DOCUMENT RESUME

ED 249 561 CS 504 722

AUTHOR Thomas, David A.; Corsi, Jerome R.
TITLE Extending the Boundaries of Debate Theory: A Value-Bounded Policy Decision Making Paradigm.
PUB DATE 3 Nov 84
NOTE 44p.; Paper presented at the Annual Meeting of the Speech Communication Association (70th, Chicago, IL, November 1-4, 1984).
PUB TYPE Information Analyses (070) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Communication Research; Competition; *Debate; *Decision Making; *Evaluation Criteria; Evaluation Methods; Policy Formation; *Theories; Values
IDENTIFIERS *Debate Theory; *Theory Development

ABSTRACT

The purpose of this paper is to propose a new, synthetic paradigm for debate analysis and decision making that features the policy systems approach within a context of values as boundaries for decision. As background for the proposed theory, the paper (1) summarizes the notions of paradigm formation and shifts initially presented by T. Kuhn; (2) looks at some current attempts by scholars to employ the paradigm notion in nonscientific academic fields, specifically, sociology and communication; (3) examines how paradigm theory has been used to explicate new developments in decision making arenas, with an emphasis on corporate managerial decision making; and (4) briefly examines how cultural values impinge on policy controversies. The proposed paradigm is then discussed at length. (FL)

Extending the Boundaries of Debate Theory:

A Value-Bounded Policy Decision Making Paradigm

by David A. Thomas and Jerome R. Corsi

a paper presented to the Speech Communication Association

Chicago, Illinois, November 3, 1984

Dr. Thomas is an Associate Professor and Director of Forensics at the University of Houston. Dr. Corsi is a Vice President with Benefit Concepts, a business and financial consulting firm in Denver.

Extending the Boundaries of Debate Theory: A Value-Bounded Policy Decision Making Paradigm

by David A. Thomas and Jerome R. Corsi

During the past decade, there has been great progress in the development and articulation of debate theory, especially in the general area of what practitioners have called "debate paradigms." We have seen advances in the conceptualization of academic debate as an educational activity, set in the metaphor of the argumentative laboratory. Within policy debate, two competing candidates for paradigms of debate analysis method are the policy system analysis approach expounded by Allen Lichtman and Daniel M. Rohrer, and the hypothesis testing approach expounded by David Zarefsky and J. W. Patterson, to mention only some of the leading authors who are associated with these two approaches. There are also other possible candidates for paradigms of debate analysis and argumentation, such as non-policy debate, widely practiced in CEDA but not firmly affiliated with any particular theory of analysis as yet.

Many have observed that the progress being made towards these varied debate theories has resulted in a sense of competition among them. When applied to a given debate contest, as a rule, it is necessary for the contestants and the judge to be in essential agreement over which debate "paradigm" is in effect, or else there will be a situation where the competing sides are simply incompatible and cannot be judged fairly on the same basis. Donn Parson has called the rising state of theoretical competition the "My little red wagon is better than your little red wagon" syndrome.

The purpose of this paper is to propose a new, synthetic

paradigm for lebate analysis and decision making which features the policy systems approach within a context of values as boundaries for decision. We hope to make it possible to generate case construction methods, and corresponding standards for evaluation of conflicting arguments, wherein both the policy systems analysis and value integration are compatible, complementary, and holistically applied. If we are successful in this purpose, the competing theories of debate analysis now contending for prominence should both be seen as relevant and useful, indeed, as equally vital components in any complete judgment over policy debate resolutions.

In order to develop this proposed new paradigm of a value-bounded policy decision paradigm, we shall develop some background information to serve as a context. I. First, we shall summarize the notions of paradigm formation and paradigm shifts as initially presented by Thomas Kuhn. II. Next, we shall look at some current attempts by scholars to employ the paradigm notion in non-scientific academic fields, namely, sociology and communication. III. Next, we shall examine how paradigm theory has been used to explicate new developments in decision making arenas, with an emphasis on corporate managerial decision making. IV. Next, we shall briefly examine how cultural values impinge on policy controveries. V. At that point, we shall be in a better position to understand the current status of paradigm theory in policy debate. VI. Finally, we shall present our proposed new paradigm.

I. Thomas Kuhn's Theory of Paradigm Formation and Shifts

Since Thomas Kuhn discussed the notion of the paradigm in his seminal work, The Structure of Scientific Revolutions, many academic disciplines have adapted the term if not the concept in an effort to

explain and legitimize their efforts to change.[1] Kuhn's original work in 1962 described the major historical advances of science as consisting of relatively sudden transformations from one stage of theoretical development to another. Kuhn asserted that an established science like physics could replace its basic theoretical framework with a completely new and different one within the space of a few decades, amounting to the longevity of one or two generations of scientists.

The term Kuhn used to describe the reigning establishment of a scientific discipline is a "paradigm", including the substantive concerns, research methods, boundaries of the field, and standards for evaluating the work of that discipline. The task of any discipline is the development and expansion of theoretical knowledge. As the practitioners of a field pursue that task, their work takes the form of "puzzle solving", according to Kuhn's analysis. A scientific researcher's interests are determined by the substance, boundaries, and standards recognized by the field; its research methods are those which are most appropriate to those limits.

Only when the outcomes of scientific investigations using approved research methods deviate from what is predicted by the established theory can a new paradigm be proposed. And only when a new paradigm succeeds in explaining the mystery of anomalous findings, while at the same time it explains the already understood body of knowledge of the discipline's field equally as well as the old paradigm, can there be the possibility of a paradigm shift. Any actual paradigm shift amounts to a gestalt shift, or conversion of the membership of the discipline, and it might not occur until the

older leaders of the discipline die off. A paradigm is like a road map which, though it is not the territory itself, yet it governs the image held of the territory and provides the directions one should go. As Kuhn expressed it,"Though the world does not change with a change of paradigm, the scientist afterward lives in a different world."[2]

Kuhn said that a scientific revolution is analogous with a political revolution, in which the older reigning establishment is replaced in whole or in part by an incompatible new one through a series of non-cumulative developmental episodes.[3] In other words, science's major advances have not occurred by steady and gradual progress so much as it has by sudden shifts. Three examples of this form of scientific revolution include the apparent effects of the revolutionary contributions of Copernicus, Lavoisier, and Einstein.[4]

Kuhn's earlier edition of The Structure of Scientific Revolutions aroused great interest among scientists, indeed, among historians and philosophers in all academic fields. It also generated considerable criticism. Partly in response to the criticism that he failed to use the term paradigm in a consistent, unambiguous meaning, Kuhn published the Second Edition, Enlarged eight years later, in 1970. That revision made almost no changes in the original version, but it added a new chapter which he called "Postscript 1969" in which Kuhn frankly admitted that the charge of ambiguity was true. He recognized two basic meanings for paradigm. "On the one hand," he wrote, "it stands for the entire constellation of beliefs, values, techniques and so on shared by members of a given community. On the other, it denotes one sort of element in that constellation, the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as

a basis for the solution of the remaining puzzles of normal science."[5] In an effort to clarify this equivocation, Kuhn posited that "paradigm" should be limited to the research examplar employed by a field to guide its work in theory building. The more global sense of paradigm should be described by a new term, "disciplinary matrix," characterized by several components:

> a set of symbolic generalizations known and used by the group;
>
> a shared commitment to certain beliefs, analogies, and metaphors;
>
> a shared commitment to certain deeply held values (mostly about predictions within the scientific research program conducted by the field); and finally,
>
> its paradigm or exemplar for teaching new students about the field's knowledge from start through advanced research.[6]

It is true that Kuhn's analysis was limited to the "hard sciences," though he believed that every discipline had a "disciplinary matrix," including all the components just mentioned. He also called for application of his theory of revolutions from a normal establishment to a new disciplinary matrix to non-science fields, such as the history of literature, music, art, and politics.

II. Some Applications of Paradigm Theory to Non-Scientific Fields

Sociology. Since Kuhn's work provided the original impetus, several non-science fields have begun to make such an application. Notably, George Ritzer of the University of Maryland has done an extensive analysis of the various schools of thought in the field of sociology. According to Ritzer, "I conceive of sociology as a multiple paradigm science. In my view, there are three paradigms that dominate contemporary sociology, with several others having the

potential to achieve paradigmatic status. I label the three paradigms the social facts, social definition, and social behavior paradigms."[7]

Of course, other sociologists have challenged Ritzer. D. L. Eckberg and Lester Hill pointed out that, in addition to Ritzer, there have been a number of other sociologists who have attempted to describe the discipline of sociology in terms of Kuhnian paradigms. According to Eckberg and Hill, about a dozen other writers have generated anywhere from two to eight separate paradigms of sociology, but most of them (including Ritzer) seem to be thinking of general sociological theories rather than puzzle-solving exemplars for social research.[8] For his part, Ritzer freely admits this charge, and he justifies his particular classification scheme for labeling different sociological perspectives as "paradigms" on the grounds that it is more important to say something insightful about the field of sociology than it is to be a "purist" in observing Kuhn's own definitions of the notion of paradigms.[9]

Thus, in the instance of the discipline of sociology, the paradigm notion is gaining wider acceptance among scholars and textbook writers. The predominant use of the term is more consistent with Kuhn's earlier definition of a paradigm as a broad disciplinary matrix (or even, perhaps, of a meta-theory at an even higher and more abstract level). As such, it helps students of sociology to understand different ways to think about their field, but not to conduct research according to a commonly accepted model or examplar to solve the problems identified by a specific sociological theory.

Communication. Our own field of communication has flirted with the paradigm notion. A recent issue of the Journal of Communication has been devoted entirely to the theme, Ferment in the Field. No less

than five of its thirty-five articles made explicit reference to Kuhn's theories to shed insight into the current condition of communication research; however, there is as yet no consensus on what that condition is.[10] Some scholars see (or wishfully hope for) a new paradigm for communication research that abandons the old paradigm based on the speaker-receiver model, especially in mass communication. Robert A. White wrote, "The present ferment in the field of communication appears to be akin to what Thomas Kuhn describes as a crisis of the dominant paradigm. Initially communication was conceived in terms of a relatively simple paradigm as the direct transfer of a message from the source to the receiver."[11]

The new paradigm incorporates a heightened emphasis on, and appreciation of, the role of culture (or audience mediation) in human communication. White went on, "Virtually every attempt to test some version of this paradigm revealed 'anomalies' which suggested that the activity of the receiver and the sociocultural conditions of the receiver are far more important in the communication process than the initial paradigm would imply. The anomalies have accumulated to the point that a new 'receiver-centered' paradigm, or a paradigm in which interacting individuals together create meaning, is proposed as more adequate than the original 'source-message-receiver' model."[12] Everett Rogers also predicted a paradigm shift in the communication discipline. He said, "I expect mass communication researchers to abandon their long-standing dedication to linear effects and to shift to convergence models of communication. This means that the nature of their data will change, as will their methods of gathering data. It's a whole new ball game, an intellectual revolution, although few

scholars in our field recognize it quite yet."[13]

Others believe that the field of communication is not yet mature enough to have a paradigm, and so is in a pre-paradigmatic stage. Gerald Miller sees a situation of multiple paradigms existing in communication research, with no clear reason to prefer any one as the reigning paradigm over all others. He wrote, "No doubt the desire for a universal paradigm owes much to the writings of Kuhn, who has argued persuasively that such a paradigm is the hallmark of a mature science....It is possible that the 'itch' for the universal can never be treated successfully by communication scholars, for the process of human communication can be conceptualized and modeled in many ways, depending upon the aims of the investigator. What constitutes satisfactory explanation and sufficient understanding depends on the functions of a specific line of inquiry."[14]

In communication studies, as in sociology, then, we can see that Kuhn has influenced some of our leading creative thinkers to describe emerging conflicting theories of communication as potential shifts in paradigms. Clearly, at this level, communication "paradigms" are thought of as disciplinary matrices (organizational communication, mass communication, and intercultural communication, etc.), and not as commonly accepted, exemplary research methods. In fact, a wide variety of research methods, both qualitative and quantitative, are being employed across most of these disciplinary groups.

III. Applying Paradigm Theory to Decision Making

Public Administration. In the applied areas of public administration, Vincent Ostrom has described the current tension between two competing approaches to administration as indicative of the process of a paradigm shift from a centralized, bureaucratic model to a

decentralized, democratic model. These are competing models of decision making as much as they are of modes of administrative action. In any case, Ostrom's use of the concept of paradigm changes the definitional emphasis from a model for conducting research, to the more general world view shared by decision makers in political life. If the public administration paradigm were to be conceived as an exemplary method for an agency or bureau to execute legal mandates, we would be given more of a description of the specific action steps to take to fulfill the objectives of either the decentralized or the centralized approaches to public administration. However, with Ostrom's analysis, we seem to be coming closer to the idea that a paradigm can be a model for action in dealing with social problems, and not a concept limited exclusively to the details of specific research methods available to academic disciplines for the purpose of extending theoretical knowledge about their fields of study.

Corporate Decision Making. Management science has come even closer to the application of Kuhnian paradigm theory to a non-scientific, non-theoretical, totally pragmatic application to the process of decision making. The recent spate of books and articles comparing American and Japanese corporate management styles make direct or indirect reference to different paradigms of decision making, flowing from the unique characteristics of the cultural (or disciplinary) matrices reflected in the two societies. The best-selling book, In Search of Excellence (1982), makes explicit reference to Kuhn's paradigm theory as the authors describe the American managerial paradigm as exclusively rational, relying on numbers, computational analysis, and inflexible, with a distrust of

experimentation (where risk cannot be precisely quantified), and an inability to factor in human values or creativity.[16]

Another book that compares current American and Japanese managerial styles explains the major differences in decision making between the corporate managers of companies in the two cultures. Pascale and Athos characterize the American corporate decision making process as leaning heavily towards analytic techniques to reduce uncertainty by compiling facts and statistics. The inherent preference of American business organizations is for clarity, certainty, and perfection leading to mastery of production and marketing for greatest profit levels. The methods most favored for achieving these ends resemble cost-benefit analysis comparing business alternatives. The final result of the American decision making process is always for the chief executive officer to make a firm, final decision, beyond which further consideration is cut off.[17]

The drive for certainty implies a bias for quantitative decision making methods. Speculative and subjective predictions are seen as less desirable than statistically derived predictions. If certainty cannot be attained (in the sense of having perfect, complete intelligence related to all decisions), at least the decision maker must have some way to avoid uncertainty (in the sense of having absolutely no knowledge of the probability of outcomes of the alternatives available). Thus, the decision maker uses the best techniques for assessing some probabilistic estimate or risk involved in choosing each alternative. Risk assessment techniques have drawn most heavily upon quantitative procedures such as operations research.[18] What can be quantified most readily, of course, is money.

Kast and Rosenzweig, writing about organizational decision making, said, "An organization can be viewed as an information processing system." They continued, "In many problem solving situations an assumption is made that the objective of the decision maker can be assessed in quantitative terms, most often with money as the common denominator."[19]

The Japanese corporate decision making paradigm, on the other hand, is heavily oriented towards group consensus in the corporation. The Japanese approach does not like quick, arbitrary decisions by an all-powerful figure at the top. They value the process of carefully building support for decisions over time, on the assumption that the key elements of the organization will be more committed to a decision if they all take part in reaching it. Implementing a decision is viewed as more important than simply reaching the decision; and successful implementation is possible only if all competing interests are reconciled first. The American drive for closure, for decision, often leads to premature choices, based on superior conceptual and substantive merit perhaps, but with greater potential for problems in feasibility. The basic point is that business organizations are always confronted with elements of ambiguity, uncertainty, and imperfection in any decision. The two competing paradigms for resolving problems and arriving at decisions feature substantive analysis without organizational consensus on the American side, and on interpersonal consensus building on the Japanese side.[20]

It is important to highlight the recommendation made by the "Quest-For-Excellence" corporate consultants. In America's best-run companies, the decision making process incorporates elements of both

paradigms. On the one hand, it is important for any business decision to be made rationally, based on knowledge; on the other hand, it is equally essential that the business organization must develop commitment to the decision through techniques to achieve agreement among all its key elements.[21] The best decision making paradigm is one which incorporates both knowledge and agreement.

The reasoning for seeking a balance between rational and consensual paradigms in corporate decision making is apparent when the nature of business problems calling for decisions is taken into account. Another management science textbook points out that one of the major characteristics of modern decision making in large organizations (in business in this instance, but also applicable to public policy by extension) is complexity. Dinkel, et. al., stated, "One of the major characteristics of modern decision making processes is the need to evaluate a large number of alternative actions."[22] The result of complexity in weighing the risks of a large number of alternative outcomes, according to Gibson, is that situations rarely exist in which one alternative singularly achieves the objective without having some impact either positively or negatively on some other objective. Classic examples of this dilemma include the problem of how to increase productivity without affecting the morale of the labor force, or how to reduce costs while maintaining quality of service.[23] In these examples, a quick quantitative analysis based on profit potential might conclude that the company should maximize productivity at the expense of plant morale, or cut costs at the expense of maintaining the same level of quality of service. Clearly, a different decision making approach based on consensus building and agreement among all key elements of the organization might come down

on the side of increasing morale at the expense of productivity, or maintaining high quality of service at the expense of higher costs.

Two paradigms of decision making have been identified and extensively discussed in the field of managerial science. One is a rationalistic model, which places a premium on complete information, interpreted by quantitative methods. The other is a humanistic model which seeks above all to make acceptable decisions in conformity with human values. Each has its record of strengths and weaknesses on the ground. There is an ongoing effort among some major corporate organizations to merge these two paradigms in a way to capitalize on their strengths without falling victim to their weaknesses.

That effort typically places the information processing function at the core of the decision making process, in order to rationalize the risk assessment between and among alternatives. It also tries to take account of the human environment of conficting values and incomplete knowledge, and to increase the level of consensus behind whatever decisions are reached, in the expectation that the organization will implement the decision with greater commitment and effectiveness. In business, then, there appears to be a new decision making paradigm emerging in which risk assessment is conducted within the boundaries of the relevant values (social, political, cultural, and individual values, as well as economic values) which impinge upon the decision. This sense of the term "paradigm" approaches more closely to the exemplary method thought to be most appropriate to determining the solutions to problems, rather than to an overarching theoretical world view of the field in which likeminded group members share a set of philosophical assumptions.

IV. How Cultural Values Impinge Upon Public Policy Decision Making.

A recent monograph by two astute theorists argues persuasively that cultural values play key roles in public deliberations over policy choices. Mary Douglas, a cultural anthropologist, and Aaron Wildavsky, a political scientist, suggest that values and uncertainties are an integral part of every problem in determining an acceptable level of risk in debates over technological and environmental dangers.[24] Thus, it is a fallacy to seek to make "value-free" decisions in those areas. For example, the famed biologist, Rene Dubos, stated that scientists themselves are no longer claiming to base their claims on value-free reasoning. Dubos said, "One of the new certainties of our age is that science cannot be purely objective as used to be believed. In their selection of problems, in their approach to them, and in the application of their findings, all scientists -- unconsciously if not consciously -- are influenced by considerations of relevance to systems of value."[25] For example, in the fight against cancer, it is scientifically impossible to calculate the strength of the links between individual chemical pollutants and cancer. Thus, the issue of how much R&D resources to allocate to environmental causes of cancer becomes as much a social and political issue as a scientific one. In this instance, the bone of contention is over the degree to which a single pollutant can be isolated as a causative factor in a single cancer case.[26]

In other instances, however, scientists may indeed be able to estimate a relatively precise risk level for a potential danger in the environment. In such an instance, the issue is not whether a risk may be assessed, but what interpretation we attach to that level of risk. At whatever point someone says a given risk is unacceptable,

the question ipso facto becomes political. About such a situation, Douglas and Wildavsky quote Oscar Handlin, President of the National Academy of Science, "The estimation of risk is a scientific question -- and, therefore, a legitimate activity of scientists in federal agencies, in universities, and in the National Research Council. The acceptabilty of a given level of risk, however, is a political question, to be determined in the political arena."[27] Thus we see a weighing of conflicting values, expressed in civil actions, in every move by the EPA to force a dumper to clean up a toxic waste site. As Murray Weidenbaum said, "It is no simple task to identify the public interest in any specific issue of public policy. To any participant in government policy making it is apparent that good policy consists of properly balancing and reconciling a variety of worthy interests."[28]

A major contribution of Douglas and Wildavsky was to lend insight into decision making by offering some basic guidelines for integrating risk and acceptability, which they define as the key terms in the debate over how to prioritize our choices between environmental conditions and the moral and political consequences of policies to deal with those conditions. Douglas and Wildavsky offer a Table which graphically displays the options available:

KNOWLEDGE

CONSENT	Certain	Uncertain
Complete	Problem: Technical Solution: Calculation	Problem: Information Solution: Research
Contested	Problem: (dis)Agreement Solution: Coercion or Discussion	Problem: Knowledge and Consent Solution: ?

TABLE: FOUR CONDITIONS RELATED TO DETERMINING RISK

In the Table, Douglas and Wildavsky illustrate that the problem of how risk should be decreed as acceptable or unacceptable hinges on which of the four possible conditions of scientific knowledge and cultural agreement is related to it. In the four quadrants shown in the Table, the two variables are Knowledge (whether the risk assessment is certain or uncertain) and Public Consent (whether there is complete consent or a contested issue). Policy decisions, then, flow from taking appropriate actions in three of the four conditions. If knowledge is certain and consent is complete, then the solution is simply to calculate the risk. If there is cultural agreement but an uncertainty as to the exact risk, then the solution is to conduct research to obtain the missing information. If there is certain knowledge of the level of risk, but no public consensus, the solution is either to force or to persuade the public to accept the certain knowledge. Only in the fourth condition, where neither the hazard can be estimated scientifically nor the public will can be united, is there an unresolved question over what public policy decision makers should do.

This discussion of the insights provided by Douglas and Wildavsky into the role played by cultural values in the assessment of risk is relevant to our essay on debate paradigms. Their monograph establishes clearly the inadequacy of scientific knowledge (and by extension, scientific methods of gaining knowledge) as the primary basis for public policy determination. Only where public consent is uniform is it sufficient to make a decision on the basis of scientific knowledge. By definition, where consent is uniform, there is no debate. On the other hand, where public agreement is not uniform, it is as important to develop approaches to achieve consensus as it is to investigate the problem area itself by scientific methods. Approaches to consensus involve the panoply of modes of persuasion outlined by Aristotle, from inartistic modes including torture, to artistic modes including advocacy -- or from coercion to persuasion, as Douglas and Wildavsky have it. For ourselves, we have a strong bias towards using methods of advocacy over methods of coercion.

V. The Status of Debate Paradigms.

There has been a prolific outpouring of articles in forensics journals on the subject of debate paradigms during the past decade. It is not our intent in this paper to summarize the various paradigms currently in the literature, or to trace the development of all the criticisms and rejoinders that have passed between the proponents of competing paradigm theories. The information is readily available in convenient, recent publications; and anyway, we believe most of the audience for the present essay is already well acquainted with it.

Suffice it to say that policy systems theory, usually identified

with the work of Lichtman and Rohrer, is rooted in general systems theory. It is a theory of analysis particularly attached to debates over policy proposals, and it insists that the only useful basis for making a decision is to compare the policy option favored by the affirmative with the policy option favored by the negative. Hypothesis testing, usually identified with the work of David Zarefsky, is a theory of analysis attached to argumentation over the probable truth of any resolution. Proponents of hypothesis testing take as a central theoretical tenet that the resolution for debate represents a hypothesis propounded for belief, and the basis for judgment is analogous with the scientific method of testing hypothesis -- whether the affirmative succeeds in overturning an assigned presumption against the resolution by means of a rigorous method of argumentation.

Criticisms of the Policy Systems Paradigm. One common criticism levied against the policy systems paradigm focuses on the part of the theory which requires the negative side to support a position which may be compared with the affirmative proposal. This requirement is seen to fly in the face of traditional argumentation theory which allows for the negative to stand for no particular policy position, as long as it attempts to refute the affirmative case at a vulnerable point identified as a "stock issue" in a "prima facie case". At this point, some of those who subscribe to policy systems theory take the position that the negative must take a stance for some position, and other adherents allow the so-called "direct refutation" attack to be a sufficient negative position on the basis that it implies a commitment to the present system by the negative; hence, a vote against an affirmative case based on a defeated stock issue is a vote for

retaining the present policy system it was designed to replace.

A far more important criticism of the policy systems paradigm for our present analysis is that it relies too heavily on quantitative tests of significance in making cost-benefit comparisons between the policy systems supported by the two contending sides. In other words, there is seemingly no provision in the theory for explicit value argumentation. What seems to be important is the ability of the opposing debaters to estimate the relative advantages and disadvantages of the affirmative proposal as compared with the same projected outcomes of the alternatives supported by the negative side. A formula which runs something like,

"Advantage (or Disadvantage)= Probability X Impact,"

must be applied by the opponents to every outcome they can predict for the policy change. Without being able to attach a numerical percentage of probability, or a numerical weight of impact, to plug into the formula, a debater finds it very difficult to advance an argument that is convincing to the judge. Values such as basic Constitutional rights cannot be translated easily into quantitative outcomes like the estimated lives lost from the absence of some regulated behavior such as mandatory seat belts. Many debate educators believe that it is important to allow debaters to explore value ramifications of policy proposals, and they object to this restricted legitimacy of the arguments.

On the other hand, when policy theorists take the position that value arguments can be, and should be, factored into the decision along with the quantifiable ones, the objection becomes that it is not possible to make an objective determination of the relative

weight of an abstract value in comparison with, say, the findings of empirical studies of potential outcomes of policy change. Thus, policy systems analysis is criticized whether value arguments are considered or not.

At this point, we do not wish to carry the argument forward over whether policy systems analysis, as originally conceived or as it has appeared to evolve in all the scholarly articles pro and con, can or cannot accommodate value argumentation. Our proposed new paradigm of value bounded policy decision making makes value determination a prior item, and it forces advocates to take cognizence of the value boundaries of any policy decision.

Criticisms of Hypothesis Testing. In Patterson and Zarefsky's recent textbook, Contemporary Debate (1983), there are numerous assertions that the basis for controversy is over whether the resolution for debate is probably true. This is a useful criterion for judging, as long as the resolution can reasonably be characterized as "true" or "probably true." But this is a very limiting description, as resolutions go. Keep in mind that "true" does not mean the same thing as "acceptable" or "reasonable" or "should be adopted."

The reason Patterson and Zarefsky take this stance is that, to them, academic debate is an educational activity involving the skillful use of arguments in language, with no practical import in the real world, since "adopting the resolution" does not mean that legislation actually follows a favorable decision in the round.

Patterson and Zarefsky discussed four types of resolutions: resolutions of fact, meaning, value, and policy. Applying their basic rule of "determining whether the resolution is probably true"

to these four types of resolution, Patterson and Zarefsky wrote: "The major competitor of the policy-making paradigm of debate is a view of debate as an activity in which people test hypotheses for their probable truth, as the critical philosopher or scientist does. According to this point of view, the purpose of an inquiry is to determine whether the statements presented are probably true. But only factual statements can be tested empirically for their probable truth. Statements regarding values, policy, predictions, or meaning must be tested in some other way."[31] (Emphasis added.)

In a nutshell, this statement implies the main criticism to be levied against the hypothesis testing paradigm. It rejects comparison between the options favored by the opposing sides as a basis for determining whether a policy resolution ought to be accepted. Instead, on the analogy of the scientific laboratory, it posits that the only legitimate basis for determining the winner of a debate is the determinstion of where the probable truth of the resolution resides. But, as Patterson and Zarefsky explained, it is not possible to determine the probable truth of a resolution of policy -- or value or meaning. Some other way must be found to test resolutions other than factual resolutions. Yet, the only other way to test a policy resolution is to judge its predicted outcomes in the policy system, whether they are advantageous or disadvantageous.

Perhaps it is worth the time and space to outline some of the reasons why Patterson and Zarefsky are correct is stating that it is not possible to test the probable truth of a resolution of meaning, value, or policy.

First, it is not possible to test the probable truth of a reso-

lution of meaning. The authors state that a claim of meaning seeks to interpret or define something. An interpretation is a judgment which is an analysis, an attitude, or an opinion; and as such, it may be reasonable or unreasonable, but not true or false. Likewise, a definition is a linguistic convention. Words are inherently ambiguous in all but the most restricted, coined terms in highly technical usage. Of course, we do not debate over the meaning of a technical, coined, single-definition term. When we say a word or concept is inherently ambiguous, we admit that it may have more than one acceptable definition. Hence, a definition may be acceptable or not in a given communicative context, or it may be correct or incorrect accordingly; but it can not be said to be true or false as a definition. Acceptability, rather than truth, is the major determinant of issues arising over contested meanings.

Regarding value resolutions, hypothesis testing suffers the same limitations as policy systems in terms of specifying what values are, and to what degree they can be attained. Unlike hypothesis testing, however, policy systems analysis does not assert that values must be judged according to whether they are true or false. Values, according to A. J. Ayer, are neither true nor false.[32] Value claims are simply statements of judgment of the relative worth of something. For instance, in the resolution, "that the American judicial system has overemphasized the rights of the accused," what is being asked for is commitment to that value judgment. Bound up in the value judgment are terms which may be defined in relatively neutral ways, or in more value-loaded language. In particular, terms like "overemphasized," "rights," and "accused" are open to a wide range of connotations. In no case, however, can this resolution be determined to be true, or

even probably true; only that the advocate's interpretation is reasonable to the listener, or is compelling enough to merit agreement or commitment. Just because a listener agrees with an interpretation, or becomes commited to it, that does not prove that the statement itself is probably true. If we agree that "the judicial system overemphasizes the rights of the accused," it says much more about our state of mind than it does about the truth content of the resolution. Thus, Patterson and Zarefsky are correct when they assert that a value resolution cannot be tested as to whether or not it is probably true.

Finally, the test of whether the hypothesis is probably true cannot be applied to a policy resolution. The most logical method of evaluating whether a policy resolution should be put into effect is to consider what effects it would have. The method of making such a determination is twofold; first, to measure or estimate its effects within the policy system as explained by both its advocates and its opponents; and second, to judge whether the effects are advantageous or disadvantageous. This comparative process relies on both factual arguments and value arguments. The determination of whether a policy "should" be adopted cannot be categorized as either true or false. A policy is merely a rule or regulation, applicable within a jurisdiction, based on the compliance or agreement of those affected by it. It can be changed by due process, through agreement. That cannot be said of any statement of fact. A statement that we should adopt the action proposed in the resolution is not the same thing as saying that the resolution is probably true. Rather, it is to say that on the basis of the arguments presented, we should or should not adopt

the resolution. We cannot know whether the resolution is "true" or "false", even after we make a decision. All we can know is how confident we are in our decision, whichever direction we decide.

This critique of the hypothesis testing paradigm suggests that only in terms of factual propositions can it serve a useful purpose. Hypothesis testing can be useful in any resolution, in helping the advocate make arguments over any of the factual components of the case. Corsi wrote, "Hypothesis testing could be advanced as a standard of evidence adequacy within the policy system paradigm."[33] Beyond that, it offers little guidance either for advocacy or for judgment as an independent paradigm to replace others.[33]

This critique also means that the paradigm's corollary axiom, that presumption is always against the resolution, is applicable only in a factual controversy. There is a presumption against a scientific hypothesis, and the scientist must overcome that presumption by means of a rigorous scientific method of testing the hypothesis -- usually an experiment. The empirical results of the test will answer the question of whether the hypothesis must be rejected or not. But there is no corresponding presumption against any claim of meaning, value, or policy. For example, "Communism is superior to capitalism" is a value resolution. Likewise, "Capitalism is superior to communism" is a value resolution. It cannot be said that the presumption is against communism in the first instance, and equally against capitalism in the second. The advocate of a value resolution seeks to arouse the belief or commitment of the judge or audience. The only presumption is in their initial predisposition to believe or disbelieve the resolution. The listener or judge does not arbitrarily disbelieve any and all value resolutions they may hear. They will not have the same

disbelief towards capitalism and communism in the examples cited. By this reasoning, presumption may not be arbitrarily assigned against any value resolution. To the extent that issues other than factual ones arise in any other type of resolution, such as resolutions of meaning, value, or policy, presumption cannot be meaningfully assigned to one side or the other; it certainly cannot be done on the analogy of the scientific lab.

By a logical extension, if there can be no presumption in any but a factual resolution, and if there is no way to determine whether resolutions of meaning or value are probably true, then the decision need not be mandated as either a win or a loss for either side. There are numerous ways it would be possible, and even desirable, for the judge to declare a tie at the end of a debate. For instance, if both sides present a reasonable case for their interpretation or definition in a resolution of meaning or of value, but neither side refutes the other, then the judge can decide that both reasonable cases can co-exist, just as an ambiguous word can have more than one reasonable meaning. Or, if both sides refute each other equally, the judge can decide that neither has succeeded in carrying a reasonable interpretation.

In a policy debate, there is a reason for turning to a rule of presumption to guide a decision in an otherwise tied debate. That rule of presumption is not that the policy is presumably false, but that the policy option with least risk should prevail. Only in a resolution of fact (which cannot be both true and false), and in a proposition of policy (you cannot decide to act and to not-act simultaneously) must there be a declared winner for one side or the other.

Under the hypothesis testing paradigm, it would be desirable in many instances to permit ties in debates over resolutions of value or meaning. Since such resolutions are neither true nor false, a tied debate could indicate an excellent debate between two superior teams. A series of wins or losses might reflect merely the luck of the draw, wherein a good team defeats a succession of very weak teams. By this reasoning, a tournament record of 0-0-8 could be a finer achievement than a tournament record of 8-0, on the grounds that it is a better achievement to debate 8 superior teams to a standstill than it is to defeat 8 weak teams.

The Status of Debate Paradigms As Paradigms. Properly understood, the policy systems paradigm and the hypothesis testing paradigm are not competitive. They are not applicable to the decision making process at the same level. Hypothesis testing takes a relatively abstract view of debate as an activity to determine truth; it is an attempt to construct a new epistemological system. It offers no specific methods for doing so, as applied to a given debate, even to debates over factual resolutions. An analogy with decision making in the scientific laboratory is offered, then disclaimed by the authors -- only a figurative analogy is suggested. If hypothesis testing is a paradigm, it is only at the level of a suggested new disciplinary matrix.

Policy systems analysis is a paradigm at the level of offering a specific pattern for decision making. It is a method for solving problems and thereby continuing the process of creating a policy system through incremental decisions. The method for decision making is explicit: it requires the comparison of policy alternatives based on their relative costs and benefits.

Therefore, it is a misconception to treat hypothesis testing and policy systems analysis as competing paradigms in a given debate. However, it may be true that proponents of each of these paradigms are in the midst of a struggle to generate a paradigm shift. That struggle may reflect the desires of some members of the field to construe the debate activity as a linguistic and rhetorical activity wherein truth is not only tested, but is socially constructed. Those who adhere to policy systems analysis share the perspective that, in policy resolutions particularly, debate is an activity designed to discover reality in policy systems, and choose among real choices, not to create it.

These two paradigms are not necessarily incompatible. If hypothesis testing is considered in the context of testing factual claims, or in the context of grappling with social truths in the realm of interpretations and values, policy systems adherents can probably live with it. Likewise, if policy systems decision making is targeted towards fairly obvious resolutions of policy, so that the burdens and requirements on negative advocates seem to be the most reasonable ways to test the acceptability of proposed actions, then hypothesis testers should also be able to live with that.

However, even more important, we have now come to the point where we can propose a new paradigm, one which incorporates the elements of both these paradigms. We propose a value-bounded policy systems decision making paradigm, which, like the currently understood policy systems paradigm, is focused on policy resolutions.

VI. A Proposed Paradigm: A Value-Bounded Policy Decision Making System

1. Value Boundary Diagrams.

Within debate theory, the policy systems approach has been identified with an empirical approach to argumentation to such an extent that debate concerning values has virtually been relegated to its own domain. A major purpose of this article is to introduce the concept of "value bounded policy systems," bringing to the foreground the consideration of values inherent to all policy constructions.

As a means of illustrating this theory, we will develop a relatively simple "value boundary diagram," consisting merely of an "x" and "y" axis defining the available "action/value space" relevant to any specific policy proposition under examination. These axes will be defined so policy configuration options of a polar nature can be posited to give content to the action/value space.

This method is made clearer by reference to the first diagram, Figure 1, which concerns an increasingly debated question in First Amendment constitutional law: namely, what is the status of private commercial property in a protest situation? On the y-axis, we place "Private Property" at one end and "Public Property" at the other. On the x-axis, we place "Public Order" to the extreme left and "Free Speech" to the extreme right.

The diagram is first used to position actions (policy options) within the space so defined. We begin by selecting from the Cartesian set (i.e., from all possible protest situations releating to retail stores) those action specifics considered most likely and interesting. These relevant actions so selected for the analysis are then placed within the diagram at appropriate locations.

In so doing, we here consider the right half of the diagram to be the locus of those speech forms involving more "pure speech," i.e., the expression of views without actions involving disruptions to public order. As a form of protest includes more disruptive behavior, its placement will move toward the left extreme of the diagram.

The upper half of the diagram then involves protest forms which directly impact the premises of the private store itself. As the protest form increasingly involves public property, the sidewalk or the street in front of the store, its placement will move lower on the diagram.

Thus, the right quadrant defines as an action space protests involving pure speech on the private property premises. Here we have placed two examples: one involving protest signs in the parking lot in front of the store, and the other, placed higher within the quadrant, a protest where customers are confronted directly in front of the store.

These two forms of confrontation are considered more purely verbal and less physically disruptive than assaulting customers in the store aisles, a protest form placed in the upper left quadrant. Similarly, orderly picketing on the public sidewalk in front of the store is a speech action placed in the lower right quadrant, stressing the expression content of what is envisioned to be a peaceful statement of views, where the protesters remain on public property. Disrupting traffic, or assaulting customers in the street, are seen as acts utilizing public space to threaten public order.

Clearly, other relevant protest acts could be selected from the Cartesian set to be placed on the diagram for analysis. Also, the placement of the acts selected could arguably be different. Even more fundamentally, we could posit different poles for one or more of the axes defining the action/value space. The goal in constructing the diagram, however, is to provide an analytic tool to facilitate discussion of these questions, not to fashion an infallible method for resolving what must remain difficult (and debatable) questions.

After we have placed relevant protest examples within the action space so defined, our next task is to define the value space by placing the value boundary to distinguish those acts (policy options) we consider acceptable from those acts (policy options) we will argue are unacceptable. Once we draw the value boundary in the action space, we utilize the convention of placing boxes around those acts (policy options) we positively value, distinguishing them from negatively valued acts (policy options).

Figures 1-3 demonstrate that different placements of the value boundary are imaginable. Each progressive figure in the sequence indicates an increasing willingness to see protest activity become more disruptive upon public order and more intrusive upon private property. Which placement of the value boundary is "correct" or "best" requires an argument concerning how conflicting claims to rights are to be balanced. The balance struck will shape which action configurations are acceptable policy alternatives.

Figures 4-6 apply these concepts to the debate proposition: "Resolved: That the United States Federal Government should significantly increase exploration and/or development of space beyond the Earth's mesosphere."

Here the poles of the x-axis are defined as "Private Enterprise" and "Government." The x-axis is framed with the alternatives "Military Purpose" and "Peaceful Purpose." These selections were made with a view to articulating two of the major policy choice dimensions suggested by the proposition.

From the Cartesian set of all possible specific actions which could be taken to explore or develop space, ten likely action goals were selected and placed within the action pace so defined. Again, the placement of an item (or of several items)

can be subject to argument. For instance, close examination of the placement of research and development activities ("R&D") reveals an initial presumption that R & D activities undertaken by private enterprise on its own iniative (and funding) will be sufficiently "pure" in nature to lean in the direction of having military applications, even if peaceful applications are the primary intent.

The progression suggested by the changed placement of the value boundary in each of the diagrams in this sequence (Figures 4-6) shows an increasing willingness to accept previously rejected policy alternatives as our values shift toward more favorable attitudes regarding both government involvement and military purposes.

2. Debating Value-Bounded Policy Systems.

Careful examination of political debates reveals the extent to which value boundaries influence policy action alternatives (and policy action configurations) which are considered acceptable or best. An underlying dimension of the political distinctions we commonly make (e.g., "liberal" vs. "conservative") fundamentally involve value positions regarding core concerns (such as the importance of private enterprise vs. government involvement, the necessity to protect private property and/or the need to maintain order vs. the desire to provide free and open expression of critical views).

Policies are not reducible to simple efficiencies of maximizing action goals. More importantly, policies state which goals are worth maximizing and how trade-offs are to be accomodated when multiple goals are mutually exclusive or interactive such that maximizing one is at the expense of others.

How value boundaries are to be placed to distinguish worthy goals from among the possible action alternatives is a subject worth of direct examination and debate. Trade-off rules may involve important balancing of values only realized in light of considering alternative policy actions we might pursue or emphasize. One need only read the U.S. Reports compendium of Supreme Court decisions or the Congressional Record to appreciate the degree to which value arguments are policy system arguments.

The concerns can become quite involved. Does opening space for peaceful exploration and commercial activity which we value positively necessitate military development of space which we value negatively. How are the trade-offs to be made? At what point does a positively pursued goal involve consequences too extreme in terms of outcomes we wish to avoid.

Nor should we become too concerned that this discussion will inevitably reduce values to utilities. John Stuart Mill, one of the greatest defenders of free speech, followed closely his father in pursuing to their logical conclusions the tenets of

Benthamite utilitarianism. The argument of On Liberty itself takes great pains to justify free speech on the importance open exchange of ideas plays in the cultural, educational, social, political, and scientific advancement of societies.

In the Republic, Plato has Socrates chide Thrasymachus as being too restrictive when Thrasymachus insists that the definition Socrates provides for "the just" cannot include reference to "the needful, or the helpful, or the profitable, or the gainful, or the advantageous." (at 336d-337c) Even an Aristotelian or Maslovian hierarchy of values proceeds to develop by demonstrated contributions made by lower ranked goods to the achievement of higher ranked aims.

Insistence that value discussions proceed as "intrinsic" pursuits completely wihout reference to the human ground, to the "what will be gained?" question, may be too abstract to leave the realm of faith in order to inform action. Our values can contain subjective elements, even alternative world views. The values are important, however, because they articulate the rules on which we distinguish acceptable actions from unacceptable. Our values are important because they permeate and shape our policy visions. As this discussion of value-bounded policy systems aims to articulate, our values are important because they remain a core component of our policy systems themselves. As such, they can be debated, and should be debated within the context of the action choices for which they set the confines.

We want to stress that the value boundary diagrams sketched here are merely suggestive of the complex thinking the concept opens. We can posit more than two sets of axes to frame critical polar value choices a policy question involves. Three-dimensional (or "n-dimensional") diagrams are imaginable even if they are considerably more difficult to draw. Nor do value boundaries have to be straight lines. Curved lines (even irregularly shaped lines) can be drawn to note action exceptions special values may demand in boundary setting.

The critical point is to explore the concept, from which the mechanics of description must flow. The only gain in conceptualizing the mechanics separately is to open our minds to the insights which can be derived once we begin to conceptualize policy systems in spatial terms.

3. The Paradigm Value of Value-Bounded Policy Systems.

One of Kuhn's central insights was that conceptual systems demand reformulation when discoveries and questions can no longer be satisfactorily explored within the confines of existing systems of thought. The proliferation of scholarly consideration of core debate theoretic ideas we have witnessed in the past few years bears clear evidence that our current systems for understanding the debate process are under severe strain.

Value debate and policy systems debate exist today as rather distinct alternatives. A major thought behind the value-bounded policy systems view is the need to find a new synthesis of the two in which the light cast by the one permits the greatest insight when combined with the light of the other.

Those who have longed for a direct exploration of values can pursue that investigation here, not as a sidelight, but as the core constructive element to the policy system itself. The exploration can retain the language of values, even if that language includes more rhetorical, more subjective, more Wittgensteinian dimensions than the goal-attainment and empirically-efficient language retained to evaluate the policy system implementation and achievement which is attained once value boundaries are defined.

Endnotes

1 Thomas S. Kuhn, The Structure of Scientific Revolutions, Rev. Ed. (Chicago: The Univ of Chicago Press, 1970).

2 Kuhn, p. 121.

3 Kuhn, p. 92.

4 Kuhn, p. 121.

5 Kuhn, pp. 181-7.

6 Kuhn, p. 208.

7 George Ritzer, Toward An Integrated Sociological Paradigm (Boston: Allyn and Bacon, 1981), p. 7.

8 Donald Lee Eckberg and Lester Hill, Jr., "The Paradigm Concept and Sociology: A Critical Review," American Sociological Review 1979, Vol. 44 (Dec.), 925-937.

9 Ritzer, "Paradigm Analysis in Sociology: Clarifying the Issues (Comment on Eckberg and Hill)," American Sociological Review 1981, Vol. 46 (April), 245-248; Eckberg and Hill, "Clarifying Confusion about Paradigms: A Reply to Ritzer," same issue, 248-252.

10 Ferment in the Field: Communications Scholars Address Critical Issues and Research Tasks of the Discipline. A Special Issue of the Journal of Communication, Vol. 33, No. 3. Hereafter referred to as Ferment.

11 Robert A. White, "Mass Communication and Culture: Transfer to a New Paradigm," Ferment, p. 279.

12 Ibid.

13 Everett Rogers and Steven H. Chaffee, "Communication As An Academic Discipline: A Dialogue," Ferment, p. 25.

14 Gerald R. Miller, "Taking Stock of a Discipline," Ferment, p. 31.

15 Vincent Ostrom, The Intellectual Crisis in American Public Administration (University, AL: The University of Alabama Press, 1972), Ch. 1.

16 Thomas J. Peters and Robert H. Waterman, Jr., In Search of Excellence: Lessons from America's Best Run Companies (New York: Harper & Row, 1982), Ch. 2, "The Rational Model."

17 Richard Tanner Pascale and Anthony G. Athos, The Art of Japanese Management (New York: Warner Books, 1981), pp. 139-164; 172. If this description of American corporate decision making sounds like that of Peters and Waterman, it is not surprising. All of the authors are consultants in the same organization, and their books are essentially reports based on the same fund of data.

18 James L. Gibson, John M. Ivancevich, and James H. Donnelly, Jr. Organizations: Behavior, Structure, Processes, Rev. Ed. (Dallas: Business Publications, Inc., 1976), pp. 346-7.

19 Fremont E. Kast and James E. Rosenzweig, Organization and Management: A Systems Approach (New York: McGraw-Hill, Inc., 1970), pp. 352; 373-4.

20 Pascale and Athos, pp. 172-176.

21 Ibid, p. 176.

22 John J. Dinkel, Gary A. Kochenberger, and Donald R. Plane, Management Science: Text and Applications (Homewood, Il: Richard D. Irwin, Inc., 1978), p. 4.

23 Gibson, et. al., pp. 346-7.

24 Mary Douglas and Aaron Wildavsky, Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers (Berkeley: University of California Press, 1982), p. 8.

25 Rene Dubos, Celebrations of Life (NY: McGraw-Hill, 1981), p. 204.

[26] Douglas and Wildavsky, pp. 64-65.

[27] Ibid.

[28] Murray L. Weidenbaum, The Future of Business Regulation: Private Action and Public Demand (New York: Amacom, 1979), p. 145.

[29] Douglas and Wildavsky, p. 9.

[30] There have now appeared more than enough articles in JAFA, the CEDA Yearbooks, the Forensic, Speaker and Gavel, Debate Issues, the publications of the National Federation of State HS Associations, and other outlets, to make up a hefty anthology for any prospective editor who would like to pull them together and find a publisher. For our purposes, we are content to mention the two special forum features which have appeared in recent issue of JAFA. Volume 18, Winter 1983, featured an article by Robert Rowland, "Standards for Paradigm Evaluation," along with three extensive responses from the authors associated with the paradigms he discussed, including David Zarefsky, Lichtman and Rohrer, and Walter Ulrich, concluding with a final rejoinder to those respondents by Rowland. Again, Volume 19, Winter 1983, included a feature on the hypothesis testing paradigm which consisted of two articles which criticized hypothesis testing (written by Thomas Hollihan and by Jerome Corsi), a response by Zarefsky and Bill Henderson, concluding with a final rejoinder by Hollihan. Among these recent articles may be found as thorough a discussion of debate paradigms as is available in two issues of a journal; their footnoted references direct the readers to most of the relevant literature which preceded them.

31 J. W. Patterson and David Zarefsky, Contemporary Debate (Boston: Houghton Mifflin Co., 1983), p. 104.

32 A. J. Ayer, Language, Truth and Logic (New York: Dover Pub. Inc., 1936. 10th Printing, 1946 ed.), pp. 110-111.

33 Jerome R. Corsi, "Zarefsky's Theory of Debate as Hypothesis Testing: A Critical Re-Examination," JAFA, Vol. 19 (Winter 1983), p. 168.

34 Corsi, pp. 161 ff. These and other attacks on the intellectual roots of hypothesis testing are presented. The only responses provided to critiques such as this run along the lines, "Hypothesis testing is not meant as a literal analogy to the scientific lab; however, a similar, equally rigorous method of testing arguments in arenas such as value and policy arenas must be found." In the policy arena, at least, the policy systems analysis method of decision making claims to provide the necessary rigor.

FIGURE 1. VALUE BOUNDARY DIAGRAM
PROTEST AT RETAIL STORE

(PRIVATE PROPERTY AND PUBLIC ORDER HIGHLY VALUED)

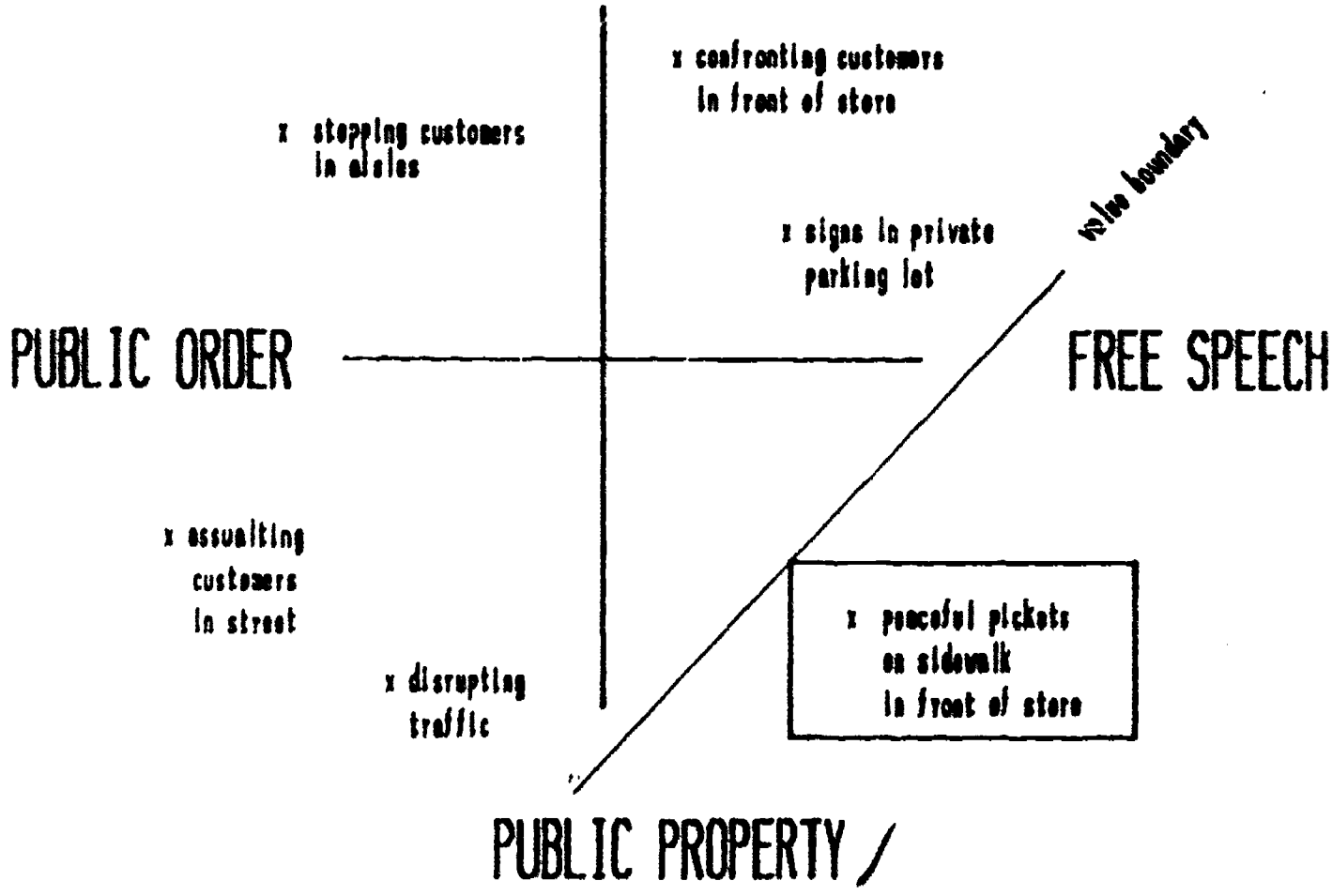


FIGURE 2. VALUE BOUNDARY DIAGRAM
PROTEST AT RETAIL STORE

(PRIVATE PROPERTY MODERATELY VALUED; PUBLIC ORDER HIGHLY VALUED)

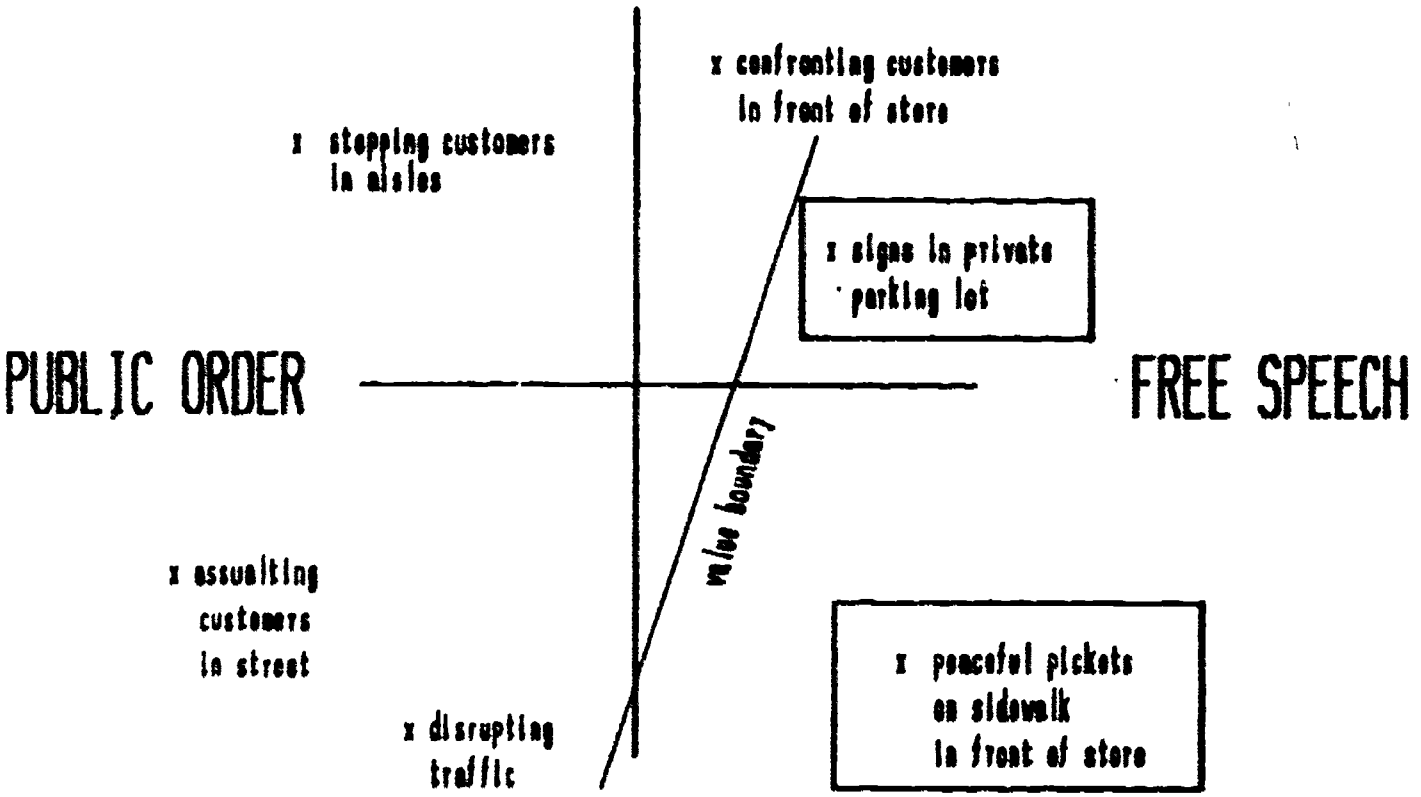


FIGURE 3. VALUE BOUNDARY DIAGRAM
PROTEST AT RETAIL STORE

(PRIVATE PROPERTY MODERATELY VALUED; PUBLIC ORDER MODERATELY VALUED)

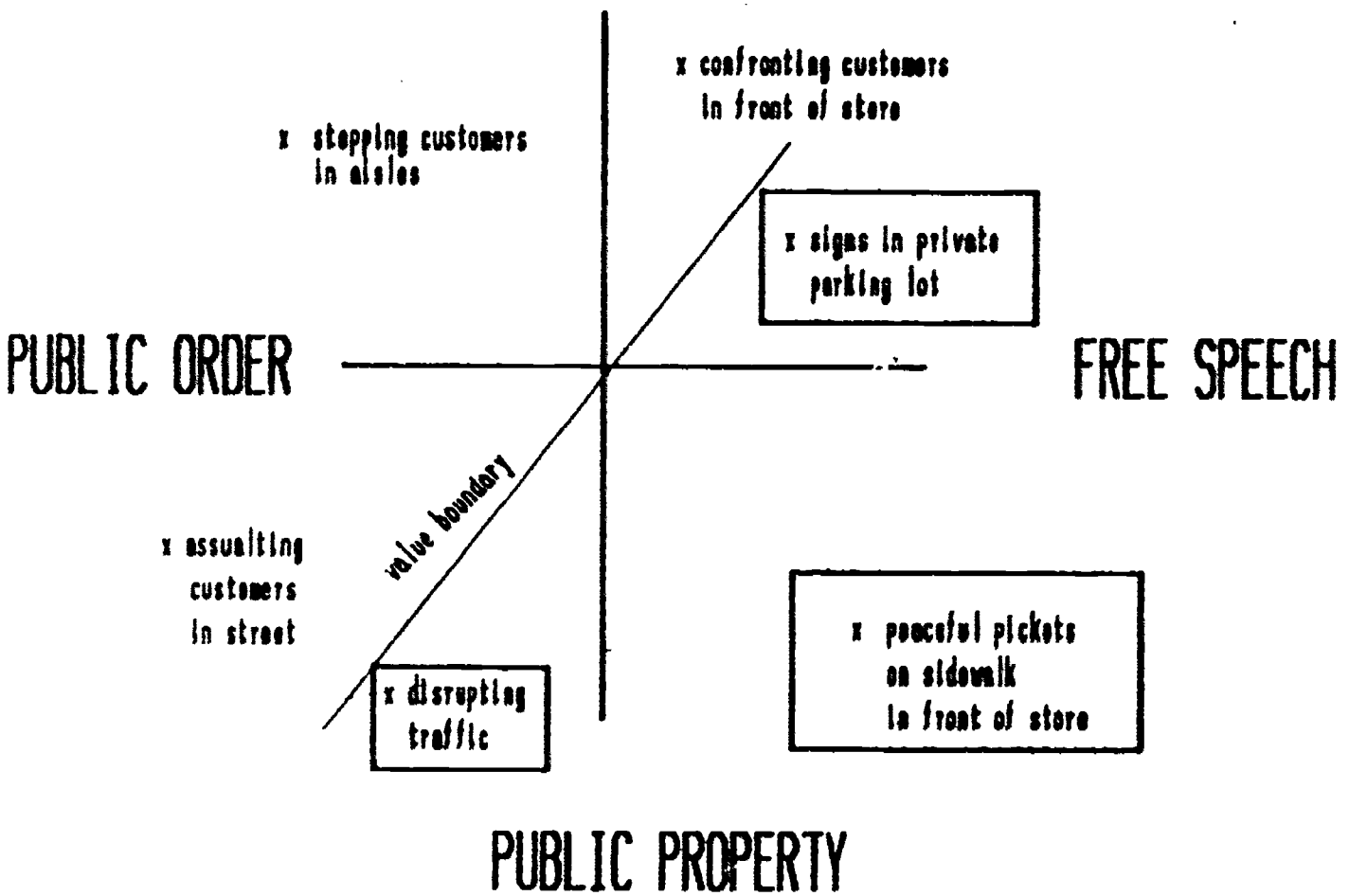
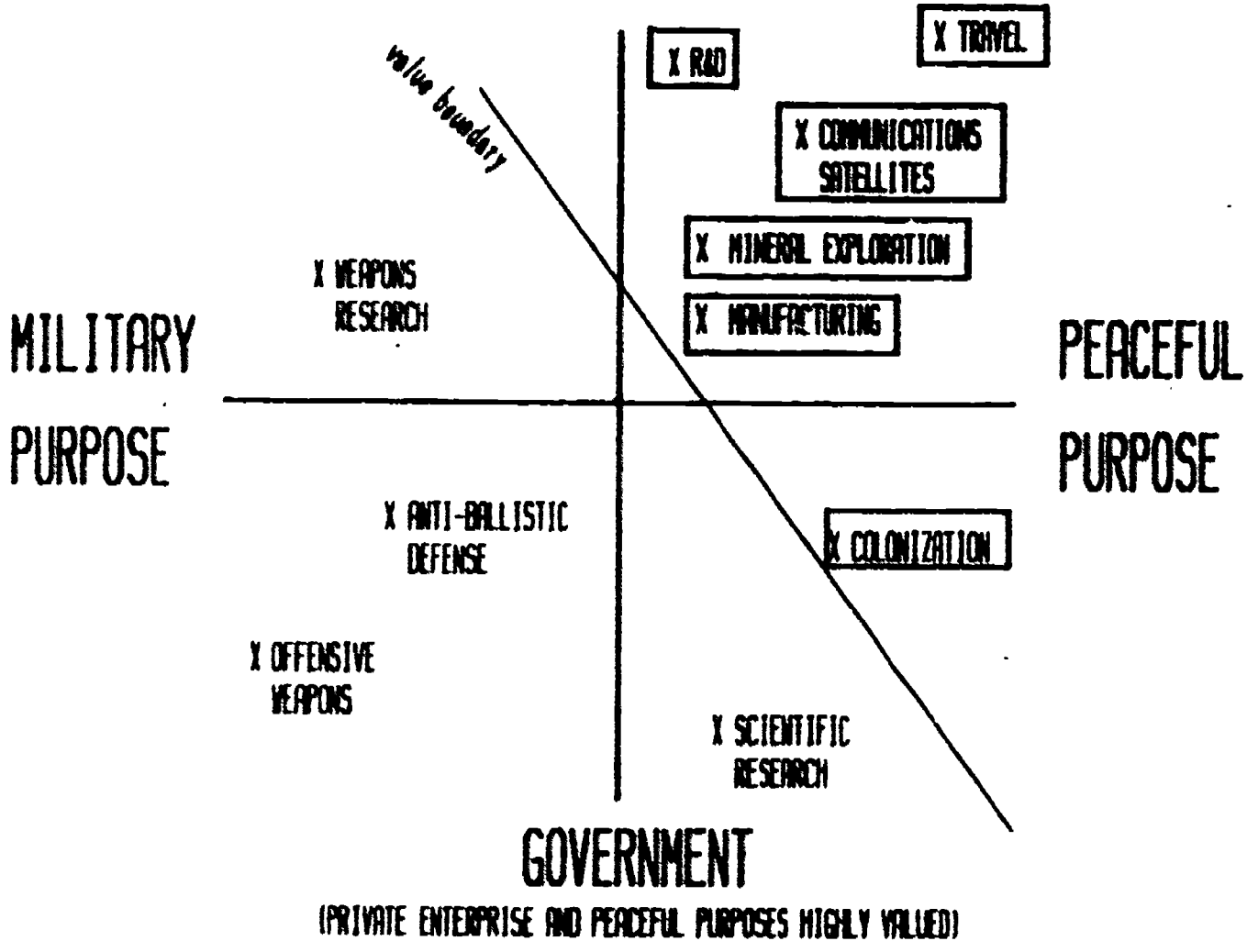


FIGURE 4. VALUE BOUNDARY DIAGRAM

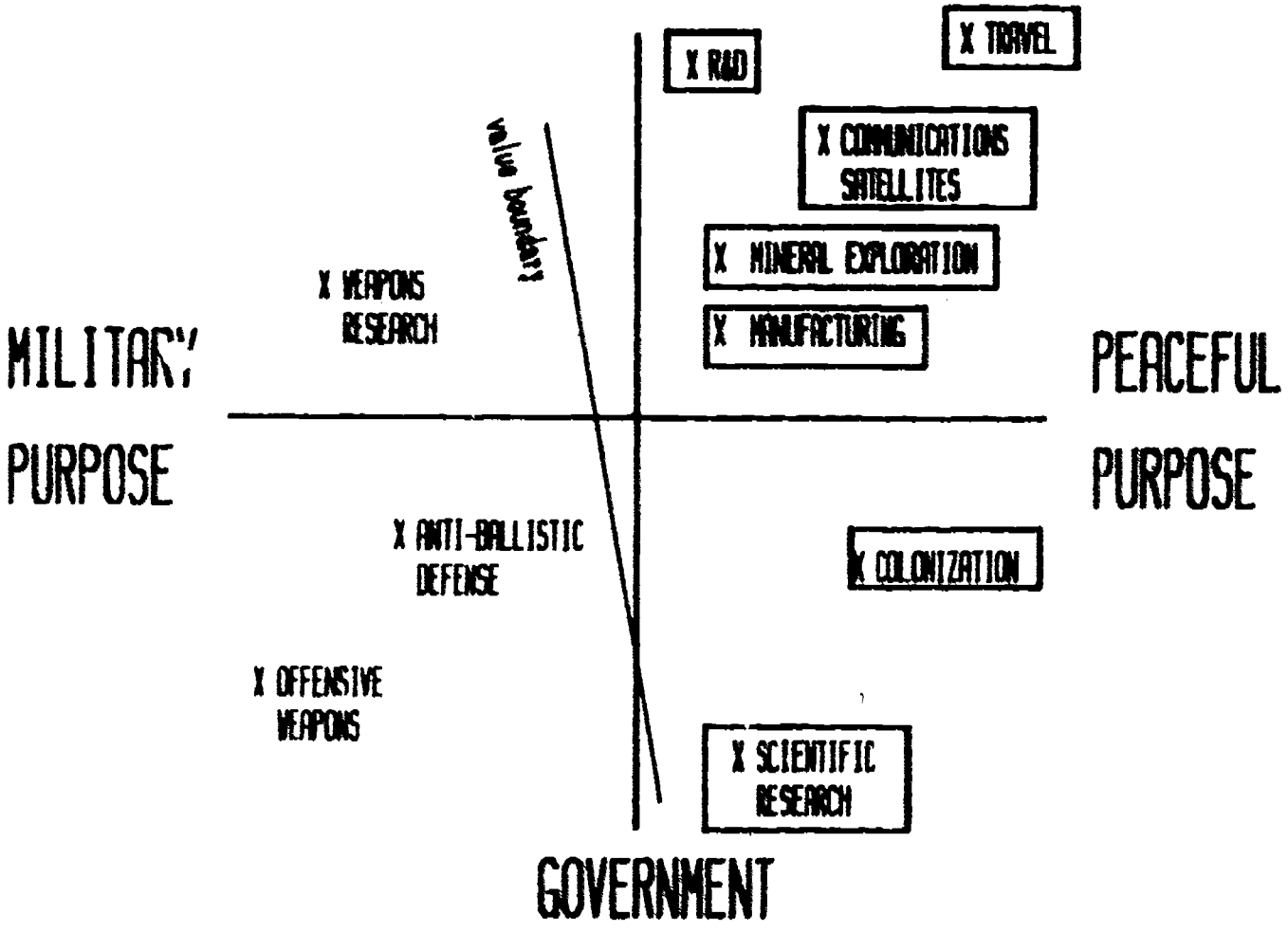
SPACE EXPLORATION



(PRIVATE ENTERPRISE AND PEACEFUL PURPOSES HIGHLY VALUED)

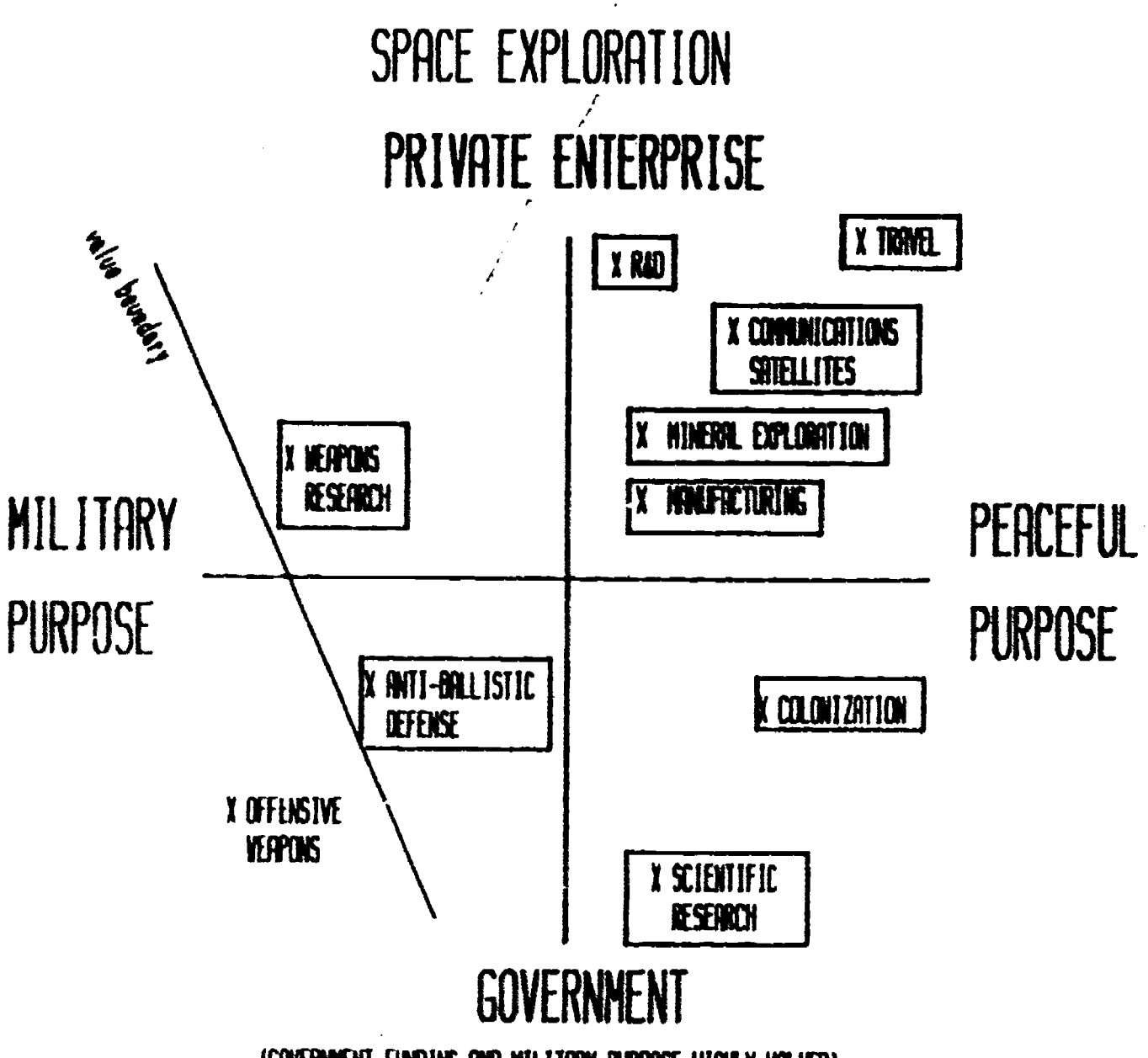
FIGURE 5. VALUE BOUNDARY DIAGRAM

SPACE EXPLORATION



(PRIVATE ENTERPRISE HIGHLY VALUED; PEACEFUL PURPOSES MODERATELY VALUED)

FIGURE 6. VALUE BOUNDARY DIAGRAM



(GOVERNMENT FUNDING AND MILITARY PURPOSE HIGHLY VALUED)