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From Realist to Constructivist Theory in Public Administration: Development of a Quality Perspective

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FROM REALIST TO CONSTRUCTIVIST THEORY IN PUBLIC ADMINISTRATIVION: DEVELOPMENT OF A QUALITY PERSPECTIVE

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ABSTRACT

FROM REALIST TO CONSTRUCTIVIST THEORY IN PUBLIC ADMINISTRATION: DEVELOPMENT OF A QUALITY PERSPECTIVE

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The purpose of this study is to formulate a behavioral theory of public organization development and administration that replaces positivism with constructivism as its underlying paradigm. This study contends that the level of maturity with respect to quality is a function of the degree to which an organization's latent thinking and conceptualization has advanced toward constructivism. The underlying thesis is that public administration and organization behavior stems from multiple realities not possible under positivism. Efficiency is not an appropriate criterion for analysis under the tenants of constructivism and should be replaced with quality as a criterion.

The use of quality necessitates the adoption of a new paradigm of thought. Constructivism gives utility to quality by integrating systems and behavior theory to produce a special systems theory for public administration. The

arguments presented in the dissertation are embedded throughout using a hermeneutic framework.

Hermeneutics attempts to systematically clarify the meaning of texts or any human construct that can be conceived as texts such as written, verbal, non-verbal, and symbolic actions. The limits of human cognition and the influences of social and historical conditions on understanding are recognized and incorporated into the research framework. Hermeneutics disavows the positivist claims of objectivity, as well as the total subjectivity of criticalists.

Positivism and the resultant contention that efficiency is the most rational criterion for analyzing public decisions form the basis for the logical null hypotheses. Relevant details in the literature are researched in the current social and historical context, leading to confirmation or reinterpretation and revision.

Results indicate that public organizations are complex systems. Behaviors represent energy within the system, and patterns of energy exchange between systems are nonlinear. Multiple realities imply more sophistication in methodological approaches than is currently taught and practiced if public organizations are to become truly effective and equitable.

DEDICATION

To my wife, Madge, and my children, Robert, Cory, and Laura, for their support and perserverance.

And especially to my parents, for instilling in me a respect and desire for knowledge.

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CHAPTER ONE

INTRODUCTION

Statement of the Problem

The purpose of this study is to formulate a behavioral theory of public organization development and administration that replaces positivism with constructivism as its underlying paradigm. Such a theory can no longer use efficiency as the standard for rational decision-making. The underlying thesis is that public administration and organization behavior must contend with multiple realities not possible under positivism. Efficiency is not an appropriate criterion for analysis under the tenants of constructivism and should be replaced. Quality is proposed as a rational criterion for analysis and action in public organizations.

This thesis accepts the generalities of Simon's (1976) exposition on administrative behavior regarding the value and factual components of decisions; however, it argues that factual judgments can not be unequivocally and empirically determined to be true or correct. Organization and efficiency are human constructs, and meanings are derived through individual interpretations. Rather, factual is a matter of degree and is dependent upon the value components

of individuals and groups of individuals. Simon's pronouncement that efficiency is the most rational criterion is itself a value statement. Efficiency as an empirical measure of the correctness of decisions is restricted to a positivist paradigm.

If quality is accepted as the most important criterion of rationality, new theoretical frameworks are required to develop and explain the roles of authority and communication in public organizations. This alternative theory proposes to transcend the usual mechanistic and organismic metaphors of the public administration field that view organizations as responsive to their environment. Instead, a case will be made for organizations as affectors of their environment.

Operationalization of quality is a key issue because of the numerous levels to which it is applied. Quality is a relative construct, and is therefore defined in numerous ways. At the product or service level, quality is often measured by conformance to standards (Crosby, 1979). Continuous improvement determines quality at the process level (Demming, 1986). At an organizational level, quality is operationalized as customer satisfaction (Whiteley, 1991). According to John Stewart, "There is no one definition of qualtiy... Quality is a sense of appreciation that something is better than something else. It changes in a lifetime, and it changes from generation to generation, and it varies by facets of human activity" (Dobyns and Crawford-Mason, 1991, p.21). There is an implication for public administration

that the "something" refered to by Stewart applies to a relevant social condition that a public agency is conceived to manage or ameliorate.

For this study, quality is defined as conformance to standards, continuous improvements in organizational processes, and the degree of overall stakeholder satisfaction with an agency's ability to accomplish its organizational goals.[1] Using this definition, multiple perspectives of quality exist from all possible groups of stakeholders in the organization's outcomes.

Constructivism allows quality to have these multiple meanings which converge at some higher, transcendental level. The most useful convergence for public administration lies in organization effectiveness in achieving its goals.

The "quality movement" is sometimes considered a fad (Fuchsberg, 1992). Its relevance to public organizations has received numerous critiques ranging from inappropriate to, more commonly, a "best management practice" suitable in specific situations (Swiss, 1992; Rago, 1994). Quality implementations have ranged from motivational programs to attempts at total organizational transformation (Dobyns and Crawford-Mason, 1991). The failures to implement lasting organizational improvement give legitimate credence to the

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[1] Consistent with the arguments of Barzelay (1992), the broader terms, "stakeholder" and "citizen" are substituted for the more commonly used term, "customer," that pervades the literature and defines a customer as the one receiving a public good or service (Deming, 1986; Dobyns and Crawford-Mason, 1991; and Whiteley, 1991).

critics. However, the successes offer the promise of a future reality that can only be imagined.

Urban Relevance

The rapid growth and expansion of urban areas pose problems for public administration. Urban infrastructures are less and less capable of handling this growth. Many are deteriorating more rapidly than anticipated or are becoming obsolete. As more and more people relocate to urban area, these problems become acute and are exacerbated by fiscal stress (Cahill and James, 1992). A greater demand is being placed on public agencies to effectively deal with these problems.

A theory and model of public organizations embracing constructivism and quality contribute a new understanding of public organizations in general and presents the basis of an original approach to public organization development. Ostrom (1989) contends that, over the years, public administration has been experiencing a growing crisis. This crisis can be attributed to public administration's inability to meet the expectations of expansive public interest and the concomitant loss of confidence.

Dwight Waldo (1968b) characterized this crisis of confidence in public administration in America as a crisis of identity. This crisis described a general failure of current theory to demonstrate sufficient utility in practice - theory that is lacking or inadequate in explaining observed

phenomena. The implied desire for prediction and control pervades current theory and application.

The environment of American public administration has changed sufficiently that gaps now exist among the competing theories, and a unifying theory has yet to be established (Jun, 1986). This lack of identity is attributable to multiple and competing perspectives in the field, none of which either originate from within the field or adequately address societal problems and solutions.

Ostrom (1989), by casting the identity crisis as a recurrent problem in the history of scientific inquiry, advances the thesis that the lack of a dominant or sufficient underlying paradigm grounding public administration theory is responsible for this pervasive sense of crisis. This crisis, a search for a dominant paradigmatic basis, might also be thought of as a scientific revolution in the field of public administration. Ostrom agrees with Waldo (1968b) that "The search for a solution must occur outside the frame of reference provided by either the traditional theory of public administration or Simon's theory of organization" (p.9).

The modern conceptualization of public organizations is a problem of multiple perspectives. These perspectives, or approaches, may be unique, or they may build on earlier theory. Each approach provides its own interpretations in an attempt to provide greater explanatory power. Even when approaches are developed from previous ones, only those aspects perceived as relevant survive. The problem with this

logic of theory building lies in the assumed superiority of the newer approaches and the abandonment or disregard of the others. Also, this logic tends to limit understanding of public organizations by narrowing the bounds of rationality (Simon, 1976).

The implication provided by positivism is that a direct causal order exists (Cook and Campbell, 1979; Davis, 1985; Guba, 1990). The goal of understanding is prediction and control. Currently, most approaches to the study of public organizations have some form of accountability, control, prediction, and efficiency as their central themes (Jun, 1986; Ostrom, 1989).

Stillman (1991) contends that the diffuse and impermanent nature of administrative thought lacks consensus and direction. The problem of administrative theory is its inability to define its scope and substance within a supporting framework. Henry (1989) has described the resultant condition as "a paradigmatic quandary" (p.20). This dissertation provides a remedy for this condition.

Despite the seemingly overwhelming evidence that a crisis exists for public administration, some scholars contend that some administrative organizations specifically, and bureaucracy in general (Stillman, 1995; Goodsell, 1994), are doing a relatively good job. Goodsell expresses his irritation with critics of bureaucracy in the United States. While admitting that bureaucracy is not perfect, he contends that examples of inefficiency and ineffectiveness are the

exception rather than the rule. Goodsell argues that methodological biases in policy and program research conceal the true effectiveness and efficiency of public administrative organizations.

Osborne and Gaebler (1992), two of bureaucracies' most severe critics, suggest a better way is desired and possible. They contend that a vision of bureaucratic efficiency does not equate to effectiveness. Bureaucratic effectiveness in achieving social goals should be the primary concern of public organizations and administrators. Archaic bureaucratic systems are the problem, not bureaucrats. They also call for "a new paradigm" (Osborne and Gaebler, 1992, p.331) to overcome the lack of vision. Their work has stimulated the formation of the National Performance Review (NPR) tasked with making government more effective.

The National Academy of Public Administration (NAPA) demonstrates support for the need of a new paradigm by creating an Alliance for Redesigning Government (NAPA, 1993). This presumes support for the above contentions from the field of public administration in general, yet Stillman (1995) invalidates this presumed support because of the lack of substantive, scholarly theoretical frameworks as a basis for reform.

Moe (1994) states the importance of theory in the development of a new paradigm. Paradigms force theoretical assumptions to be made. This is discussed in a later chapter. These assumptions are often more important than the

recommendations emerging from a new paradigm or theory because they can lead to agreement on a desirable means while leading to conflicting and often undesirable ends. Such has been the case using positivism and efficiency.

If a new paradigm is needed, new theory and new applications of existing theory must be forthcoming. Quality, as a criterion for determining effectiveness, implies a new paradigm. The paradigm suggested in this paper is constructivism. If problems are systemic in nature, then a constructive theory of systems is also needed. This dissertation overcomes these difficulties by integrating theory within the bounds of paradigmatic thought and offers advanced conceptualizations of systems.

The synthesis of conceptual relationships between paradigmatic thought and public administration theory is perhaps the greatest contribution of this study. It answers a pervasive call from the literature that would provide definition and direction for the field as a profession and a science.

Methodology and Research Questions

This dissertation argues that a different way of understanding public organizations is possible using quality as the criterion for rationality. The use of quality necessitates the adoption of constructivism as a new paradigm of thought. Constructivism is the belief that multiple realities exist that are constructed in the minds of the

individuals that create them. It gives utility to quality by integrating systems and behavior theory to produce a special systems theory for public administration. The arguments presented in the dissertation are embedded throughout using a hermeneutic framework.

Hermeneutics is a methodological process that focuses on interpretation and explanation in a textual approach. It attempts to systematically clarify the meaning of texts or any human construct that can be conceived as texts. These texts can include written, verbal, non-verbal, and symbolic actions. It recognizes the limits of human cognition and the influences of social and historical conditions on understanding and incorporates them into the research framework. Hermeneutics disavows the positivist claims of objectivity, as well as the total subjectivity of criticalists.

A back-and-forth process known as the hermeneutic circle (Gadamer, 1975) guides the interpretive development of a logical null hypothesis. Within the social and historical context of their origins, the widespread acceptance of positivism and Simon's (1976) contention that efficiency is the most rational criterion for analyzing public decisions form the basis for the logical null hypotheses. Relevant details in the literature are researched in the current social and historical context, leading to confirmation or reinterpretation and revision.

The goal of these cyclical reinterpretations is to advance the understanding of texts and the meaning of human action to the point that the alternative theory, or quality as the most important criterion, fits all the important details in a coherent and consistent fashion. A valid interpretation is one that fits coherently within the context of the research problem and is confirmed or enriched by all subsequent facts and interpretations (Diesing, 1991; and Balfour and Mesaros, 1994).

The hermeneutic circle is constructed through an iteration of deduction, induction, and falsification that is generally accepted by all scientific communities (Popper, 1959; Campbell and Stanley, 1966; Cook and Campbell, 1979). Deductive validity is established when a model results from theory and is operationalized into a testable hypothesis. The deductive chain of validity establishes logical null hypotheses. In this study, there are two hypotheses to be examined:

1. Positivism is an appropriate paradigm for the development of administrative theory.

2. Efficiency is an appropriate criterion for the evaluation of public organizations.

Normally, empirical statistical tests are performed to establish significance and propose confidence limits. Since quality theory has not been sufficiently implemented within the context of a constructivist theory and paradigm, a construct limitation exists that precludes collection of

empirically testable data. Also, many plausable rival hypotheses might be developed to explain the observations made in this study. Two logically derived alternative hypotheses are proposed for the falsification process as:

1. Constructivism is an appropriate paradigm for the development of administrative theory.

2. Quality is an appropriate criterion for the evaluation of public organizations.

This does not prevent establishing inferential validity using a hermeneutic circle. Logical argument will be drawn from the literature to refute the logical nulls. The logical alternatives demonstrate applicability and utility where positivism and efficiency fail, without loss of explanatory power previously provided by efficiency.

Inductive validity is achieved when the logical alternative is chosen and leads to a quality model based in the alternative paradigm. Falsification guides the deductive-inductive process and validates the hermeneutic circle.

If efficiency is the most important criterion of rationality, then efficient organizations are the most rational. Rational is related to correctness of decision in Simon's (1976) theory of behavior in that efficient behavior is correct, and therefore responsive within the system. If quality is the most important criterion of rationality, then a theory of behavior based on quality is correct and, therefore, more responsive. Both cannot be correct at the

same time since one falsifies the other. If a decision choice does not bear on quality, then, and only then, can efficiency be considered.

Limitations

Most dissertations have theoretical implications (Rudestam and Newton, 1992). This study is theoretical by design. They state that to write a theoretical dissertation is to "bypass the need for data [in the traditional sense] collection entirely" (p.40). Therefore, in this study, data consist of the literature of the field. A methodology capable of making use of data in this form is largely underdeveloped and lacks the general acceptance of common use. This study attempts to overcome this limitation and establish validity through the use of hermeneutics.

"To many, both within and outside of public administration, the suggestion that hermeneutics become the basis for advancing knowledge in the field must seem like a prescription for obscurity and irrelevance for a professedly applied discipline" (Balfour and Mesaros, 1994, p.559). White (1992) characterizes the field of public administration research as largely local narratives from multiple perspectives and methodologies striving to achieve the desirable characteristics of locality and diversity. This translates into the problems of internal and external validity. Since hermeneutics lack the appeal of objective quantitative procedures and the richness of detail afforded

by the use of qualitative methods, it is perceived as weaker in its ability to generate explanations and knowledge that are useful in varying scenarios. Quantitative methods are closely associated with what is commonly understood to be the "scientific method," deviation is considered a step backward. This need not be the case.

Validity can be achieved through hermeneutics and dialectics consistent with constructivism. According to Balfour and Mesaros (1994), this is accomplished by providing a common methodological framework that incorporates diverse methodologies and connects the local naratives to each other. Balfour and Mesaros (1994) join Gadamer (1975) and Skinner (1985) contending "that the natural science model, with its emphasis on researcher objectivity, instrumentalism, prediction and control, is far more obscure and inappropriate for the study of social phenomena than hermeneutics" (Balfour and Mesaros, 1994, p.559). By providing the requisite interconnections, hermeneutics integrates and enhances multiple methodologies within a consistent epistemological framework, thus overcoming their inherent weaknesses.

Gadamer (1989) argues in favor of hermeneutics by criticizing the assumption that scientific methods are somehow guarantors of truth. He considers a discipline of concurrent and continuous questioning and inquiry, not generally found in scientific method, as an approach to truth. Sufficient rigor is absent from method alone. Balfour and Mesaros (1994) contend that hermeneutics provide

a "useful and accessible framework for the study of public organizations and policies and for analyzing the issues surrounding the practice of public administration" (p.559).

The limitations of internal and external validity are lessened when the shortfalls of quantitative and qualitative approaches are examined. Campbell and Stanley (1966) define internal validity as the ability of design methodology to detect variance on the explanatory variables in determining effect and external validity as the ability to generalize findings to subjects and settings excluded from the study.

Quantitative research attempts to achieve internal validity by accounting for statistical variation through linear modeling and control groups. Variation in observations of independent variables or attributes in large samples is analyzed for contributing effects on a dependent variable or variables of interest (Berry and Feldman, 1985; Mohr, 1992). Campbell and Stanley (1966) list eight threats to internal validity for which control groups and randomization attempt to control. Although a design attempts to control for particular threats, this does not mean that it does. Plausibility of a threat is always present. Threats are controlled only to the extent that control groups can be shown to be comparative, and this is never unequivocal. Random assignment, "the great ceteris paribus...of causal inference" (Cook and Campbell, 1979, p.5), does not control for all threats. Cook and Campbell (1979) describe diffusion or imitation of treatments, compensatory equalization,

compensatory rivalry, and resentful demoralization as potential problems even in the presence of randomization. Therefore, inference of an effect cannot be completely proved.

The numerous studies of social programs failing to achieve significance at *a priori* levels is a testament to this undetermination of theory (Hesse, 1980). By undetermination, it is meant that other theories can be conceived that explain a study's observations just as well as the one proposed.

Statistical inference of effect also incurs a risk of being wrong. It is possible to statistically demonstrate an effect simply due to chance (Henkel, 1976; Mohr, 1990). It is also possible to demonstrate effect through relaxation of significance requirements following post hoc comparisons (Tabachnick and Fidell, 1989). This "effect grabbing" can be justified as necessary to demonstrate that a program was at least beneficial, if not causal, to some portion of the sample. This may or may not be true.

At the very least, quantitative studies have serious limitations and lingering questions with regard to internal validity. Qualitative research faces these same limitations and questions in addition to the criticisms of those favoring quantitative methods.

Yin (1989) counters the critics of qualitative methods by developing an argument demonstrating the potential for causal determination. Qualitiative studies subject a sample

of one to substantial depth and meticulous detail. According to Mohr (1992):

> When we know enough of just the right facts about a situation to be able to emphathize with, or quite throughly understand the behavior of the actors, we feel that the information we tuck away has a good chance of being reused with profit at some future time. (p.4)

Still, qualitative approaches cannot escape the threats to validity.

Problems of internal validity for qualitiative studies result for the absense of variance. Yin describes the techniques of pattern-matching, explanation-building, and time series analysis as methods for overcoming threats to internal validity. Nevertheless, Yin acknowledges the ramifications and difficulties in overcoming the threats to internal validity posed by Campbell and Stanley (1966).

Although qualitative studies lack comparison of variance on explanatory variables, Mohr (1985), concurring with Yin (1989), argues that necessary contrasts can be built into the study. The performance of an individual or group with respect to an observed variable over time can be contrasted with performance in the absence of that variable. For instance, the performance of the economy during Clinton's administration can be compared to the performance of the economy during other presidential terms. Another possibility is the contrast of existing conditions in a specific case against conditions known by all to be generally pervasive.

The problem with qualitative approaches lie in the nature of time. Popkewitz (1990) states "Any social science is *inevitably about the past*...about what *has* happened...because they are constructions that occur after the events" (pp.62-63). There is no reason to assume that the same conditions or trend will continue into the future. Causation is tied to the event. Variation may exist, but because it is conditional on only one score before and one score after, or one observation compared to the common content, it is inherently weak.

Campbell and Stanley (1966) recognize this limitation of time and the importance of increasing the time perspective of research. To be theoretically interpreted with confidence, all research must be replicated and cross-validated at other times and under other conditions to establish the existence of effect.

The essential claim of qualitative methodology is that it is wrong to attribute causation exclusively to correlation (Mohr, 1992). Another qualitative approach to causation that makes claims for internal validity comes from Scriven (1976) in the field of program evaluation. It is known as the *modus operandi* approach and:

> Its basis lies in the recognition that when X causes Y it may operate so as to leave a "signature," or traces of itself that are diagnostic. In other words, one can tell when it was X that caused Y, because certain things that happened and are observed unequivocally point to X.

> At the same time, one knows the signature of other possible causes of Y and one may observe that those traces did *not* occur. (Mohr, 1985, pp.82-83)

The problem with this approach is that the social sciences tend to contain innumerable possible causes of effect. Relatively few qualitative studies in social science have been or will be able to claim internal validity using this approach outside a historical context.

Another problem is the lack of covariation. While correlation does not prove causation, it is still a requirement. It relies on the essentialist idea of necessary and sufficient as justification for cause (Cook and Campbell, 1979). If an independent variable changes in value, then the dependent variable must also change in response. This must happen with each change in the independent variable. If it does not, then the relationship cannot be causal. Qualitative methods do not have quantitative procedures for the manipulation of a variable while controlling for the spurious effects of other variables. This idea has applicability in the physical sciences, but it loses its relevance in the complexity of the social conditions and human behavior where the potential for many plausible explanations is great.

As the above discussion demonstrates, the limitations of this study, with respect to internal validity, are no greater that the limitations of quantitative or qualitative methods. This study may, in fact, have no relevance with regard to

internal validity in the normal sense. This is because cause has no direct connection with data (Cook and Campbell, 1979). Cause resides in constructs which influence the interpretations of data. Since cause cannot be proven or derived from data, it only seems logical that causal analysis focus on constructs. Therefore, if internal validity actually exists, then a constructive approach the study of public organizations may actually strengthen the inferential process. Similarly, the limitation of external validity may be expounded.

Yin (1989, p.43) says that "The external validity problem has been the major barrier to [qualitative] studies." According to Mohr (1992), generalizability is best achieved when a researcher can legitimately hold the auxiliary assumption - that all units of analysis are equivalent on dimensions or characteristics of interest to the population of interest. While this assumption is often made without hesitation in physics and chemistry, it is unfounded in the social sciences. "...For some purposes, not only is a rose a rose, but a hunk of iron is a hunk of iron, and a falling body is a falling body" (Mohr, 1985, pp.72-73). Mohr (1992) argues that researchers are unable to conduct studies of behavior on single individuals or single groups of individuals and assume that the results can be generalized to even a subclass of other individuals or groups. He implies a rejection of realism by stating, "To hold that we can never make the auxiliary assumption with impunity is as much as to

say that there are no universal laws of behavior that hold for all human beings or all members of certain classes of human beings" (Mohr, 1992, p.2). This means that qualitative studies involving humans are left wanting for generalizability for the same reasons as quantitative studies.

Mohr (1992) proposes three commonly available alternatives to a limited generalizability. The first is probability sampling. Random selection is required. This is often impossible for ethical reasons involving withholding of treatment. Also, cost is often a prohibition since large samples are required. Probability sampling limits generalization to the population sampled. This means that the scope of generalizability is confined, and the utility of probability sampling is limited. Theories are only useful in explaining phenomena in subsets of reality. Even for that population, time is a factor. Generalizations to future events, conditions, or populations are highly suspect.

This limitation to generalizability imposed by time is directly opposed to the intent of quantitative and qualitative research. Both see causation as a way to predict and control similar or future states.

Replication as an alternative approach to generalization has two forms - as a synonym for sample size and repetition of an experiment. As a synonym for sample size, each unit of analysis is a replication. Presence of covariates precludes any useful generalizations since they may not be present in

the settings to which one intends to generalize. As a repetition of a large sample study, variation limits generalizability. Rogers and Shoemaker (1971, pp. 346-385), in a study of predictors of innovation, showed substantial variation on each predictor variable. These often ranged from significantly positive to significantly negative in predictive ability. Mohr (1982, pp. 123-153) arrived at similar conclusions in studies of the relationship between participation and job satisfaction.

The qualitative approach to generalizability proposed by Mohr (1992) is supportive of relativism. Knowing and understanding a process and empathizing with the actors provides information perceived as valuable and likely to be relevant to other situations and circumstances. Mohr (1992, p.4) considers generalizability of qualitative studies as intuitively present though indeterminate.

Many philosophers believe that universal laws of behavior that are valid for all human beings or even their subclasses do not exist. This idea is the subject for later discussions, but it leads to the same conclusion for both quantitative and qualitative methods. Neither method can be made the basis for universal generalization. In this regard, the methodology used in this study is no more limited than the other two.

Campbell and Stanley (1966, p.16) describe threats to external validity as interaction effects. Appropriately, then, constructivism is concerned with the interaction of the

inquirer and the "inquired into." Consistent with a logic of inquiry, it is not the data that is generalized, but the theory. Since theory is a relation of constructs, it follows that constructs are to be generalized. Generalization is the process of defining truth. Since no universal truths exist, it must be implied that the interactions of constructs are dynamic, and generalizations are temporary and limited to context.

According to Denzin (1970), users lend unique interpretations to their methods. Each method uncovers peculiar aspects of the social process called reality. The changing nature of society cannot be denied. Shibutani (1966) contends that:

> The world is in a state of continuous flux, and as life conditions change, knowledge must keep pace. Crisis situations arise whenever new events are incomprehensible in terms of established assumptions. Existing expectations are violated; new sensitivities arise; and new ideas emerge to be tested. In order that they may continue to act in association with one another men must alter their orientations *together* [italics added]. Thus, the emergence of new hypotheses and their acceptance as part of a modified outlook is a social process. (p.182)

In this sense, then, all knowledge is social. Quantitative and qualitative methodologies fail in the face of time, change, and context. Hermeneutic methods include a focus on

context, time, and change that quantitative and qualitative methods lack, giving legitamacy to the method.

Yin (1992), in a comparison of quantitative and qualitative studies, finds that all exceptional studies of high quality have a common ground. The commonalities lie in thorough coverage and investigation of all evidence, constant awareness and testing of rival hypotheses, significant implications beyond the immediate study, and investigatory expertise regarding the subject. This study attempts to achieve this common ground.

Chapter Overview

Chapter Two clarifies the nature of paradigms in general. It uses the methodology described above to demonstrate the relevance of the constructivist paradigm to public organization theory and its utility.

Chapter Three discusses General Systems Theory and conceptions of organizations as closed and opens systems. The limits of paradigmatic thinking relative to systems are introduced.

In Chapter Four, behavioral theory as proposed by Herbert Simon is discussed in a further narrowing of the subject. The weaknesses in Simon's proposals that exist in the current context of public administration are demonstrated. Specific interests in this chapter include authority, accountability, communication, efficiency, prediction, control, and equity.

The current quality movement and its impact is the focus of Chapter Five. Questions regarding the factors underlying success and failure are answered relative to its current implementation.

Quality is offered as an alternative to efficiency in Chapter Five. Replacing efficiency with quality as the most rational criterion for rationality uses the theoretical frameworks mentioned above. The implications for public administration are explained in detail.

Chapter Six provides a summary and conclusions for possible application of quality as a new paradigm within public organizations. Implications for public administration are related to research, education, study, and practice in the field. In essence, this dissertation proposes an innovation for public administration and offers insights regarding its potential impact upon public organizations.

CHAPTER TWO

THE NATURE OF PARADIGMS

Paradigm Controversy

Kuhn (1970) forecasts scientific revolution by differentiating normal science from extraordinary science. Normal science prevails as long as there is general agreement regarding a shared set of assumptions and a common theoretical framework. This is characteristic of a dominant underlying paradigm. This paradigm drives reasoning and methodological experimentation while limiting a researcher's frame of analysis. It also provides a structural framework for building upon existing knowledge since new knowledge expands the boundaries of shared understanding. Bits and pieces of new knowledge are added in building block fashion as long as the fit between expectations and observations is reasonably consistent.

However, the quest for new knowledge often results in anomalous findings that deviate significantly from what is expected and cannot be satisfactorily explained within the dominant framework. Such was the case for expanding the science of physics beyond Newtonian into general and special relativity (Zukav, 1979). As anomalies persist and increase, the underlying paradigm, itself, comes into question.

Extraordinary science begins to dominate as the scientific community turns to questioning the existing paradigm rather that applying the prevailing one. A shared understanding no longer exists and competing theories proliferate. Science enters a state of paradigmatic crisis. Lack of a sufficient or dominant paradigm is grounded in Kuhn's symptoms of paradigmatic crisis:

1. Proliferation of numerous versions of prevailing theory.

2. Willingness of scholars to engage in methodological experimentation.

3. Expression of explicit discontent fundamental.

4. Recourse to philosophical speculation.

5. Debate over fundamental epistemological issues.

A beneficial result develops because the crisis stage leads to new ideas that stimulate research, communication, and scientific cooperation. Fundamental change occurs as these new ideas gain acceptance.

For public administration to remain viable as a discipline, fundamental change must emerge through Kuhn's process of scientific revolution. The current paradigmatic crisis must be resolved. This study proposes that it can be resolved by acceptance of a new dominant underlying paradigm. This, in turn, implies the existence of an old dominant underlying paradigm.

Simon (1976) offers positivism as the paradigmatic framework for research on administrative behavior. Guba

(1990) and O'Toole (1995) describe the lingering effects of positivism. The arguments of Waldo, Ostrom and others seemingly fail to acknowledge the continued existence of a dominant, latent paradigm that determines the accumulation of new knowledge. They appear to regard competing approaches and perspectives, along with their resultant theories, as competing paradigms. Their calls for a paradigm is interpreted as a call for new theory. This is a consequence of inadequate understanding of the controversial concept of a paradigm.

Much of the problem for paradigmatic resolution, however, involves the lack of clarity surrounding the concept of paradigms themselves. Kuhn contrived the paradigm controversy by his multiple use of the concept. Masterson (1970) extracted three latent categories that seem to differentiate the dominant themes proposed by Kuhn:

1. A metaphysical paradigm (or metaparadigm), which refers to a reality determined by the values and culture that underlie one's view of the world.[2]

2. A sociological paradigm, which is concerned with tangible, observable and measurable scientific advancement.

3. A construct paradigm, which constitutes differing theoretical approaches to similar phenomena that allows or causes problem solving to occur. The concrete theories used in scientific disciplines are an example of this kind of

[2] The salient point is that culture and values determine reality, not paradigms. A single culture can make use of all the paradigms to be discussed later in this study. A discussion of culture and its relationship to paradigms can be found in Guba (1990, pp. 108-109).

paradigm.[3] The first category is ontological, and the second and third categories are methodological and epistemological respectively.

The latter two categories can be used to explain the rationales of Waldo and Ostrom. These categories also support the existence of multiple perspectives to be used as pieces to the larger puzzle. However, these categories have little, if any, utility in resolving the current paradigm crisis. It may even be likely that use of paradigms in these contexts have contributed to the crisis.

As proposed by the first category, using the concept of a paradigm as a reference window to view the world does have utility because a way of seeing now also becomes a way of not seeing. Culture and ideology determine values and one's reality. Realities determined by other cultures and ideologies are not recognized when a dominant underlying paradigm is present. Tolerance for multiple perspectives exists as long as they are supported by the dominant paradigm.

Jun (1986) contends that Kuhn's notion of a paradigm is inapplicable to public administration, yet provides five interpretations of his own regarding the use of a paradigm:

1. An implicitly shared set of theoretical assumptions.

2. A theoretical framework for understanding reality, based on assumptions that are taken for granted as valid.

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[3] Masterson explicated 21 different meanings for the paradigm concept as used by Kuhn. They are roughly represented by these categories.

3. Viewing reality in a particular way.

4. A way of seeing the social world.

5. The way people perceive the world. (pp.57-58)

Still, the similarities are readily apparent. The latter three tend to possess a metaphysical connotation similar to Masterson's first category while the first two interpretations are conceptually similar to theory and methodology.

Jun (1986) argues against Kuhn's notion of the paradigm concept because of the theoretically pluralistic nature of public administration. This is a result of public administration's complex social context that seemingly refuses to conform to a given set of implicit assumptions when compared with the natural sciences. For example, Jun states that public administration has yet to develop a comprehensive theoretical framework that incorporates "such complex and often conflicting issues as efficiency, participation, decision making, coordination, change and innovation" (p.62). In natural sciences such as physics, theoretical pluralism does not normally occur. For instance, Newtonian physics is completely explained within the theory of relativity.

Theoretical pluralism is an advantage because it improves administrative capabilites for intellectual problem solving and develops "alternative conceptualizations rather than forcing us to attend to the more abstract and logical issues involved in the empirical testing of propositions"

(Haines, 1982, p.63). Traditional, behavioral, and systems theory exist side-by-side as separate entities competing for proponents within the domain of public administration.

Public administration theories also reflect an evolving nature, keeping what is useful or best from earlier theories while discarding the rest in development of new theories. For these reasons, Jun (1986) prefers the use of the term "approaches." An approach is defined as a broad set of assumptions about the process and design of public administration and about appropriate methods to investigating and solving problems.

In order for paradigms to encompass multiple theories or approaches, paradigms should be considered as being one step removed from theory and two steps removed from reality. Paradigms determine the use of theory relative to reality. For example, the belief in spontaneous generation, or abiogenesis, was supported by the religious culture of Europe despite Pasteur's evidence to the contrary (Hesse, 1980).

Therefore, paradigms must be more that basic theoretical assumptions or frameworks. Considering paradigms as metaphysical views or perceptions of reality seems appropriate. This view must also be relevant to the previous arguments that call for the inclusion of theory and methodology. Ritzer (1975) provides an accurate generalization of paradigms by stating:

> A paradigm is a fundamental image of the subject matter within a science. It serves to define what should be

> studied, what questions should be asked, how they should be asked, and what rules should be followed in interpreting the answers obtained. The paradigm is the broadest unit of consensus within a science and serves to differentiate one scientific community (or sub-community) from another. It subsumes, defines, and interrelates the exemplars, theories, and methods and instruments within it. (p.7)

An analogy using a single lens reflex camera can be used metaphorically to describe such an application of paradigms. The view through the optic lens reduces the field of view in much the same way that paradigms define one's relation with reality. The objective lens further refines the view to desired perspective in the same way that theory refines areas of interest. By adjusting the distance between the two lenses, the subject of interest is brought into focus. This process is analogous to methodology.

Guba (1990) provides a consistent scheme for analyzing paradigms from a metaphysical perspective. In this sense, paradigms guide the actions of science and administration by serving as baselines in the process of ascertaining the nature and practice of inquiry.

Paradigms can be differentiated on the basis of their ontological, epistemological, and methodological grounding. Ontological characteristics of paradigms concern the nature of what can be discovered. It attempts to determine the state of existence regarding reality. Epistemological

characteristics infer a relationship between the inquirer and potential knowledge and offer an explanation of the nature of this relationship. Methodological characteristics reify how knowledge should be obtained.

An inclusive synthesis is possible at this point and provided in Figure 1. More specifically, ontology determines how one views reality; epistemology determines how one relates to reality in the pursuit of knowledge; and methodology determines how one goes about extracting knowledge knowledge of reality and makes use of it (Guba, 1990).

FIGURE 1

A SYNTHESIS OF PARADIGMATIC THOUGHT

Guba	Jun	Masterman/Kuhn
Ontology	A way of seeing the social world	Metaphysical
Epistemology	A theoretical framework	Construct paradigm
Methodology	Shared theoretical assumptions	Sociological paradigm

Using these criteria, Guba (1990) compares and contrasts four paradigms commonly discussed in methodological literature. These are positivism, postpositivism, criticalism, and constructivism.

Positivism

The latent ontological creed of positivism is that a reality driven by immutable natural laws exists. The

objective of administrative science is to discover the true nature of this reality and how it works, with prediction and control of natural phenomena being the ultimate objective.

Positivism has its roots in the philosophy of David Hume. Hume (cited in Cook and Campbell, 1979, and Lincoln and Guba, 1985) stressed constant conjunction of cause and effect. This means that cause cannot be directly observed. The fact that a billiard ball moves when struck is no guarantee that it will move on the next observation. Cause can only be inferred. Hume and positivism deny all conceptual status to unobserved phenomena, therefore justifying the use of correlation to establish causality. For Hume and positivists, observation of cause is a problem for psychology.

The result of believing that a reality driven by immutable laws exists and is discoverable requires that the relationship between the observer and the observed be one of detached, noninteractive objectivity. The real world, behaving in accordance with deterministic laws, requires the inquirer to ask questions directly to nature and allow nature to respond accordingly. Nature, in this sense, refers to creative and controlling forces in the universe which is typically considered to the the entirety of the external world (or reality).[4]

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[4] The use of the word nature (natural) in the context of this study is definitional, as provided in Webster's Nineth New Collegiate Dictionary.

As positivism's extreme form, logical positivism holds as a core tenet, the "verifiability criterion of meaning" (Phillips, 1990, p.39). By this tenet, a statement has meaning only if it is verifiable in terms of sensory perception.[5] A serious problem for both the natural and social sciences arises because of this. Under this tenet, theory is meaningless and theoretical entities cannot be verified.

However, it is precisely because of this tenet that Simon (1976) was able to propose a fact-value dichotomy. Facts are verifiable, and values are not.

Epistemologically, positivism argues that objectivity is desired and possible. The observer can separate himself from reality and eliminate the possibility of bias due to his own values because verification rests with nature rather than with the observer. Reality provides clues to its inner workings; one merely has to observe nature to determine its laws. An analogy provided by Gleick (1987) is the operation of a clock with the case removed - one can learn how the clock operates by watching it operate. This implies that one can learn about the behavior of humans solely on the basis of objective observation.

Eliminating the possibility of researcher bias and preventing nature's propensity to confound results dictate the use of a manipulative methodology that controls for both.

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[5] An exception is logico-mathematical propositions. For additional information, see Phillips (1983).

Developing hypotheses in advance and subjecting them to rigorous empirical testing under carefully controlled conditions and detached observation is the preferred methodology. This process is known as empirical experimentalism.[6]

In the decade following World War II, the positivist view that all theoretical terms of science must be reduced and defined operationally, objectively observed and verified, and disavowing the possibility of constructs was flatly rejected by the natural sciences and hotly debated by the social sciences. Carl Hempel, a logical positivist who later rejected his positivist beliefs, made the following statement regarding the absurdity of positivism:

> Scientific systematization requires the establishment of diverse connections, by laws or theoretical principles, between different aspects of the empirical world, which are characterized by scientific concepts. Thus, the concepts of science are the knots in a network of systematic interrelationships in which laws and theoretical principles form the threads...The more threads that converge upon, or issue from, a conceptual knot, the stronger will be its systematizing role, or its systematic import. (Hempel, 1966, p.94)

Phillips (1990) points out that scientific theoretical concepts have meanings that transcend definition in

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[6] This includes Popper's "falsification" and processes of deduction as discussed by Cook and Campbell (1979).

observational terms. If constructs were not possible, science would have difficulties in accumulating and expanding knowledge.

Postpositivism

Postpositivism is usually viewed as a modified version of positivism since prediction and control remain the main goal. Ontologically, postpositivism substitutes what is called critical realism for the positivist's realism. Critical realism acknowledges a real world driven by natural causes but considers reality beyond complete comprehension. In other words, reality exists, but we cannot get at it.

According to Philips (1990), postpositive science, in the critical realist sense, attempts to provide reasonable justifications for theoretical assertions. Postpositivists recognize that these assertions are not immune to challenge or potential overthrow. Assertions and the resulting attempts at determining truth are not absolute. However, postpositivists claim that it is misleading to assume that because assertions cannot be justified absolutely, that absolute justifications do not exist.

Dewey (1966) preferred to discuss theoretical justification in terms of warranted assertability as opposed to any claims of truth. He recognized that different theories and assertions relied on different warrants. Because of the recognition of science and society as dynamic entities, warrants lack permanence.

Epistemologically, postpositivism realizes the inanity of the researcher attempting to divorce himself from his own shortcomings. These shortcomings enter scientific endeavor usually in the form of observer bias, whether intentional or unintentional. The Heisenberg Uncertainty Principle and the Bohr Complementary Principle (Hesse, 1980; Zukav, 1979) have aptly demonstrated that findings often emerge from the interaction of the observer with the observed.

Hanson (1958), in a crucial and famous psychological work involving reverse colored cards in a normal deck, disproved the claim that observations are, theory neutral. He states "The theory, hypothesis, or background knowledge held by an observer can influence in a major way what is observed" (Hanson, 1958, p.7). Objectivity must therefore be modified.

Pure objectivity is considered the ideal for which to strive but can never be fully achieved. However, it can be closely approximated by full disclosure regarding one's own predisposition, consistency with existing scholarly tradition of the field, and submission of all inquiry to the critical review of the scholarly community.

Guba (1990) notes that "these last two requirements make it virtually impossible for new paradigms to assert themselves" (p.21) since they lend themselves to the protection and defense of postpositivism. Impossible may be too strong a word; however, if one accepts Guba's contention that the preponderance of the scientific community is

postpositivist, then it would be very difficult for new paradigms to emerge indeed.

The notion of objectivity is still being debated within the paradigm. Nevertheless, the following sentence captures the essence:

> The objectivity of science is not a matter of the individual scientists but rather the social result of their mutual criticism, of the friendly-hostile division of labour among scientists, of their co-operation and also of their competition. For this reason, it depends, in part, upon a number of social and political circumstances which make criticism possible. (Popper, 1976, p.95)

That debate is present among postpositivists is healthy. Perfect consensus inhibits the growth of knowledge by making scientific endeavor unnecessary. This is true of any paradigm.

The modified experimental methodology of postpositivism, particularly with regard to management and administration, recognizes the necessity for external validity while attempting to fit theory into local contexts. It is often the case that internal and external validity are trade-offs (Campbell and Stanley, 1966). By using more qualitative methods along with quantitative methods, postpositivism strives to balance the quest for objectivity so crucial to positivists with the quest for relevance crucial to those at the other end of the epistemologial continuum. In attempting

to overcome the trade-off between external and internal validity, postpositivism seeks to develop grand theory that is applicable in local contexts (Glaser and Strauss, 1967). This is dependent more on grounded theory yet seeks to reintroduce discovery into the research process.

Discovery is an inductive process by which *a priori* theories and implied hypotheses emerge. Verification is a deductive process by which these hypotheses and theories are tested. While positivists argue for verification and criticalists seek discovery, knowledge requires both. The modified objectivism and modified subjectivism of the postpositivism is a compromise. This implies a definition of inquiry as a continuum, ranging from pure discovery to pure verification.

The compromise, "in the interest of conforming to the commitment to critical realism and modified subjectivity" (Guba, 1990, p.21) places emphasis on critical multiplism as defined by Cook (1985) and elaborated upon by Denzin (1970) as a form of triangulation. If sensory and intellectual perceptions fail to attain objectivity, it is essential to achieve confirmation from as many sources as possible. Both quantitative and qualitative methods are useful. Qualitative methods enhance discovery and hinder verification; however, quantitative methods enhance verification and hinder discovery (Guba, 1990). Together they offset the other's limitations.

Criticalism

Having the same ontology as postpositivism, criticalism departs from the previous paradigms by advocating a subjectivist epistemology that allows for the mediating roles of values in inquiry. The claim to value freedom championed by positivists and its approximation by postpositivists is flatly rejected by criticalists. Values can determine the choice of problems for study, the paradigm within which to study it, the design of test instruments, methodology, and the conclusions, interpretations and recommendations made.

If scientists take their values with them into inquiry, then inquiry takes on an additional political context. Knowledge is power. Guba (1990) labels criticalism as "ideologically oriented inquiry" (p.23); however, it should be noted that there are no claims that a given set of values is any better, or any worse, than another.

One might, at this point, claim a logical chink in the criticalist armor: an ontology that assumes a true reality based on subjective relationships. An empirical reality implies that an objective epistemology be used to reveal it. Yin (1989) advocates the use of quantitative methods if units of analysis embedded a qualitative study can minimize the potential for misinterpretation or when there is a need to examine particular phenomena in detail. Criticalism seems to lose much of its impetus in light of these complications.

The common phrase used by criticalists in defending their subjective reality is a "false consciousness." The

task of inquiry is enlightenment. The acquisition of knowledge raises the levels of awareness so that action can take place. Awareness implies perspective.

Criticalism embraces multiple perspectivism by granting the contributions of differing theoretical approaches. Habermas (1971) argues that human interests in social science are many and diverse, reflecting different dispositions toward reality and how it should be challenged.

Accumulation of knowledge from multiple perspectives is believed to contribute to a better picture of the "true reality." The task of inquiry is one of raising the people's level of consciousness through tolerance of multiple perspectives and acceptance of significant contributions from differing approaches based on differing value systems.

The idea is that if the people can be made to understand and appreciate their epistemological differences, the world can be transformed. The similarity between transformation, in this context, and prediction and control should not be lost. From a political standpoint, then, reality can be negotiated.

At the methodological level, the aim of criticalist inquiry is transformation through a dialogic approach toward consensus regarding the true nature of reality. Qualitative methods are employed to determine existing levels of consciousness concerning features of reality. Judgments are made regarding which features of reality can or should be altered. The implication here is that knowledge can be

negotiated since it, too, is political. Once this occurs, effective, concerted action can bring about transformation. As examples, civil rights, equal opportunity, and education have been offered to support criticalism. Popkewitz (1990) discusses the critical tradition in education that used dialog to identify contradictions of educational practice resulting from unequal power relations and subtle forms of social regulation. Recognition of the true reality led to education reform.

Constructivism

Constructivism developed as a response to what are considered major flaws in the previously discussed paradigms. First, according to Guba (1990) and Zukav (1979), facts are theory laden. To be completely objective, facts must be independent of theory, propositional statements, and observation. Scientists invariably agree that facts are facts only within some theoretical framework (Hesse, 1980). Second, no theory can be completely validated because of the problem of induction. No unequivocal explanation is ever possible because numerous theories can be offered to explain a single phenomenon. Rather than existing, reality is defined by constructs. Third, according to Hesse (1980) and Zukav (1979), facts are value laden because theory is value laden. Constructivists agree with criticalists that inquiry is not value free. Lastly, the interactive nature of the inquirer and the inquiry have deterministic results making

objectivity impossible. Knowledge becomes a creation rather than a report on reality. Therefore, constructivism becomes a necessity - not as the winning paradigm, but to take management and administration to a higher level.

Ontologically, constructivists are relativists. People create their own realities through mental constructions that are individually dependent. Differt meanings are attached to the same concepts. The relationship between reality and the inquirer is subjective, the inquirer and inquiry being fused into a monistic entity. Methodologically, constructions are defined and refined with an appreciation for context, time, and change. They are compared and contrasted from multiple perspectives until substantial consensus is achieved.

In its essence, constructivism does not endeavor to predict, control, or transform a true reality. Constructivism attempts to reconstruct or modify the perceptions of reality in the minds of humans where it actually exists (Guba, 1990; Lincoln, 1990). To change reality requires changing the way reality is perceived rather than an actual change to reality itself. This represents a radical shift in paradigmatic thinking. The current crisis of identity proposed by Waldo and identified as a paradigm crisis by Ostrom and implied by Guba could be evident of the need for a paradigm shift. As Lincoln (1990) puts it, "When the 'stuff' of science is constructions of reality, rather than 'facts' determined by scientists, we will have moved to

a social science in which respondents have as strong a voice as the priesthood of science" (p.84).

Because facts are value laden, the inherent and unexamined values of the scientist influence policy without ever being scrutinized. The facts, as determined by the scientist are forced upon society unchallenged. Boruch (1986) asserted that determination of fact is better left to scientists and not to research "subjects [who] don't know a fact from a bag of popcorn" (Lincoln, 1990, p.84). If reality exists in the human mind, then facts reside there also, and respondents in the process of inquiry have a role in determining what facts are relevant.

Paradigm Shifts

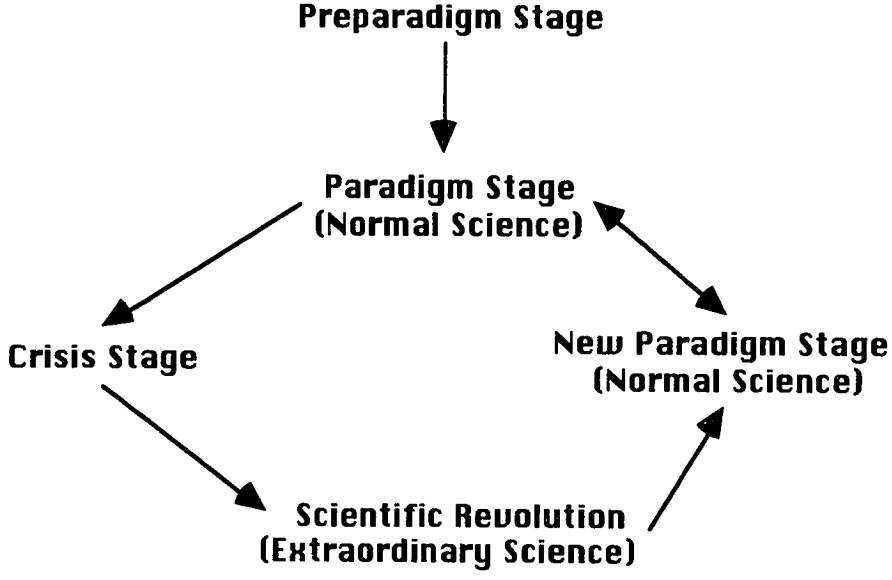
Kuhn (1970) contends that science progresses through stages identified in order as preparadigm, paradigm, crisis, scientific revolution, and new paradigm stages. These stages might be conceptualized as a process of continual metamorphosis. The demarcation between each stage is hazy and the point where one stage ends and the next begins can not be known precisely. A graphic representation is offered in Figure 2.

Initially, a preparadigm stage exists characterized by numerous schools of thought competing for acceptance. Normative thought attempts to assert a direction for the field to follow. Inductive processes begin to shape the field. According to Stillman (1991), public administration

prior to the first world war typifies this stage. He contends that "The most striking feature of America's public administration thought at the founding of the United States [and until Leonard White's first text in 1926] was its absence" (p.19).

FIGURE 2

STAGES OF SCIENTIFIC PROGRESS



The preparadigm stage yields to the paradigm stage as science accumulates knowledge and theory is refined, and a dominant paradigm becomes established. Normal science takes place during this paradigm stage, and scientific progress occurs. In the United States, these events occurred during the period between the world wars.

In the case of public administration, positivism became the dominant paradigm. Waldo (1948), Ostrom (1974), Henry

(1975), and McCurdy (1986) describe the development pattern of this period between the world wars as one of "orthodoxy" established on the tenets of Weber's (1922/1978) bureaucracy and Taylor's (1912) scientific management. Perhaps Ostrom stated it best: "More than a half-century of intellectual effort in American study of public administration was predicated upon an assumption that perfection in the hierarchical organization of administrative arrangements is synonymous with efficiency" (p.36).

In the two decades following World War II, Simon (1976/1965, 1959, 1957, 1946) initiated a theoretical challenge to the structural-functional theories as public administration entered a behavioral era. Later, system theories came on the scene and demanded the attention of the field.

These theoretical challenges did not, however, constitute a paradigmatic crisis stage in public administration. It must be remembered from the previous discussion that theory is a step removed from paradigms. Until the mid to late 1960's, positivism was largely unchallenged in public administration. Any paradigm is likely to accommodate multiple theories. It is only at the theoretical level that Jun's (1986) preference for approaches has applicability. During the stated period, all approaches had problem solving utility. This is because the problems that public administration was asked to solve had yet reach the size and complexity required to exceed paradigmatic

limitations of positivism. Just as Newtonian physics continues to have applicability within limits, efficiency has applicability within limits.

A crisis stage develops gradually as the dominant paradigm faces many anomalies and no longer effectively solves scientific problems. Realization happens at the epistemological and methodological levels more or less simultaneously though a long latency period may exist before ontological realization occurs. For public administration, the issues identified by Waldo (1968a) indicated the initial conditions of paradigmatic crisis that intensified in the 1970's (Ostrom, 1989).

Interpreting Stillman (1991), little progress has been made in alleviating this crisis as attempts to review and reform public administration bring it to the present. This argument is supported by differing perspectives resulting from the two Minnowbrook conferences (called for the purposes of reflecting on the current status of public administration and offering conclusion and recommendations for a future direction) (Marini, 1971; Minnowbrook, 1989) and "a strikingly lack of consensus on a 'new paradigm' or an action agenda" (Stillman, 1991, p.2). The first edition to Ostrom (1989), published in 1973, offered public choice as a solution to the crisis but has seen limited acceptance (Stillman, 1991). Wamsley (et al., 1990, p.7) express concern regarding the "frustration of involvement with problems of public administration and governance" and attempt

to ground public administration institutionally as a form of governance. They "refound" public administration in the structural-functional approach described by Jun (1986). Most recently, Osborne and Gaebler (1992) propose a paradigm to reform government that focuses on entrepreneurialism and innovation and offer numerous examples in support.

Kuhn's (1970) notion of the stages of paradigm revolution is not one of distinctly separate stages, but rather an arrangement of features along a continuum. Crisis and revolution overlap to a certain extent. It was previously argued that public administration is solidly within the crisis stage. The assumptions of positivism and postpositivism are under attack. Actually, postpositivism never really gained a significant foothold, although its presence cannot be denied. Despite being in a stage of crisis, indications of extraordinary science are emergent. However, if public administration is to progress, it must eventually resolve the crisis and revolution proposed by Waldo and Ostrom and reenter a period characterized by productive normal scientific activity.

Limits of Paradigmatic Thinking

Kuhn (1970) argues that a scientific discipline reify accomplishments through exemplars resulting from the construct paradigm. Jun (1986) argues that, although public administration has many exemplars, models, theories, and empirical research, the effectiveness of an administrative

paradigm lies in the soundness of its conceptual framework and applicability to problem-solving.

This would be true if theoretical approaches are equivalent to paradigms. It implies an intolerance of multiple perspectives and a forced choice among approaches based on ability to solve problems. This limitation is removed if one considers paradigms once removed from theory. Multiple perspectives are permitted and one can choose between approaches depending upon the nature of the problems.

If one accepts the use of approaches as synonomous to paradigms (Jun, 1986), a second limitation to paradigmatic thought is the lack of consensus among public administration theorists about what the dominant paradigm is. Argument arises because "public administrationists do not yet generally agree on which particular theory to follow" (Jun, 1986, p.60). Again, this appears to be a problem at the theoretical level. Lack of consensus as to which theory to follow should be expected. Researchers have their own individual interests within their respective disciplines. It would be unreasonable to ask a subatomic physicist to abandon his interest and assert that it is useless because the majority of physicists agreed that cosmology should be the interest of the discipline. Without consensus, a crisis stage lingers.

At a paradigm level, once removed from theory, this limitation disappears. Tolerance and accommodation are allowed. Problem-solving occurs within context. Whether or

not public administrationists can arrive at consensus as to what the dominant paradigm is, positivism appears to be the most widespread (O'Toole, 1995; White and Adams 1995), and calls for "scientific rigor" are in constant demand (White and Adams, 1995, p.8).

Jun (1986) proposes a third limitation of paradigm succession. For a new paradigm to demonstrate its effectiveness in problem-solving, sufficient exemplars need to be generated to from a convincing argument. Ostrom (1989) introduces "public choice" as a paradigm to replace bureaucracy and rational models. Harmon (1981) proposes an action theory paradigm that advocates micro-level analysis of face-to-face encounters as a basis for intersubjective understanding and problem-solving. As theoretical perspectives, they have not as yet produced many exemplars.

This limitation also receives its impetus from not viewing paradigms as being removed from theory. The theories proposed by Ostrom and Harmon are competing for theoretical plausibility, not paradigmatic plausibility. The crisis Ostrom (1989) proposes to solve is one of choice between competing theoretical frameworks. The degree to which his frameworks are untenable within the paradigmatic boundaries of positivism is support that a paradigm crisis exists. The degree that his and other untenable theories are gaining acceptance represents extraordinary science and at least the imminence of a paradigm revolution.

Perhaps the most compelling limitation to paradigmatic thinking is that it tends to lock problem-solving activities into a more or less rigid structure of paradigmatic concepts.[7] This limitation is difficult to deny, but it exists on a conceptual level. Paradigms, and particularly positivism, tend to be exclusionary. To overcome this limitation, a paradigm must be conceived that allows problem-solving to have the flexibility of being derived within the context that created the problem and the theory that most suitably explains it.

This limitation also tends to result from a literal interpretation of Kuhn (1970). Kuhn (1977) does not accept this view that research is necessarily trapped within a paradigm. Robert Yin, who seems a criticalist, and Simon, who advocates positivism, can communicate dialectically and understand the positions of the other without having to agree. Firestone (1990) calls this a process of accomodation. The point, according to Kuhn (1977), Phillips (1990), and others, is "paradigms (if one accepts this controversial notion) serve as lenses, not blinders" (Phillips, 1990, p.41).

Lenses, used properly, add clarity and focus to a distant reality while bringing it closer relative to seeing and understanding. This is a proper understanding and use of paradigms. It should be realized, however, that paradigms,

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[7] This limitation is most evident in cross-cultural comparisons which are beyond the scope of this study. For an indepth analysis, see Hirshman's (1970) analysis of Latin American studies.

as lenses, can be used improperly. Used improperly, paradigms seemingly add clarity and focus, but reality appears farther away, and the field of view is reduced. This is analagous to the view through the binoculars that are held in reverse.

An example of paradigm misuse is provided. Constructs are used to represent higher-order abstractions as variables in cause and effect generalizations. Cronbach and Meehl (1955) and Cook and Campbell (1979) consider inferences about constructs to be determined by the fit between operations and their conceptual definitions. Reinharz (1990) argues that if one accepts positivism, then a construct represents true reality. Consensus becomes fact. In this case, a paradigm trap is created because, according to Morgan (1986), constructions are given an existence and power, by virtue of their reality, that allow them to exercise a measure of control over their creators.

Nowakowski (1990), arguing in opposition to Reinharz, explains that if constructs represent reality, then stereotypes must be accepted along with the paradigm. Gender as a construct requires that female equate to weak and soft, and male equate to hard and strong. The implications of such a trap using the constructs of race, segregation, and equity are profound. This misuse occurs when a positivist uses a construct as a high-order abstraction because abstractions are not permitted.

Cook and Campbell (1979) concur that constructs are legitimately used by positivists to define and measure observed operations as independent variables and traits provided "that definitions are clear and in conformity with public understanding" (p. 60). For instance, intelligence is a useful construct in so far as it is related to something real and observable. If it refers to intelligence quotient as measured on a standardized test, and this is the consensus of the field, then it can have no other meanings. The possibility that the test might be biased doesn't matter. Groups for which the test is biased are a problem for another construct. For example, if an intelligence test is considered unbiased, the those scoring low on the test are of lower intelligence than those scoring high. If the possibility of bias is allowed, then those scoring low on the test may have as much intelligence as those scoring higher, but other possible constructs are operating such as attention deficiency, hyperactivity, or reading disorder. According to Zukav (1979, p.131), "ambiguity results from attempting to depict with limited concepts (language) situations which are not bound by the same limitations."

Public Administration Theory in a Paradigm Context

Jun (1986) implies that public administration prior to Wilson, Goodnow, Taylor and other early authors was largely preparadigmatic, but slowly moved toward positivism. No particular school of thought or theory received the support

of the majority of scholars. Public administration was largely subsumed by the field of political science (Wilson, 1887; Shafritz and Hyde, 1987; Stillman, 1991). Most of these early writings were largely normative and set the stage for those to follow. It was Wilson's (1887) recognition that public administration needed to be a separate field with its own theoretical groundings premised on management. He contends that administration must be separate from politics and focus generally on management and organization. His primary concerns are for determining what administration can realistically achieve and how to do it efficiently.

Supporting Wilson, Goodnow (1900) differentiated administration from government according to function with administration responsible for the execution of state will once that will is politically determined. This differentiation led to concerns regarding control of administrative organizations.

Babbage (1832) anticipated the principles approach to management by asserting that basic principles of management existed and were discoverable. Taylor (1912) defined the function of management - to discover and implement the best ways for accomplishing tasks, and created the basis for a principles approach to organization and administration. It followed that if there was one best way to accomplish a task then there was also one best way to organize and control human activity. The one best way of organizing could be discovered using systematic scientific method. This method

included objective observation and measurement. While control was being developed as a function of management, an appropriate structure for enhancement of this control was also being developed.

Weber (1946) provided for a structural component in his "ideal type" discussion of bureaucracy - another "one best way." Included in his characteristics of the "ideal" was fixation of a jurisdiction ordered by rules or administrative regulation Weber (1978, p.50). Weber called for methodological rigor in advancing organizational studies. Interestingly enough, Weber's ideal bureaucracy supports management principles such as specialization, span of control, and unity of command reflected in ordered hierarchies later proposed by Gulick (1937).

Gulick (1937) is considered to have provided the definitive statement on the principles approach to managing an organization. Ontologically, the focus on principles and the desire for objectivity in discovering the "one best way" are consistent with the tenets of positivism.

Although other authors demonstrated considerable foresight by recognizing additional potential schools of thought, such as behaviorism, this early period is considered one of orthodoxy (Shafritz and Hyde, 1987), concentrated within a structural-functional approach (Jun, 1986). Public administration became comfortable and consistent with the propositions of positivism, specifically the perceived need for objectivity, prediction, and control.

Despite presenting a challenge to the structural-functional approach, Simon (1946/1976) actively advocated the positivist paradigm. He urged the use of scientific method in the study of administrative phenomena. Positivism was to be used for answering policy questions and analyzing decision making. Simon's concepts of bounded rationality and fact/value dichotomy asserted the ability to remain objective. He demonstrated the shortfalls of previous theory by forcing scholars to consider decision-making behaviors as the appropriate unit of analysis for scientific study.

While this shift in emphasis was certainly controversial, it was not necessarily a paradigm shift resulting from a crisis stage, but, rather, a change in perspective from within the same paradigm. However, it may have been that Simon, himself, unconsciously suggested the need for a new paradigm by calling for a systems approach that examines the various facets of public administration. Nevertheless, public administration has been dominated by the positivist paradigm, largely due to the influence of Herbert Simon.

Not until Robert Dahl (1947) did the post positivist movement begin to emerge in public administration. Signaling the crisis stage necessary for a paradigm shift was a growing concern that public administration had yet to evolve as a science. Dahl argued for a science of public administration that recognizes the role of normative values and the complexities of human behavior. Public administration was

not yet a science because it was value laden and normative.

Insisting that universal laws didn't exist, he also called for a more naturalistic inquiry similar to criticalism in that the nature of public administration should be studied within its social setting. Asserting that public administration cannot be separated from its social setting is similar to the assertion that a principle from one culture is not likely to be assimilated by another without change.

Waldo (1955) anticipated the systems approach by advancing structural-functionalism as a unit of analysis in terms of enduring patterns of contributions toward system maintenance. The systems approach provides legitimacy for conceptual constructs such as Waldo's "cooperative human action." Boulding (1956) provides nine levels of system constructs from the more primitive "framework and clock" to the more advanced "social and transcendental."

At the higher levels, human values assimilated by organizations can act to transform the environment. How to transform the environment can only be determined based on some value system and consensus. This implies an interaction between administration and politics.

Etzioni (1960) acknowledges the role of values in the transformation of the environment. He contends the organizational goals and their achievement are observer values projected upon the organization. Effectiveness in the utilization of resources is his preferred criteria in evaluation.

Implied is the role of an organization's clientele in determining which resources will be used and how. The clientele determines the organization's ultimate objective based on their interests, value system and consensus. Much literature has been devoted to constructing public interest and the role of special interests.

Many writers during the last half century have sought to transform public administration from an art to a science. Whereas Dahl sought to transform (criticalism) public administration from an art to a science, Waldo concludes that public administration is both art and science. Waldo is, in part, consistent with constructivism when he argues that culture emphasizes the variety of human experience. The importance of the non-rational cannot be denied.

Constructivists support the argument that inquiry cannot be separated from values (Guba, 1990). Reality is determined relative to a value system. Because, as previously documented, knowledge is also theory laden (Hesse, 1980) reality exists within some theoretical framework. Because theory is one step removed from reality, knowledge accumulates through theoretical, and therefore, "value windows." Thus multiple constructions are possible. The underdetermination of theory also supports multiple constructions because no incontestable explanation is possible, precluding a foundational way for choosing among these constructions.

It would seem evident at this point that public administration theory is nearing the end of Kuhn's crisis stage and a new paradigm is emerging. Inquiry dominated by positivism and post positivism has lost its appeal. Emerging modes of inquiry recognize the limits of objectivity and the value-ladeness of fact (Zukav, 1979) as well as the underdetermination of theory (Hesse, 1980).

Summary

This chapter has discussed the role of paradigms in the quest for knowledge. Its purpose was to demonstrate the reasons for the confusion that pervades the conceptual use of paradigms. Paradigms were removed from theories and clarified by their ontologies, epistemologies, and methodologies. Four paradigms were identified as currently in use. With the exception of constructivism, these paradigms are mutually exclusive.

Positivism states that reality exists and can be directly observed. Universal laws can be empirically discovered through experimentation and used for prediction and limited control. Postpositivism holds that reality exists but is hidden. Prediction and control depend upon consensus regarding the true nature of reality. Objectivity can still be achieved through experimentation. Criticalism views reality in the same manner as postpositivists but rejects objectivity. Constructs reflect the values of the observer. Findings can vary depending on the values chosen.

The choice of a value system makes inquiry a political act. Qualitative methods are used to develop sophisticated constructions through consensus.

Finally, constructivism adheres to the existence of multiple realities in the form of mental constructions, "socially and experientially based, local and specific, dependent for their form and content on the persons who hold them" (Guba, 1990, p.27). Facts are both theory and value laden. Observations are underdetermined by theory. Inquirers can look into different realities through hermeneutics and dialectics. Hopefully, an understanding of the differences between realities can be achieved by comparing and contrasting realities contextually.

A paradigm acts as a lens; it is a way of seeing reality. It can assist, or it can hinder. Hindrance depends on how it is used.

A paradigm hinders when it restricts one's view and conceals possibilities. A paradigm should be relevant to the discipline that uses it. Exclusive use of positivism in the natural sciences is acceptable. After all, a bar of iron is a bar of iron, and a stellar body is a stellar body.

For a field that depends on constructs, however, any paradigm that limits their use and flexibility is inappropriate. Demanding paradigmatic consensus is forcing form to follow function. Ostrom (1989) and Waldo (1968) imply a call for a public administration paradigm that not only allows more effective use of constructs, but also has

room for accommodating other paradigms. Of the available choices, the only paradigm that can do this is constructivism.

Constructivism allows for the possibility of multiple realities constructed in the mind. This includes the other paradigms because they are also constructs. Constructivism permits the use of a particular paradigm dependent on the context, content, and situation. Because it is not exclusionary, it permits the flexibility of multiple perspectives for problem-solving.

A discussion of systems theory is the subject of the next chapter. Systems theory is both a metatheory and an applied theory. The relevance of paradigms to systematic thought will be explicated as the discussion unfolds.

CHAPTER THREE

SYSTEMS THEORY

General Systems Theory

As mentioned in the previous chapter, paradigms represent belief systems regarding the accumulation of knowledge. As such, they systematically impact the development of constructs. Systems, as constructs, represent varying levels of abstraction.

Boulding (1956) addressed the need for a systematic body of theoretical constructs for each level of abstraction that provide an optimum level of generality. If inquiry is the systematic accumulation of knowledge, then a general theory of systems has utility by revealing gaps in theoretical models and pointing towards potential methods of filling them.

At a general level, relevant discourse between disciplines is possible. This allows scientists from nonrelated fields to learn from each other. The physicist learns from the administrator and vice versa. Pickler (1955) made use of such discourse in the field of economics, as did Lewin (1951) in organization development.

In an effort to provide a framework for a general theory of systems, Boulding (1956) approaches the problem with an

arrangement of system levels along a vertical continuum, ranging from bottom to top in order of complexity. These levels also correspond to varying levels of potential theoretical discourse.

The first level is frameworks. Frameworks describe static structures such as the arrangement of electrons in an atom, the arrangement of a bureaucratic hierarchy as depicted in an organization chart, DNA in genetic code, or the flow of information through a computer network. Input and output are not relevant at this stage. Important at this level is knowing that a structural relationship exists and defining its nature. Without this structure, the entity ceases to be recognizable. Organization disappears. An accurate description of these frameworks is the necessary beginning for organizing and accumulating knowledge. Progress into dynamic theory cannot begin without this basic understanding. Wilson (1887/1978), Goodnow (1900), Weber (1922/1978), White (1926), and Gulick (1937) were important contributions to this understanding.

The clockworks level follows as a mechanical system with predetermined and necessary motion. For every input there is a known output. Problems can be solved using simultaneous equations if simple mechanics are involved. In this manner, two states of equilibrium can be compared. This would be the case in situations that require the maximization of output compared to input. Comparing various end states using simple

regression equations is another example from research methodology.

Regardless of approach, the clockworks level is the first level of a closed system represented in Figure 3.

FIGURE 3

A TYPICAL CLOSED SYSTEM

At this level of closed systems, equilibrium is not a requirement, however, "Most physical and chemical reactions and most social systems do in fact exhibit a tendency to equilibrium" (Boulding, 1956, p.202). Closed systems exhibit entrophy in that without continued input of energy, the system stops.

Most of the theoretical papers and research studies in public administration prior to World War II were at the clockworks level. The more notable ones were by Taylor (1912), Herring (1936), Barnard (1938), Meriam (1939) and Merton (1940).

A cybernetic system represents the third level, or thermostat. It is cybernetic because it differs from the simple stable equilibrium of the previous level in that it can be controlled. Equilibrium is not confined to just a single set of equations. The system moves toward an equilibrium level that can be specified in advance. Equilibrium can be achieved if the ideal value is within the

limits of the system's capability. Transmission and interpretation of information is an essential feature of the system. This is a common feature of a bureaucratic organization whose budget is subject to change. It is still a mechanical system that can be solved using simultaneous equations. The difference is that the equations can specify different end states.

The efficiency model proposed by Simon (1976) also resembles such a system. Equilibrium is specified through the political process that mediates values and provides inputs. Maximization of output relative to input is the goal of administrative systems, but input can be varied. Assuming sufficient input, the system compares the difference between the existing and ideal states and attempts to zeroize it.

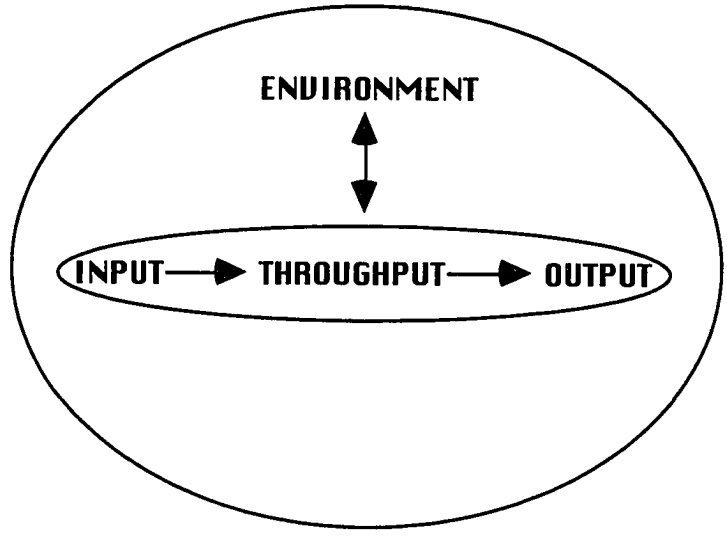
The ability to process information is limited. Therefore, the system has only a few alternatives from which a decision can result. Efficiency is the criterion determining system capability. An efficient cybernetic system is one that minimizes the difference between an observed output and the ideal output for a given level of input. If two similar cybernetic systems are provided with the same input, the system that best minimizes the difference between observed output and the ideal will be the most efficient because it also maximizes output relative to the other. In this sense, a cybernetic system is the first level of a rational system.

Most behavioral and public choice theories, as well as most system applications, exist at this level. Very few applications of public administration theory are offered beyond this level (Boulding, 1956).

The cell is an a good metaphor for the fourth level of system complexity. The cell exists in an environment that exhibits natural selection processes. Exchanges between the system and the environment are driven by survival needs. Open systems similar to that in Figure 4 are characteristic of this level.

FIGURE 4

A TYPICAL OPEN SYSTEM



At the cellular level, life is differentiated from non-life. Systems are self-maintaining and have the ability to reproduce. Self-maintenance results from an ongoing exchange between the cell and the environment. Information gathering

and processing abilities are more advanced; however, abilities to respond to adverse environmental stimuli are only adaptive.

Kiel (1994) implies that the few remaining theories and studies of public organizations generally do not go beyond the cellular level. The exceptions seem to be limited to information processing and learning theories of organizations, and newer theories of government and public organizations as complex systems. Policy analysis and program evaluation are theoretical areas that are attempting to adapt public organizations to problems posed in the environment.

The fifth level of systems is the genetic-societal level typified by plants. Organizations at this level have differentiated parts and specialization among subsystems or cells. Information processing shows more advancement due to the development of sensory receptors; however, throughput of information is doubtful, and responses remain adaptive.

The characteristic of importance at this level is the differentiation between genotype and phenotype associated with equifinal growth. This is to say that internal structures and functions, along with external appearances, differentiate between organizations at this system level. Yet, these differentiated organizations can interact similarly with the environment and possess the same functions within it.

Moving upward in sophistication, one arrives at the level of the animal. Boulding (1956) attributes the characteristics of increased mobility, purposive behavior, and self-awareness to systems at this level.

Specialized sensory receptors have developed for accessing large amounts of information and nervous systems have developed for processing it. The brain functions as an organizer for the intake and storage of information. The first indications of learning are present.

Increasingly, as one moves up the continuum in the animal kingdom, behavior is a response to an "image" or loosely coupled knowledge structure that incorporates a holistic view of the world. This is a step up from the direct stimulus-response behavior of lower order animals. Constructs, however simple, are possible at this level and above.

The constructed image resides between stimuli and responses. Once the image is established, additional information seldom has any effect in altering the original image once it has formed. Most additional information is either filtered and not processed, or it passes through the loosely coupled information processors without triggering a new behavioral response.

Occasionally, however, information does reach and alter the image, resulting in apparently radical changes in behavioral responses to seemingly small stimuli (Boulding,

1956, p.127). This phenomenon explains the difficulties in prediction of behavior, even at the animal level.

Argyris and Schon (1978) describes this behavioral process as single-looped learning. At the primate level, the establishment of dominance is an example of single-loop learning. An organizational example of this type of learning is avoidance behavior to an unpleasant stimulus. If an organization behavior in the community was so unpopular that a group of people or organizations refused to support organizational goals or objectives, an organization would avoid similar behaviors in the future or develop processes that would allow the organization to avoid contact with that group.

At the human level, organizations possess the additional feature of self-consciousness. The image complex is more elaborate and includes time and finality. At this level, an organization possesses a knowledge of death. The human level organization has an ability to reflect and reason. An organization not only knows, but realizes that it knows.

The capacity for speech beyond the basic warning cry of animals demonstrates an ability to create and interpret symbols. It is also at this level that paradigms and theories exist. Behavior is profoundly complex because behavior is affected by abstractions in addition to the physical world.

The concern for content and meaning of messages distinguishes the social organizations level from the human

level. The purpose of this level is to define and explain the interactions of units from the human level in terms of roles and channels of communication. The human level responses could be considered in terms of Maslow's (1943) hierarchy of needs.

The human level is concerned with behavior directed toward fulfilling the physiological, safety, and love needs. Behavior may be contextually social and organizational at the human level, but it is self-motivated. The social organizations level addresses the higher needs for self-esteem and self-actualization. This implies that Maslow's hierarchy is applicable to organizations.

The social organizations level involves true dynamics. In true dynamics, differential (or difference) equations are required for problem solving. Each variable has an explicit function with time. Behavior at this level is characterized by roles and action that change over time in response to environmental changes or change to affect changes in the environment. An organization at this level is a subset of all organizations. It is defined by purposes, goals, and objectives.

The final level, that of transcendental systems, is concerned with the inescapable unknowables. It is reasonable to assume that these, too, would exhibit systematic structure, processes, and interrelationships. It is this level that continues to spawn inquiry by allowing the

possibility of infinite realities interacting with imperfect human cognitive ability.

Summary of Levels

Boulding (1956) proposes a hierarchical continuum of nine levels of system abstraction. These range in complexity from the simple framework to that of transcendental systems. Public administration has generally failed to progress beyond the third level, a cybernetic system, in its theoretical conceptualizations. These lower levels are characterized by perceptions of organizations as closed in that the environment is not significantly considered. The following section expounds the differences between closed and open systems.

Closed and Open Systems

Katz and Kahn (1966) attempt to elevate organization theory to the upper levels described by Boulding (1956) by developing an open systems model. Common sense approaches to creating, modifying, and understanding organizations depend on two assumptions: "that the location and nature of an organization are given by its name; and that an organization is possessed of built-in goals - because such goals were implanted by its founders, decreed by its present leaders, or because it emerged mysteriously as the purposes of the organizational system itself" (Katz and Kahn, 1966, p.14).

Location and nature result from socially accepted stereotypes about organizational structure and function. For example, Aid to Families with Dependent Children programs are easily located in the area of welfare, and their functions are implied in their name. Stereotyping, in this sense, is a determinant of organizational character.

These stereotypes, however, can be deceiving because they do not specify role structures, psychology, or boundaries. This is a particular problem for public administration in general, and particularly policy analysis and program evaluation. The Social Security program is evidence of this.[8]

Perceived relative to Bouldings's continuum, organization purposes exist on two levels. First are the primary operational functions of the organization. These goals, explicit or implied (Rossi and Freeman, 1989), give a social nature to an organization characteristic of the higher levels. Second, there are subsidiary goals required for organization maintenance and support that are not social in nature and resemble features of the lower levels.

The closed system approach allows for the application of the laws of physics without consideration of environmental forces acting on the system. Katz and Kahn (1966) contend that closed systems assume that individual goals and objectives can be equated to organizational goals and

[8] Social Security has numerous sub-programs, some of which could be conceived as welfare and some which could not. Numerous programs and policies have similar features problems. For a detailed discussion, see Aaron and Schultze (1992).

objectives. This simplification conveniently ignores the complex interdependent patterns of nature and directs focus toward an input-output analysis of the closed system. The closed system focus becomes solely a comparative analysis of the stated purpose against a standard that is independent of external forces.

Von Bertalanffy (1956/1940) is generally credited by Boulding (1956), Katz and Kahn (1966) and others for the introduction of open systems theory characterized by energy input-output. Katz and Kahn (1966) apply his concepts to the problems of social science and the study of organizations.

The concept of open systems includes consideration of external forces in the dynamics of input-output processes. Physical laws, while applicable, modify system characteristics. Analysis of energy in a closed system reveals simple dynamics of a clock or cybernetic mechanism, but open systems feature more complex, true dynamics. Energy flows through the system at varying levels dependent on the environment and the systems ability to extract energy from it.

Katz and Kahn (1966) offer negative entropy as a characteristic of open systems. They define this as the ability to import more energy than is required for input-output and to store this energy until some future moment. This additional energy might also be used for development of additional processes, such as growth or survival.

This should not be assumed to mean that open systems do not entropy. It just allows for entropy to be extracted over extremely long periods of time. No social organization has ever demonstrated permanence; however, Downs (1967/1987) argument for extremely long life spans is germane. Entropy is a matter of degree in both the physical and social worlds.

The advancement of information processing capabilities of animals and other higher systems, enabled them to develop feedback mechanisms. These mechanisms enable correction of the system relative to its environment. Miller (1955) emphasizes the importance of negative feedback in his proposition: "When a system's negative feedback discontinues, its steady state vanishes, and at the same time its boundary disappears and the system terminates" (p.529).

Argyris and Schon (1978) offer a similar process they refer to as double-looped learning. This higher level learning process incurs a behavior change beyond simply avoidance. When an individual's or organization's behavior results in an unintended behavior from another, feedback mechanisms attempt a behavior change in the originator of the behavior that is cognitively designed to bring about a corresponding behavior change on the part of the other. This process can be likened to adaptation.

Natural selection and adaptation are closely related. Adaptive responses to the environment enhance survival. Those that do not adapt are selected for extinction. Learning assists higher animals in adapting to their

environment. Organizations, because they are constructs, cannot physically adapt. They must learn or face entropy and extinction. For organizations, then, adaptation is a cognitive process dependent upon correct interpretations of the information received through feedback loops.

A final characteristic of open systems not previously discussed is dynamic homeostasis. This is different from the equilibrium exhibited by closed systems in which the energy flow through the system remains the same. A disturbance in the input of a closed system will have predictable consequences for output. In perfect equilibrium, input and output will remain constant.

In open systems, however, dynamic homeostasis acts to anticipate disturbances if they occur regularly. Complex systems move to counter entropy through growth and expansion. Energy is used for the preservation of the system itself. Open systems attempt to assimilate additional, new energetic input from the environment into the nature of their structure. Organizations create supportive structures to maintain the system and constitute expansive growth.

Integration of Paradigms and Systems

Systems are constructs that attempt to organize highly general relationships into coherent, recognizable, and predictable and patterns. Public administration theorists have developed sophisticated theoretical constructs that

demonstrate the capacity for systematic thinking at the higher levels proposed by Boulding (1956).

Given this level of sophistication, it is incongruent that applications of theory appear restricted to the lower levels and have limited success. The cause can be attributed to the level of paradigmatic thinking.

Positivism, postpositivism, and criticalism limit systematic thinking to an assumed single reality. Systematic thinking is therefore limited to determining the nature of this reality. If a single reality exists, whether objective or subjective, theory is two dimensional. A measurement on one variable has a given effect on another once the relationship has been defined. This is a feature of closed systems.

Closed systems assume that outside forces have no effect on the functioning of the systems. Using standardized variables, unexplained variance is attributed to random error within the system described by the variable set (Neter, et al., 1990; Tabachnick and Fidell, 1989; and Lewis-Beck, 1980). This is an underlying assumption of linear models that are commonly used to determine effect in quantitative causal inquiries.

Qualitative inquiries are no less immune because they assume that unexplained variance is a function of setting or location. Both ignore the possibility that variance could be attributed to external forces. This is commonly referred to as specification error. In quantitative methods using the

general linear model, lack of specification error is a requisite assumption (Lewis-Beck, 1980).

In qualitative models, specification error results from value choices (Hesse, 1980) and assumptions about setting and location (Yin, 1989; Mohr, 1992). Yin (1989) acknowledges the difficulties of causal inferences inherent in qualitative methods and the requirement for replication to establish validity. Generalizations at these lower levels of system abstraction are necessarily from one closed system to another closed system.

Acknowledgment of a determinate reality denies the unobservable under positivism. This led Mach to deny the existence of atoms during a period of rapid development of atomic theory and particle physics (Cook and Campbell, 1979). Acknowledgment of reality under postpositivism and criticalism is represented by a preference for "intervening variables" over "hypothetical constructs" (MacCorquodale and Meehl, 1948), and the impractical and theory-confusing dogma of operational definitions for theoretical terms (Cook and Campbell, 1979; and Bridgman, 1960).

Because reality is a human construct, it can have different meanings for different individuals and organizations. The environment is also a construct. One organization's environment is not necessarily the environment of another. Just as one organism might interpret its environmental conditions as harsh, another might interpret

those same conditions as benign. External forces may affect organizations differently.

For this accommodation to be made, multiple realities must be accommodated. This allows the open system perspective. This perspective does not make the assumptions of location, nature, and built-in goals. Constructivism is currently the only paradigm that accommodates multiple realities. Nor does it require acceptance of stereotypes inherent in positivism and postpositivism.

The forced dichotomy of discovery and verification is eliminated under constructivism. A cyclical continuum is the case. Knowledge is accumulated through both induction and deduction. Discovery is verified, and verification leads to new hypotheses consistent with the logic of inquiry.

It would seem evident at this point that public administration is nearing the end of the crisis stage and entering a period of revolution. Inquiry dominated by positivism, postpositivism, and criticalism has lost its appeal. Having demonstrated the flawed nature of these paradigms, constructivism is proposed as an alternative for public administration, and a theoretical grounding is necessary.

Prior to beginning this grounding, the major exemplar of positivism must be challenged. Simon (1976) is generally acknowledged as the exemplar of the field of administration. He proposed positivism as the paradigm of choice. Reality is therefore determinate. Fact can be separated from value.

Decisions are correct if they are rational and incorrect if they are not. Efficiency is the criterion for measuring rationality. Inconsistencies and gaps in Simon's theory must be identified that will allow a new theory to emerge. The following chapter addresses these shortcomings through a falsification process using the hermeneutic circle.

CHAPTER FOUR

PUBLIC ADMINISTRATION BEHAVIOR

The Logical Null Hypothesis

Thus far, this study has proceeded through the deductive chain following the hermeneutic circle from general to specific. Positivism, as a theory of knowledge, led to the development of theorems explaining reality. Following the theorems or frameworks originating in systems and behavior theory, an efficiency model of rationality was proposed.

Over time, aspects such as bounded rationality and satisficing were confirmed. Induction affirmed the consequences, and an efficiency model of behavior as an exemplar is generally accepted. Wamsley (1990) affirms by stating "Although there have been many exciting advances in organization theory since world War II, it seems to us that public administration theory has been trapped in an intellectual cul-de-sac created by behavioralism...and the power of Herbert Simon" (p.19).

To escape this trap, a falsification must be demonstrated. This chapter presents a challenge to the logical null hypothesis that efficiency is the most useful criterion for judging the performance of public organizations.

Consistent with the views of Kuhn (1970), an exemplar must be challenged and shown to be ineffective before a case can be made to justify a paradigm shift. Herbert Simon's Administrative Behavior (1976) is the acknowledged exemplar in the field of public administration.[9] This work provides two features that have been previously criticized: first, it is grounded in positivism; and second, it is framed within the context of the closed system.

Administrative Theory

In order to distinguish between correct and incorrect decisions and the elements of fact and value, Simon accepts the conclusions of logical positivism (1976, p.45). He sets the field of administration solidly within this paradigm by his many references to principles of administration. He defines administration as the art of getting things done, pervaded by the task of deciding. The task of deciding necessitates a general theory of administration that includes principles of organization that will insure correct decision-making, just as it must include principles that will insure effective action (p.1).

The implication is that a single, determinate reality exists and its true nature is discoverable. This is compatible with the realist ontology of positivism. Furthermore, when claiming that "Administrative description

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[9] Simon received the Nobel Prize in 1978. For convention and ease of reading this chapter, citations and quotes to Simon refer to this work unless otherwise noted.

suffers currently from superficiality, oversimplification, and lack of realism" (p.38) by refusing to supply operational definitions, he is implying that everyone perceives reality the same way. If this is true, then there shouldn't be any need for a representative bureaucracy, and the arguments proposed by Krislov and Rosenbloom (1981), and others since, are irrelevant.

A single reality implies that (X) and (not X) cannot exist at the same time. If X is the case now, it will remain so, and it is true for everyone concerned. This permits constructs to be operationalized. Simon (1976) operationalizes an administrative decision as correct" if it selects appropriate means to reach designated ends" (p.61). Positivism implies universal laws, therefore, only one set of correct appropriate means can exist. Administrative decisions can be correct only within the context of closed systems if equifinality doesn't occur.

Simon provides additional evidence of a closed system by stating that:

> The need for an administrative theory resides in the fact that there are practical limits to human rationality, and these limits are not static, but dependent upon the organizational environment in which the individual's decision takes place. The task of the administrator is so to design this environment that the individual will approach as close as practicable to

> rationality (judged in terms of the organization's goals) in his decisions. (pp. 240-241)

This statement is clearly an example of a cybernetic system as proposed by Boulding (1956). Simon's reference to the environment is in the sense of internal regulation of the closed system rather than a response to external forces of the open system. His statement that administration theory "is concerned with how organizations should be constructed and operated in order to accomplish its work efficiently" (1976, p.38), and that it "must be interested in the factors that will determine with what skills, values, and knowledge the organization member undertakes his work" (p.39) suggest the built in control mechanisms common to cybernetic systems such as a thermostat.

To infer that an administrator can actually manipulate his environment requires a metaphoric transcendence to the social organizations level and acknowledgment of open systems. This is not possible under positivism because a finite reality exists with immutable, universal laws.

As previously discussed, a cybernetic system seeks equilibrium using an effective control mechanism. Simon proposes rationality as this mechanism when he states:

> The rational administrator is concerned with the selection of these effective means. For the construction of an administrative theory it is necessary to examine further the notion of rationality and, in

> particular, to achieve perfect clarity as to what is meant by 'the selection of effective means'. (p.61)

The notion of perfect clarity is again a notion of positivism. A universal law, once discovered, is universally applicable.

A cybernetic system also implies limits in which equilibrium can occur. Control is therefore limited to the range of options available in the system. Again, Simon states:

> Administrative theory must be concerned with the limits of rationality, and the manner in which organization affects these limits for the person making a decision. Theory must determine how institutionalized decision can be made to conform to values developed within a broader organizational structure. (p.241)

The purpose of organization becomes one of controlling the rationality of its members to achieve a state of equilibrium measured against some appropriate criterion.

The purpose of the organization for which it was conceived is undermined. The idea that an organization's purpose is to manipulate reality becomes inconceivable.

If this is correct, the organization must translate its value purpose into a factual purpose so that equilibrium can be achieved. An incorrect translation produces a disturbance in the closed system. A closed system can ignore these disturbances to some extent under positivism. Reality is factual. If the organization perceives that it as made a

correct translation, then those making the translation do not understand reality or the facts.

If the translation is correct, the disturbances will eventually dissipate. If the translation is incorrect, the organization will adjust through iterations of translations to achieve equilibrium. If the disturbances fail to dissipate and the organization fails to adjust, then the problem lies in a faulty interpretation of reality and the organization becomes dysfunctional. By deduction, the relevant theory must also be dysfunctional.

Rationality as a control mechanism operates in the translation process. According to Simon:

> The basic task of rationality is "to provide each 'operative' employee with an environment of decision of such a kind that behavior which is rational from the standpoint of this environment is also rational from the standpoint of the group values and the group situation. Moreover, it must be taken into consideration that the establishment of an environment of decision for the individual involves problems of communication for the organization. These then are the basic elements from which a theory of organization can be constructed: (1) a decision made above the operative level must be communicated; (2) wherever a decision is made, its quality will depend on the environment that bounds the area of rationality of the person making the decision. (p.243-244)

The closed system implications of the previous statement are that decisions of high quality in a hierarchy are to be achieved when the areas of rationality at the operative levels overlap the area of rationality immediately above it. Decisions of highest quality are possible when the areas of rationality coincide. Figure 5 demonstrates overlapping areas of rationality.

FIGURE 5

DECISION QUALITY AND AREA OF RATIONALITY

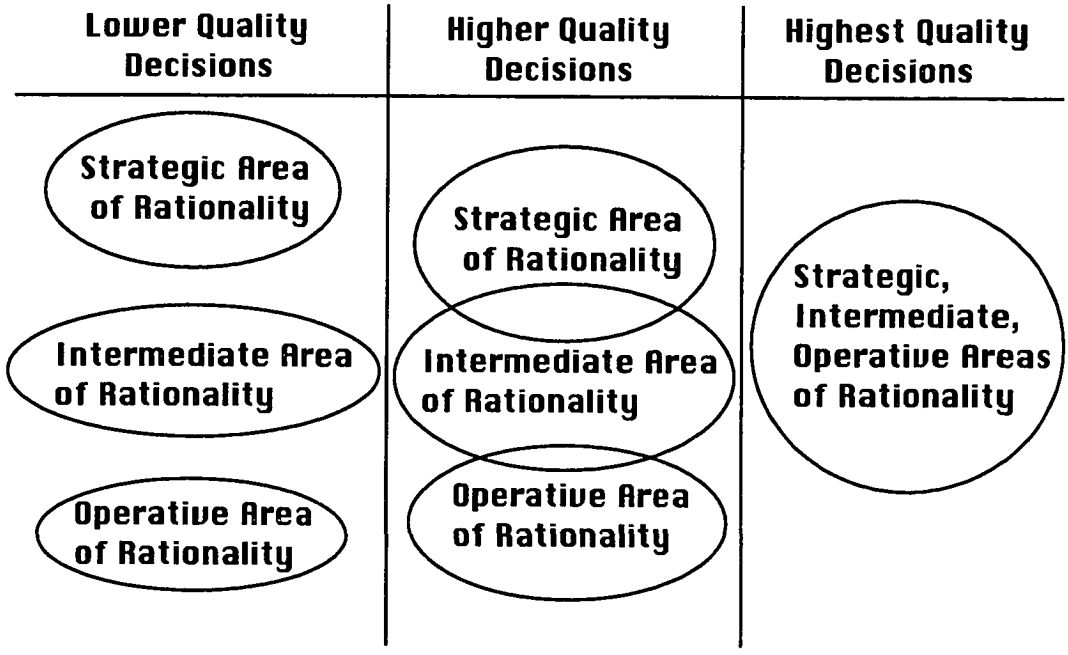


Figure 5 implies that lower quality decisions result when administrative objectives are different across organizational levels. The more that organizational goals are synomous across levels, the better the decision that results. The

best decisions result when organizational goals are consistent across all levels. Lower quality decisions result in suboptimization, and higher quality decisions result in optimization of the entire organization.

Figure 5 also implies that an efficient decision at one level may not be rational at another level, or even between subunits at the same level. For instance, a change in an operational process in a subunit at the operative level may improve that subunit's efficiency, but at the expense of another subunit or possibly the entire organization. It may not be rational from the standpoint of the strategic level if the decision limits the organization's ability to accomplish its designated goals or inhibits flexibility during periods of uncertainty and rapid change. Argument can now be made for alternative structures proposed by Morgan (1986) that are both rational and efficient.

Mintzberg (1971) observes that accuracy of the communication is inversely proportional to the distance it must travel. The more levels there are, the greater the distance the communication must travel. If rationality, and efficiency in turn, is dependent upon accurate communications, then the inherent efficiency of hierarchical arrangement proposed by Weber (1922/1978) can be called to question. Distance causes problems when there are many levels in the hierarchy. Argument can now be made for alternative structures or imbedded structures.

Rationality

Simon presents administrative rationality as concerned with the selection of desired behavior patterns in terms of some system of values whereby the consequences of behavior can be evaluated. A behavior pattern, once selected, provides a type of thermostatic control and permits prediction of equilibrium states.

According to Simon (1976), rational administrative behavior "refers to rationality when that behavior is evaluated relative to the objectives of the larger organization" (p.41). In a closed system, knowledge of the objectives of the larger organization at the operational level is not required, or even implied.

Viewing the human body as a closed system organization, it is not relevant to the heart that the organization objective is to run a mile as fast as possible. It is only important that the heart operate as efficiently as possible to provide oxygenated blood to the other parts. The same goes for the legs, lungs and other specialized subsystems.

A closed system model emphasizes the efficiency of related parts to the whole. The objective of the whole is not a concern of the operative parts. In administrative organizations, behavior patterns selected from alternatives provided by a closed system model must be efficient to be rational relative to the organization objectives.

It is easy for the operative levels to lose sight of organization objectives. The operatives may not even have

knowledge of what the organization objectives are, nor is it important that they do. Effectiveness of the organization is dependent upon the efficiency of the parts. The natural assumption that follows is that if the parts are efficient, then the organization is effective.

Because administrators lack complete information and have limits to their ability to process it and make correct decisions, rationality is bounded. When decision-making requires intuition, spontaneity, and faith in analytical techniques because of limited information, limited time, or complexity of the problem, boundaries are placed on rationality. The administrator intends rationality, but limits are placed on one's ability to achieve it.

Simon argues that "Rationality implies a complete, and unattainable, knowledge of the exact consequences of each choice" (p.81). This is the first limitation upon rationality. Hence, rationality is bounded.

A closed system context is obvious. "Rational choice will be feasible to the extent that the limited set of factors upon which decision is based corresponds, in nature, to a closed system of variables - that is, to the extent that significant indirect effects are absent" (p.83). The closed system perspective has implications for decision-making.

"Administrative theory is peculiarly the theory of intended and bounded rationality - of the behavior of human beings who *satisfice* because they have not the wits to *maximize*" (p.xxviii). Satisficing is, essentially, decision-

making that seeks as good a decision as possible relative to the constraints on rationality.

The closed system perspective insures that rationality is bounded. By using a closed system model, Simon makes himself subject to his own criticisms of over-simplification and lack of realism. Gleick (1987) demonstrates that closed system assumptions do not hold in reality. The simplification assumption inherent in closed systems is that small disturbances dampen and have no lingering effects on the system, and it moves to equilibrium. In complex, nonlinear, open systems, small disturbances can have dramatic effects (Keil, 1994). Kiel (1994) provides examples of the potentially dramatic effects due to small disturbances in forcasting weather, populations, police activity, and epidemics. Another assumption is that features of reality not related to the system have no effect on it, therefore, they can be ignored.

Closed system forces satisficing to some extent. Administrative man satisfices because he perceives most of reality as irrelevant to his situation. That is, most of the facts of reality have no significance to his situation. Closed systems also have a fixed number of behavior alternatives from which to choose. In this sense, a closed system model also forces bounds on rationality.

Bounded rationality incorporates the idea that possible future behaviors can be represented as decision trees. Simon implies that the number of choices is fixed using the analogy

of chess games and gaming theory. Again, a closed system model is assumed.

What is not considered in a game theory of behavior is that there doesn't have to be a consistent set of rules, and therefore, choices are unlimited rather that constant. An open systems model expands choice. (X) and (not X) can exist simultaneously if (not X) is perceived as (Y). Relativism is required for this conceptualization, which in turn requires multiple realities. Determination of social equity, or equality of results, is an example provided by Sowell (1981) and Nakamura and Smallwood (1980). An example from the business world is the desire for protective legislation to offset the different rules of competition in overseas markets, especially the Pacific rim countries (Lodge, 1987). The goal of a level playing field is often cited, but the other side would argue that the field is already level.

It has been demonstrated that a closed system model restricts choice in a quest for equilibrium, and rational behavior within this model is judged on the criterion of efficiency. Suboptimization is the necessary result.

Juran (1992) describes suboptimization as the process of substituting operative goals for organization goals. Much discussion has taken place in the literature about the need to overcome the adverse effects of this process, but relatively little discussion has taken place regarding the process itself or how it arises within an organization. Insight into this phenomenon is provided.

Simon describes a means-ends hierarchy where the means of achieving organization objectives become the ends of the level immediately below it. "Regarding the means-ends hierarchy, organizational behavior is seldom an integrated, completely connected chain" (p.64). Herring (1936, pp.7-11) points out that ultimate objectives are often obscure or incompletely formulated.

According to Simon, rational behavior is the remainder of the incomplete and often inconsistent hierarchy of means-ends. The remainder is the criterion of efficiency that determines extent of rationality of behavior relative to the organization objective. What is lost is the organization objective at the operative levels. Simon (1976) verifies this himself when he continues his discussion of behavior:

> If behavior is viewed over a stretch of time, it exhibits a mosaic character. Each piece of the pattern is integrated with the others by their orientation to a common purpose; but these purposes shift from time to time with shifts in knowledge and attention, and are held together in only slight measure by any conception of an over-all criterion of choice. It might be said that behavior reveals only segments of rationality - that behavior shows rational organization within each segment, but the segments themselves have no very strong interconnections. (p.80-81)

This means that behavior rational relative to the specialized divisions is rational relative to the organization as long as

it is efficient. This is characteristic of the mechanism of identification.

Identification is determined by loyalty. An individual is loyal to either his personal objectives, the organization objectives, or the objectives of the division or level at which he operates. Simon states:

> Identification is an important mechanism for constructing the environment of decision. When identification is faulty, the resulting discrepancies between social and organizational values result in a loss of social efficiency. When the organizational structure is well conceived, on the other hand, the process of identification permits the broad organizational arrangement to govern the decisions of the persons who participate in the structure. Thereby, it permits human rationality to transcend the limitations imposed upon it by the narrow span of attention. (p.211)

Decisions that reflect efficiency are rational in the context of the closed system. Behaviors must suboptimize in order to be evaluated as rational.

Efficiency

Simon (1976) limits rational choice in a closed system to the criterion of efficiency in an effort to control significant indirect effects. This implies a conscious

decision to bound rationality even more in an effort to control behavior.

An organization is a system of behaviors. Control is necessary to ensure that behavior is cooperative. Cooperation is necessary to achieve organization objectives. As a closed system, the organization objective is equilibrium necessary for survival. The controlling mechanism, or thermostat, is rationality. The measure of control is efficiency. As previously discussed, efficiency becomes the objective of the operative levels. This section describes efficiency as a common ground between rationality and a behavior system.

Efficiency is an internal decision premise supplied by the individual. Efficiency is defined as the maximization of the difference between output and input. Related to organization objectives, it is concerned with maximization of output. Related to conservation objectives, maintenance of a positive balance of output over input is the driving concern. This implies that the "law of conservation of energy" is not a requirement of social systems.

Efficiency defines "good" or "correct" administrative behavior in terms of maximization, but leaves to administrative theory to identify how objectives are to be maximized. Simon (1976) states "The theory of administration is concerned with how an organization should be constructed and operated in order to accomplish its work efficiently" (p.38).

The criterion of efficiency requires the choice of that alternative leading to the greatest attainment of organization objectives when costs are constant, or the alternative of least cost if attainment of objectives is equal. Efficiency cannot be used as a sole decision premise where resources, costs, and objective attainment are all variable. When these variables are givens, beyond the control of the administrator, efficiency is the determinant factor of administrative choice.

The "private" sector has the convenience of using monetary valuations for both input and output in decision analyses using efficiency. The kind of product manufactured is valuationally neutral. The public sector is not afforded this convenience and must find a substitute. Substitutes are provided through organization objectives and development of indices to measure the degree of attainment of these objectives.

The operative values are low cost and large results. Difficulties arise in comparing these values since they are often conceptualized in different terms. Decisions reflecting maximization as a trade off between low cost and high result rely on the efficiency criterion as the common denominator for value. "The criterion of efficiency dictates that choice of alternatives which produces the largest result for the given application of resources" (p.179).

The problem still remains of equating alternatives based on differing human values. Efficiency does not solve or avoid this controversy.

Efficiency dominates administrators and administrative decisions to the extent that they are rational. This does not necessarily mean that administrators and their decisions should automatically be characterized as rational.

Decisions have value elements and factual elements. Efficiency is properly applied only to factual elements. Ethical criteria need be applied to value elements.

To employ efficiency in decision-making, empirical knowledge of alternative results is mandatory. These are factual elements that require the development of production functions. The criterion of efficiency is to determine the maximum of each function given a constraint of fixed expenditure. At this point, alternatives can then be compared in light of value elements. Rationality cannot play any significant role in the formulation of administrative decisions unless these production functions are known or can be approximated.

Related to efficiency is functionalization. "The value of organization along functional lines lies in its facilitation of decisional process" (p.197).

Functionalization further refines the results to be achieved by administrators at each level of the organization. It involves expansion of the ultimate organization goal into a hierarchy of subsidiary objectives assigned to

organizational units. Functionalization results in a hierarchy of functions and objectives and, hence the development of a bureaucracy. Weber (1922/1978) comments that efficiency is one of the goals and results of bureaucracies. Hierarchical arrangements of functions form a means-end chain where the upper level means form the ends for the next lower level of the organization. If subunit objectives are well defined and directed toward well-defined organization goals, subunit decision-making is simplified.

Effective functionalization also dictates that the organization's technology must be conducive to organization subdivision. Each subdivision must be oriented toward only one of the subsidiary objectives. "If the functionalization is unrealistic - if it does not fit the technological picture - then functionalization may lead to deterioration in the quality of decisions" (Simon, 1976, p.191). This means that decisions will be incorrect, or not as correct as they could be. That is, decisions, to some degree, will not be related to maximization of organization goals.

Subunit objectives become mutually exclusive focuses of effort. Subunit identification surfaces and competition between subunits develops. This process has become known as suboptimization.

Efficiency is implied in all aspects of rational behavior. Efficiency is also a value criterion. This is because the organization, as a system, seeks to maintain at least an equilibrium between input and output. Remember the

social science premise that output can exceed input. Its importance is therefore relative. If maximization is the value, efficiency is most important. If equilibrium is the value, efficiency may still be important, but it leaves the option for mediating criteria to supersede efficiency.

Hierarchy of ends with subunits focusing on only one functionalized objective causes subunits at the same level in the organization to lack integration and coordination. These aspects occur at the next higher level. The organization limits its members attention to the task assigned. Also, since focus is on different objectives at a given level, rationality is limited to only those alternatives that fall within the domain of the subunit administrator.

Even if communication channels are operating effectively between subunits at the same level, there is no incentive for subunit directors to expand rationality at their level. They "need not give particular concern to the ... operative functions, which are equally vital to the accomplishment of the organization's task" (p.102). Some other rational criterion is required to affect integration and coordination.

Summary

Stillman (1991) describes Simon (1976) as an intense effort to eliminate values from serious analysis and discussion. Simon desired that administrative focus be on factual premises. The problem is that when facts become disconnected from values, ends have no meaning. They are

without purpose. Simon does not differentiate between purpose and process; there is no difference between the two as far as he is concerned. Methods are goals, and substance is lost. Efficiency alone is not an appropriate criterion for rational decision-making. The deduction-induction processes of the hermeneutic method dictates the rejection of the logical null hypothesis.

The deductive phase of the hermeneutic circle proposes that if positivism is correct and a true reality exists, then reality is governed by universal, immutable laws that can be discovered through objective observation. A portion of reality is administrative behavior.

If administrative behavior is a portion of reality consisting of discoverable universal and immutable laws exists, then, according to Simon, it would possess the features of a closed system. If administrative behavior resembles a closed system, then equilibrium is the objective of administrative behavior.

Equilibrium is the achievement of organization objectives. Organization objectives can be achieved through rational behavior. Again, according to Simon, the criterion for determining achievement of organization objectives is efficiency. If organizations are efficient, organization objectives will be achieved.

The case has been made that efficiency is an inappropriate criterion for the evaluation of public organizations. Therefore, through induction, efficiency is

not an appropriate criterion for determining the degree of goal accomplishment. Additionally, a closed system is an inappropriate model for administrative theory. Values cannot be separated from fact, and therefore, a true reality with universal laws does not exist. Positivism is rejected as an appropriate paradigm for the development of administrative theory. Since the logical nulls have been tested and rejected hermeneutically, it remains to validate the logical alternatives through a similar hermeneutic process.

This process begins with validating constructivism. Reality is a construct. Therefore, multiple realities exist. They can be described by race, gender, class, or any other imaginable construct. Public administration is tasked with the management of multiple realities. Public organizations are designed to create an environment based on a negotiated reality.

Each reality evaluates that environment against its own, and often unique, criterion. What is needed is a construct criterion that cuts across realities without requiring consensus of definition. This criterion determines the effectiveness of public organizations for each reality and has a measure of consistency across multiple realities. Quality is proposed as an appropriate criterion and is the subject of the next chapter.

CHAPTER FIVE

THE QUALITY ALTERNATIVE

A New Beginning

Another hermeneutic circle is proposed as a logical test of the alternative hypothesis. This circle will add to the previous one by further developing paradigms and systems theory in a different direction. The new direction leads to quality as an appropriate criterion for evaluating public organizations.

Cupello (1994) contends that the differentiating factor between successful and unsuccessful quality implementation is a function of the level of organizational maturity with regard to quality. This study contends that the level of maturity with respect to quality is a function of the degree to which an organization's latent thinking and conceptualization has advanced toward constructivism.

The implication of the previous paragraph is that quality can be judged using other paradigms. To some extent, this is true considering that quality is defined as having three features. Conformance to standards is a feature of quality that can be judged from a positivist perspective. A product or service meets the established standards or it does not. Empirical testing procedures are used to determine

whether a particular product or service meets specifications or the probability of defectives in a given lot or batch (Gitlow, et al., 1989). However, quality suffers somewhat under positivism because of the definition of conformance to standards. Crosby (1979) defines conformance to standards as meeting design specifications. This definition does not allow consideration relative the stakeholder's standards. Therefore, as long as a product or service conforms to the design standard, it has quality. Positivism tends to inhibit multiple perspectives because of a determinate reality.

Finding special cause variation and identifying remedies form the basis for the second feature of quality called continuous improvement. Deming (1986) defines special cause variation as variation attributable to a specific individual, group, or location within a system and not attributable to the system itself.

Finding special cause variation attributable to human behavior and values within a process calls for a more subjective approach and allows quality to be judged from postpositivist and criticalist perspectives. Subjective, qualitative methods are useful in explaining human values and behaviors (Mohr, 1992; Lincoln, 1990; Yin, 1989). This implies that subjective relationships proposed by postpositivism and criticalism are useful in determining what constructs such as stakeholder satisfaction really mean and how values mediate the determination of the standards to be used.

Deming (1986) contends that, while each feature offers some insight into quality, none are sufficient by themselves. All three must be integrated into a total package in order for quality to have a pervasive meaning and utility. Excluding constructivism, the paradigms discussed are limited in their ability to accomplish this integration.

Constructivism is capable of integrating the multiple perspective of quality into a coherent whole. This integration is important because, according to Deming (1993), Dobyns and Crawford-Mason (1991), Whiteley (1991), Scherkenbach (1991), and Walton (1986), organizations that have successfully implemented lasting quality programs have this integration in common.

Barker (1992) predicts that the focus on quality processes will be hailed as the most important paradigm shift to come out of the 20th century. But quality is not inherently a paradigm in itself. It is evidence of a new paradigm. The degree of success quality achieves is measured by the success of constructivism.

Deming (1993) contends that transformation is required if management (including public administration) is to advance. Transformation in this sense is not the transformation of criticalism, but transformation in the sense of a revolutionary paradigm shift. A working theory of knowledge provides the theoretical grounding designed to effect this transformation. A realist ontology is insufficient for the purpose of transformation.

As mentioned previously, public administration theory has been dominated by positivism. If the solution to Waldo's identity crisis and Ostrom's paradigm crisis is to be resolved, a theoretical revolution is necessary and desirable. This implies a revolutionary way of thinking. Bernstein calls this "the shift from a model of rationality that searches for determinate rules which can serve as necessary and sufficient conditions, to a model of practical rationality that emphasizes...judgmental interpretation" (Bernstein, 1983, p.57).

Reality is a construct, and constructs give meaning to reality. Constructs are contextual and form the basis for perspective. According to Anderson and Carter (1974), perspective determines what part of the context receives primary attention. Constructs determine how the context is interpreted and translated. This is an epistemological issue.

Epistemologically, relativism is the process for interpreting and translating context. Perceptions of reality are constructively formed in one's mind. Einstein (1961) demonstrates that perceptions of events are relative to the position of the observer. Because of one's position, culture and values influence interpretation, and translation is relative to the meanings attached to reality.

There is an implied interaction between constructs, perspectives, and reality that gives utility to relativism. Causation is determined relative to the perspective of the

observer at the moment of experience and interpretation. Ichheiser (1949) states "What we perceive, or overlook, in the field of our potential experience depends on the framework of concepts we have in our minds" (p.2).

When constructivism is accepted, theory, though still twice removed from realities, is capable of capturing and organizing their complexity, diversity, and interrelationships. Constructivism expands one's view of reality because it is able to accomodate multiple perspectives and theories. Because more theories are accomodated, more realities are available for study and more of each reality is visible. Thus the limits to rationality are expanded.

Simon's propositions are not surprising when considered in the context of global conditions at the time of his original work (1945). War had devastated Europe and Asia. The world needed goods, and America was in economic position to provide them. While quality was certainly a consideration, efficiency was the over-riding criteria. The advantage that efficiency offered in context was its determinate nature.

Efficiency is determinate under any realist paradigm. Efficiency could be predicted and controlled by manipulation of production functions (Simon, 1976, p.188). Governmental efficiency was no exception.

Constructivism, on the other hand, relies on the indeterminate nature of human reality for its grounding.

Interpretation is a creative process that gives meaning to experience. Interpretation occurs within context. For instance, a pleasant experience with a given stimulus is interpreted differently than an adverse experience with the same stimulus. Values and culture develop in this manner.

Constructivism implies that variation in human interpretation is equifinal. That is, interpretations of different stimuli can lead to a similar interpretation of reality. This is demonstrated by common cross-cultural taboos such as incest and institutional arrangements such as the family.

A construct allows consensus of meaning despite conflicting perception. For instance, the color, green, is a construct that provides consensus. In a natural sense, green is representative of a particular wavelength of light. Consensus provides that this particular wavelength is named green. There is no guarantee that each brain perceives green the same way. One person's perception of green might be another person's perception of red or white. This is the case for people who exhibit symptoms of color blindness.

In this manner, all of reality is constructive. Different realities emerge through interpretation of context and cannot be separated from it without loss of meaning. When reality is separated from context, culture shock results, and experience is reinterpreted to provide a modified reality.

As a construct, quality has no universally accepted definition that can be objectively measured. It exists relative to individual perceptions within the context of organized social systems. Quality is different things to different people. If one is dealing with a reality based on constructs, it makes sense that theory should also be based on constructs.

As was demonstrated earlier, most theories of public organizations and behavior are interpretations and translations using a closed system model. Constructivism permits the use of a system model that incorporates the complexity of multiple realities at the social organization level proposed by Boulding (1956). A closer inspection of systems, as constructs, in a social context is warranted.

Social and Administrative Systems

Howard Polsky posed two aspects of systems theory as a metatheory: (1) theorizing about theories; and (2) as a model applicable to dynamic, patterned activity (Hearn, 1969, p.12). This study uses systems theory in both regards. The discussion of paradigms demonstrated the systematic nature of knowledge and theory through patterned interactions of ontological, epistemological, and methodological relationships inherent in the researcher.

In the second sense, Bailey (1980) says that systems theory "is really a misnomer. It really is a complicated and elaborate metaphor for describing what seems to be an

inevitable way of thinking" (p.73). If the metaphor fits with the reciprocity of persons, organizations, and the environment, it has utility. If it explains related patterns and interactions that result in behavior, then it useful for social applications.

Boulding (1956), Katz and Kahn (1966), and Anderson and Carter (1974) argue in favor of a systems approach for studying social and administrative arrangements. Hearn (1969) ascertains the adequacy of a systems approach relative to administrative work. He states:

> The general systems approach...is based upon the assumption that matter, in all its forms, living and non-living, can be regarded as systems and that systems, as systems, have certain discrete properties that are capable of being studied. Individuals, small groups,...and other complex human organizations...can all be regarded as systems, with certain common properties. If nothing else, this should provide social [and administrative] education [and practice] with a means of organizing the human behavior and social environment aspects...But beyond this, if the general systems approach could be used to order knowledge about the entities with which we work, perhaps it could also be used as the means of developing a fundamental conception of the social [and administrative] work process itself.
>
> (Hearn, 1969, p.2)

A social systems approach, then, is derived from the more general systems approach, and complexity is an additional differentiating factor.

System complexity has long been recognized; however, the linear models of the realists were incapable of capturing and explaining complexity. Waldo (1980) states "no prediction about our social life seems more certain than that complexity will increase and change will quicken" (p.146).

Kiel (1994) argues that simple linear models are misleading because they ignore complex relationships. Complex systems are naturally dynamic. The mathematics of chaos theory confirm that dynamic systems rely on variation, disorder, and instability to metamorphose and generate more complex forms of organization and process.

Realism restricts system analysis to the closed, linear model. Mathematics of general linear models and simultaneous efficiency equations fail to capture and interpret the complex dynamics of social systems. Reality is just not determinate. Therefore, paradigms based in a realist or modified realist ontology are inadequate for conceptualization of complex administrative systems. The following arguments support the claim that constructivism overcomes this limitation.

Keil (1993) contends that public administration has failed to capture the dynamics of administrative systems. Multiple realities create the complex dynamics of social and administrative systems. Using nonlinear mathematics such as

differential equations, one can capture the latent, implicate order of chaos and explicate patterns that can be interpreted and translated into useful knowledge. Keil (1994; 1993) argues that public administration's reliance on linear modeling lacks the sophistication necessary for a deeper, clearer understanding of complex systems.

Constructivism provides a three dimensional integration of paradigms and systems relative to continuums of level (Boulding, 1956), openness (Katz and Kahn, 1966), and dynamic complexity (Kheil, 1994). This integration proposes that constructivism offers a greater potential for understanding the complex dynamics of open systems at the social organizations level than positivism or a critical realist based ontology restricted to the lower ends of these three continuums. The following section discusses the importance of a social system as a construct for understanding public organizations.

> Olsen (1968) best describes a social system as: the most widely used analytical model...a social system can be thought of as a special case of a more general system model. A social system is not, however, a particular kind of social organization. It is an analytical model that can be applied to any instance of the process of social organization from families to nations...Nor is the social system model a substantive theory...This model is a highly general, content-free conceptual framework within which any

> number of different substantive theories of social organization can be constructed. (p.228)

A social system model is not descriptive of realities. It merely provides a way of identifying common relationships found in organizational phenomena. A social system is a construct that gives researchers a basis for interpretation and translation.

A social system is a special order of systems (Boulding, 1956; Anderson and Carter, 1974). Persons, groups of persons, or organizations are included. Units of the social system interact and mutually influence the behavior of others, providing two levels for analysis.

At the atomistic level, the unit of analysis is the behavior of the individual. Weber (1922/1978), Barnard (1938), and Simon (1976) hold to this level. Behavior patterns are stimulated by input-output analyses of the closed system. The degree of dynamic complexity is reduced.

It is at this atomistic level that the utility positivism was proposed. Buckley (1967) defines an atomistic system as "a complex of elements or components directly or indirectly related in a causal network, such that each component is related to at least some others in a more or less stable way within a particular period of time" (p.41). Lack of dynamic complexity allows the potential existence of linear causal relationships typical of positivism.

At the holistic level of analysis, all of society is the primary focus. Parsons (1956) contends that the needs and

goals of the total system determine the behavior of organizations. Therefore, in order to learn about a single organization, the system that contains all organizations must be studied at a macro level. The magnitude of comlexity of such a task should not be lost.

Society is a system of systems. Causal relationships are often indistinct and unclear. Causation is not restricted to one direction. X can cause Y, and Y can cause X. This implies that complex dynamics occur within the total system that cannot be explained by simple linear causal relationships because these dynamics are indeterminate. Path analysis, simultaneous equations, and differential equations address complex dynamics.

At issue between the atomistic and holistic levels is whether or not, as Churchman (1968) contends, that "once individual and social behavior have been examined in detail, then one can discover in the operation of behavior the nature of the whole human system" (p.200). This cannot be so if one accepts constructivism, since there are multiple realities that can never be known entirely. This implies multiple interacting human systems.

Koestler (1967) holds that an entity is simultaneously a part and a whole. He coined the term "holon" to express his idea of a focal system. Systems that are interacting parts integrated into larger more complex interacting systems explain the lack of utility of simple, closed system approaches. Seeger (1992) believes that the deterministic

framework and the adaptive, equilibrium-based closed system seeking incremental change limits administrators' ability to see all the dynamics and potential of organizations.

Both atomistic and holistic approaches are deterministic if positivist principles are applied to the use of a holon. Von Bertalanffy (1967, p.93) anticipates constructivism by describing a stance that is contextual, interactional, pluralistic, and perspectivistic. The implication of dynamic complexity is evident throughout and is consistent with constructivism.

Dynamic complexity generates from interaction with the environment. Social systems are differentiated by their relationship with the environment. Administrative systems are a special order of social system. Whereas most social systems attempt to adapt to changes in the environment, administrative systems have a designed purpose intended to modify the environment. This does not exempt the administrative organization from responding to demands made upon it by the environment.

If the environment is constantly changing, then organizations must also change. Boulding (1964) noted, adaptive, closed systems models are a search for order. Those that promote the closed systems model seek to find that order in stability and equilibrium.

Change and uncertainty describe a dynamic environment. It is inappropriate to study dynamic systems using a static ontology and methods. In order to remain effective,

administrative systems must continually change along with the environment. The evidence is that public organizations are not responding to change.

Jantsch (1980) maintains that dynamic systems possess the internal capacity for continued renewal. Administrative organizations capable of self-organizing into new forms of order and processes can adjust to new levels of equilibrium in changing environments.

The process of self-renewal is termed autopoiesis by Maturana and Varela (1980). They argue that a living system attempts to maintain itself through circular patterns of interaction with the environment that are always self-referential. An organization becomes a reflection of its environment.

A system, as a constructive model, implies that the environment is a supra-system. Figure 6 is a possible conceptualization of an administrative holon interacting with the environment. As can be seen from Figure 6, the potential interactions of the holon and the supra-system are virtually limitless, increasing complexity by orders of magnitude.

It should be considered that Figure 6 does not include the indirect interactions between environmental systems that eventually affect the administrative holon. These serve to increase the complexity and dynamics even further.

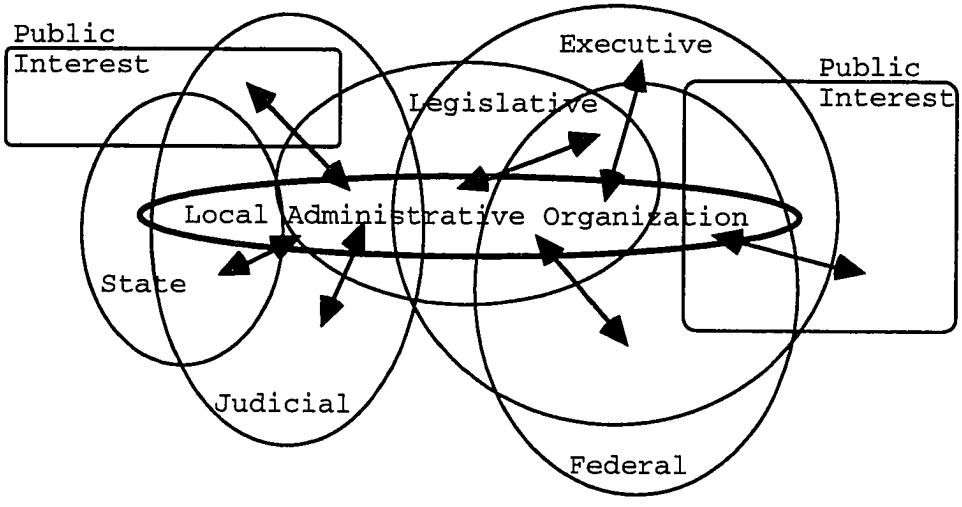
The interaction of systems creates the dynamics of complexity and change. The dynamics of these environmental interactions are also limitless, and nonlinear.

Constructivism allows for bi-directional causation. The construct of environment creates a perceived undesirable stimulus that causes the creation of construct administrative systems. The design purpose of administrative systems is to alter the environmental construct by eliminating the undesirable stimulus.

FIGURE 6

DIAGRAMS OF AN ADMINISTRATIVE HOLON

AND THE ENVIRONMENT SYSTEMS



Prigogine and Allen (1982) insist that an administrative organization, as a holon, thrives in a state of internal dynamic instability. An administrative organization is successful to the extent that its dynamic instability allows it to alter basic structures and processes as it copes with environmental change. A fundamental aspect of change is the alteration of patterned energy exchange.

Energy

The basic element or dynamic property of interest related to systematic thought is energy. At an elemental level, energy is stable and predictable. It is manifest in the behavior of an electron around the nucleus of an atom. Depending upon the polarity of the system, energy exhibits behavior. If the polarity of the system is in equilibrium, energy patterns are constant, and energy cannot be shared. The element is said to be inert. Behavior of the element is constant. At the systems level, an atom is a framework.

When there is a variation in polarity, energy has potential for being shared. It can be transferred across elements to form molecules. Electrons have valence. Valence is the relative capacity to interact depending upon the polarity of the system. Potential energy levels increase as distance from the center of polarity increases. As electrons move farther away from the center of polarity of one system, they move closer to the center of polarity of another. Valence increases. The more complex the system, the closer two polarities come. As valence increases, more opportunities exist for energy exchange.

At the molecular level, electrons are shared between atoms. Energy is transferred between atoms providing a multi-systematic coherence. Behavior is still predictable, but it is no longer constant. Constancy is relative. The more complex the system, the less predictable energy patterns become and the potential for instability increases.

The general nature of energy is still known, but its exact nature becomes elusive. The same can be said for behavior patterns that represent patterns of energy exchange.

At the systems level, the use of energy is construct since it is unobservable and its presence is inferred from the effects upon the system and its parts. Its use is also analog since the extent of its presence is continuously variable and consistent within the construct of a complex system.

Energy is dynamic. It flows. According to May (1969), dynamic movement of energy is the result of realities having the "ontological characteristic of negative-positive polarity...[It] has become important to see [realities] not as consisting of substances in a fixed state but as...[processes] of dynamic movement between polarities" (p.112). The energy from these dynamic processes are not directly observable, but inferred. They are explicated in the existence of patterns of behavior. Behavior is the manifestation of energy transfer within and between administrative systems.

Individual behavior patterns differ, depending on the construct reality of that individual. Their exact nature is elusive. However, within a particular system, the general nature of behavior patterns can be known. Systematic similarities emerge and demonstrate stability. Behavior patterns in administrative systems can be constructively viewed as behavior sets. These behavior sets have similar

identifiable properties. Behavior sets are identified by constructs such as university professor, policeman, fireman, or administrator.

Identification of a behavior set is relative to the polarity of the holon having the greatest influence at a specific time. Holons exert varying polarity forces on the individual. The higher the energy level, the more behavior is able to drift. As one holon attracts an individual closes, behavior becomes unstable, transforms, and becomes identifiable with another set associated with the new holon.

A positivist ontology views systems as fixed regions in space-time (Miller, 1955). Administrative systems are bounded, and emphasis is directed toward energy use within the system. This bounded view of administrative system energy considers an individual, at any one time, as a part of one system only. Flow of energy is between only one negative-positive polarity at a time. In this is an atomistic view, authority and communication are used to maintain the single polarity and prevent the behavioral set from drifting. When energy is directed toward production, efficiency is used to measure the effectiveness of energy transfers.

An individual identifies with a single system at any given time because it is that system that provides rewards and sanctions. Energy exchanges result in behavior sets that optimize that particular system to which an individual belongs.

Positivist rationality implies that administrative organizations are made up of multiple closed systems. Each closed system is conceived to efficiently perform some organizational function. Administrators believe that efficiency within their closed system contributes to the goal of the larger organization, and it does. However, the distinction between purpose and process is lost.

Simon (1976, p.32) contends that there is "no essential difference between a purpose and a process." In a means-end hierarchy, efficiency of the closed system is the goal. Suboptimization results. It appears inevitable if economy of production is the goal of the broader organization. The greater the extent that attainment of the organizational goal relates to efficiency, and the greater the individual identifies with that closed system, then the greater manipulation of energy patterns will occur to demonstrate success under an efficiency model.

The circular depiction of systems in Figure 6 is meant to illustrate the cyclical character of patterns of energy exchanges (Katz and Kahn, 1966) across multiple systems. The energy construct has consistent utility across multiple realities.

Constructivism allows an individual to be a part of multiple systems simultaneously. Systems are not bound to single polarities. The unstable nature of behavior sets is recognized as an advantage. If a transformation is between systems of conflicting behavior sets, disruption occurs in

one or more of the systems. The system experiences shock. However, if there are sufficient tolerances in the systems, behavior sets are accommodated, and mutually beneficial energy exchanges occur.

As individual behavior transforms between sets, additional knowledge, information, and skills are transferred between systems. Rationality is expanded. Authority and communication are not used to control behavior sets, but to align behavior sets across systems and utilize the beneficial results of behavior exchanges. Energy, and hence behavior, is directed toward optimization of the holon of choice.

Constructivist administrators understand and attempt to deal with multiple, indeterminate realities and the complexity of administrative situations. They recognize that their system interacts with others within the organization and those outside it. Constructive administrators realize that people bring energy in the form of behavior patterns into the administrative system and transfer energy when they move to another system. To accomplish the design purpose, the administrator must develop a behavior set within his system that is compatible with the others. Energy transfer between systems becomes less disruptive.

Effectiveness of the administrative system can be focused toward a more useful measure consistent with the design purpose of the organization without sacrificing efficiency. Quality is a constructivist alternative to positivist efficiency as the most useful criterion of

rationality, and properly used, quality ensures efficiency while achieving organizational effectiveness.

The Quality Construct

Quality in government and public administration is valued and desired. Numerous attempts to implement quality programs in public organizations appear in the professional journals (Rago, 1994; Boman, 1994; Milakovich, 1991). Not all are successful (Wilson and Durant, 1994).

Quality programs have had their own problems. In the private sector, 16% of Chief Executive Officers subscribing to Electronic Business reported an improvement in market share as a result of quality efforts, and 13% reported improved operating income or profits (Boyette, 1992). There is no way to determine if these reported percentages are good or bad, but they seem to be lower than expected when compared to quality programs in other countries.(Fuchsberg, 1992).

Fuchsberg (1992) contends that lasting and meaningful levels of quality-boosting practices have not been forthcoming. These apparent failures to successfully implement quality programs may be artifacts of positivism.

Deming (1993) proposes a systematic philosophy of quality that includes knowledge, systems, psychology, and variation. Variation, according to Deming, can be controlled using empirical methods. These methods have great appeal to positivists. Organizations have adopted statistical process control methods to satisfy a narrow positivist definition of

quality as conformance to specifications (Fuchsberg, 1992). Alexander Hiam states, "You need to embrace the whole constellation of practices or none at all" (Fuchsberg, 1992, p.B9).

Guba (1990) discusses the ramifications of positivism and concludes that an observable reality reveals itself and its processes. Principles that govern these processes can be discovered and used. Quality is given concrete definitions by Crosby (1979) and Juran (1989), and quality programs have been developed in positivist fashion as steps (Crosby, 1979; Juran, 1989), principles, or points (Deming, 1986).

Lasting quality improvements seem illusive in view of the pervasive support for quality programs (Fuchsberg, 1992). Results are a long time in coming (Deming, 1986; Fuchsberg, 1992), and most give up trying to implement quality programs (Fuchsberg, 1992). Deming (1993, p.94-118) implies that implementation of quality programs transcends positivism in his proposal of a "system of profound knowledge." His system of profound knowledge implies an integration of a system of knowledge and knowledge of systems, variation, and psychology. It is naive to think that the application of points, steps or principles alone will always result in success.

Quality as a positivist concept in public organizations must coexist in a reality that already confirms hierarchical control, efficiency and accountability to the exclusion of other processes and structures that might also provide these

features. Quality, as a construct of a determinate reality, seems to defy positivism in these regards.

However, the National Security and International Affairs Division of the U.S. Government Accounting Office reported improved quality, customer satisfaction, employee relations, market share, and profitability among private sector firms scoring high on their Malcom Baldridge National Quality Award applications. The quality paradox implies a paradigm crisis.

The crisis of identity in public administration and the lack of a dominant underlying paradigm would seem to be the result of a lack of quality within the dominion of public administration. This lack of satisfaction with the quality of public administration in general, and health care, education, law enforcement and government services specifically, dominates the news media and public administration theory (Barzelay, 1992).

Economy of production and the inevitable suboptimization are transferred to the public sector. The goals of public organizations can be interpreted as increasing the number of college graduates, increasing the number of healthy people, or reducing the number of incidences of crime.

The intent is economic production of public goods and services. The implied assumption is that increased production of something desirable has a positive impact on the environment. The assumption fails to consider the potential negative impacts. Specifically, it fails to

consider if the product produced is the product needed or desired.

Constructively, the real goal is the transformation of the environment. As a crisis of identity or paradigm problem, current theory appears to be attempting to achieve a constructivist solution within a positivist paradigm.

In the private sector, quality applications involve customer satisfaction. For public administration, the "customer" is difficult to define. A customer is more than the person receiving an agency output. A customer is more than just a legislative body that provides purpose and direction. A customer is more than just a taxpayer providing fiscal input. All are "customers" of public agencies. For this reason, "citizen" is a better term than customer.

Each citizen has a perception of the organization and its purpose. To accommodate all citizens, a different view of public organizations is required. This view is provided using systems theory within a constructivist paradigm.

When quality is used constructively, it no longer matters that purpose is indistinguishable from process. As a process, quality is even more constructive. Relevant to quality as a process are the constructs of satisfaction, behavior, variation, equity, and leadership. All administrative system energy is expended toward the desired end result, the transformation of the environment.

The problem of implementing quality is, therefore, also a paradigmatic problem. Most implementations of quality

programs reflect the positivist paradigm. Quality is tied to efficiency and costs of production. There is an implied cost attached to quality.

Quality costs are a subset of variable costs. Broken into four categories, quality costs are: (1) prevention costs (PC) if they are associated with deterring the production of a bad product or service; (2) inspection costs (IC) if they are associated with detecting defects of errors; (3) internal quality costs (IQC) if they are associated with repairing, replacing, or disposing of defects or errors prior to receipt by customer; and (4) external quality costs (EQC) if they are associated with repair or replacement of product or service after receipt by customer.

Crosby (1979) envisions the possibility of eliminating defects and errors entirely. Quality is free because people can overcome defects. This implies that people are totally responsible for errors. When people overcome error, quality costs diminish. When errors and defects are zero, the cost of quality is zero. The definition of quality implied by Crosby is the absense of defects. Typical of the frameworks level, this model doesn't acknowledge variation inherent in a complex system. Using probability sampling and the techniques of statistical process control, a certain percentage of products or service will fall beyond control limits simply due to chance. Defects occur due to variation in the system and are not attributable to human error. Juran

(1988) contends that the system is responsible for 80% of defects.

Feigenbaum (1990), Juran (1988), and others recognized the inherent variation of systems. This led them to develop statistical methods to control variation and its associated costs. This implied an optimal level of quality. Feigenbaum and Juran's propose that an optimal level of quality exits at the point where total quality costs are minimized. Again, this is a reflection of positivism and efficiency.
This closed system model attributes error and defects to both system and operator, 80% and 20% respectively.

Control and prediction of administrative behavior is the goal of positivism. Efficiency, as the criterion for behavior choice, measures the success of administrative organizations relative to the achievement of control. If control is achieved, prediction can take place. Control is synonymous to stability or equilibrium. Shocks to the system dampen if the system is controlled.

In complex government systems, control fails to bring about desired results. Landau and Stout (1979) recognized the problems of complexity and uncertainty as instrumental to the failure of management control in government. Management attempts to limit and control complexity and uncertainty with new constraints and specialization.

Specialization and work rules are deterministic systems designed to constrain the field of action and eliminate variation. Kiel (1994, p.127) contends that management, by

constraining the field of action, limits learning and precludes adoption of improvements. He states "Public managers must see variation in systems not as a threat but as a potential source for positive change" (p.125).

Constructivism views shocks to the system as energy transfers across realities. Behavioral energy within a reality flows across multiple realities. Instability is the natural result of differences in translation and interpretation. Instability is manifested in variation.

Kiel (1994) proposes that variation in systems provides a level of freedom of action. Constructivism makes use of that freedom to release potential energy for beneficial use. The essential difference between positivism and constructivism relates to behavior in this context. Variation in behavior cannot be eliminated, and at times, it cannot be controlled due to interacting administrative systems. Quality makes use of variation under constructivism.

Deming (1986) links quality to continuous improvement. This linkage takes advantage of inherent variation. A system is stable within limits. A behavioral shock to the system drives it beyond the limits, signaling the potential need for change and providing clues to the type of change required.

Individuals and organizations learn from these unstable energy exchanges. Detrimental exchanges are terminated, and the system returns to the original limits. Beneficial exchanges redefine the process and it adjusts to new stable

limits or patterns. Continued improvement through advantageous use of variation improves efficiency while effectively progressing toward accomplishment of the organization's designed purpose.

Constructivism and Quality

Quality and efficiency are constructs. They have different meanings across realities. Because of this, achieving quality is not simple. It is extremely difficult. Constructivism excludes any universal principles or systematic application of procedures and techniques. There is no guarantee of success implied.

Constructivism can use advanced quantitative and qualitative methods, but there is no substitute for the common sense of contextual hermeneutics and dialectics. Rationality must be judged from the perspectives present in multiple realities.

Rationality is concerned with achieving public organization goals across these realities. Rationality dictates using the criterion for choice that has the greatest potential for organization effectiveness.

Optimization of the organization may require that reduced variation in individual behavior be given greater attention that efficient use of resources in certain situations. For instance, using quality as the criterion for rationality could dictate that individual training to improve worker knowledge and job skills or reducing the threat of

unemployment were more important than meeting or exceeding production and service goals.

Whereas efficiency tends to focus on doing things right, effectiveness focuses on doing the right thing. This is synomous to the fact-value dichotomy proposed by Simon (1976). To the extent that facts can be ascertained, efficiency plays an important role. Because efficiency, as Simon proposed, doesn't discriminate between values, effectiveness must be considered relative to efficiency. It is possible to be efficienct without being effective, and it is possible to be effective without being efficient. Quality ascribes to be both efficient and effective with effectiveness having the greater emphasis.

To take advantage of learning brought about through variation requires transformation of potential energy into kinetic energy. For behavior to be kinetic, empowerment must occur. Expanding the knowledge and skill base of the worker is a prerequisite for empowerment.

Empowerment, based on knowledge, skill and trust, expands the bounds of rationality. Bringing more knowledge, skill, experience and perspectives into the decision process increases the available information relative to the decision in question. The likelihood of making the best, or at least a better, decision is increased. This is more desirable than merely "satisficing." Short-term gains in efficiency at the expense of citizen satisfaction are exchanged for long-term gains in quality, efficiency and satisfied citizens.

The focus of quality efforts is citizen satisfaction by providing quality products and service. A differentiation in product quality and service quality exists. A defective product can be returned in the private sector. Not so with defective public service. It can only be modified and redelivered at potentially great cost to all realities.

Completing the Hermeneutic Circle

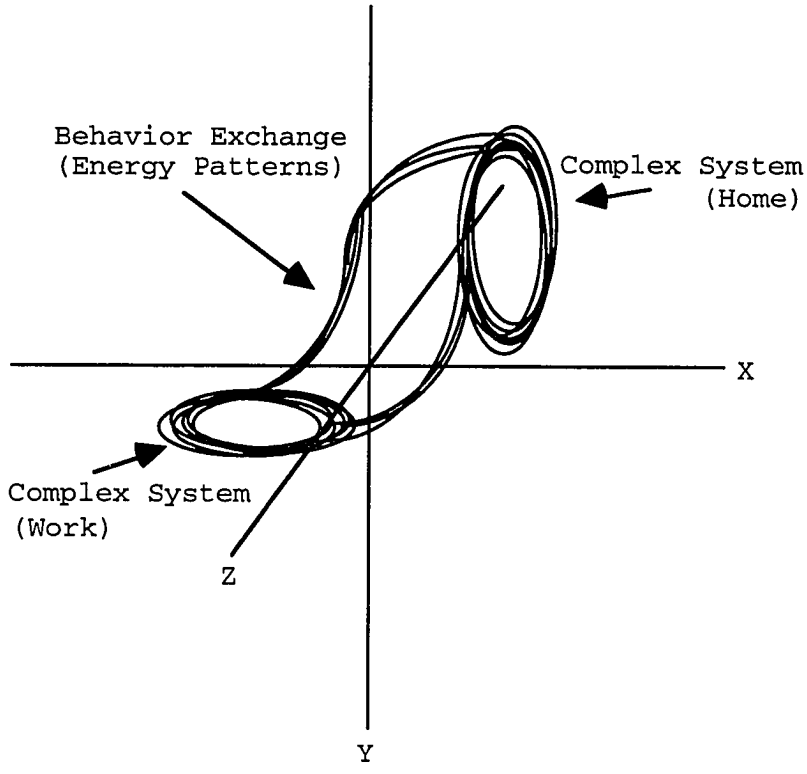
To complete the deductive phase of this second hermeneutic circle requires the demonstration of successful quality implementations. The difficulty of implementing quality in the private sector is minute when compared to the public sector. Private sector behavior sets undergo fewer valence experiences. The ones they do undergo are relatively similar, reducing uncertainty and aiding prediction.

A constructive model of administrative behavior using quality as the criterion for rationality recognizes the complexity of administrative systems. Interaction between systems is a key feature because energy transfer between systems is explicated in patterns of behavior. Quality provides the criterion for ensuring consistent behavior across systems. Figure 7 simplifies the constructive model using just two possible behavior systems. The three axes, X, Y, and Z, are meant to illustrate the complexity of even simple systems and give a three dimensional perspective to the figure. Using a simple example of an individual's

behavior at home and at work, one can see how energy is transfered between, and affects, two complex systems.

FIGURE 7

CONSTRUCTIVE MODEL OF ADMINISTRATIVE BEHAVIOR



Problems at home can affect behavior patterns at work and vice versa.

Swiss contends that total quality management (TQM) is "strikingly ill suited to the government environment" (p.358).[10] Swiss's analysis of the problems of TQM in the government environment emphasize the need for modification of

[10] Total quality management is the name often given to Demming procedures for continuous quality improvement.

TQM theory and concepts if it is to be useful. Daley (1994) contends that TQM discards important management methods that have proven their worth. He considers quality programs as extensions of positivism by describing quality principles as similar to the behavior aspects presented by Taylor, Fayol, and Gulick.

Rago (1994) counters Swiss's argument in his analysis, contending that the significant problems involved with the implementation of TQM into the public sector have less to do with the applicability of the central concepts of TQM. The real problems are the government environment with its political culture and the unmet needs of an unlimited supply of customers. Bowman (1994) discounts Daley's arguments by implying that many management methods perceived as causal of behavior never really work, are only relevant in an outmoded paradigm, and are now undesirable.

There have been few successes of quality implementations in the public sector that were organizationally pervasive; however, an example from each level - federal, state, and local - will be offered to demonstrate the rationality of quality. Regardless of the researchers' original intent and operating paradigm, these examples are examined hermeneutically to illustrate the application of constructivism and quality. Taking the local level example first, Perlmutter and Cnaan (1995) offer a large urban case involving the Department of Recreation in the city of Philadelphia.

The authors' analysis of the Department of Recreation in the city of Philadelphia reveals the efficacy of public-private partnerships. They conclude that because of its success "the quest for private donations is the trend that will characterize many successful local governments in the years to come" (Perlmutter and Cnaan, 1992, p.35). While the approach to raising revenue achieved its goals, the authors pose several questions that warrant additional critical examination.

Perlmutter and Cnaan (1995) have taken a positivist approach. They objectively examined a specific example, noted the results, and generalized them to public administration at large. The results of their methodology are purely descriptive. Had they taken a constructivist approach and used a complex administrative system model with quality as the evaluative criterion, they would be able to show how the success was achieved and could answer some of their own questions. For example, conformance to standards is supported, as well as continuous improvement, by maintenance of grounds and equipment and consideration of the very young and the very old in the improvement of facilities. Two of the three quality features are thus addressed. They question whether equitable distribution occurs and have made no attempt to solicit input from stakeholders regarding their level of satisfaction. Nor is the question of private donor influence over government and the provision of equity addressed.

The evidence in favor of constructivism is provided. Private support for public services implies interacting, multiple realities. Public-private cooperation is mutually beneficial according to Osborne and Gaebler (1992). They contend that private business is able to increase profit and expand products and services, and Bendick (1989) contends that government benefits by reducing responsibility for the provision of goods and services in a process called load sheeding, allowing the reduction of taxes or freeing funds for other uses.

Instability inherent in complex interacting systems reflects energy exchange. The department administrator apparently recognized this feature because he allowed subordinates to behave freely across system boundaries. E.J. Fagan, one such subordinate, was given the freedom to explore possibilities outside the existing rules and procedures. New behavior patterns were learned, shared, and incorporated within the administrative processes. Improvements to the process were continuous, meeting one aspect of quality.

Quality, disguised as efficiency, was the rational criterion of choice for the commissioner. He was committed to the improved provision and expansion of a quality recreation service from the standpoint of maximization. To be certain, he included representative portions of the citizenry. He also took steps to ensure continued improvement over the long term.

It can be argued that the success of the public-private venture described in the Perlmutter and Cnaan study was not a result of entrepreneurship. Organization effectiveness in achieving designed purposes resulted from an accidental constructivist application of systems theory with behavior choice rationalized by the criterion of quality. It may be that constructivism and quality provide the grounding for successful entrepreneurship.

Because the department was receptive to the study, it is assumed that it was interested in the potential controversies their approach was likely to engender. The questions asked reflect the linearity of positivism. That is, given X, what is the probability of Y? The positivist solution is to wait and see, then make adjustments as necessary. The questions reflect a failure to consider the potential interactions of complex systems.

The constructivist approach would be more proactive. The complexities of interacting realities are studied, behavioral transfers are allowed to occur, and the patterns of energy exchange are analyzed. From this, steps are taken to prevent undesirable behavior choices by utilizing quality as the criterion for choice. Behaviors are relatively consistent between systems, are more stable, and more effective. Continued effectiveness of the department is questionable because of the positivist approach taken in this example.

Rago (1994) provides a state level example in his analysis of the Texas Department of Mental Health and Mental Retardation (TDMHMR). His conclusion is that implementation of quality programs in government must be modified from those in business. This is consistent with constructivism's claim that universal rules of nature do not exist.

Evidence is provided to demonstrate the rationality of quality as the criterion of effectiveness. Rago states:

> The point is that customers of a department within the organization do not have to receive perfect service in order to recognize and appreciate improved service. They just have to experience the relative improvement in service quality that can accompany the implementation of TQM. (1994, p.62)

Effectiveness is achieved through policy deployment (Imai, 1986; Juran, 1988; Berry, 1991) by integrating quality as the rational criterion for behavior choice. This is implied rather than stated. This ensures that the goals of the organization are not displaced, and it coordinates the activities of the entire organization.

A complex administrative system model is appropriate when one realizes that the TDMHMR is composed of 62 geographically separate components headed by 62 politically motivated and driven chief executive officers. This implies multiple realities, as does the citizenry and clientele.

Continued success of the TDMHMR is dependent upon the extent that constructivism is the underlying paradigm. Each

of the 62 components represents a potentially distinct reality. If positivism prevails, the success of one component could become the failure of another. This would lead to the perceived dysfunction of quality as a criterion and abandonment of the quality program. The implication of Rago's study is that improvements to organizational processes are not necessarily hierarchically determined in positivist fashion, but may originate at any point in the system of energy exchange, supporting the constructivist conceptualization of complex systems.

The last example is at the federal level and involves the Internal Revenue Service (IRS). Mani (1995) discusses the IRS crisis that began in 1986 because of citizen dissatisfaction over excessive errors. The errors were largely due to conversion to a new computer system at 10 large service centers. Quality was subsequently defined as improvement of IRS processes related to providing accurate information to citizens, ease of filing returns, and faster rate of processing returns.

Using the IRS as the holon of choice, the complexity of interacting systems is evident. The political system interacting with the IRS resulted in the initial decision to implement a system wide quality program. The IRS interacting with the citizenry at large determined the operationalization of quality.

Within the holon, upper management identified the system processes that required change and developed a subsystem to

demonstrate commitment and potential success. All IRS employees received training in systems and processes. They were empowered to make decisions that would improve a process. The interactive nature of complex systems was recognized and steps were taken to utilize knowledge gained from behavioral interactions between systems. The IRS responded to citizen demand, improved the quality of their services, and became more efficient in the process, saving millions of dollars.

The evidence of a constructivist approach is overwhelming in the IRS example, though probably more by accident than design. The potential for long term improvement exists and these improvements are forthcoming. The TDMHMR is an example of success that may be fleeting. There is an implied search for quality principles that can be used to make processes similar across components. It's not the processes that require similarity, but results. Similarity of results are possible using quality, not efficiency.

The effectiveness and utility of the constructive model using quality as the criterion for rationality has been demonstrated. Linear relationships do not exist outside the confines of closed systems. It should be obvious that administrative systems are complex and interacting. Constructivism offers the conceptual freedom necessary to assimilate the dynamics of multiple realities and make useful

sense of behavior. The second hermeneutic circle is complete.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary and Conclusions

This study begins by accepting the premise of Waldo (1968b) and Ostrom (1989) that a paradigm crisis exists in public administration. By accepting this premise, one acknowledges the assumption of the relative ineffectiveness of public organizations in achieving their designed purposes, because a paradigm crisis implies a theory crisis, and therefore a practical crisis. Osborne and Gaebler (1992) and Barzelay (1992) document the perception of ineffectiveness on the part of public organizations and also conclude that the cause resides in an outdated paradigm.

It is logical to assume that if a paradigm crisis actually exists, as these authors propose, then current public administration theory is ineffectual. Explication results from the demonstration of ineffectual public organizations. If public organizations are effective, then theory is relevant, and a paradigm crisis does not exist.

Kuhn (1970) explains the conditions that bring about a paradigm crisis and scientific revolution that results in the adoption of a new paradigm. This study demonstrates that these same processes are evident in the field of public

administration. In public administration, normal science fails to adequately provide the theory and tools for managing and leading effective organizations. The discipline is experiencing the effects of a period of extraordinary science with the proliferation of recent theoretical proposals by Deming (1986), Ostrom (1989), Barzelay (1992), Kiel (1994), and others.

The current positivist paradigm pervades public administration since Simon (1945/1976), and only recently have trends toward postpositivism emerged (Cook, 1994; O'Toole, 1995; Harmon, 1995). O'Toole argues that epistemological and methodological issues presented by White and Adams (1994) provide the "critical mass necessary to advance further the discourse and dialogue" (White and Adams, 1994, p. xiv) of the discipline. It appears that the proponents of new paradigms overlook the ontological groundings represented by paradigms (O'Toole, 1995).

Guba (1990) differentiates paradigms on ontological grounds as well as epistemology and methodology. Ontology refers to the relationship between reality and the observer. Positivism assums a determinate reality exists that can be observed independently of mitigating values. Reality possesses a linear order that can be discovered and used for prediction and control. This ontology is called realism.

The allure of positivism is obvious. Using the assumption of positivism, one can know that a particular set of conditions, A, causes another set of conditions, B. If

set B represents a desirable set of conditions, one merely has to provide an organization that creates set A. One knows that B will result. According to Simon (1945/1976), this is true; B is a foregone conclusion if A is in place. The only remaining task is to ensure that A is provided efficiently. Effectiveness and efficiency are synonomous under positivism.

Postpositivism and criticalism assume that this same reality exists, but values prevent observers from discovering the true linear order. According to Guba (1990), postpositivists and criticalists claim that reality can be closely approximated by methodological rigor, reintroduction of discovery, and subjecting work to critical review by the field.

Constructivism, on the other hand, asserts that the interrelationships between humans and the environment are infinitely varied and complex. Multiple realities exist as interpretations of interactions of complex systems. Constructs, which describe these interactions, are contextual. Reality has no linear order, but it is a product of human construction and bi-diectional, nonlinear order.

Reality and culture are the products of bi-directional events; X causes Y, and Y causes X. The construct of environment includes all known physical objects, phenomena, and interrelated processes. By themselves, they have no meaning.

An individual experiences an environmental phenomenon, initially without reference or fact, and gives it meaning.

In the absence of reference or fact, the individual makes a judgmental decision regarding the experience and the appropriate response. The initial assumptions are constructive and contextually related to experience.

These initial basic assumptions provide order to reality so that new experiences are relative to previous ones. Contradictions cause confusion and despair. Interpretation of new experience relative to previous ones assists assimilation. Once meaning is attached to a construct, it also becomes a part of the environment. Therefore, constructs have an environmental context.

As humans become organized, constructs come to represent shared meanings. As new events and phenomena are encountered, the experience must be shared and interpreted contextually with the first, providing a systematic nature to the environment, and therefore, reality. The organization begins to value certain experiences and phenomena relative to their assigned, shared meanings. Customs develop systematically and behavior is normalized. Reality creates culture in this manner.

As new members are socialized in the existing culture, reality is created for them. Also, because of the contextual nature of new experience, reality is culturally constructed.

Sathe (1983) and Schein (1985) contend that culture is concerned with the basic assumptions, values, and norms shared and taken for granted by organization members. Cummings and Huse (1989) contend that culture serves to guide

perception, thought, and action. Culture is a behavioral response to a constructed reality.

In one sense, culture and reality are interchangeable, since culture is an interpretation of reality. Multiple and diverse cultures are evidence of multiple and diverse realities. Cultures and realities are complex systems of behavior. "Administrative organizations are systems of cooperative behavior" (Simon, 1976, p.72). By deduction, administrative behavior is complex, systematic, and purposive while reflecting diverse realities.

Much of the problem of positivism, postpositivism, and criticalism is the failure to recognize the existence of these realities. Bemowski (1995), Lorenz (1983), and Jung (1968) hint at a possible reason. They discuss a learning process that develops into a cultural unconsciousness. A culture is sufficiently imprinted at an early stage that renders it unconscious. Because it is unconscious, perceptions of reality and resultant behaviors are largely predetermined. White, Protestant Americans have white Protestant American children and not black, Catholic French children or Jewish, German children. Other realities are unconsciously excluded from possibility.

With an unconscious culture and positivism, expedient patterns are discovered incrementally. Successes are repeated and rules of thumb emerge. Useem (1982) calls the dissociation of norms from specific situations a "classwide rationality." Cohen, March, and Olsen (1972) appropriately

refer to management functioning in such a manner as the "garbage can model."

The singular view of reality of positivism and its empirical monism pervades public administration. This view contributes to the perpetuation of principles and linear problem solving models. Even policy analysis, which purports to cavort with equity, succumbs to positivism when quantitative techniques are used to explicate social problems and alternatives (Quade, 1982). Public administration has accepted the possibility of multiple realities, but it has not acted with them in mind.

Realities, cultures, and behaviors are systematically complex. The traditional closed system approach is no longer viable. Even a conceptualization of open systems with semi-permeable boundaries appears obsolete. Truly open systems lack boundaries, and energy flows unrestricted between them. These systems are extremely susceptible to external stimuli and are stable only within limits. Persistent forces acting on these systems can alter them, bringing about new forms and new ways to interact. The conclusion to be drawn is the lack of constructive models, implying the need for public administration to develop constructive models that allow the field to capitalize on the advantages offered by these systems.

An understanding of public administration as complex systems offers the opportunity to overcome persistent problems. Weick (1979) states that "Problems persist because

managers (and theorists) continue to believe that there are such things as unidirectional causation, independent and dependent variables, origins, and terminations" (p.52). Astley and Van de Van (1983) continue by stating that:

> in efforts to identify ultimate causes and effects, the most interesting parts of...questions tend to be ignored - namely, an investigation of the process by which the loops in the circular relationships unfold. To say that A causes B and B causes A is predictive, but it is intellectually sterile until one can explain the processes by which the reciprocal relationship unfolds over time. (p.267)

A constructivist theory of complex behavior systems directs attention to the circular relationships.

Efficiency does not focus on circular behavioral relationships, implying that causation is unidirectional and leading to the persistence of problems. The goal of efficiency in administrative organizations is to reduce cost by controlling behavior. Constructivism requires that a rational construct transcend multiple realities. This study proposes quality as a constructive alternative to efficiency.

Quality as a rational criterion focuses behavior toward goal accomplishment. It explains the unfolding processes, and only then does it attempt to control by reducing variation in behavior. Quality recognizes the potential instability of complex systems and tries to assimilate and replicate beneficial behaviors. This is not accomplished

through the use of control but by recognizing the difference between a stable system and one that has become unstable.

Lastly, quality is responsive to the citizenry who define it. Constructively, quality is potentially unique for each situation. Universal principles do not exist. Constructivism is the paradigmatic realm of public administration. Systems theory is the metatheoretical framework for research. Quality is the rational criterion for behavioral choice. As Mani (1995) concludes, quality "reshapes various theories into one philosophy to which an entire organization commits" (p.157).

Implications for the Future of Public Administration

The paradigm crisis in American public administration seems to reinforce an observation made over a century and a half ago by Alexis de Tocqueville (1835/1945) that public administration in America is mostly temporal in nature, failing to make adequate use of what has gone before (p.219-220). Adams and White (1994) point this out in their periodic reviews of dissertation research in the fields. They refer to "cutting edge" research as that research demonstrating the utility of theory across varying settings and point to the general lack of such works.

The implication is that an artifact of positivism is in operation. Positivism implies that if new observations are accepted as correct, then older observations must rejected as false. Two opposing observations cannot both be correct. In

this manner, old theory is perceived as no longer applicable and is rejected in favor of new theory. The relevant pieces of the old theory tend to be forgotten.

Constructivism allows the retention and application of relevant theory because of the contextual interrelationships of multiple realities. This implies that constructs can have multiple meanings, all of which are valid dependent upon context. The purpose of public administration, then, is the determination and management of multiple realities. Multiple perspectives in the management of public organizations seem to be the most capable of fulfilling this purpose since it brings multiple realities into the administrative process. Quality is representative of multiple perspectives and can be used for determining the efficaciousness of public agencies.

The use of quality as a construct for determining the effectiveness of public organizations implies that the application of administrative theory is more than just a customer orientation. Quality in government currently redefines the focus on client relationships and politics as "customer satisfaction" and removes the citizen-stakeholder from consideration (Carroll, 1995). The National Performance Review (Gore, 1993) differentiates between citizen and customer and defines a customer as one who benefits from a particular service through participation in an agency's operations and consumes the provided services. As an artifact of positivism, this definition implies that the citizen receives no benefits from effective public agencies.

However, citizens' taxes pay for the agency's services and receive benefits from their effectiveness such as increase in tax base from educational programs that allow recepients to obtain better jobs. Similarly, citizens have a right to be concerned when the agency they are paying for is ineffective or inefficient.

The acceptance of constructivism implies a continued emphasis on multidisciplinary knowledge and the continued development and use of methods such as hermeneutics and dialectics without sacrificing the legitimate use of the other developed quantitative and qualitiative methods. Constructivism attempts to integrate art and science.

This study proposes acceptance of the proposition first made by White (1926) and more recently by Mani (1995). Public administration is both an art and a science. Public administration is concerned with the accumulation of knowledge. Knowledge has artistic and scientific components at both the practice and research levels.

Art exists at both levels of public administration. Discovery is the higher level artistic component in the acquisition of public administration knowledge. Imagination and creativity provide opportunities for discovery. New experiences require new constructs. The creative, discovery aspect of knowledge allows for the creation of new constructs to assist interpretation and translation of experience into new knowledge.

Art, at the practitioner levels, generally refers to the the knowledge and skills aready acquired and applied through individual technique. The art of public administration at these levels brings the richness of personal experience into the administrative process. This experience is interpreted within the context of a specific reality and relies on the accuracy of other interpretations for successful implementation or intervention.

Public administration as a science is a more controversial issue. Science means knowledge as opposed to ignorance. It is also used to refer to method characterized by hypotheses tested through controlled experimentation and the absense of values. This study implies that public administration is no less scientific that any other discipline in these regards.

Physics, as an example often proposed for emulation in the social sciences (Bailey, 1992), is no less susceptable to these definitional criticisms and confusions. Zukav (1979) demonstrates the inherent igorance of physics in the Heisenberg Uncertainty Principle. Heisenberg concludes that reality is forever hidden from human knowledge.

In 1803 Thomas Young proved that light is made up of waves; over a century later, Einstein proved that light is made up of particles. Both are correct, dependent upon the perspective of the observer, and they reinforce constructivism while rejecting realism. Zukav (1979) and Hesse (1980) imply that physicists are borrowing (perhaps

unconsciously) from the "softer sciences" by recognizing that values permeate experimentation. Thus, the theories of public administration are no more value laden or underdetermined than those of physics. The implication is that public administration is at least as scientific as physics.

Science involves the determination of construct utility. Often there is little direction regarding how to proceed. Much of art and science narrows to good common sense.

Those that propose public administration become more scientific realize that science suffers from the same fallible reasoning as other forms of intellectual endeavor. Dewey (1966, p. 101) points out that all intellectual inquiry:

> in spite of the diverse subjects to which it applies, and the consequent diversity of its special techniques has a common structure or pattern: that this common structure is applied both in common sense and science.

"Science is not a model of perfection" (Phillips, 1990, p.31). Common sense applied hermeneutically and dialectically is just as fruitful.

What constitutes public administration cannot be determined within the positivist paradigm. The multitude of possible cause and effect relationships have led to specialization and diversity. No single philosophy unites the discipline. Conflict over which theoretical framework or approach stifles progress.

Constructivism avoids these problems. Public administration is both art and science dependent upon perspective. From a theoretical perspective, public administration does not face any problem not faced by any other science. From a practical perspective, public administration is the art of applying knowledge gained by the science. Public administration is concerned with managing multiple realities to achieve a desired environmental state. Administrators must realize that multiple realties are manifested in complex behavioral systems. Public administration is also concerned with both efficiency and quality, but by using a constructivist approach, efficiency is achieved as quality is improved.

The non-linearity of behavioral patterns indicates that systems fluctuate between stability and instability. Control is not likely to be achieved, but prediction is possible. Systems can be nudged into stability or instability with the application of force. The nature of the required force can be approximated by knowledge and constructive use of variation.

The analysis of behavior patterns as energy transfers require the use of differential equations to capture the relevant information. Mathematics is the language of theory. It attempts to organize highly general relationships into a coherent system.

Because of the complexity of administrative systems, public administration can be considered a metadiscipline. It

requires knowledge of mathematics, pure sciences, and social sciences. Specialization does not obviate the need for synthesis. Some unifying philosophy must be in place. Without this philosophy, theory lacks direction.

Efforts to affect change must be theory based. Moe (1994) challenges the recommendations of Osborne and Gaebler (1992) on this basis. Osborne and Gaebler (1992) offer another positivist principles approach based on their observation of entrepreneurial success stories. They contend that the successes of the few can correct the failures of the many. Moe's (1994) closer examination reveals underlying assumptions and theory that are mutually exclusive.

Khademian (1995) examines the reinvention of the Federal Deposit Insurance Corporation and finds evidence of success that is contrary to the recommendations of Osborne and Gaebler (1992). This case study demonstrates the shortcomings of a single perspective due to a limited paradigm The lack of theory to support reinvention proposed by Moe (1994) and Stillman (1995) is reinforced when Khademian points out that effectiveness can be achieved through the development of internal capabilities often more efficiently that externally, as implied by Osborne and Gaelber (1992).

The qualitative methodology used by Khademian reflects the realist impression that behavioral aspects are solely responsible for the reinvention off the FDIC. When examined from a constructive systems perspective, reinvention doesn't

exist unless it is defined as autopoiesis. Administrators chose quality as the rational criterion for behavior when they identified processes for improvement. Examination of processes to control variation demonstrated recognition of complex systems. What occurred wasn't reinvention, it was government working the way it was designed to work. Administrators did what they were paid to do; they managed complex systems, learned from system instabilities, and applied the necessary force to re-stabilize the system. This makes a valid argument for using multiple persectives supported by constructivism.

Public administration can be effective, as the previous example demonstrates; however, it can be improved by a better understanding of complex systems of behavior and using quality as the rational criterion for decision making. Many would propose that bureaucracy is good already (Goodsell, 1994), but current urban issues suggest that improvement is required.

Replacing positivism and efficiency with constructivism and quality is an alternative with the potential to make public organizations better. This implies the need for future research using constructivism and multiple methods. A single perspective and method only increases the probability of being wrong when multiple realities exit.

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APPENDIX A

GLOSSARY OF TERMS

Criticalism - A paradigm based on a critical realist ontology, subjectivist epistemology, and a dialogic, transformative methodology. The methodological intent is to eliminate a false consciousness and to energize and facilitate transformation of reality.

Critical realism - The belief that a true reality exists beyond the complete comprehension of humans.

Constructivism - A paradigm based on a relativist ontology, a subjectivist epistemology, and a hermeneutic and dialectic methodology. The methodological intent is to elicit and refine individual constructions with the aim of generating a substantial consensus regarding a few constructs (Guba, 1990).

Deterministic - The belief that, in a causal relationship, a one-way causal order exists. Only A can cause B. This relationship may be linear or nonlinear.

Dialectics - Any systematic reasoning, exposition, or argument characterized by logically arguing and reconciling contradictory positions for the purpose of determining truth.

Dynamic stability - In a system, the ability to maintain homeostasis, or self-regulation, around a stady state (Kiel, 1993).

Efficiency - A criterion of choice that dictates maximization of results for a given application of resource. "The efficiency of a behavior is the ratio of the results obtainable to the mazimization of results obtainable from the behaviors which are alternative to the given behavior" (Simon, 1976, p.179).

Epistemology - The relationship between the knower and the knowable (Guba, 1990).

Fact - Something that has actual existence. An occurence, quality, or relation attributed to reality because of its manifestation in experience or because it may be inferred with certainty.

Hermeneutics - A methodological process focusing on interpretation and explanation in which the researcher, based on foreknowledge, develops an initial set of hypotheses to guide the search for, and interpretation of, relevant details

in the text, followed by revision of hypotheses, reinterpretation, and further search, leading to the generation of new texts. Texts refer to meaning of any human action. Research findings are contextual. (Balfour and Mesaros, 1994)

Linear - Being, giving, or involving a response that is directly proportional to what is being measured.

Methodology - The process that governs how the inquirer proceeds in the acquisition of knowledge.

Nature - The operating processes or characteristics that create the perception of a reality.

Objectivism - The belief that it is both possible and essential for the inquirer to adopt a distant, noninteractive posture with reality. Values and other biasing and confounding factors are automatically precluded from affecting results (Guba, 1990).

Ontology - How one perceives or believes in nature of reality.

Paradigm - A metatheory of knowledge that beliefs regarding reality are systematic, having ontological, epistemological, and methodological components.

Positivism - A paradigm based on a realist ontology, an objectivist epistemology, and an experimental, empirical methodology. Methodology attempts to control conditions and quantitatively, through falsification, test hypotheses proposed in advance.

Postpositivism - A paradigm based on a critical realist ontology, a modified objectivist epistemology, and qualitative methodology. Methology strives for the objectivism as the ideal, but recognizes that values can enter the research process. External critics act as guardians of objectivism (Guba, 1990).

Quality - A characteristic of a product or service possessing the features of conformance to standards, continuous improvement, and stakeholder, or citizen, satisfaction.

Rational - Maximizing given values in a given situation. As rational relates to decisions, a decision is

> "'objectively' rational if *in fact* (italics in original) it is the correct behavior for maximizing given values in a given situation. It is 'subjectively' rational if it maximizes attainment relative to the actual knowledge of the subject. It is 'consciously' rational to the degree that the adjustment of means to ends is a conscious process. It is 'deliberately' rational to the degree that adjustment of means to ends has been

deliberately brought about (by the individual or by the organization). A decision is 'organizationally" rational if it is oriented to the organization's goals; it is 'personally' rational if it is oriented to the individual's goals." (Simon, 1976, pp.76-77)

Realism - The belief that a true and discoverable reality exists.

Relativism - The belief that multiple realities exist in the form of multiple constructions that are socially and experientially based, local and specific in context, and dependent for their form on the persons who hold them (Guba, 1990).

Special cause variation - Variation that results from external forces acting on a system that cause it to become unstable.

Specification error - In statistical linear modeling, the inclusion of irrelevant variable, and/or the exclusion of relevant variables.

Stable system - A system whose output conforms to a known or knowable distribution.

Subjectivism - The belief that the inquirer and reality are fused into a single entity. Findings are the creation of interaction processes between the two (Guba, 1990).

Type I error - Rejecting the null hypothesis when it is true.

Type II error - Failing to reject the null hypothesis when it is false.

Underdeterministic - The belief that multiple causes exist that can explain an observed phenomenon. A and C can both cause B. Causation can be bidirectional in that A can cause B under certain circumstances, and that B can cause A under others.

AUTOBIOGRAPHICAL STATEMENT

Ernest Edward Sides III was born March 8, 1951 in Statesville, North Carolina. He recieved a Bachelor of Science Degree in Biology from North Carolina State University in 1973, and another in Sociology in 1974. He received his Master of Science Degree in Management Science from Troy State University in 1985.

He retired from the United States Marine Corps in 1995 with over twenty years experience in management, operations, and leadership.

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