

EFFECTIVENESS AS PARADOX: CONSENSUS AND CONFLICT IN CONCEPTIONS OF ORGANIZATIONAL EFFECTIVENESS*

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Attention to the subject of organizational effectiveness has been increasing in the last several years as popular management books have extolled management excellence, almost two million jobs have been lost due to poor U.S. competitiveness, and economic conditions have put pressure on organizations to become more accountable with their resources. However, despite its popularity, much confusion continues in the organizational literature regarding the definition, circumscription, and appropriate criteria for assessing effectiveness. In this paper, I summarize what areas are becoming consensual among most writers on effectiveness, and I point out continuing areas of disagreement and conflict. The five statements summarizing consensual characteristics of effectiveness and the three statements summarizing areas of continuing conflict point out that agreement about effectiveness is mainly an agreement to disagree. Conflicts center mainly on the incompatibility and inappropriateness of commonly selected criteria. The main theme of the paper, however, is a discussion of an inherent, but largely ignored, characteristic of effectiveness in organizations—the paradoxical nature of effectiveness criteria. This discussion illustrates that the most effective organizations are also those characterized by paradoxes—i.e., contradictions, simultaneous opposites, and incompatibilities. Taking account of this characteristic helps explain one reason why so much confusion and disagreement continues to surround effectiveness, and it uncovers a new set of research questions that can guide future investigations. Some suggestions are provided for how research on paradoxes in effectiveness might be pursued in the future.

(ORGANIZATIONAL EFFECTIVENESS; MANAGING PARADOXES; EXCELLENCE)

Organizational effectiveness has become a fashionable topic lately in the popular press. The best selling management books in history have been written in the last five years, and they center squarely on explanations of what makes some firms excellent, of high quality, productive, efficient, healthy, or possessing vitality—all proxies for the concept of organizational effectiveness as used in the organizational sciences literature. Innovativeness, closeness to customers, management-by-walking-around, participative leadership styles, and the like have been extolled as the most important predictors of effectiveness in organizations.

In addition, American industry has been buffeted by competition from abroad, and attention to organizational effectiveness has become a necessity for survival. For example, over 1.8 million manufacturing jobs have been lost in the United States since 1980 (*Business Week*, October 7, 1985), and in 1985 alone over 212,000 jobs were lost to foreign competition. By 1990, 943,000 textile worker jobs will be lost to off-shore producers (*Business Week*, September 16, 1985). Moreover, lack of world-wide competitiveness has led to a trade deficit in 1984 exceeding all the trade surpluses accumulated from 1945 to 1983 (Department of Commerce). Management in this country simply cannot ignore issues of organizational effectiveness.

Despite this prominent place of organizational effectiveness in modern organizational America, confusion and ambiguity still characterize scholarly writing on the subject. Problems of definition, circumscription, and criteria identification plague most

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authors' work. My intent in this paper is to introduce an alternative perspective that has emerged relatively recently from my research on effectiveness in colleges and universities and in manufacturing industries. This perspective helps address for me several of the most frustrating issues surrounding research and theorizing on effectiveness, and it helps provide some new direction for future investigations and interpretations, especially in the coming decade of post-industrial environments.

In the first part of the paper I review areas of consensus that have emerged over the last several years' writing and research on effectiveness. That discussion is followed by a discussion of several remaining areas of conflict that have not been resolved in the literature. Both these sections provide a groundwork for the discussion of a crucial, but largely ignored, characteristic of effectiveness which follows in the final section: the inherent paradoxical nature of effectiveness in organizations. In this section I discuss the nature of paradox, some insights that can be gained by coupling effectiveness and paradox, and some directions for research that hopefully will prove fruitful in better understanding effectiveness and its predictors.

Consensus in Conceptions of Effectiveness

I would like to suggest that we have now reached a point in effectiveness research when the following five themes commonly appear in the writing of most investigators. These have not always been consensual propositions, but most current authors now accept them as reasonable (see Cameron and Whetten 1983, for an elaboration of several of these themes).

1. *Despite the ambiguity and confusion surrounding it, the construct of organizational effectiveness is central to the organizational sciences and cannot be ignored in theory and research.* Some authors have become discouraged with the disarray which characterizes the effectiveness literature and have, therefore, advocated a complete abandonment of the term from scientific investigation (Hannan and Freeman 1977; Goodman, Schoorman and Atkin 1983). Contrary to these proposals, all theories of organizations rely on some conception of the differences between high quality (effective) performance and poor quality (ineffective) performance. Hence, effectiveness is inherently tied to all *theory* on organizations. *Empirically*, effectiveness is generally the ultimate dependent variable in research on organizations. Relationships between structure and environment, design and innovation, or adaptation and uncertainty, for example, are important because their results lead ultimately to organizational effectiveness. *Pragmatically*, as mentioned above, consumers, clients, resource providers, managers, regulators, members, and other major stakeholders in organizations are continually faced with making judgments about effectiveness. Careers are often made or murdered on the basis of adherence to and support of some set of effectiveness indicators. Because criteria of effectiveness are neither stable nor static, maintaining harmony and congruency between one's own valued criteria and those valued by the organization is an important determinant of the pragmatics of career success.

2. *Because no conceptualization of an organization is comprehensive, no conceptualization of an effective organization is comprehensive. As the metaphor describing an organization changes, so does the definition or appropriate model of organizational effectiveness.* Many of the scientific breakthroughs of the twentieth century have emerged from insight resulting from the use of a new metaphor. Organizational theory has advanced, for example, as a result of borrowing the open systems metaphor from biology (e.g., McKelvey 1982), the social contract metaphor from political science (e.g., Keeley 1980), the transactions cost metaphor from economics (e.g., Williamson 1975), and the force field metaphor from engineering (e.g., Lewin 1951). Each time a new metaphor is used, certain aspects of organizational phenomena are uncovered that were not evident with other metaphors. In fact, the usefulness of metaphors lies in their

possession of some degree of falsehood so that new images and associations emerge. The same is true with conceptualizations of organizations. As the view changes from an organization being a social contract, for example, to its being an open system, the conceptualization of an *effective* organization changes, and with it the appropriate criteria that indicate successful performance.

3. *Consensus regarding the best, or sufficient, set of indicators of effectiveness is impossible to obtain. Criteria are based on the values and preferences of individuals, and no specifiable construct boundaries exist.* Constructs, by definition, have no objective referent. They are mental abstractions used by individuals to interpret their own reality. Therefore, judgments of effectiveness are based on the values and preferences individuals hold for a certain organization. The trouble with these values and preferences, however, is that they vary, and they are often contradictory among different constituencies, as illustrated by research by Whetten (1978), Friedlander and Pickle (1968), Rohrbaugh (1981), and others. Depending on whom one asks, a different set is identified.

Second, preferences are difficult for individuals themselves to identify accurately. Several researchers have concluded that what people say they prefer and what their behavior suggests they prefer is not always the same (see Slovic and Lichtenstein 1971; Nisbet and Wilson 1977; Argyis and Schon 1978). Third, the preferences of individuals change, sometimes dramatically, over time. For example, Cameron and Whetten (1981), Quinn and Cameron (1982) and Miles and Cameron (1982) found that criteria of effectiveness changed among constituent groups over the life cycle development of organizations. What was preferred at one point in time was not valued at another point. Fourth, contradictory preferences are held by individuals and pursued by organizations simultaneously. It is not unusual for individuals in organizations to prefer both growth and stability, efficiency and flexibility, high capital investment and high returns to stockholders, autonomy and control, and so on. Organizations try to cope with these contradictions using strategies such as sequencing (Cyert and March 1963), satisficing (Simon 1948), or incrementalism (Lindblom 1959). This relationship between contradictions and effectiveness is discussed more in a following section.

4. *Different models of effectiveness are useful for research in different circumstances. Their usefulness depends on the purposes and constraints placed on the organizational effectiveness investigation.* Table 1 lists seven of the most popular models of organizational effectiveness that have guided research. The circumstances in which each is most useful also is presented. No model covers all contingencies or applies to all settings. Each has its own focus and strengths. None of these models can be directly substituted for the others in assessments, although combinations of criteria have been found in some studies. Debates about which model of effectiveness is best or right are largely beside the point, therefore, because models are more likely to complement one another than supplant one another.

5. *Organizational effectiveness is mainly a problem-driven construct rather than a theory-driven construct.* Because no single model or criteria set exists for organizational effectiveness, there cannot be a single *theory* about effectiveness. This does not imply that multiple theories cannot be developed for certain models of effectiveness. It just argues that predictive variables and relationships relevant to one model may not be applicable to other models.

However, the basic problems surrounding organizational effectiveness are not theoretical problems, they are criteria problems. The primary task facing any investigator of effectiveness lies in determining what are the appropriate indicators and standards. It is the assessment issue, not the theoretical issue, that dominates current concerns of both evaluators and managers. Most people have in mind some notion of what they value as effective, but those notions are frequently very difficult to operationalize.

TABLE 1
Commonly Used Models of Organizational Effectiveness

Model	Definition	When Useful
	An Organization is effective to the extent that . . .	The model is most preferred when . . .
Goal Model	It accomplishes its stated goals.	Goals are clear, consensual, time-bound, measurable.
System Resource Model	It acquires needed resources.	A clear connection exists between inputs and performance.
Internal Processes Model	It has an absence of internal strain with smooth internal functioning.	A clear connection exists between organizational processes and performance.
Strategic Constituencies Model	All strategic constituencies are at least minimally satisfied.	Constituencies have powerful influence on the organization, and it has to respond to demands.
Competing Values Model	The emphasis on criteria in the four different quadrants meets constituency preferences.	The organization is unclear about its own criteria, or change in criteria over time are of interest.
Legitimacy Model	It survives as a result of engaging in legitimate activity.	The survival or decline and demise among organizations is of interest.
Fault-Driven Model	It has an absence of faults or traits of ineffectiveness.	Criteria of effectiveness are unclear, or strategies for improvement are needed.
High Performing Systems Model	It is judged excellent relative to other similar organizations.	Comparisons among similar organizations are desired.

Adapted From: K. S. Cameron, "The effectiveness of ineffectiveness," In B. M. Staw and L. L. Cummings, *Research in Organizational Behavior*, Vol. 6, JAI Press, Greenwich, CT., 1984, 276.

Guidelines for bounding and assessing effectiveness models was provided by Cameron and Whetten (1983) in the form of seven critical questions. These questions are to be answered explicitly by evaluators prior to all assessments of effectiveness:

1. From whose perspective is effectiveness being assessed?
2. On what domain of activity is the assessment focused?
3. What level of analysis is being used?
4. What is the purpose for assessing effectiveness?
5. What time frame is being employed?
6. What type of data are being used for assessments?
7. What is the referent against which effectiveness is judged?

Answering these questions in different ways makes different criteria of effectiveness applicable. The challenge lies in determining the most appropriate answers for a particular research setting.

These five areas of agreement lead to the conclusion that the central area of concern regarding effectiveness is matching an appropriate model of effectiveness, including its criteria set, with the appropriate circumstances. Unfortunately, this matching of

models to appropriate circumstances is seldom done in organizational research, and conflicts in perspective and approach to assessment are a common result. Some of the continuing causes of this conflict and confusion in the effectiveness are reviewed in the next section.

Areas of Conflict in Effectiveness Evaluations

In this section, I try to summarize several major areas of continued conflicts about effectiveness. Despite emerging consensus on some points, lack of agreement is still typical of the literature, particularly as it relates to assessment issues.

1. *Evaluators of effectiveness often select models and criteria arbitrarily in their assessments, relying primarily on convenience.* A review of the effectiveness literature (Cameron 1978, 1982) found that 80 percent of the criteria used in evaluations of effectiveness did not overlap with those used in other studies. The most frequently used criterion was a single, overall rating of effectiveness given by respondents within the organization. Seldom did evaluators make explicit their answers to the critical questions listed above, so that they did not specify the boundaries that help constrain their selection of criteria. Few authors admitted having considered seriously alternative indicators of effectiveness and rational selection of the most appropriate ones. In short, much of the literature of effectiveness continues to report questionable assessment, and subsequent generalization may be misleading or mistaken. Criticism of the effectiveness literature as being fragmented and in disarray is at least partly a product of this careless assessment.

2. *Indicators of effectiveness selected by researchers are often too narrowly or too broadly defined, or they do not relate to organizational performance.* A common problem in effectiveness research is for authors to equate the construct of organizational effectiveness with a host of attributes or outcomes that may have little to do either with the organization or its performance. This is primarily a level of analysis problem. Individual or group effectiveness is not necessarily the same as organizational effectiveness, nor is societal harmony. Yet indicators ranging from personal need satisfaction (e.g., Cummings 1983) and small group cohesion (e.g., Guzzo 1982) to economic welfare (e.g., Nord 1983) and social justice (e.g., Keeley 1980) appear in the literature as being indicators of effectiveness for single organizations. A similar problem is the scope of indicators included. A survey of the literature finds structure, decision processes, culture, congruence, job design, innovation, sensitivity to constituencies, and environmental responsiveness as synonymous with effectiveness. Seldom is a rationale or justification given for selecting the particular criteria set. One problem is that *determinants* of effectiveness often get confused with *indicators* of effectiveness. One study, for example, may use group cohesion as an indicator of effectiveness while another may treat it as a predictor. Investigators of organizational effectiveness have been careless in differentiating between the two.

The reverse also is true of this problem of scope. That is, articles continue to appear that use effectiveness in the title, but that rely on single indicators such as satisfaction, morale, turnover, quantity of outputs, overall firm rating, or ROI to assess effectiveness. The fact that effectiveness is a multidimensional construct and that it relates to many domains of activity in organizations is widely acknowledged. Yet investigators still select too narrowly in defining the boundaries of effectiveness, primarily because indicators such as those listed above are convenient and readily accessible. Whetten (1981) illustrated this problem by comparing effectiveness assessments with a common marketing problem. When individuals find it difficult to judge a product on the basis of "primary" criteria (e.g., how well soap gets out dirt), they will not postpone judging the product. Rather they will make a selection on the basis of "secondary" or tertiary

criteria that are easy to detect (e.g., the color of the box). Similarly, because the most appropriate criteria of effectiveness may be difficult to identify, other more readily available criteria are substituted. Unfortunately, these proxies sometimes have little or nothing to do with organizational performance.

3. *Outcomes are the dominant type of criteria used to assess effectiveness by researchers, whereas effects are most frequently used in policy decisions and by the public.* In our study of the U.S. tobacco industry, Bob Miles and I found that, depending on whether one considers outcomes or effects for the tobacco firms, one could reach a very different conclusion about their effectiveness. For example, tobacco firms have successfully adapted to what many consider to be the most turbulent and hostile environment ever faced by a U.S. industry. They have maintained a respectable degree of both profitability and productivity. (For example, the average ROI for the Big Six tobacco firms ranged from 9.0 to 17.8 between 1970 and 1979; see Miles and Cameron 1982.) The *outcomes* of the strategic actions of these firms have been highly successful.

The *effects* of cigarette production and the profitability of these firms, on the other hand, have been evaluated negatively by the public at large. Over 80 percent of all cigarette smokers currently desire to give up the habit because of the health risks, and a Roper poll found that less than 25 percent of the public feel that tobacco firms are concerned with the welfare and safety of consumers. The abundance of legislation and public policy controlling the tobacco industry is much more a product of the effects of tobacco firms than of the outcomes of tobacco firms. That is, effects as criteria are more important than outcomes in the broader societal context.

Unfortunately, the effects of organizational actions are often so complex and diverse that assessment of them is impossible. Moreover, it is extremely difficult to attribute causality to organizational actions when a myriad of interacting elements exist simultaneously in an environmental niche. Hence, researchers are largely limited to a consideration of outcomes, not effects, and controversy continues over the conclusions that are derived from effectiveness research.

Summary

These conclusions about the consensus and conflict that surround effectiveness lead to the realization that agreement about effectiveness is mainly an agreement to disagree. Writers now mostly agree that flexibility and discretion must characterize the selection of criteria and models in effectiveness research, so long as the selections made by investigators are rationally bounded and justified. The only constraint is that they must be appropriate to their contexts. The remaining conflicts regarding effectiveness mainly center on the incompatibility and inappropriateness of commonly selected criteria. The conflicts are at least as much a product of sloppiness in assessments and conceptualizations as they are thoughtful disaccord.

An Introduction to Paradox

It is precisely this point that identifies the intersection between this paper and the one by Lewin and Minton in this issue. Their paper uses the competing values model (Quinn and Rohrbaugh 1981) as the groundwork for a review of the problems and possibilities regarding effectiveness research, and this paper does the same. That is, problems of criteria dissonance are precisely those that the competing values model of effectiveness helps address. An advantage of that model is that it helps analysts think of criteria as *competing* rather than as compatible and congruent. This thinking highlights an important attribute of effectiveness that helps explain why the literature has remained so chaotic and confusing regarding what effectiveness is and how to measure it. The attribute can be characterized as follows: *Organizational effectiveness is*

inherently paradoxical. To be effective, an organization must possess attributes that are simultaneously contradictory, even mutually exclusive.

A paradox is an idea involving two opposing thoughts or propositions which, however, contradictory, are equally necessary to convey a more imposing, illuminating, life-related or provocative insight into truth than either factor can muster in its own right. What the mind seemingly cannot think it must think; what reason is reluctant to express it must express (Slaatte 1968, p. 4).

Paradox, then, involves contradictory, mutually exclusive elements that are present and operate equally at the same time. Paradoxes differ in nature from other similar concepts often used as synonyms such as dilemma, irony, inconsistency, dialectic, ambivalence, or conflict. A dilemma is an either-or-situation, for example, where one alternative must be selected over other attractive alternatives. An irony exists when an unexpected or contradictory outcome arises from a single alternative. An inconsistency is merely an aberration or discontinuity from past patterns. A dialectic is a pattern which always begins with a thesis followed by an antithesis and resolved by a synthesis. Ambivalence is simply uncertainty over which of two or more attractive (or unattractive) alternatives should be chosen. And a conflict is the perpetuation of one alternative at the expense of others. Paradox differs from each of these concepts in that no choice need be made between two or more contradictions. Both contradictions in a paradox are accepted and present. Both operate simultaneously.

The Paradox in Effectiveness

A number of writers, including some in this special issue of *Management Science*, have speculated on the marked difference in environmental conditions that will characterize the next decade compared to the present. Labels such as post-industrial environment (Bell 1973; Huber 1984), the technetronic era (Brzezinski 1970), the information society (Masuda 1980), the telematic society (Martin 1981), and the third wave (Toffler 1980) have been used to describe the unique circumstances that will face organizations in the 1990s. Drucker (1980) observed, for example, that turbulence would be the hallmark of the future:

The one certainty about the times ahead, the times in which managers will have to work and to perform, is that they will be turbulent times. And in turbulent times, the first task of management is to make sure of the institution's capacity for survival, to make sure of its structural strength and soundness, of its capacity to survive a blow, to adapt to sudden change, and to avail itself of new opportunities (p. 1).

One paramount attribute characterizing organizations that have the capacity to adapt successfully to such conditions is the presence of paradox. That is, attributes such as the following are present in successful post-industrial organizations:

(1) Loose-coupling—which encourages wide search, initiation of innovation, and functional autonomy—as well as tight-coupling—which encourages quick execution, implementing innovation, and functional reciprocity (see Morgan 1981; Zaltman, Duncan and Holbeck 1973).

(2) High specialization of roles—which reinforces expertise and efficiency—as well as high generality of roles—which reinforces flexibility and interdependency (see Lawrence and Lorsch 1967).

(3) Continuity of leadership—which permits stability, long-term planning, and institutional memory—along with infusion of new leaders—which permits increased innovation, adaptability, and currency (see Chaffee 1984).

(4) Deviation amplifying processes—which encourage productive conflict and opposition that energize and empower organizations—as well as deviation reducing proces-

ses—which encourage harmony and consensus needed to engender trust and smooth information flows (see Maruyama 1963).

(5) Expanded search in decision making—which allows for wider environmental scanning, access to more information, and divergence of input—as well as the creation of inhibitors to information overload—which reduce and buffer the amount of information reaching decision makers and lead to convergence in decision making (see Huber 1984).

(6) Disengagement and disidentification with past strategies—which fosters new perspectives and innovation and inhibits defining new problems simply as variations on old problems—as well as reintegration and reinforcement of roots—which fosters commitment to a special sense of organizational identity and mission and past strategies (see Tichy 1983).

Without the tension that exists between simultaneous opposites in organizations, unproductive “schismogenesis” occurs (see Bateson 1936; Morgan 1981). Schismogenesis is a process of self-reinforcement where one action or attribute in the organization perpetuates itself until it becomes extreme and therefore dysfunctional. For example, consider the situation where one person’s dominance produces submissiveness in another, which in turn reinforces even more dominance on the part of the first person and more submissiveness on the part of the second. A negatively reinforcing cycle is produced. One person’s actions produce more extreme reactions in the other until the system becomes so out-of-balance that it disintegrates. Bateson referred to this condition as *complementary schismogenesis*. Or consider the situation where dominance in one person produces a reaction of dominance in another, which sets up a cycle of escalating competition and eventual mutual destruction. (The current international arms race is a good example.) Bateson called this *symmetrical schismogenesis*. Similar forces accelerate one another until system disintegration occurs.

Paradox, unlike schismogenesis, implies mutually exclusive opposites, not opposites that are mutually reinforcing. Loose coupling in an effective organization, for example, does not cause a reaction of more tight coupling, nor of even more loose coupling. Instead, simultaneous, equally compelling, contradictory attributes exist which create both balance and dynamism. Loose coupling and tight coupling exist in both independence and dependence in effective organizations. Unless such a paradoxical condition exists in organizations, dysfunctional cycles emerge that lead to ineffectiveness. Organizational effectiveness, then, is inherently dependent upon the presence of paradox.

In my own research on adaptation and effectiveness in colleges and universities, the pursuit of simultaneous contradiction has been found to be highly successful in coping with conditions of uncertainty, complexity, and turbulence. In one study, for example, 14 small colleges were selected for investigation because each had undergone decline in both revenues and enrollments during the 1970s. Half of those schools successfully recovered, half did not. The question of interest was, what was it that distinguished the successful recoverers from those that continued to slide? The following conclusions were drawn:

1. Recovering institutions engaged in proactive, entrepreneurial, and innovative actions that were oriented toward long-term recovery. Simultaneously, they initiated conservative, self-protection mechanisms (e.g., efficiency measures) oriented toward short-term survival.

2. Management strategies were simultaneously oriented toward both enacting and manipulating the external environment (e.g., changing resource suppliers and markets), and ignoring the environmental constraints by establishing environmental buffers and concentrating on internal human resource and allocation decisions.

3. Top leadership paid a great deal of attention to symbol as well as substance. On the one hand, structural, personnel, and curricular changes were instituted, so that the

basic fiber of the institution was altered. On the other hand, substance was ignored in favor of image. A great deal of attention was paid to helping constituencies interpret events favorably. The management of symbols and interpretations was a critical difference between successful managers and others who failed (see Cameron and Ulrich 1986).

4. Institutions engaged in domain defense along with domain offense (see Miles and Cameron 1982). That is, energy was spent in defending the institution against the encroachment of external environmental events and stakeholders, while at the same time, aggressive strategies were initiated to influence the external environment and important stakeholders outside the institution's boundaries.

5. The core culture or "saga" of successful institutions was reinforced and perpetuated (i.e., institutional roots were strengthened), but at the same time new innovations and creative activity helped change the character of the school. The simultaneous destruction and creation processes typical of successful innovations was typical in these institutions (see Cameron 1983, 1984; Chaffee 1984).

These conclusions are similar to those that were drawn from another study of 334 four-year colleges and universities throughout the United States (see Cameron 1985, 1986). One of the questions under investigation in that study was, what accounts for the improvement of organizational effectiveness over time in colleges? The following are some of the main findings.

1. Institutions that improve in effectiveness over time have an infusion of new leaders at the top as well as maintain continuity and stability among top administrators. The necessity for both new ideas and fresh perspectives exists simultaneously with the requirement for an enduring sense of history among the institution's leadership.

2. Improving institutions emphasize and reinforce internal morale issues among institution members, while at the same time, they are market sensitive and reactive to external demands. Institutions that do not improve often have leaders that lose sight of the need to reinforce the value of human resources inside the organization and to stay "close to home." On the other hand, staying close to home at the expense of adapting to market conditions inhibits organizational effectiveness.

3. Overwhelmingly, the major predictors of improving effectiveness are factors under the control of managers (e.g., strategic actions) as opposed to context or demographic factors. On the other hand, turbulent and hostile environmental conditions act as inhibitors to effectiveness and supportive conditions enhance the probability of improvement.

These general conclusions help illustrate the presence of simultaneous opposites in organizations that are highly effective, or that improve in their effectiveness, particularly under turbulent conditions. These simultaneous opposites, or paradoxes, also have been found by other authors in their studies of effectiveness. Peters and Waterman (1982), for example, suggested that excellent firms possess a variety of paradoxical characteristics such as simultaneous loose and tight coupling, productivity through participation along with a bias for action (nonparticipation), autonomy and entrepreneurship along with "sticking to the knitting," and so on. "The excellent companies have learned how to manage paradox" (Peters and Waterman 1982, p. 100). Rothenburg (1979) studied the major breakthroughs of 54 highly creative artists and scientists in the United States and Great Britain (e.g., Einstein, Mozart, Picasso). He coined the term "Janusian thinking" to describe their commonalities. Janusian thinking is named after the Roman god Janus who is pictured as having at least two faces looking in opposite directions. This type of thinking occurs when two opposite or paradoxical thoughts are held by the person to be simultaneously true. The tension that results from simultaneous incompatibilities within the individual is the springboard from which all the creative insights studied by Rothenburg arose.

For example, Einstein's conception of the theory of relativity emerged from what he described as "the happiest thought of my life." He conceived of a man jumping off a tall building, and on the way down, took from his pocket a wallet, placed it in front of himself, and let go. It occurred to Einstein that relative to the man, the wallet would remain stationary in the air. At that instant, therefore, the wallet (and the man) was simultaneously moving and at rest. That is, two conditions that seem to be mutually exclusive were present at the same time. Einstein's paradox led to a complete revolution in the accepted laws of physics. Rothenburg's study uncovered similar paradoxes in composers who conceived of simultaneous dissonance and harmony in a chord, artists who painted tension and rest in the same scene, and athletes who experienced both exhaustion and exhilaration at a point of peak performance.

This relationship between paradox and excellence, and between paradox and quantum leaps in knowledge and insight, is also illustrated by Schumacher (1977) who distinguished between two types of problems—convergent problems and divergent problems. Convergent problems deal with distinct, precise, quantifiable, logical ideas that are amenable to empirical investigation. Convergent problems are *solvable* problems, and as they are studied more rigorously and more precisely, answers tend to converge into a single accepted solution. Divergent problems, on the other hand, are problems that are not easily quantifiable or verifiable and that seem not to have a single solution. The more rigorously and precisely they are studied, the more the solutions tend to diverge, or to become contradictory and opposite. For example, the problem of world peace seems to necessitate security and protection on the one hand, and reducing the threat of war by disarmament on the other. The education of children is a process of passing on past knowledge and culture—a process requiring those who know to tell those who don't know—as well as a process of allowing freedom, autonomy, and self-development—where an absence of authority, constraints, and "telling" exists. Governments (at least in the Free World) face the problem of insuring liberty—where, left to themselves, those who have, get, and those who don't have, don't get—as well as equality—where the haves and the have-nots divide resources equitably.

In normal organizational science, "good scientists study the most important problems they think they can solve" (Medawar, 1967, p. i). Consistency and control take priority in defining problems. Barnard (1957, pp. 55, 77) suggested:

When faced with complex questions, physiologists and physicians, as well as physicists and chemists, should divide the total problem into simpler and simpler and more and more clearly defined partial problems. They will thus reduce phenomena to their simplest possible material conditions and make application to the experimental method easier and more certain.

Schumacher (1977, p. 126), on the other hand, argued that unlike convergent problems, divergent problems deal with "higher faculties" and "higher levels of being."

I have said that to solve a problem is to kill it. There is nothing wrong with killing a convergent problem . . . Divergent problems cannot be killed; they cannot be solved in the sense of establishing a correct formula; they can, however, be transcended. A pair of opposites . . . cease to be opposites at the higher level, the really human level, where self-awareness plays its proper role. It is then that such forces as love and compassion, understanding and empathy, become available . . . Opposites cease to be opposites.

According to Schumacher, wrestling with divergent problems, because of their inherent paradoxes and incompatibility with linear methods, is more likely to produce breakthroughs of the kind studied by Rothenburg than are convergent problem solutions. Excellence in science, like excellence in organizations, seems to involve the tension of paradox.

Three Principles of Paradox

I am arguing that because effectiveness is inherently tied to paradox, the construct of effectiveness can be understood in only a limited way without considering simultaneous contradictions. Effectiveness is more a divergent problem in Schumacher's sense than a convergent problem. The possibilities (as well as the problems) in its investigation are, therefore, enormous.

As pointed out by Medawar (1967), Schumacher (1977) and Rothenburg (1979), however, it is not just the presence of mutually exclusive opposites that makes for effectiveness, but it is the creative leaps, the flexibility, and the unity made possible by them that leads to excellence. Opposition in the form of schismogenesis may lead to system ineffectiveness and eventual dissolution, whereas the presence of creative tension arising from paradoxical attributes helps foster organizational effectiveness. Three principles summarize this relationship between organizational effectiveness and paradox.

1. *Extremity in any criterion of effectiveness creates linearity and dysfunction.* Some balance must be present in opposition. Too much of either element in a paradox leads to extremism. For example, effective organizations demonstrate both proactivity and entrepreneurship as well as stability and control (see the discussion of the research results above). However, too much action and innovation can create a loss of direction, wasted energy, and a disruption of continuity. An over-emphasis on control and coordination can produce stagnation, loss of energy, and abolition of trust and morale. It is the presence of balanced paradoxes that energizes and empowers systems. In selecting criteria for inclusion in effectiveness studies, therefore, investigators should search for potential balance in opposing indicators.

2. *Synthesis is desirable but not required for excellence. Paradox need not be resolved to be adaptive.* Rothenburg proposed that the resolution of paradox led individuals to produce quantum leaps in insight and creativity. When they were able to reconcile two contradictory elements, remarkable advances resulted. On the other hand, Schumacher suggested that the mere recognition that two opposite elements are simultaneously true and present in a system creates flexibility and freedom that is not present in totally linear systems. Contradictions need not be reconciled to enhance effectiveness because paradoxes are not necessarily dialectical. The need to resolve all simultaneous contradictions, in fact, may inhibit excellence by eliminating the creative tension that paradoxes produce. In selecting effectiveness criteria, therefore, evaluators should not be as concerned with the intersection between paradoxical criteria as with their presence.

3. *Paradoxes are paradoxical.* Most of our models and theories of organization assume consistency and symmetry (e.g., structural, leadership, or motivational contingency theories). According to these models, characteristics or behaviors are matched with particular contexts in order to produce effectiveness. On the one hand, however, the principle of paradox being proposed suggests that disconfirmation, contradiction, and nonlinearity are inherent in all organizations, a direct contradiction of current models and theories. On the other hand, paradoxes also are predictable and symmetrical by themselves. They are both confusing and understandable, common and surprising. This paradoxical characteristic of paradoxes in organizational effectiveness is illustrated by two different studies of effectiveness in higher education institutions and government organizations.

In one study (Cameron 1986b), an attempt was made to assess some of the basic propositions of the multiple constituencies model of organizational effectiveness (see Table 1). A variety of different constituencies were assessed to obtain their preferences and expectations relative to an organization's performance. As might be ex-

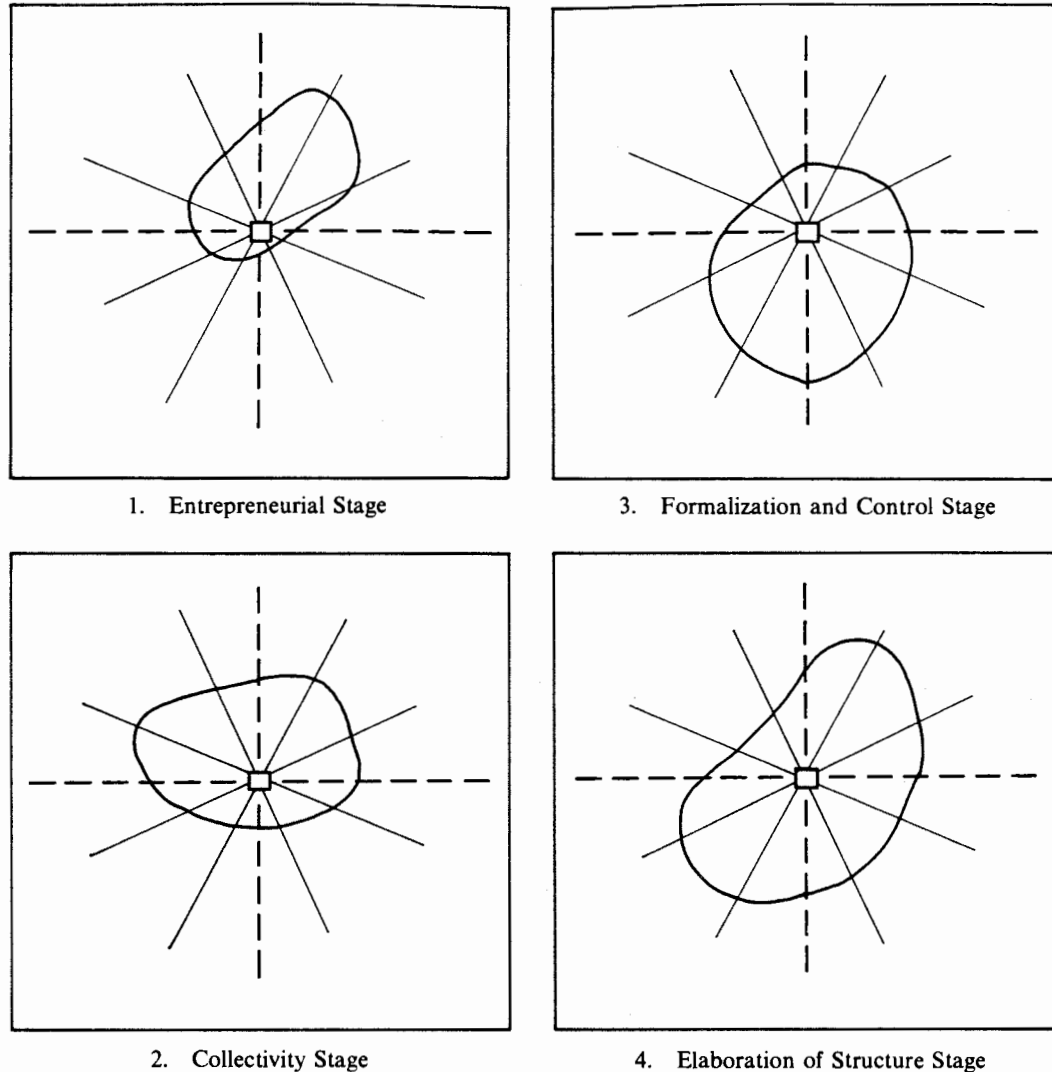


FIGURE 1. Shifting Criteria of Effectiveness over Life Cycles in a New Organization. Source: Quinn and Cameron (1983).

pected, different constituencies held different, and sometimes opposite, preferences and expectations for organizations. Then the actual performance was measured on a variety of dimensions for a set of organizations in order to obtain their effectiveness levels. One important result was that the organizations that achieved the highest levels of effectiveness scores were also those that satisfied the most separate constituency group expectations, even when different constituencies held contradictory expectations. Highly effective organizations were paradoxical in that they performed in contradictory ways to satisfy contradictory expectations.

A second study by Quinn and Cameron (1982) used the competing values model (see Table 1) to identify changes in criteria of effectiveness over organizational life cycle stages. Figure 1 summarizes the results of that study.

By definition, diagonal quadrants in the model are opposite, or paradoxical, to one another. For example, the opposite of the criterion *flexibility* in the upper right quadrant is in the lower left quadrant, *stability*. It was discovered that effective organizations do not emphasize activities in only one of the quadrants, but they maintain some balance or capacity among all four. We found, for example, that effectiveness criteria in different quadrants were emphasized in different life cycle stages. What was defined as effective performance in one stage was contradictory to

effectiveness in another stage. However, a predictable pattern of change was found. The competing values model helped organize the criteria in such a way as to predict what contradictory criteria would be valued in the next stage. Paradox was predictable, despite its surprising nature.

Implications for Research

Maruyama (1976) pointed out the inappropriateness of the traditional ways in which scientists think for analyzing complex organizational phenomena. He described them as unidirectional, uniformistic, competitive, hierarchical, quantitative, classificational, and atomistic. The requirement for understanding complex phenomena, according to Maruyama, is for mutualistic, heterogentic, symbiotic, interactionist, qualitative, relational, and contextual thinking. Similarly, Van de Ven (1983) asserted that our organizational theory matches our analytic thinking in narrowness and unidirectionality. In this paper, I have suggested that investigators of organizational effectiveness should begin to consider the presence of paradoxical criteria of effectiveness in post-industrial organizations. This consideration will lead not only to an elaboration of our conceptions of organizations, but it has the following implications for the conduct of research.

1. *Paradoxical criteria should begin to be included in assessments of organizational effectiveness.* The complexity of effective organizational performance cannot be evaluated without considering simultaneous opposites. The implication for researchers is that when assessing paradoxes in the context of effectiveness studies, investigators should measure both the extent to which the element 'a' is present as well as the extent to which the opposite of 'a' is present. Low scores on 'a' may not necessarily indicate the presence of its opposite.

For example, consider a condition of excellent physical health called wellness, and its opposite, illness. Indicators of wellness might include low percentage of body fat, low levels of serum lipids in the blood, high tolerance for stress, low blood pressure, cardiovascular fitness, and so forth. High scores on these indicators would suggest excellent health (wellness), but low scores would not necessarily indicate illness. Completely different, even independent, criteria would be required to indicate illness such as fever, bleeding, nausea, congestion, and so forth. Assessments of health should include both sets of criteria in order to avoid linearity, since wellness and illness could exist simultaneously in the same individual. Similarly, in organizations, criteria of effectiveness may be independent of criteria of ineffectiveness, so both should be measured (see Cameron 1984b, for an elaboration of this argument).

2. *Changes in data analysis procedures may need to be considered.* It is common to use means, medians, and linear trends as the basis for statistical analyses and inferences. Unfortunately, taking averages and finding midpoints may mask the presence of paradox, as might the reliance on linear trends in regression equations. Not only should investigators be sensitive to nonlinearity and variation in their data, but outliers and contradictions should not be neglected or explained away as aberrations. This suggests that Tukey's (1977) advice should be taken seriously to manipulate and explore data in nonstatistical ways before submitting it to standard programs of analysis. In addition, giving consideration to variances and unexplained discontinuities may lead to interesting insights that are normally outside the realm of most current theories.

3. *Hypotheses should be generated that do not consider merely the rejection of the null or not.* Contradictory hypotheses, or antitheses, are required for researchers to be sensitive to the presence of paradox. Data supporting two mutually exclusive points of view should not be interpreted merely as disconfirmation of a single hypothesis. On the

other hand, instead of simply including random contradictions in a search for indicators of effectiveness, care must still be taken to bound and justify the criteria selected in assessments. Models should be developed and used to organize and help interpret the relationships among paradoxical criteria. The competing values model, or others like it, may help rationalize this selection process.¹

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