

PLANNING,
PARADIGM
& CHANGE:

OUTGROWING THE
GROWTH ETHIC.

PLANNING, PARADIGM, and CHANGE: Outgrowing the Growth Ethic

by

Brenda Lori Nielsen

A thesis
presented to the University of Manitoba
in partial fulfillment of the
requirements for the degree of
Master of City Planning
in
Department of City Planning

Winnipeg, Manitoba, 1985

(c) Brenda Lori Nielsen, 1985^v

PLANNING, PARADIGM AND CHANGE:
OUTGROWING THE GROWTH ETHIC

BY

BRENDA LORI NIELSEN

A thesis submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
of the degree of

MASTER OF CITY PLANNING

© 1985

Permission has been granted to the LIBRARY OF THE UNIVERSITY OF MANITOBA to lend or sell copies of this thesis, to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film, and UNIVERSITY MICROFILMS to publish an abstract of this thesis.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

ABSTRACT

The social, economic and ecological environment with which contemporary planners must deal is fraught with difficulty and dichotomy. In examining the situation, however, it appears that the true difficulties lie with the obsolete thought and value systems which guide action, the outmoded paradigms. This thesis deals with a current idea system and its consequences, as well as details of the present world context and their implications for change. These and related subjects, such as the planner's role in the process, are explored through a wealth of pertinent literature, both current and classic.

The underlying assumption and indeed the conclusion of the thesis is that greater understanding of a system leads to greater effectiveness in working within it. Although mere knowing does not guarantee an answer to current dilemmas, an awareness of what is occurring from a broader perspective can reveal the nature of the answers which are necessary. Such implications are important to those who must deal with people generally, but become particularly valuable to planners and related professionals whose actions depend upon and directly affect many people.

PREFACE

There is a certain intuitive sense in each of us which tends to guide our interests and spark a personal curiosity in certain subjects. In spite of a very limited initial understanding or background in a particular subject area, our attention can be drawn to it. As that interest matures however, it must be more fully grounded and substantiated by specific, tangible information in order for it to be of real benefit to the individual concerned or others.

For a number of years I have experienced this form of growing interest in 'people' questions and issues--the behavioral underpinnings related to all of the more pragmatic issues of economics, population, policy and ecology in planning and design. I began to identify these interests during the course of my undergraduate work in Interior Design. They have continued to develop through subsequent studies and experience in City Planning.

A number of ideas and questions have been forming and accumulating parallel to those encouraged by the prescribed subject areas of my formal course of study. Largely, they have taken the form of personal queries and conjecture which have resulted from pondering the significance of other issues and topics. For example, Where do widely held beliefs

originate? Why are they so widely accepted? If, through analysis and criticism, we can generate alternatives, why are they so difficult to implement? We have such limited understanding of human social and cognitive systems and how they operate in this broader sense. The question of 'Why?' remains so difficult to answer.

Although I have been able to pursue these incidental interests to a limited degree within the established parameters of most courses and seminars, my curiosity was always left largely unsatisfied. For the most part, my attempts to probe into these other subjects did not prove extensive enough to produce more than a limited sense of resolution or satisfaction about them in my own mind. Hence, I have greatly appreciated the opportunity which this thesis has afforded to focus my attention more fully and directly on certain aspects of behavior and cognition which have long intrigued me. It has been a particularly meaningful experience.

I appreciate those whose enthusiasm and support allowed me to see this project to completion within such an abbreviated time frame. I especially recognize and thank:

- My parents and sisters who have always taken a personal interest in my sometimes less-than-orthodox academic interests. They have shared with me the difficulties as well as the triumphs.

- My thesis committee of Mario Carvalho, Basil Rotoff and Michael Cox who have demonstrated again and again their skills as 'educators' in the true sense of the word. Bruce B. Clark once said, "Giving information is only the beginning of a teacher's responsibility; the end is to stimulate, motivate, lift, challenge and inspire". These professors have offered this form of support, providing guidance and direction while still allowing me the freedom to explore my personal interests.
- The classmates with whom I've worked side by side throughout the summer. Their companionship and unfeigned optimism, interest and enthusiasm have been greatly appreciated.

It has been a meaningful though difficult exercise to sort and clarify and finally communicate some of the ideas this thesis deals with. By nature they are neither succinct or easily capsulized, and their applicability to planning may be less obvious and direct than other subjects more commonly undertaken in MCP theses. Nonetheless, I have gained a great deal of satisfaction personally from this particular pursuit. It represents what I hope will be the first step toward a continued series of studies and increased understanding of the subject.

CONTENTS

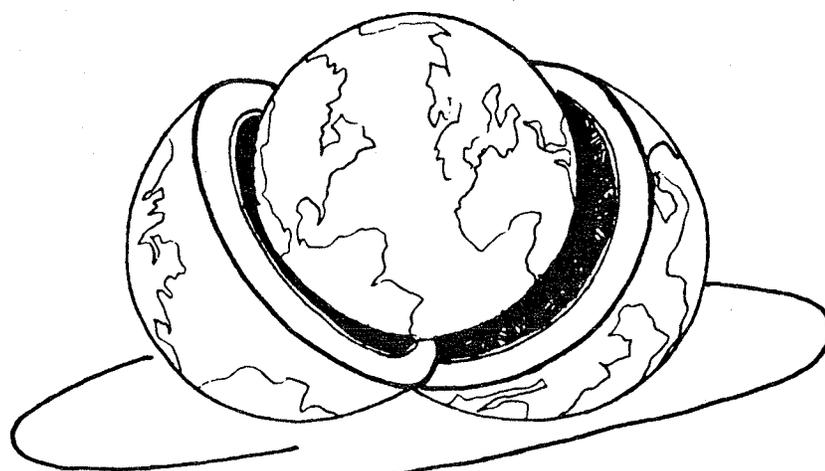
Abstract	iv
Preface	v
Chapter I: AN INTRODUCTION	1
Chapter II: PARADIGMS	7
PARADIGMS DEFINED	13
EMERGENCE OF THE PARADIGM	23
FUNCTION OF PARADIGMS	26
Chapter III: A CONTEMPORARY PARADIGM	32
ORIGINS OF GROWTH	33
THE GROWTH ORIENTATION IN PLANNING PRACTICE	40
Chapter IV: CHANGE AND PARADIGMS	48
THE CONTEXT	48
CONTEXTUAL FIT	50
ANOMALY AND PARADIGM CHANGE	52
THE PROCESS OF CHANGE	56
REVOLUTION	57
INVISIBILITY OF REVOLUTIONS	60
EVOLUTION VERSUS REVOLUTION	61
IN SUMMARY	63
Chapter V: CHANGE TO THE CURRENT PARADIGM	69
CONTEXT 1	70
CONTEXT 2	75
ECOLOGICAL CRISES	75
ECONOMY	77
DEMOGRAPHY	79
TECHNOLOGY	81
QUALITY VERSUS QUANTITY	82
IMPLICATIONS OF CONTEXTUAL MISFIT	85

Chapter VI: OUTLINING A NEW PARADIGM	89
ECOLOGICAL LIMITS	91
ECONOMIC REDIRECTION	92
QUALITY OF LIFE	93
PROGRESS REDEFINED	94
NONGROWTH PROTOTYPES	95
IMPLEMENTING A NEW SYSTEM	98
A PREFERRED ALTERNATIVE	99
IN SUMMARY	103
Chapter VII: DIFFICULTIES IN IMPLEMENTING CHANGE	106
OTHER OBSTACLES	112
GRADUAL EVOLUTION	113
OVER-OBJECTIVE EVALUATION AND EDUCATION	113
QUANTITY AND 'FACING CHANGE'	114
GROWTH AND WELL-BEING	115
DISSATISFACTION	116
TECHNOLOGY	118
VESTED INTERESTS	120
MASS MEDIA	122
TIME	123
IN SUMMARY	124
Chapter VIII: A ROLE FOR PLANNERS IN THE PROCESS	126
THE PLANNER; THE INDIVIDUAL	128
EDUCATION	131
PUBLIC AWARENESS	135
NETWORKING	140
Chapter IX: IN CONCLUSION	145
BIBLIOGRAPHY	154

ILLUSTRATIONS

1. The Thought/Action Sequence	9
2. Mental Frameworks	10
3. The Thought/Action Process: Overt and Covert Aspects	11

4.	Paradigm Sequence	22
5.	Population Projections	44
6.	Paradigm Change	65
7.	Levels of Perception	100
8.	The Role of Planning in Paradigm Change	150



CHAPTER 1

Men live not by truth alone,
but by myth.

E.J. Mishan

Chapter I

AN INTRODUCTION

Our society seems to speak a double language, one of unlimited potential and progress and, at the same time, cutbacks, scarcity and restraint. In considering current policies, literature and directions, one remarks increasingly upon the dichotomy between words and action and between aspirations and logical possibility or potential. There is an increasing distance between escalating expectations and capacity to meet those demands in terms of the economy, raw materials and ecological limitations.

The discrepancies and inconsistencies between what we can do and what we want to and insist upon doing seem sufficiently clear with even superficial observation. However, in the general operation of things, the situation is obscured and collectively society does not recognize the dichotomy.

The guiding principles of modern society have their origins in the developments of the Industrial Revolution. The growth ethic, undaunted faith in the power of technology and elevated expectations originated in that era. Since that time, they have become so deeply entrenched and inflated that their validity is not questioned. Subscription to

these principles is not only assumed but advocated and promoted at every level and throughout all social strata. As a result, growth has become:

the secular religion of American society, providing the goal, a basis for political solidarity, and a source of individual motivation; the pursuit of happiness has come to be identified almost exclusively in material terms, and the entire society--individuals, enterprises, the government itself--has an enormous vested interest in the continuation of growth.¹

Although the essence of the thinking may not have changed significantly since the turn of the century, the social and environmental context is very much different. There have been fundamental changes in society, economy and ecology which render the contemporary world a substantially different place than the one in which and for which the aforementioned principles were originally conceived and fostered. Much of our present difficulty in coping with current issues is a direct result of this 'lack of fit' between thought or perception and reality. How can any action or initiative be effective in a real sense if the thinking which guides it is inappropriate and divorced from the actualities of the situation?

One must wonder why, when the symptoms are so apparent, that the solution is not equally obvious. Any appeal to logic and the most superficial review of pertinent factors indicates that fundamental changes in thinking are not only

¹ William Orphuls, ECOLOGY AND THE POLITICS OF SCARCITY: Prologue to a Political Theory of the Steady State (San Francisco: W.H. Freeman & Co., 1977), p. 185.

imminent but essential. One senses that there must be a realignment of the very basics. However, if this change is as fundamental as it appears, how does one account for the fact that it has not taken place? Not only has it not occurred, it is not as yet recognized as necessary by the vast majority.

As in most cases, there is more involved than pure logic. There are forces in operation which dictate the dynamics of society; the momentum with which it moves and the complexity of the process. In our insistence on rationality, we seldom address the factors which lie beyond the bounds of strict logic. These factors do exist, however, and are operant in all areas of contemporary society.

The phenomenon of increasing stress and anomaly which is becoming more and more apparent in the modern scenario is consistent with the basic cycle of established paradigms. Contrary to the commonly held concept that development occurs through an incremental and relatively frictionless accumulation of understanding and methodology, the triumph of a new and more appropriate idea system over the incumbent occurs only through "revolutionary competition between proponents of the old and the new".² The study of paradigm change reveals the cycle involved in aligning and realigning accepted models with their context. Evidently, we are presently in the midst of such a transition; at a point where

² Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 8.

there must be not only new methods and actions, but an entirely new way of thinking behind them.

Thus far, in dealing with the difficulties of the current situation, we have only been focusing on the overt symptoms. There must be understanding and action which extends to a broader level, that of behavior and cognition. The exploration of this broader cognitive and behavioral system has become one of the major concentrations of this thesis; the identification, so far as is possible, of thought-level phenomena, the nature of their operation, and their relationship to present problems in other social, economic, and ecological spheres. The current idea system and its consequences, as well as details of the present world context and their implications for change, all become part of describing the dynamics of the paradigmatic process.

Once one understands how a system operates, he is much more effective in working within it. Although mere knowing does not guarantee an answer to current dilemmas, an awareness of what is occurring from a broader perspective can reveal the nature of the answers which are necessary. Such implications are important to those who must deal with people generally, but become particularly valuable to planners and related professionals whose actions depend upon and directly affect many people.

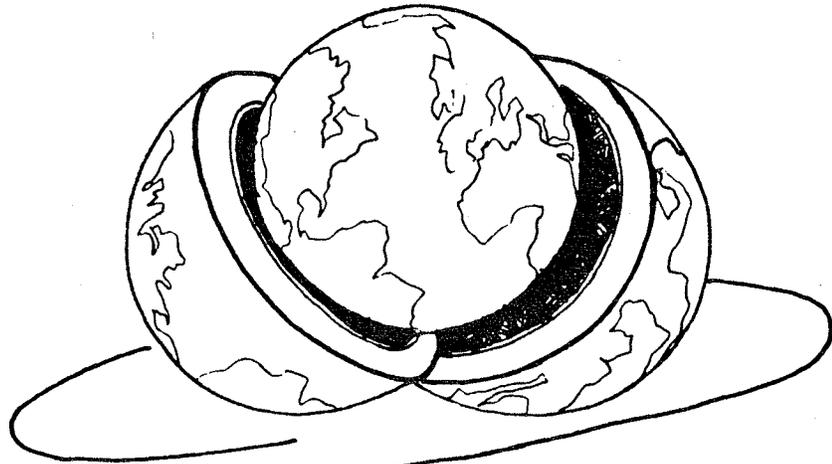
There is a place within the cycle of change now underway for planning professionals to exert positive and much needed

to understand performance

influence and direction in promoting constructive change. In order to assume such a catalytic role, it is not only imperative that one understands the past and current social, economic and philosophical contexts which implicate the change, but also, there must be very clear recognition, if not comprehension of the factors which oppose it. Without a sense of the realities and peculiarities of the present situation, one cannot be effective in making a meaningful and timely contribution.

The intention throughout the remainder of this thesis then, is not to present "one more survey of the flood of predictions, contingency forecasts and similar studies" which now exist in such abundance. Rather, it is an attempt to articulate and communicate some of the rudiments responsible for the "widely shared and deeply held 'gut-feeling' that something essential in our human world has gone off-center."³

³ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 19.



CHAPTER 2

What a man sees depends both upon what he looks at and also upon what his previous visual-conceptual experience has taught him to see. In the absence of such training there can only be, in William James's phrase, "a bloomin' buzzin' confusion".

Thomas Kuhn

Chapter II

PARADIGMS

Life, by definition is an 'animate existence', implying action, movement and change. In all spheres and in all aspects, life is in a constant state of flux; expanding, diminishing, evolving, dissolving; always changing. This is the essence of 'panta rhei' or 'everything in flux' which Heraclitis attempted to capture.¹

In describing man's predicament in this changing world, Jackson Davis wrote: "We are specks on the river of history, swept toward a sharp bend that will carry us into the unfamiliar."² The struggle to cope with unfamiliar and changing situations becomes the essence of human life. Man, however, "finds his security in firm structures, physical as well as social and cultural ones, not in the balance of movement. The only way he knows how to deal with the world is sequential, starting from firm grounds and proceeding step by step in solving what he calls 'problems'."³

¹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 23.

² W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Co., 1979), p. xv.

³ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 114.

Hence, in striving to deal with the many aspects of life situations, certain mental frameworks have developed--a 'firm ground' on which to base decisions and selections between alternatives. These firm grounds consist not only of facts and experience but, of values, beliefs and prescriptions. The interaction between consciousness and reality determines the package with which one confronts the world. It includes "what we are, feel, perceive and know" as well as "what we want, what we conceive and what we can do."⁴

The mental frameworks thus established comprise certain generalizations which can be applied in similar situations, eliminating the need for entirely new decisions in each instance. These structures become an intermediate step in the thought/action process. Without a set of preconceived principles, one must work through a series of options, weighing the relative merits of all alternatives before formulating the most appropriate response. There can be considerable delay before the eventual action is initiated. This process can be diagramed in the following manner:

⁴ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 192.

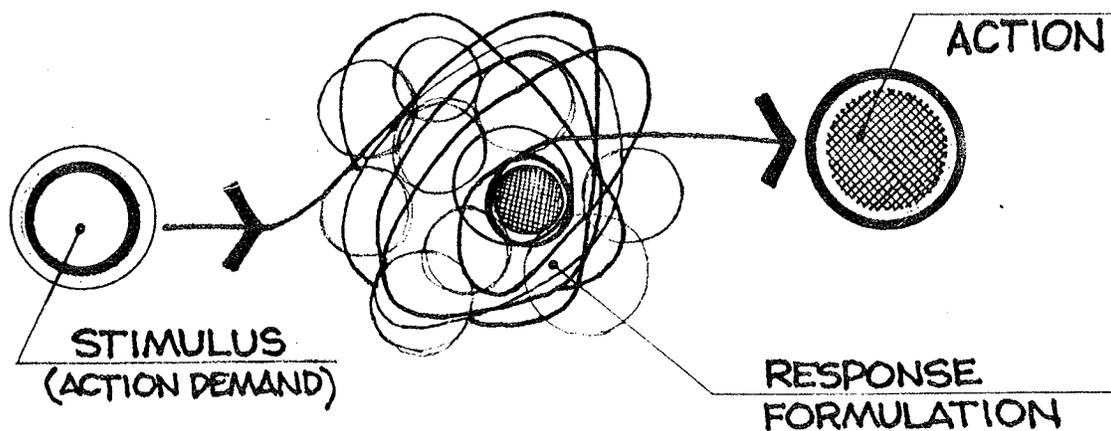


ILLUSTRATION 1: The Thought/Action Sequence

However, "the constant burden of decision...is a tiring one. So, (man) avoids it where he can by using rules, (or general principles) which he formulates in terms of his invented concepts...They are prescriptions which relieve the burden of self-consciousness and of too much responsibility."⁸ Instead of reevaluating the alternatives in each instance, one appeals to the previously established framework. The time and effort involved in formulating a response are thus greatly reduced, which in turn reduces the energy expended in the whole sequence of stimulus-to-action. This net gain is represented in the figure below:

⁸ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 62.

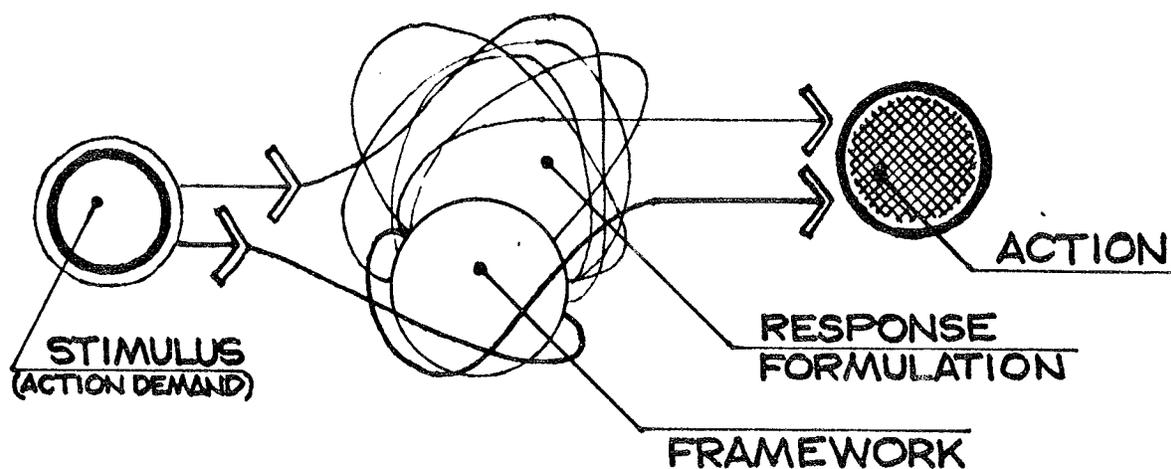


ILLUSTRATION 2: Mental Frameworks

With the incredible numbers of stimuli one routinely encounters, responses are necessarily very rapid. In fact, some responses occur so rapidly as to appear to be merely reflexive. However, regardless of the rapidity, "it is surprisingly difficult...to find processes in human history which are truly mechanically latent in the sense that they are quite independent of any image which may be held by the people participating in them."⁹ Consequently, human life is "neither random or haphazard" but purposeful and directed.¹⁰

As life and social structures have become increasingly complex, so have these cognitive frameworks. Men increasingly organize their thinking and direct their decision-making

⁹ Kenneth Boulding, The Image (Ann Arbor, Mich: University of Michigan Press, 1977), p. 117.

¹⁰ Kenneth Boulding, The Image (Ann Arbor, Mich: University of Michigan Press, 1977), p. 77.

by means of larger belief systems. These systems not only facilitate decision-making, as mentioned above, but serve to establish at least minimal consensus of thought amongst groups of people. Our ability to function collectively as groups as well as the physical context we have consequently constructed, are the tangible manifestations of these underlying belief systems which guide action.

Due to their covert nature and strong behavioral ties, these phenomena (A) are less frequently discussed than the more empirical action-side events (B).

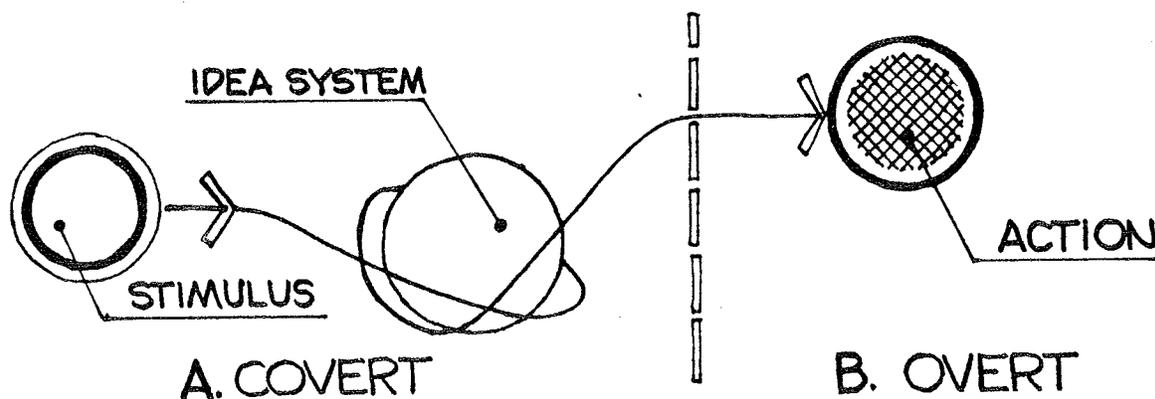


ILLUSTRATION 3: The Thought/Action Process: Overt and Covert Aspects

Since action is concrete, tangible and easily observable, it is typically the object of study. We do not often focus on the intangible thought process which any action presup-

poses. The assumptions and generalizations which form the decision-making framework become so accepted that we are almost unaware they occur. Frequently it is assumed that "What cannot be seen (does) not...exist, and what cannot be measured does not count."⁸ However, in the words of Edward Shils, "That which is effective need not be visible."⁹

There are many idea systems and subsystems which operate in an equally large number of ways and levels. Everyone at one time or another, through common experience or casual observation, has made use of some form of idea framework. For this reason, the concept may seem deceptively elementary. In actuality, an idea system in its entirety is extremely complex. Of interest in this thesis, therefore, is the portion or aspect of that system which relates to how widely held patterns of belief in professional fields come about; how they are introduced and initiated, then perpetuated and finally, under certain circumstances, rejected and overthrown.

Unravelling these features is a difficult undertaking. Many have made the attempt. Their observations and speculation, taken collectively, begin to define the nature and characteristics of a system, the process by which it operates and, its role in co-ordinating the efforts of individu-

⁸ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 25.

⁹ Edward Shils, Tradition (Chicago: University of Chicago Press, 1981), p. 197.

als and groups within a given profession or practice. The remainder of this chapter, therefore, is devoted to an idea system called 'paradigm'; its definition and an introduction to the way it operates.

2.1 PARADIGMS DEFINED

As previously mentioned, one of the great difficulties in dealing with idea systems is their covert nature. They function on a level which is not physically obvious except for secondary evidences which occur as a result of their operation. These evidences include observable actions as well as the artifacts those actions create. In tracing behavior and action in specific circumstances over time, certain patterns emerge from which the features of an idea system can be inferred. The inference then in turn is compared and refitted to specific situations testing the degree to which it in fact reflects the process it aims to describe.

Although in many ways this methodology becomes highly subjective and prone to the particular biases of the individuals applying it, there has been substantial agreement as to the existence and configuration of the phenomenon under study here. It is labeled differently by different people but the essence of the concept seems to remain constant.

Thomas Kuhn is widely known for his contribution to our understanding of idea systems and is responsible for defin-

ing in great detail the aspects of the system known as 'paradigm' which is of particular interest here. Although he has been strongly criticized as to the details of his argument, his major work, The Structure of Scientific Revolutions, stands as a landmark in the understanding of how ideas and belief systems evolve and operate. It is particularly significant in the insights it offers into professional matrices. Kuhn's astute observations and conclusions form the theoretical framework on which the remainder of the thesis is constructed and from which its major premises have grown.

Being a scientist by profession, Kuhn focused his attention on the scientific community. It provided a relatively neat sphere in which to observe and test his perceptions.

Kuhn coined the term 'paradigm' and applies it to the specific phenomenon of idea development which he studied. Throughout the course of his book, he defines the concept. Beginning with a very basic definition, he builds and elaborates upon it as he addresses various characteristics.

Very simply, paradigm is "an accepted model or pattern."¹⁰ It is less structured and specific than a theory and of broader scope. In fact, paradigm includes "the entire constellation of beliefs, values, (and) techniques shared by members of a given community."¹¹

¹⁰ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 23.

¹¹ Thomas S. Kuhn, The Structure of Scientific Revolutions

Its precise scope and content, of course are impossible to specify, but it is sound knowledge nonetheless. Derived from observation, it can be infirmed by further observation, and it meanwhile provides a basis for rational action.¹²

Two characteristics distinguish paradigms from theory and other forms of belief:

1. What they embody is 'sufficiently unprecedented to attract an enduring group of adherents away from competing modes of...activity.'
2. In spite of the definition which they give to a field of enquiry, they remain 'sufficiently open-ended to leave all sorts of problems for the...group of practitioners to resolve.'¹³

There is a tendency to label the specific theories and rules which dominate a particular field as paradigms, however, it must be remembered that the paradigm is the idea from which these narrower, more definitive structures originate. The paradigm itself is "prior to, more binding, and more complete than any set of rules...that could be unequivocally abstracted from them."¹⁴

2nd ed. (Chicago: University of Chicago Press, 1970), p. 175.

¹² Imre Lakatos and Alan Musgrave, Criticism and The Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 17.

¹³ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p.10.

¹⁴ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 46.

The rules and assumptions which often follow paradigm development initially need not be explicit in order for the paradigm to function. This is possible in the same way that, categorically speaking, we can classify things like chairs and games without a fixed set of characteristics. A broad general conception or 'tacit knowledge'¹⁵ of what constitutes a 'chair' or a 'game' is sufficient at the outset. Analogically, "paradigms determine large areas of experience at the same time."¹⁶

Others besides Kuhn have also dealt with the subject of paradigms. Jackson Davis prefaced his remarks in The Seventh Year with brief reference to them. His definitions are derived directly from the writings of Kuhn, but for their simplicity are worthy of note. He states that a paradigm is "a set of broadly shared assumptions." Further,

It is the paradigm that dictates which operation is important, which hypothesis merits attention, and which theory holds sway. Likewise, paradigms mold predictions about the future.¹⁷

Although there have been many critics of Thomas Kuhn's position and argument, they have focused almost exclusively on his description of the process by which the paradigm

¹⁵ Michael Polanyi, Personal Knowledge (Chicago: University of Chicago Press, 1958).

¹⁶ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 129.

¹⁷ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. xvii.

operates within the professional community. Since these dissenting views offer little by way of further understanding of the definition of paradigm, any detailed comments on their positions is reserved for a later section on process. It is useful instead to consider the observations of Jantsch, Boulding and Alexander who attempt to describe the paradigmatic phenomenon in slightly different terms. It is significant that although the nomenclature differs, the concept or nature of the phenomenon they describe changes very little from that which Kuhn perceived.

Erich Jantsch describes the idea phenomenon in terms of 'myths'. He claims that they are a "matter of design"¹⁸ and in fact, are so designed "as to 'tune-in' with reality; to become powerful regulators in designing man's physical, social, spiritual world in a viable way."¹⁹ These ideas are not myths in the sense of being untrue, but in that they are the articulation of man's perception, based on the way he is able to 'appreciate' his world at any given point. They are myths in the sense that they represent beliefs which are effective and 'true' during the period in which they are observed and in force. Their influence is a function of popular acceptance.

¹⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 108.

¹⁹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 109.

Laws and rules evolve consequent to the establishment of certain myths. They are "introduced, tested, weighed and modified through the appreciated world by means of our ideas (myths) of what the world can do for (or to) us and what we can do for (or to) the world."²⁰ They become, in Jantsch's words, "an intellectual prosthesis"²¹ which imposes order on our ways of thinking and acting.

Kenneth Boulding prefers to use the term 'image' to describe the paradigmatic phenomenon. According to Boulding, the 'image' represents "subjective knowledge" or "what I believe to be true."²² He goes on to state that "the subjective knowledge structure or image of any individual or organization consists not only of images of 'fact', but also images of 'value'."²³ Pursuits such as social psychology, psychoanalysis and public opinion polling all attempt in their own way to identify the image held by individuals and groups, and reconfirm in Boulding's mind the existence of the phenomenon.

Christopher Alexander also alludes to some form of conceptual concensus which dictates a generalized set of values. "While the relative importance of different require-

²⁰ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 192.

²¹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 232.

²² Kenneth Boulding, The Image (Ann Arbor, Mich: University of Michigan Press, 1977), p. 6.

²³ Kenneth Boulding, The Image (Ann Arbor, Mich: University of Michigan Press, 1977), p. 11.

ments usually is a matter of personal opinion, the decision that a requirement is a requirement or not, is less personal."²⁴ He goes on to explain that our decision-making is based on an accepted value system which prioritizes life.

Although these similar descriptions appear under different names, one must make a distinction here between such paradigm-like processes and others, like dogma or tradition which are clearly of another order. In his book Tradition Edward Shils describes a phenomenon which has the appearance of a paradigm in some respects but, on closer examination, is not. The differences are important to note in order to understand where these other processes fall in relation to paradigms. There are several fundamental differences.

Firstly, traditions can be and often are articulated in a relatively concise fashion. Paradigms, by contrast, are much less tangible and infinitely more complex. They are rarely definable in the strict sense of the word.

Secondly, traditions are thought to proceed incrementally and through the process of very gradual evolution. They change slightly though perceptibly from generation to generation as each adapts the specifics of the patterning to the prevailing situation. Major shifts are not common nor easily achieved and the complete elimination of a tradition is all but impossible.

²⁴ Christopher Alexander, Notes On The Synthesis of Form (Cambridge: Harvard University Press, 1971), p. 103.

Paradigms, on the other hand, are convincingly overthrown. When sufficient evidence and new insights are accumulated, a new paradigm clearly supersedes its predecessor and takes effect. Although proponents of the old paradigm may linger, it effectively dies with them and becomes extinct.

For these and other reasons, tradition fits most appropriately in the category of the 'disciplinary matrix' Kuhn refers to. They are part of the practical articulation of the paradigm. Paradigms affect one's perceptions and govern thinking while tradition demands performance of certain well-defined actions.

Image, myth, paradigm; all are attempts to describe a similar idea structure. Although the means differ, it becomes evident that each is essentially addressing the same concept. This consensus serves to reconfirm the existence of an underlying structure and its specific label becomes a secondary concern. For purposes of clarity in ensuing discussion, however, it is necessary to adopt one term which will hereafter represent the concept.

Although it has additional, and in some cases conflicting connotations and usages, the term 'paradigm' appears to be the most appropriate for our purposes. In addition to the breadth of scope which it implies, paradigm also connotes a certain concreteness and substance which reflects the nature

of the concept more fully than the alternate terms 'image' or 'myth'. In order to further clarify the context in which paradigm will subsequently be used, it is helpful to consider Margaret Masterman's insights into the 'Nature of Paradigm'.²⁵ Dealing with the 21-odd definitions found in Scientific Revolutions, she identified three types of paradigm or general meanings of the word. The first represents paradigm as an artifact or construct which is more concrete and specific than even a theory. Typically, these 'paradigms' take the form of textbooks, tools or instruments of the profession. The second definition is of 'sociological' paradigm, a concept which is less concrete but still observable. Basically, it is an achievement as opposed to a theory.

The first two definitions are probably the most common conceptions of paradigm. However, it is the third type, or 'metaparadigm', which forms the definition central to this thesis. It describes paradigm as a metaphysical notion or entity far wider than theory and prior to it.

It is useful perhaps to diagram the concept of paradigm in the context of this specific definition and in reference to theory, laws, and then practice. These elements form linkages which can be represented simplistically by the following chain:

²⁵ Margaret Masterman, "The Nature of Paradigm", in Imre Lakatos and Alan Musgrave, Criticism and The Growth of Knowledge (Cambridge: Cambridge University Press, 1970).

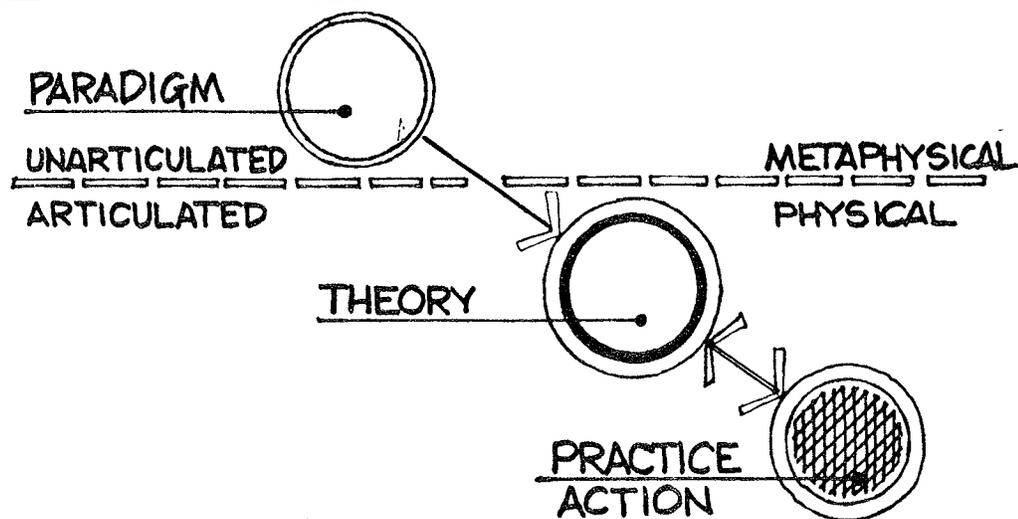


ILLUSTRATION 4: Paradigm Sequence

The paradigm, operating at a metaphysical level, provides the framework or basic assumptions from which theory and rules can be derived and formulated. On this level, the paradigm, is a perceived notion whose strength is dependent upon the degree to which it is generally accepted.

Theory and laws operate in the physical sphere. They are tangible manifestations of the broader belief system (paradigm) and outline HOW those ideas will be implemented in specific situations and conditions. They become, in fact, the 'tools' through which the paradigm operates. These tenets are frequently set down in writing in professional codes, textbooks and other forms of desiderata. The fact that they are clearly articulated and available and the paradigm is not, often leads to confusion about the distinction between the two levels and the mistaken combination of the two into one sphere of ambiguous dimension.

The theory to practice linkage is fairly obvious in spite of the discrepancies which often occur between the professed and the applied. In general, the means prescribed through formal theory and methodology are eventually implemented.

One may note that the correlation between these spheres does not form a vertical structure. The interaction is not spontaneous, but forged over time. Therefore, when suspended over a time line, there is some degree of lag from inception of the paradigm until its effects are translated through to practice. This skew over time becomes particularly significant in the discussion of paradigm change undertaken in subsequent chapters.

2.2 EMERGENCE OF THE PARADIGM

Having defined the idea system and affixed the label 'paradigm' to facilitate further reference, it is important to consider the process by which these paradigms originate and operate. In doing so, we appeal again to the work of Thomas Kuhn. It should be remembered that his observations and descriptions were formed in reference to the scientific community. This becomes evident in some of his definitions. The principles, however, are equally applicable to other professions and society at large.

Kuhn presents a sequence through which ideas emerge, consensus is built, and a particular paradigm is eventually adopted. Initially, in any field, there are many opposing

schools of thought which each claim a number of areas that their position explains. Each group is free to draw from the existing body of knowledge the aspects which they particularly find useful. One theory can lead to another, providing the point of departure for an ensuing one, or they can be very separate and distinct in their derivations. Certain fundamental disagreements exist in these initial theories which fuel the quest for more explicit and comprehensive resolutions to that research question or subject.

As we will remember, consensus is germane to any paradigm. It also represents, however, one of the great difficulties involved in the establishment of new paradigms. There are a number of reasons that consensus is difficult to build:

- Initially, all of the theories are given equal relevance. There is no means of prioritizing them, therefore, one has as much claim to its adherents' loyalty as the next.
- Early collections of data and findings are usually very casual, making full argument and articulation of a pre-paradigm idea confusing to undertake and to accept.
- The way in which the existing data are combined and juxtaposed make clear conclusions difficult to derive.

Early paradigmatic development is characterized by a divergence of interpretations derived by individuals describing and interpreting the particular situation and information in different ways. These divergences soon disappear, however.

The 'weeding-out' occurs as a preparadigm school, focusing on a specialized part of the larger and unmanageable pool of facts, etc. begins to emerge. Discussing this process, Kuhn states:

In order to be accepted as a paradigm, a theory must seem better than its competitors, but it need not, and in fact never does, explain all the facts with which it is confronted.²⁶

Preparadigm consensus promotes further advancement in spite of its weaknesses. It ends interscholastic debates which were based on the reiteration of fundamentals. Then, more precise work is encouraged. Because the focus is no longer on the assimilation of the entire field of pertinent facts, scientists can concern themselves more fully with specific areas and perform intensive research. The background is now justified by the paradigm so work can move forward on the assumptions it provides. Other schools of thought disappear as members of the community either adopt the new paradigm or, remaining with their former ideas, are no longer recognized by the profession.

Paradigms are not always conceived or adopted in a complete or fully mature form. Being 'dynamic' structures in some senses, they continue to be detailed and articulated for some time after their inception. This is not forcibly the case with all paradigms, nonetheless, Kuhn cautions, "We must recognize how very limited in both scope and precision

²⁶ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 18.

a paradigm can be at the time of its first appearance."²⁷ He compares newly adopted paradigms to an accepted judicial decision in the common law which is "an object of further articulation and specification under new and more stringent conditions."²⁸ More precise paradigms "are obtained by the elimination of ambiguities that the original form had retained."²⁹

The extent to which the paradigm will ever become explicit, however is limited by the exigency of breadth. The paradigm must allow for sufficient flexibility. If it is too restrictive by being too descriptive, it can provide no room for exploration and problem-solving. If it is pared down to only the factors which hold true unequivocally, there is no longer room to test and continue to discover.

2.3 FUNCTION OF PARADIGMS

Any discussion of process necessarily leads to questions about the function paradigms perform. They are significant social instruments in a number of ways. For instance, in discussing the hierarchy of values, Elizabeth Drews commented:

²⁷ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 23.

²⁸ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 23.

²⁹ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 34.

One of the aspects of our lives about which we have no choice at all is that we must, and do, make choices continually. Indeed, to live is to choose.³⁰

However, with the enormous number of decisions to be made and the changes which are constantly occurring in both the individual and society, it is extremely difficult if not impossible to distinguish in a significant way between the available options without some form of framework which organizes values into an hierarchal system. Paradigms perform this function. In acting as a field of action, they influence behavior in such a way that it "gravitates towards the most highly valued part of the field."³¹ Paradigms become, therefore, a powerful guide to action. In this regard, we might consider as an example Christopher Columbus. He "would never have thought to set sail westward had he not had an image of the round world, and a high value in his system for spices."³² By the same token, "All the horse collars in the world did not suffice to abolish slavery until the image of a free society became dominant."³³ Action, therefore, is based on and centers around the ideas and values of the dominant paradigm.

³⁰ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 11.

³¹ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 115.

³² Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 122.

³³ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 121.

In terms of smaller communities such as science and other professions, paradigms reduce the scope of investigation and focus action on a narrower range of concerns and questions.

One of the reasons why normal science seems to progress so rapidly is that its practitioners concentrate on problems that only their own lack of ingenuity should keep them from solving.³⁴

Once the reception of a common paradigm has freed the scientific community from the need constantly to re-examine its first principles, the members of that community can concentrate exclusively on the subtlest and most esoteric of the phenomena that concern it.³⁵

Paradigms, therefore, dictate which problems need to be solved. "Paradigms provide scientists not only with a map but also with some directions for map-making."³⁶ From the concise framework that a paradigm affords, scientists are well equipped to begin problem-solving. Both their effectiveness and efficiency is enhanced by means of the paradigm they follow.

The paradigm not only directs and dictates the course of research and pursuit of specific goals, but also provides a means of evaluating the resultant findings. With a paradigm in place, "the range of anticipated and thus assimilable results is always small compared with the range that imagi-

³⁴ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 37.

³⁵ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 164.

³⁶ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 109.

nation can conceive."³⁷ The solution to the problems articulated by means of the paradigm must be within certain rules, also embodied in the paradigm, that determine the nature of the solution and the steps to get there.

In summary, the paradigm is catalytic in its role. It provides a means to accomplishing ends beyond itself; ends which without the paradigm vehicle could not have been achieved with the same efficiency. The paradigm establishes a groundwork of assumptions from which further steps can be taken, and imposes order on the pursuit of espoused goals. In short, it "determines the patterns of theory, meaningful questions, the legitimate interpretations, etc., within which theoretical speculation is bounded for as long as that particular conceptual scheme retains intellectual authority within the...science concerned."³⁸

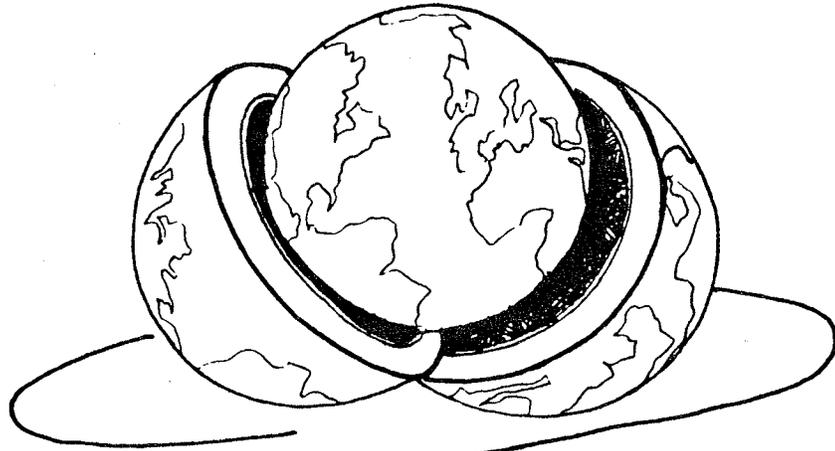
Thomas Kuhn described the uncovering of a hitherto unknown phenomenon, like paradigm, as a necessarily "complex event, one which involves recognizing both that something is and what it is."³⁹ This chapter has been the attempt to highlight these two factors: the existence of the phenom-

³⁷ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 35.

³⁸ Imre Lakatos and Alan Musgrave, Criticism and The Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 40.

³⁹ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed. (Chicago: University of Chicago Press, 1970), p. 55.

enon, and how it operates. Both subjects will be developed further in subsequent chapters as we consider in detail a contemporary paradigm and then focus specifically on the mechanism for change each paradigm embodies. It is sufficient to reaffirm at this point that a phenomenon herein described as paradigm does exist and commands a particular form of adherence.



CHAPTER 3

Most persons think that a state in order to be happy ought to be large; but even if they are right, they have no idea of what is a large and what is a small state.

Aristotle

Chapter III

A CONTEMPORARY PARADIGM

The observations of Thomas Kuhn and others in reference to science apply equally well to all professions. Paradigms are a fundamental part of the operation of all societal groups. Without such theoretical constructs, there is no basis for the initial and elementary consensus from which they originate.

Although the planning profession has long lamented the absence of some body of doctrine or professional credo of its own to guide action, it is not immune to the influence of paradigms. Planning has and does follow very definite paradigms, the essence of which are embodied in its literature and evidenced in the products of planning efforts and interventions.

One of the most pervasive of these paradigms is the one which dominates current planning thought. Although it has been variously named, the basic content of this modern paradigm is growth; the emphasis on quantity and progress through accumulation. Indeed, this concept is not restricted only to planning, but pervades every aspect of the modern world.¹

¹ Another planning paradigm which parallels the growth paradigm is that of maximization of power and profit. It

3.1 ORIGINS OF GROWTH

Growth, per se, had its origins with those of civilization. It is rooted in man's historical pursuit of 'Progress'. The word 'progress' is from the Latin verb PROGREDIOR, meaning 'going forward'. However, it is important to note that "Progress is not a function of mere chronology; the earlier is not always lower nor is the latest necessarily the best."² Rather, it involves the realization of values; "values that were not but now are, and are yet to be."³

Progress has not always been equated with growth. In fact, it is a relatively recent connotation. Classical antiquity was dominated by the concept of cultural degeneration which depicted man's predicament as a process of decline from what was once a Golden Age. The deterioration occurred gradually through successive periods, from the ages of Silver and Bronze to Iron, whose labels reflect the change. Classical writers perceived themselves as being within the Iron Age and many, such as Hesiod in his Works and Days lamented the loss of the bygone utopian initial state created by the gods.

accounts for the tendency towards greater concentration of production and distribution in fewer and fewer hands. Although simultaneously operative, these paradigms are distinct and separate entities.

² Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 13.

³ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 2.

The sense of progress in the classical world is represented by their parallel belief in eternal recurrence or "the cyclical recapitulation of the forms of material existence."⁴ This return to a past condition, however, was seen as largely beyond the conscious control of man. The cyclical progress depended entirely on forces superior to those of mortals.

In spite of the dominance of these concepts, there was some acknowledgement of man's independent ability to progress in other classical writings. We find reference to directive intelligence in the work of Lucretius (c.94-55) the Epicurean poet as well as in those of Aristotle. Roman writers were somewhat more explicit in their advocacy of human initiative as a means for achieving progress. Cicero (c.104-43) declared in his PROGRESIONIBUS, "from small beginnings, men proceed to larger gains and advantages."⁵ Seneca (c.4-65), however, believed this progress was contingent upon a conscious decision to return to the simple, rational life of the past Golden Age.

The medieval world saw human progress defined in the Christian tradition. The 'providential outlook' depicted "human life, past and present (as) under Divine Providence"⁶

⁴ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p.26.

⁵ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 29.

⁶ Radoslav A. Tsanoff, Civilization and Progress (Lexington:

with the full meaning of God's judgement eventually to come in some solemn finality. Protestantism rejected the idea of human progress by man's own efforts believing that good works are only performed by grace. Man, by virtue of the fall of Adam, inherited evil. His situation became a hopeless downward spiral.

The 17th century and the Renaissance marked the turning point in men's thinking in two significant areas; the authority they recognized and, the direction and range of their interests. This in turn affected their concept of progress. Renaissance man was less and less affected by ecclesiastical leaders and authority. He no longer relied solely on the doctrines of the church but sought to discover truth through observation, experiment and critical analysis. This self-reliance fostered a more secular outlook. There was still, however, some question as to where to turn to find assured truth or to have the new discoveries confirmed as important. The result was widespread skepticism about the new ideas. This "unstable borderland between creative zeal and indecision became characteristic of the Renaissance."⁷

Writers and thinkers grappled with these difficulties throughout the period of transition. Among the most significant were Erasmus(1466-1536), Montaigne(1533-1592) Giordano

University Press of Kentucky, 1971), p. 35.

⁷ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 63.

Bruno(1548-1600) and Blaise Pascal(1623-1662). They were initially skeptical and often concluded with pessimism about man's ability to better his situation by virtue of his reason alone. In spite of early misgivings, however, the belief in man's capacity to progress and advance toward higher goals continued to grow. Henry More(1614-1687) presented the notion of 'boniform faculty' which explored the positive power for progressive goodness in man. Thomas Burnet(1635-1715) put forward the doctrine of 'cosmic progressivism', extending the belief in man's progress not only throughout his own lifetime, but throughout eternity.

The essence of the 17th century belief in progress and its counterarguments are also anticipated in the works of Machiavelli(1469-1527) and Rabelais(1490-1553). They both rejected the providential tradition of medieval times but differed in the degree to which they felt men were capable of progressing of their own volition. Francis Bacon, also caught up in the optimism about human progress, declared:

By far the greatest obstacle to the progress of science and to the undertaking of new tasks and provinces therein, is found in this--that men despair and think things impossible.⁸

The idea of progress also affected social philosophy as evidenced in the works of Thomas Hobbes(1588-1679), John Locke and Descartes(1596-1650). In brief, "men became keenly aware of themselves and their daily experience, of their

⁸ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 72.

needs and opportunities and prospects."⁹

If the 17th century moved toward a more definite grasp and expression of the theory of progress, then the 18th century gave systematic philosophical formulation to it. Trust and belief in progress came into full bloom--in many cases to the extreme and a boundless sense of optimism. Many radical reforms were initiated as a result of the "confidence in the power of spreading enlightenment to emancipate men and guide them to ever-increasing progress in every direction."¹⁰ To some degree, however, the development of the philosophy of progress was still tempered by the continued questioning of man's actual capacity to achieve it.

In the 19th and 20th centuries, belief in unending historical progress has been the modern man's religion. It was firmly entrenched that progress is "marked not by a finality of attainment but by a more steadily assured upward direction."¹¹ Increasingly, the 'steadily assured upward direction' has become numerical rather than normative and that utopian urge for material increase and security, rationalized as 'economic reason'.¹² Progress became synonymous

⁹ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 189.

¹⁰ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 88.

¹¹ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 280.

with growth.

Industrialism played a particularly significant role in establishing this new perspective. The ethos of the industrial system and its measurement of success is "the capacity to increase production in response to wants of its own creation."¹³ This translated into exponential and economic growth of unparalleled proportions. If the moving spirit behind economic growth could speak, its motto would undoubtedly be 'enough does not suffice'.¹⁴

By the 1960's growth was professed as one of the social priorities which had to be accommodated. "Growth," Drucker declared, "is a necessary goal of a modern economy"¹⁵ and "we certainly can no longer leave (it) out of the model of the economy."¹⁶

Thus, 'progress', in the modern sense, is almost entirely an economic concept, and economic theory is based on the principle of maximization. According to Erich Jantsch, "The rate of increase in income and output in the National Income and Gross National Product, together with the amount of

¹² Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 203.

¹³ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 134.

¹⁴ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 163.

¹⁵ Peter F. Drucker, The Age of Discontinuity (New York: Harper & Row, 1969), p. 144.

¹⁶ Peter F. Drucker, The Age of Discontinuity (New York: Harper & Row, 1969), p. 148.

unemployment remains the all but exclusive measure of social achievement"¹⁷ as opposed to 'progress' in any other sense. The appeal to economic rather than other less quantitative values is not difficult to understand. Values like the quality of life are subjective and disputable. "Cultural and aesthetic progress cannot be easily measured...Gross National Product on the other hand, (is) objective and measurable."¹⁸ Jantsch concludes ruefully that "to many it will always seem better to have measurable progress towards the wrong goals than unmeasurable and hence, uncertain progress toward the right ones."¹⁹

The subject of 'rightness' or 'wrongness' is addressed in ensuing chapters. Suffice it to say for the moment, therefore, that the current social paradigm equates progress with growth. Planning, which falls under the influence of the paradigm, is similarly growth-oriented. Since, by definition, a paradigm is the prevailing idea system from which theory and methodology are derived, there should be evidence of the growth orientation in the tools and equations presently in use, as well as in the basic premises upon which the profession is built.

¹⁷ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 410.

¹⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p.410.

¹⁹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 41.

3.2 THE GROWTH ORIENTATION IN PLANNING PRACTICE

Planning is a multi-dimensional undertaking, but in the context of the current paradigm, it essentially becomes the vehicle through which growth in all areas can be accommodated in an orderly and efficient manner. It answers the question "How shall we grow?"²⁰ at the level of the community. The Goodman text, Principles and Practice of Urban Planning, was written a number of years ago at a time when the growth paradigm was as yet seriously uncontested. It provides a number of insights into the role of planning during the height of its adherence to the paradigm. For example,

There can be growth in many directions, on different scales and on diverse frontiers...Planning...is thus becoming a vital instrument for guiding urban growth and providing a healthful and aesthetically pleasing community environment.²¹

The achievement of this function or role consists of three processes: "formulating objectives and criteria, obtaining and organizing information, and designing, or the creation of a possible set of actions--"²² all of which eventually came to be embodied in the ultimate tool of planning, the 'Comprehensive' or 'Master Plan'.

²⁰ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 106.

²¹ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 106.

²² William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 250.

During the late 1960's and early 1970's the primary mission of urban planning agencies, regardless of organizational form was likely to revolve around the preparation of comprehensive plans for long-range development.²³

By definition, the comprehensive plan is "an official public document adopted by a local government as a policy guide to decisions about the physical development of the community."²⁴ In substance, they became the envisionment of the city's collective growth potential 20 to 30 years into the future. The very development of the master planning concept hinged on faith in the growth potential of the particular urban precincts. The master plan was a manifesto of optimism about the future of the city concerned and publication of a plan became a sign of 'progressive' planning action.

In these comprehensive plans, "concern with the quality of urban development, apart from sheer quantity was a retrograde notion. To be bigger meant, ipso facto, to be better, and planning marched forward under the watchword 'Grow or Die'.²⁵ The goal and intent statements of these plan documents clearly illustrate this orientation and objective.

During the second half of the nineteenth century, the population of Chicago increased from thirty thousand to two millions of people. Today all

²³ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 282.

²⁴ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 349.

²⁵ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 28.

conditions point to continued gains. The days of chance and uncertainty are past. The days of doubtful ventures are gone, and the hazards of new frontiers. The elements which make for the greatness of the city are known to be permanent and men realize that the time has now come to build confidently on foundations already laid.

The growth of the city has been so rapid that it has been impossible to plan for the great influx of people, surging like a human tide to spread itself wherever opportunity for profitable labor offered place.²⁶

Chicago is now facing the momentous fact that fifty years hence, when the children of today are at the height of their power and influence, this city will be larger than London: that is, larger than any existing city. Not even an approximate estimate can be ventured as to just how many millions the city will contain.²⁷

These excerpts were taken from an early master plan for Chicago, first compiled shortly after the World Exposition. A similar perspective is also evident in the equivalent planning document for the city of Toronto.

Toronto is growing and changing dramatically...There will be a vast amount of new development and massive redevelopment. We must plan to seize this great potential and channel it intelligently, to produce a really fine city that will work well and be a source of pride and pleasure to its citizens. Unless this happens, Toronto could become another megalopolitan chaos, an asphalt jungle, a prison for its people. We face a tremendous challenge, a great responsibility and a wonderful opportunity.²⁸

²⁶ Daniel H. Burnham and Edward H. Bennett, Plan of Chicago (New York: Da Capo Press, 1970), p. 32.

²⁷ Daniel H. Burnham and Edward H. Bennett, Plan of Chicago (New York: Da Capo Press, 1970), p. 33.

²⁸ Proposals for a New Plan for Toronto (City of Toronto Planning Board, 1966), p. 7.

In order to compile these documents, there had to be a quantitative base for their forecasts. Hence, the importance of the many mathematical and statistical models which have become essential components of the 'kit bag' of planning. The demographic and economic models subsequently developed all assume net increase over time.

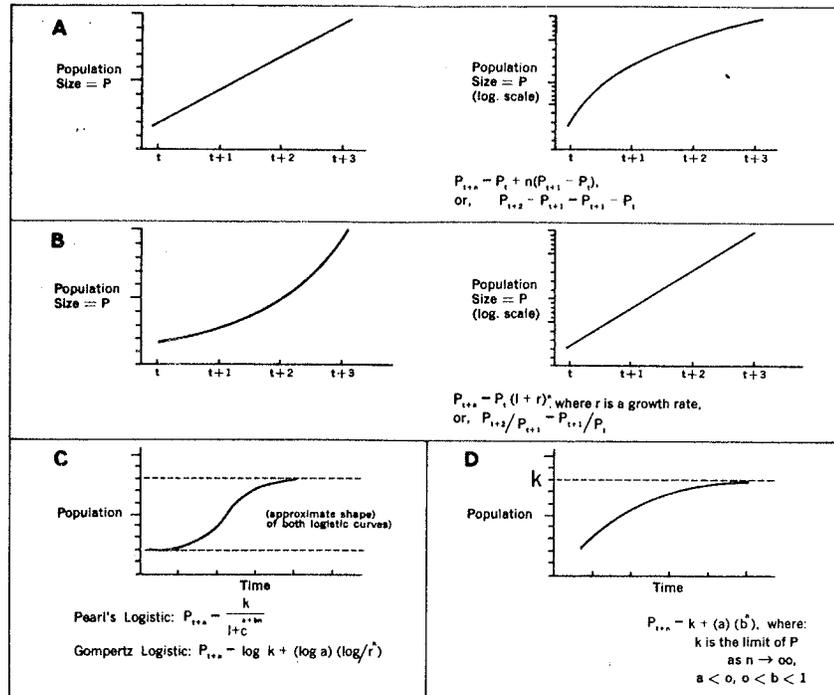
It is useful to look at some of these models and equations in greater detail. First, let us consider the population models. They are important since "analysis and projection of population are at the base of all major planning decisions."²⁹ According to Goodman's definition, projection involves using "facts about a population at earlier points in time to reach conclusions about the population at later points in time."³⁰ This definition fails to mention that the underlying assumption in any projection equation is the principle of net increase over time. Although the percentage by which population is anticipated to increase differs from model to model and equation to equation, there is always a multiplier involved.

There are numerous projection techniques in common usage, ranging from ratio and analogue methods, natural increase and net immigration, to those involving graphic and mathematical extrapolation. The figure below illustrates some of

²⁹ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 51.

³⁰ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 54.

these basic strategies.



Population projection strategies (A, constant absolute change per unit of time; B, constant percentage change per unit of time; C, typical logistic curves; D, constant percentage decrease in unused capacity in each time period.)

ILLUSTRATION 5: Population Projections

(Goodman, Principles of Planning Practice, p.58)

In spite of the range of complexity these methods represent, we readily recognize the previously mentioned assumption of population increase over time. In the end, every equation becomes a reflection, to some degree, of that straightline increase. In fact, tracing the evolution of projection techniques, Goodman concludes that:

the 'straight-line' approaches which make a few simple assumptions and project a single aggregate, were the first stage in the evolution of a method. The second stage was the use of complex assumptions, expressed in voluminous exponential equations, to project the same single aggregate. In the contemporary standard practice, which may be called the third stage, demographers deal with many components of the population and have gone back to making simple straight-forward assumptions.³¹

Thus, the methodology, being tethered to the growth principle, came full circle. The essence of every method is to predict and depict the extent to which growth in the population can be anticipated.³²

Economic models and studies display a similar orientation. Whether it be input-output or industrial complex analyses, and economic simulation, they are designed to provide quantitative indications of the degree to which growth will occur.

Contingent upon the economic and demographic projections are all those models and equations dealing with land use allocation, transportation, public utilities and community facilities. Taken collectively, the resultant extrapolated figures provide the basis for predicting and planning the dimensions of the future city.

³¹ William I. Goodman, ed., Principles and Practice of Urban Planning (Washington, D.C.: International City Managers Assoc., 1968), p. 60.

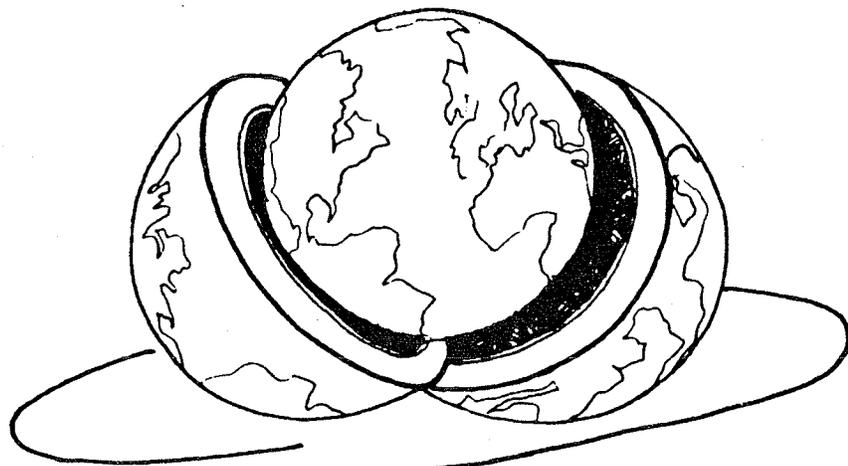
³² Growth is so much a part of the vocabulary that even cases where there is a net decrease anticipated in the population it is referred to as 'negative growth'.

One may agree that growth is an integral part of any human system; a biological rather than paradigm-induced concept. However, the growth orientation in question here "is not growth in the same sense as a living organism grows."³³ Although frequently confused, the economic and physical growth which has become the hallmark of current planning and societal objective, involves "expansion and unbridled consumption."³⁴ Subscription to growth in this sense has never been formalized and institutionalized to the same extent that it has since its adoption in the form of the modern paradigm. The elevation of growth to the level of a commonly held goal and priority is what makes it paradigmatic and remarkable as a social phenomenon. As Kuhn suggests, the fact that a particular conceptual scheme gains sufficient intellectual authority to "determine the patterns of theory, the meaningful questions, and the legitimate interpretations"³⁵ within which action and practice are bounded, is enough to distinguish it as something more than a biological sense. Certainly one cannot question the extent to which the growth paradigm has done that.

³³ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning For The Unthinkable (Stamford, Conn.: Sinauer Associates, Inc., 1974), p. 20.

³⁴ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning For The Unthinkable (Stamford, Conn.: Sinauer Associates, Inc., 1974), p. 20.

³⁵ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 40.



CHAPTER 4

The fact that something is...
does not mean that it ought
to be so.

Ira Glasser

Chapter IV

CHANGE AND PARADIGMS

To this point, we have discussed the nature and role of idea systems generally, as well as considering in some detail the aspects of a specific idea system known as 'paradigm'. At the outset it was important to define the concept of paradigm and focus on its peculiar role and function. In so doing it was appropriate to explore the features of a contemporary paradigm, 'growth', significant in its direct application or connection to current planning process.

Having established a basic understanding of the paradigm phenomenon, it is now possible to attempt a more detailed description of some of its internal processes, particularly the mechanism through which paradigms change. This additional exploration, in turn, moves us toward the more specific applicability of paradigmatic understanding to planning and discussion of the significance of contemporary events relative to this broader cycle.

4.1 THE CONTEXT

As a preface to the subject of paradigm change, some discussion of the concept of 'context' is in order. Christopher Alexander advocates that "the context defines the prob-

lem".¹ This is certainly the case with any paradigm. It does not evolve independently, but represents the attempt to deal with a particular situation or set of circumstances. As mentioned previously, the paradigm facilitates ordering and prioritizing within a certain context.

The context is comprised of multivarious aspects and one must agree in principle with Alexander when he finally concluded, "Unfortunately, we cannot give an adequate description of the context we are dealing with".² It represents such numerous elements that the ensemble is difficult to package within a single, neat definition. A general description is possible however, and for the most part, adequate for our purposes.

Typically, in defining context, the attempt is made to identify certain broad categories or groups of factors which comprise it. This process of simplification proves useful in understanding the concept implied by the word context. For instance, in studying human systems, Erich Jantsch deals with the question of context and eventually characterizes it as having two components: one is the 'physical milieu', consisting of "the totality of physical systems in and with which man interacts",³ and the other he calls 'civilization'

¹ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p.15.

² Christopher Alexander, Notes on the Synthesis of Form (Cambridge: Harvard University Press, 1971), p. 20.

³ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 52.

which is "the totality of social systems with their multiplicity of interactions between their members".⁴ These two notions, physical milieu and civilization, offer a fairly concise outline of what comprises the larger aggregate we call 'context' and will form the basis of its definition within this thesis.

There is often a tendency to regard one or the other of these factors as the primary operative element in determining social phenomena. However, so far as paradigms are concerned, one must regard the composite structure which these factors collectively represent. It is important to clarify then, that for the purpose of our discussion, the 'context' designates the sum total of all social, environmental, cultural and economic factors and influences of which the 'world' as we know it is comprised.

4.2 CONTEXTUAL FIT

In their evolution, all paradigms seek to reflect their context as accurately as possible. The context is the foundation upon which the paradigm is constructed. Its premises stem from the specific features which characterize the context at that given point in time. Therefore, "the rightness of the form (paradigm) depends...on the degree to which it fits the rest of the ensemble".⁵ This 'goodness of fit' is

⁴ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 52.

⁵ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 17.

one of the primary reasons that new paradigms are initially adopted. Their close fit with their context accounts for their effectiveness in dictating and directing action.

Changes are constantly taking place within the contextual world. Each aspect evolves after its own pattern in conjunction with all other aspects, shaping, reshaping and being reshaped to form a composite environment or 'context' which is never consistently the same. Although one has the impression that his world remains the same, maintaining equilibrium at least for considerable blocks of time, this is not so. At best, it retains "a precarious and temporary equilibrium".⁶ By the same token, even our collection of ideas, facts and knowledge do not remain the same. None are an "abiding possession", nor in themselves are "assured of permanence. No idea remains inalterably valid".⁷ The illusion of stable equilibrium is a function of our limited ability to perceive changes on all but the most obvious levels. Thus, unaware of all the transactions taking place, we continue to regard our world as 'the same' until such time as the differences in it become sufficiently extensive and obvious to draw our attention.

With changes in the context, the premises upon which the paradigm is built are altered. These changes invalidate the paradigm. Hence,

⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 55.

⁷ Radoslav A. Tsanoff, Civilization And Progress (Lexington: University Press of Kentucky, 1971), p. 314.

what appears as good at one level may turn into evil at the next higher level; that is, in the light of the purposes which emerge there more clearly; and that which made sense in a given framework may become non-sense.⁸

As the paradigm's validity diminishes, what occurs is a situation which Alexander calls 'misfit',"any state of affairs in the ensemble which derives from the interaction between form (paradigm) and context, and causes stress in the ensemble".⁹ These 'stresses' signify the need for a corresponding change--a change in the paradigm. Understanding the process by which this corollary change occurs is quite crucial.

4.3 ANOMALY AND PARADIGM CHANGE

The paradigm, by nature and structure, is 'designed' to change. In fact, the turnover from one paradigm to the next is an integral part of the organization and definition of the phenomenon. In order to allow for significant progress, paradigms must be dynamic. The process by which the changes occur is, however, as controversial as it is essential.

Thomas Kuhn is responsible for articulating the majority of the ideas on the topic. The bulk of his writings and observations address the issue of change and transition from one paradigm to another. Essentially, Kuhn traces all changes in paradigms to 'anomaly' or phenomena which do not

⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 223.

⁹ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 101.

correspond to paradigm-induced expectations. Margaret Masterman defines the concept of anomaly more fully, stating that:

An anomaly is an untruth, or a should-be-soluble-but-is-insoluble problem, or a germane but unwelcome result, or a contradiction, or an obscurity, which is thrown up by the paradigm itself being pushed too far.¹⁰

Her definition stands complete except perhaps to re-emphasize that the source of the contradiction originates within the paradigm itself. "The anomaly, to be a true anomaly, has got to be produced from within the paradigm."¹¹

Recognition of the anomaly is only possible relative to the paradigm. It acts as a reference point from which to judge all other phenomena. Kuhn believed this is because such "novelty ordinarily emerges only for (those) who, knowing with precision what (they) should expect, (are) able to recognize that something has gone wrong".¹² Therefore, through application of the paradigm, its inherent weaknesses are disclosed to those who are dealing with it.

¹⁰ Margaret Masterman, "The Nature Of Paradigm", in Imre Lakatos and Alan Musgrave, Criticism and the Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 82.

¹¹ Margaret Masterman, "The Nature of Paradigm", in Imre Lakatos and Alan Musgrave, Criticism and the Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 83.

¹² Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 65.

We also find reference to the concept of anomaly in the works of Alexander. He placed considerable importance on the role of anomalous findings in initiating necessary changes. Describing the goal of the process as the achievement of 'good fit', he insists that difficulties with the particular form or paradigm are signaled by the existence of anomalies and incongruities. "It is through (such) misfit that the problem originally brings itself to our attention."¹³ Depending on the extent of the anomaly, a process is set in motion to alter the structure of the paradigm. Conceptual changes are necessary so the anomalous can again become the expected; so that a sense of 'fit' is restored.

When anomalies first appear, they are minimized by ad hoc adjustments to theory and more detailed articulation of the paradigm so as to resolve, as much as possible, the apparent conflict. This initial action represents the attempt to neutralize "the incongruities, or irritants, or forces, which cause misfit".¹⁴ As more and more adjustments are made to the paradigm, it becomes increasingly specific and precise. At the same time, however, these adjustments loosen the grasp of the current paradigm, making the discovery and introduction of a new one less difficult. Kuhn describes the process in the following manner:

¹³ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 26.

¹⁴ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 24.

The more precise and far-reaching that paradigm is, the more sensitive an indicator it provides of anomaly and hence of an occasion for paradigm change.¹⁵

Not all anomalous occurrences lead to paradigm change. The minor ones, as mentioned, are assimilated. Only those which come under more generalized scrutiny are significant in the process of change. As these more sizable anomalies are discovered, they become the focus of research in themselves. The paradigm weakens as it is more widely recognized that a basic flaw exists.

"All crises begin, (therefore), with the blurring of a paradigm and the consequent loosening of the rules of normal research."¹⁶ However, this is only likely to occur when the first tradition is felt to have gone badly astray. The time frame from crisis to new paradigm can vary greatly. Kuhn estimates that breakdowns in the accepted paradigm begin to occur 10 to 20 years prior to the announcement of a new one. This new paradigm, when finally in place, invariably represents a direct response to the crisis created in the previous one.

¹⁵ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 65.

¹⁶ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 84.

4.4 THE PROCESS OF CHANGE

Having addressed briefly the key factors in the erosion of established paradigms, it is important now to examine in more detail the nature of the change process. Initially, researchers set out to solve the puzzles which the paradigm identifies and not to discover a new paradigm or test the existing one. Having adopted a particular paradigm, energy is then expended almost exclusively on applying it. Once assumed as the guide and reference, it need no longer be questioned and reworked, only applied.

As mentioned, during the course of this general implementation, anomalies surface which can lead to an eventual crisis situation where the inabilities of the paradigm are highlighted. When it becomes apparent that these differences are irreconcilable, they cannot be ignored, and the paradigm itself must be seriously scrutinized. In turning attention toward the details of the actual paradigm, it often becomes obvious that resolution of the anomalies lies well beyond its capacity to accomplish. The crisis created by this realization initiates the search for an alternative paradigm.

Once other alternatives exist and other postulates have been forwarded, paradigm 'testing' is possible. This

paradigm testing occurs only after persistent failure to solve a noteworthy puzzle has given rise to crisis. And even then, it occurs only after the sense of crisis has evoked an alternate candidate for paradigm.¹⁷

¹⁷ Thomas Kuhn, The Structure of Scientific Revolutions 2nd

Unlike puzzle-solving which operates within the parameters set by the paradigm, testing involves comparing new models to those which exist and evaluating them all with reference to the context at that point in time. It "involves comparison of both paradigms with nature and with each other".¹⁸

4.5 REVOLUTION

The process involved in the overthrow of an established paradigm is 'revolutionary' as opposed to 'evolutionary'. The implication is one of deliberate change from one mode to another as opposed to an incremental adjustment. The revolution represents "a special sort of change involving a certain sort of reconstruction of group commitments".¹⁹

This distinction is an important one when we consider what is in fact occurring as one paradigm is supplanted by another. At the point of crisis or revolution, the old or established paradigm has ceased to be an effective means of describing the context and, therefore, its prescriptions are also invalid. The new paradigm, therefore, cannot be merely a variation of its predecessor. It must attempt to solve some major question which the previous one did not.

ed., (Chicago: University of Chicago Press, 1970), p. 145.

¹⁸ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 77.

¹⁹ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 181.

For this reason, new paradigms and theories can only occur with the destruction of old ones. The unresolvable anomalies provoke review of the existing model and its limitations. If there is a fundamental misfit between the paradigm and context, then only a different approach can cure the dischord.

If new theories are called forth to resolve anomalies in the relation of an existing theory to nature, then the successful new theory must somewhere permit predictions that are different from those derived from its predecessor. That difference could not occur if the two were logically compatible.²⁰

Kuhn insists that one paradigm must displace the other. In the process, however, the new paradigm may preserve a significant amount of the problem-solving ability the previous one possessed.

Since paradigms are born from old ones, they ordinarily incorporate much of the vocabulary and apparatus, both conceptual and manipulative, that the traditional paradigm previously employed. But they seldom employ these borrowed elements in quite the traditional way. Within the new paradigm, old terms, concepts and experiments fall into new relationships one with another.²¹

Successive paradigms differ then in fundamental concepts, in their definition of significant problems, and in the standard which is considered acceptable for solutions. We might illustrate the extent of the changes incurred during paradigm revolutions by citing those initiated by Coperni-

²⁰ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 97.

²¹ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 149.

cus, Newton, Lavoisier and Einstein in the field of science. Each represented a major turning point in scientific development. Each presented a direction and a perspective unique unto itself, arrived at by means of a previous paradigm, yet without obligation to its predecessor's perspective.

Change from one paradigm to another is revolutionary in another aspect. "The decision to reject one paradigm is always simultaneously the decision to accept another."²² Therefore,

Just because it is a transition between incommensurables, the transition between competing paradigms cannot be made a step at a time, forced by logic and neutral experience. Like a Gestalt Switch, it must occur all at once (though not necessarily in an instant) or not at all.²³

This is to say that the transition must be complete. One cannot simultaneously support two paradigms. The old is incommensurate with the new and vice versa. Therefore, upon realizing the failure of one in reference to its rival and context, there must be a corresponding transfer of allegiance. As this crossover occurs, the individuals involved (in Kuhn's case, scientists) are "able to account for a wider range of natural phenomena or to account with greater precision for some of those previously known...That gain was only achieved by discarding some previously standard beliefs or procedures and simultaneously, by replacing those compo-

²² Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 77.

²³ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 150.

nents of the previous paradigm with others."²⁴

4.6 INVISIBILITY OF REVOLUTIONS

It has been important to draw attention to the revolutionary aspect because, although paradigms are significant guiding forces, their functioning, and in particular, their revolutions, are not generally recognized. Their 'invisibility' is the result of a number of factors.

The details of the revolutionary process are often lost because textbooks and other 'authorities' only record the paradigm itself and not its development. They document the outcome of past revolutions. Since "textbooks have to be written in the aftermath of each...revolution, and, once rewritten, they invariably disguise not only the role but the very existence of the revolutions that produced them."²⁵ There is no need to provide the authentic information as to the way in which these bases were originally recognized and subsequently embraced by the profession.

Secondly, this historical perspective presents the work of practitioners in such a way that they appear to have been working in today's context. It "implies scientists (and other professionals) have striven for the particular objectives that are embodied in today's paradigm".²⁶ The result

²⁴ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 66.

²⁵ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 137.

is that development appears to be cumulative and incremental rather than revolutionary. Pieces of knowledge seem to have been added one by one, side by side instead of one over another.

There is always the tendency to write history backwards and to present the past as part of a linear progression towards the present situation. This perspective is only possible once conclusions have been drawn and the reigning paradigm is firmly in place. Then, even in reviewing their own work, scientists and other professionals interpret the process as a step-wise progression towards the current outcome.

4.7 EVOLUTION VERSUS REVOLUTION

As mentioned previously, in any discussion of paradigms, the question of how they change is always the source of the greatest controversy. In fact, Kuhn's major critics, including Karl Popper, Stephen Toulmin, and Imre Lakatos, focus almost exclusively on that aspect. The substance of their counter-arguments centers on a few major issues in this regard: the process of incrementalism as opposed to crisis and revolution, the nature of the scientific community--its openness or closure, and the difficulties inherent in shifting personal allegiance from one paradigm to another. All these arguments are useful in the closer

²⁶ Thomas Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 140.

scrutiny they give to specific areas of Kuhn's hypotheses.

The source of the most adamant disagreement is 'revolution', the idea that one paradigm surrenders to another. All of Kuhn's critics advocate science as an open system subject to self-criticism, correction and incremental advance. They take exception to the anarchic connotations of revolutions and, in a number of cases, have redefined the pattern of change which takes place in terms of 'variations'.

Watkins questions the absolute supremacy of one paradigm and the rapidity with which transition to a new one can be made, claiming along with others that development of a new paradigm cannot be instant. Instantaneous development implies some sudden stroke of genius which enables one to articulate immediately and in complete detail all of the features of the new paradigm. In reality, he claims, thinking cannot be confined exclusively within the parameters of the existing paradigm. There must be a period of questioning and development in order to generate a new one.

Since it takes time--a matter of years not hours--to develop a potential new paradigm to the point where it may challenge an entrenched paradigm, heretical thinking must have been going on for a long time before paradigm change can occur.²⁷

Paul Feyerabend is of the opinion that such questioning and challenging goes on at all times, and is not limited to a period of perceived crisis. In his words, "Progress has

²⁷ J.W.N. Watkins, "Against Normal Science", in Imre Lakatos and Alan Musgrave, Criticism and the Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 37.

always been achieved by probing well-entrenched and well-founded forms of life with unpopular and unfounded values".²⁸ He concludes that a proliferation of ideas exists at all times and, at certain points, are instrumental in bringing about revolutions.

4.8 IN SUMMARY

Debates over monism and pluralism of thought and, evolution versus revolution in process are useful in the more detailed description of paradigm which they demand. However, none are particularly successful in affecting the overall validity of Kuhn's system. They represent details of the phenomenon which must be dealt with rather than fundamental flaws.

In terms of this thesis, these opposing views offer the opportunity to reiterate an important aspect of the paradigm phenomenon which obviously is frequently misunderstood. Namely, the paradigm process does accommodate a significant amount of incremental development. In fact, all development within a given paradigm is incremental. However, this is the key point. It occurs within the parameters of the established paradigm. This form of incremental modification and stability is essential to steady progress and the maintenance of order within the profession or organization.

²⁸ Paul Feyerabend, "Consolations for the Specialist", in Imre Lakatos and Alan Musgrave, Criticism and The Growth of Knowledge (Cambridge: Cambridge University Press, 1970), p. 209.

What Kuhn was addressing in his paradigm system, however, occurs on a much expanded time and social scale. He is not dealing with the changes and 'variations' which arise in day-to-day and even year-to-year kinds of events. These variations are a normal part of the application of the paradigm. Kuhn is concerned with the much larger and extensive kinds of changes which happen once the effectiveness of the paradigm has been weakened beyond meaningful adaptation by anomalies identified throughout its period of usefulness.

From this perspective, the changes ARE revolutionary and as clearly phenomenological as he describes them. Christopher Alexander provides fitting summary in the following words:

A culture does not move from one change to the next in discrete steps of course. New threads are being woven all the time, making changes continuous and smooth. But from the point of view of its effect on form, change only becomes significant at that moment when a failure or misfit reaches critical importance--at that moment when it is recognized, and people feel the form has something wrong with it. It is therefore legitimate...to consider a culture as changing in discrete steps.²⁹

The following model provides a useful illustration of the dynamics involved in paradigm change.

²⁹ Christopher Alexander, Notes On The Synthesis Of Form (Cambridge: Harvard University Press, 1971), p. 44.

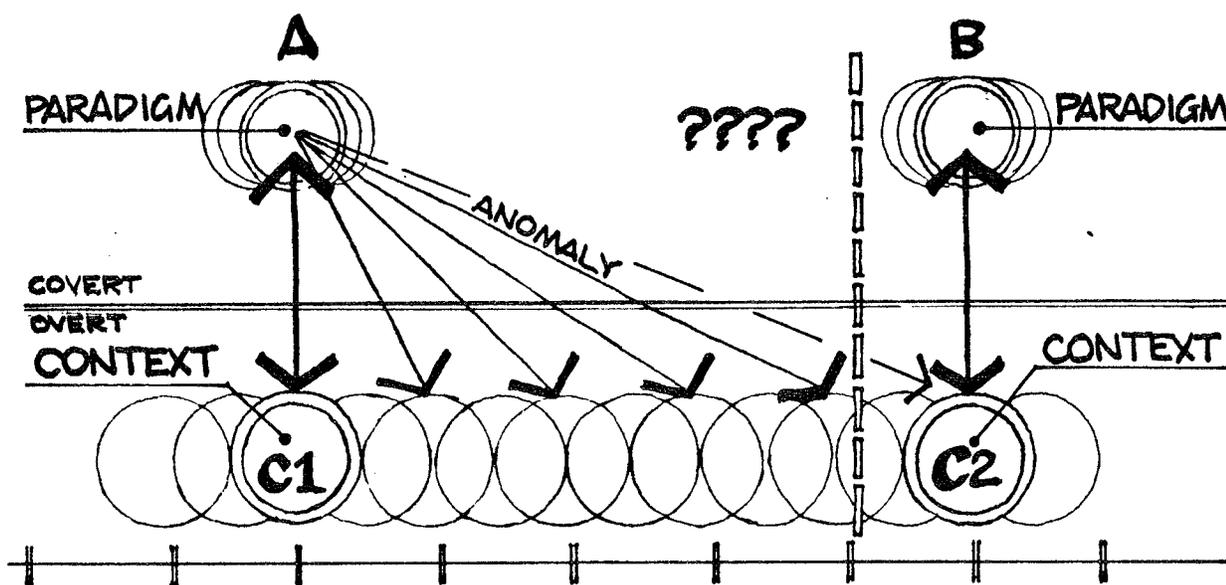


ILLUSTRATION 6: Paradigm Change

At its inception (A), there is always a close correspondence between context and paradigm. The paradigm at this point carefully and reasonably accurately reflects the context in and for which it was created. There is a strong relationship, therefore, between the two, illustrated by the double-headed arrow.

As explained earlier in the chapter, however, the context is ever-changing. Over the course of time, many aspects of which the context is comprised change. Eventually, the effect of these continued changes is so great that a new context (B) emerges, whose composite nature differs markedly from that of the context at any point previous.

The paradigm, by contrast, does not experience a similar evolution. The degree to which it can vary in any direction is extremely limited. Throughout the course of its usefulness, it remains essentially unchanged. As a result, when the context moves on, the same paradigmatic assumptions remain in effect. The more advanced the evolution in context becomes, the greater the distance between it and the paradigm and, inevitably, the more spurious their relationship.

Anomalies begin to surface at the point where the paradigm/context relationship is weakest. The strain of increasing distance and more serious anomalies necessitate the period of questioning in which an alternative paradigm is generated (B)...and on recommence. The cycle begins again.

The transitory or pre-revolutionary period within this sequence (indicated by the ???) will become the focus of particular attention in the remainder of the thesis, for it is at this point which we presently find ourselves socially and developmentally. One might well scribe the current date, 1985, along the time line below the model, directly underneath the pre-paradigm (???) indication.

As discussion continues, therefore, it is well to remember not only the cyclical sequence here described, but also to recognize the stage to which we have advanced within it. And again, it is important to be aware of the level at which

the paradigm operates as well as the time frame within which change occurs.



CHAPTER 5

While we have been busy finishing the great 19th century economic edifice, the foundations have shifted under our feet.

“

Peter F. Drucker

Chapter V

CHANGE TO THE CURRENT PARADIGM

To this point, we have discussed the paradigm phenomenon and its characteristics in some detail and have outlined the current growth paradigm in planning. In so doing, the importance of the relationship between the paradigm and its context has been stressed. Discrepancies and anomalies which the paradigm is incapable of dealing with signal a misfit between context and paradigm which can ultimately invalidate the latter. As failures to perform in the anticipated manner reveal anomalies that "cannot despite repeated effort, be aligned with professional expectation",¹ change to the paradigm becomes imminent.

There is strong reason to believe that the difficulties facing modern society are the prelude to such a paradigm revolution. To substantiate this claim, however, it is necessary to step back and examine the context; both the situation which was prevalent at the inception of the paradigm and the circumstances which currently prevail. The differences between the two serve to highlight the serious anomalies which exist.

¹ Thomas Kuhn, The Structure of Scientific Revolutions, 2nd ed. (Chicago: University of Chicago Press, 1970), p. 6.

5.1 CONTEXT 1

First, let us examine the contextual circumstances which fostered the economic growth paradigm. Opinions vary as to how far the notion of economic expansion as a process "on balance beneficial to humanity"² goes back. Some cite its origins at two centuries previous,³ while others claim a growth orientation has been dominant throughout the past 500 years of human history.⁴ Whichever the case may be, it is certain that "the case for economic growth was very much stronger then than it is today".⁵

The specific time or date when the growth paradigm began to evolve is impossible to fix but its influence was clearly evident by the time of the Industrial Revolution of the 18th century. It is from that point that the present discussion of context will proceed. In effect, there were several changes around that time period which established the basis for articulation of the paradigm. These 'technological revolutions'⁶ began with the agrarian developments around 1700, which improved food production both qualitatively and quan-

² E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 161.

³ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969).

⁴ A.J. Toynbee, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 27.

⁵ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 161.

⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 64.

titatively. The higher productivity freed more of the labour force from agriculture to pursue other employment. Invention of the mechanical loom in 1786 and subsequent mechanical technologies dramatically increased the efficiency of the work force and, consequently, productivity. Furthermore, a medical revolution was ushered in with the discovery of the smallpox vaccine in 1796. The final significant revolution began in the mid 19th century with new dimensions in transportation and communication. It made possible the wider sharing of information and material well-being.

All of these events constituted a prelude to the immense growth which began to take place in the 19th and 20th centuries, in the Western World generally, and North America specifically. The costs of basic necessities were relatively low, money became available to purchase luxuries and, in general, lifestyles were very comfortable during the Industrial Era. A certain exploitation ethic soon emerged. Kenneth Boulding described it as a 'cowboy economy' in which the prevalent attitude was 'Go West, young man, and make your fortune'.⁷

The abundance experienced in increasing degrees throughout this time shaped attitudes toward the resources available to satisfy wants. The opening of the New World and other areas where abundant resources could be found, the

⁷ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning For The Unthinkable (Stamford, Connecticut: Sinauer Associates Inc., 1974).

rapid initial growth stages in the fields of science and technology, as well as the abundant 'free' resources of air, land and water for waste disposal, destroyed man's sense of scarcity. As a result,

Abundant energy and resources have not only shaped the character of work, education and politics in industrial society; they have also molded our culture, and inculcated us, consciously and otherwise, with some of our deepest values.⁸

The effect of all these factors was undoubtedly most evident in America. The initial discovery of the Americas "gave the Western peoples....an impression of infinite space and wealth at (their) disposal".⁹ The mechanization of industry through steam power and later, electric and atomic energy, which occurred to such a large extent in America, "gave us the impression that we had opened up an infinite source of production".¹⁰ The abundant energy resources and large population were able to support manufacturing and marketing on a large scale. The whole American system became production and consumption oriented. This occurred to such a degree that "the consumption of energy per capita (in the U.S.) in 1850 was already greater than it would be in Switzerland or Japan by 1970".¹¹

⁸ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 276.

⁹ A.J. Toynbee, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 27.

¹⁰ A.J. Toynbee, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 27.

¹¹ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning for the

There were many benefits to such unprecedented growth. Standards of living in general were higher, educational opportunities were increased and more readily available, better sanitation facilities and techniques meant cities were less polluted, and people enjoyed better health. There was more leisure time and better working conditions as well as increased income. One of the obvious outcomes of the improved situation was what William Leiss described as 'insatiable wants'.

The American, confident of his own power to advance his well-being, steps up his wants at an equal pace with, or even faster than, his accomplishments.¹²

Although the effects of capitalizing upon development potential and the application of modern technologies were most obvious in America, many countries enjoyed the same benefits. This was especially true in the years following WW II. If there was a true crescendo in growth mentality and activity, it had to have been in the three decades following the war. Those postwar years saw "unprecedented rates of growth in the Western world, Japan, the Soviet block countries and certain of the developing nations".¹³ National income per capita was approximately twice what it was before the war and mass unemployment was curbed. The

Unthinkable (Stamford, Connecticut: Sinauer Associates Inc., 1974), p. 153.

¹² William Leiss, The Limits To Satisfaction (Toronto: University of Toronto Press, 1976), p. 17.

¹³ Peter F. Drucker, The Age of Discontinuity (New York: Harper and Row, 1969), p. vii.

zeal for growth and expansion was such that even vocabulary began to reflect it. As Jane Jacobs remarked:

The very phrases 'backward countries' and 'poorest countries' dropped from the vocabularies of economists, civil servants, bankers, editors and were replaced by 'developing countries' and 'less-developed developing countries'...¹⁴

It is not difficult to understand how the context we've been describing shaped the attitudes of those who lived within and experienced it. The resultant growth paradigm accurately represents the image which this affluent context suggested. All paradigms are an attempt to interpret reality. They evolve based on man's perception of his environment at any given time. Hence, it is not surprising that the characteristics of this particular context suggested a paradigm based on economic growth to the members of industrial society.

In more recent times, however, many of these factors have changed considerably. As a result, the contextual framework within which we now find ourselves is substantially different from that which existed even two or three decades ago. In spite of the fact that:

everything valued today by the 'official' culture is predicted to be valued even more highly in the future--more efficiency, more growth, more consumption, more competition and so forth, reality overtakes these...forecasts even while they are being made.¹⁵

¹⁴ Jane Jacobs, Cities and the Wealth of Nations (New York: Random House, 1984), p. 4.

¹⁵ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 33.

Hence, at this point, the characteristics of the new context and the paradigmatic changes they imply merit further comment.

5.2 CONTEXT 2

No indication that growth could not continue arose until the 1970's. In fact, from 1947 to 1970, there were only two years in which real income in the U.S. failed to rise.¹⁶ After 1970, however, a number of factors contributed to the realization that growth could not continue ad infinitum, and initiated an awareness of the negative consequences of growth which had hitherto gone unnoticed or ignored. It is these 'limits to growth' which are the essential features of the contemporary context and which will shape the emerging paradigm.

5.2.1 ECOLOGICAL CRISES

The ecological consequences of the unprecedented expansion of the preceding century first began to appear in the form of pollution and resource depletion. These have been among the most widely discussed aspects of the changing context. There has been much speculation and widely varied opinion as to the actual quantities of resources which remain, especially in the wake of the world oil crisis of the mid-seventies.

¹⁶ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 3.

At present, world energy consumption doubles every 15 years and oil consumption doubles every decade.¹⁷ There are many opinions as to the extent to which resource depletion continues to represent a 'crisis'. According to the calculations of the Club of Rome team and their world model, most of the currently important resources will be depleted to a point where they will be prohibitively expensive within 100 years.¹⁸

Critics of Limits to Growth, however, are convinced that such depletion will not occur. They claim "the most pressing limits to growth in resource usage are not geological: Mother Nature has put on and in the planet ample for perhaps tens of thousands of years". They feel the critical limits will be those imposed by "man's economic and technological ability to exploit these resources".¹⁹

In spite of the huge discrepancies in opinion, the extent to which the subject of resource availability has been increasingly discussed in public forum attests the fact that resource depletion is a serious contemporary issue.

¹⁷ H.S.D. Cole et al., MODELS OF DOOM: a Critique of 'Limits to Growth' (New York: Universe Books, 1973), p. 105.

¹⁸ D.H. Meadows et al., The Limits to Growth (New York: Universe Books, 1972).

¹⁹ H.S.D. Cole et al., MODELS OF DOOM: a Critique of 'Limits to Growth' (New York: Universe Books, 1973), p. 37.

Pollution has become another prominent aspect of the modern context. However, even the Club of Rome group was forced to admit that there are so many unknowns about the amounts and rates of polluting substances being dumped into the biosphere that many types of projections simply cannot be made. The upper limits are essentially unknown. The situation is complicated by the time delay between initial use and release of a substance into the biosphere and the subsequent detection of harmful side effects.

Whether or not definitive ecological limits can be set is not really at issue here. What these studies and speculations do represent, however, is an awareness of a new range of considerations which, to this point, have not been a concern to society. The realization that "for practical purposes the habitat of mankind and of all other forms of life....is nothing but a thin envelope of air, soil and water round the surface of a single planet"²⁰ is one of the characteristics of the present framework. The image of the world as a sphere of insuperable dimensions is an important facet of the emerging context.

5.2.2 ECONOMY

The characteristic of the modern context which has proven most difficult to deal with is the economy. The current economy is not the robust, dynamic system it once was. To the contrary, it has slipped very quickly from rapid and

²⁰ A.J. Toynbee, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 27.

exponential growth to a state we might term in the contemporary vernacular, 'ungrowth' or decline. Jane Jacobs made the study of this new situation the subject of her latest book, Cities and the Wealth of Nations. In her opinion, the state of the economy can best be described as one of 'stagflation', a combination of rising unemployment and inflated prices.²¹ This condition differs markedly from other slow-downs experienced in the past. In previous recessions, prices fell as unemployment rose. However, during the 1980's, prices have continued to rise in spite of the increasing unemployment. Efforts to cure one of the two only aggravate the other. Jacobs is particularly insightful in suggesting the base of the problem.

Behind this terrible dilemma is a terrible theoretical void, for rummage as we may through volumes of economic theory, we will find nothing there that acknowledges the fact of stagflation, much less tells us how to deal with it or what it means.²²

Essentially, what she has outlined is the inadequacy of the existing paradigm to deal with the situation. Kenneth Watt suggests much the same thing:

The discrepancy between the conventional belief that the economy was in robust health and the reality that it was in trouble, had made it difficult to either explain or to predict economic behavior within the old conventional framework, using the traditional method.²³

²¹ Jane Jacobs, Cities and the Wealth of Nations (New York: Random House, 1984), p. 9.

²² Jane Jacobs, Cities and the Wealth of Nations (New York: Random House, 1984), p. 12

²³ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning for the

Evidently, it is not merely new actions which are necessary, but an entire new way of thinking.

5.2.3 DEMOGRAPHY

The demographic component of the contemporary context is also different. Davis found that "from the beginning of the Industrial Revolution to the 20th century, population grew fastest in the industrialized nations of the world. But since 1920, the populations of most industrial nations have stabilized at a low growth rate, typically 1% per year."²⁴ Further, studies of population figures for the past half-century indicate that although birthrates displayed increases immediately after 1945, they have been decreasing in Western nations since 1965.²⁵

The tapering-off of population increase is not the only important consideration, however. Of the existing population, there is a growing percentage of elderly. In fact, in the near future, people over 60 years of age will constitute a major portion of the total population. This 'demographic transition'²⁶ has obvious ramifications in terms of special

Unthinkable (Stamford, Connecticut: Sinauer Associates Inc., 1974), p. 3.

²⁴ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 219.

²⁵ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning for the Unthinkable (Stamford, Connecticut: Sinauer Associates Inc., 1974).

²⁶ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 219.

services, facilities and financial and pension arrangements.

Although composition of the existing population is the new concern facing industrialized nations, enormous population increase remains a very real problem in many under developed countries. Massive starvation in these countries has recently been drawing worldwide attention. There is much speculation as to the world's carrying capacity in terms of food.

During the height of the growth paradigm, the solution to these problems was believed to lie in increased growth. It stood to reason that the more wealth and commodities available, the more there would be for everyone. As this solution was applied, however, the problems were not automatically alleviated. Distributional inequalities, it was discovered, are not contingent upon the amounts of goods available. In many cases, increases only lead to greater disparity between the advantaged and disadvantaged. Reluctantly, we have learned that an increase in 'absolute' shares does not necessarily affect one's 'relative' share.²⁷ Consequently, dealing with this dilemma is a very real part of the modern predicament.

²⁷ Herman E. Daly, "Toward a Stationary State Economy", in The Patient Earth, ed. John Harte and Robert Socolow (New York: Holt, Rhinehart & Winston, 1971).

5.2.4 TECHNOLOGY

Of all the factors which distinguished the recent past as a unique period, the supremacy of technology and its corresponding economy was one of the most powerful. Hailed initially as the savior of the modern world, it has in more recent times begun to demonstrate its less benign qualities. The present context is characterized by the harsher realities and many social consequences of the much-heralded technology. If it was the benefits of technological advance and economic growth which were enjoyed in the preceding period, then certainly it is the costs of that same growth and development which are now the issue.

It is now being acknowledged that "the organized pursuit and realization of technological progress themselves destroy the chief ingredients that contribute to man's well-being", and there is a close connection "between the many symptoms of social malaise and the processes generated by economic growth".²⁸ For instance, the laws of economic growth and technological advance are based in part on the notion of 'satiation of human wants'. In other words, individuals have finite capacities as consumers, but "continuous material growth cannot be sustained by a system geared simply to producing ever-larger quantities of the same goods. Hence, the importance of product innovation. New and more expensive goods and services continuously supervene".²⁹ In order

²⁸ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 107.

for people to change their wants as quickly as the market must change, the economic system actually advocates dissatisfaction.

Commodities are not the only things obsoletized in the process. The incredible rapidity of technological advancement also accelerates the rate at which knowledge, skills and culture are becoming obsolete. As individuals and groups began to be left behind, they became aware of the effects of development and growth. "Skills painstakingly acquired over many years may become obsolete in as many months."³⁰ Thus, as Jantsch concludes:

Rapid technical innovation may offer to add to men's material opportunities, but it does so only by increasing the risks of their obsolescence and by therefore adding to their anxieties.³¹

5.2.5 QUALITY VERSUS QUANTITY

In general, a sense of quality of life was replaced by quantity during the 'growth' decades. Clearly, "the technological conditions of production are not chosen with a view to enhancing man's experience in life...They evolve solely in response to the requirements of industrial efficiency".³² Similarly, the sense of personal worth is being lost in the

²⁹ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 105.

³⁰ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 115.

³¹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 164.

³² E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 127.

drive for efficiency. It becomes increasingly difficult for individuals to feel their own work matters to society, much less that of others. Men are more distant and less dependent on one another than on the machine for all their services and experiences, and frequently "slip into the frame of mind that judges people according to numerical systems and ranks their worth on some scale of efficiency".³³

In summary then, we are left to admit the inherent weaknesses of our once-proud system and deal with the situation it has been responsible for creating. As Daniel Yankelovich aptly concludes:

Our advanced industrial society, for all its strengths, has long harbored a fundamental weakness: it has prodigiously generated goods and services, but has been seriously deficient in creating some of the basic conditions of human community.³⁴

The degree of satisfaction and quality of life which one enjoys has not been substantially enhanced despite the many new opportunities made available by growth. Instead, "there is unmistakable evidence that much of the enjoyment of life still attainable is effectively marred by a chronic restlessness to realize that which is bigger and better".³⁵

³³ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 151.

³⁴ Daniel Yankelovich, New Rules (New York: Random House, 1981), p. 4.

³⁵ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 106.

These are only the major changes which have taken place in the world and local context since the initiation of the growth paradigm. It becomes clear that the environment we currently confront is of drastically different dimensions than the one in which the paradigm evolved. There are obvious shortages of materials, increased labor costs and taxes, material losses and expense due to pollution, market saturation, inflation and glut of labor force, not to mention all the social dimensions.

Swifter means of communicating have had the paradoxical effect of isolating the individual; the increased speed of transport has led to more hours of commuting;...increased automobilization is accompanied by increased family separation; more television entails less communication between neighbors and within the family.³⁶

Frequently the attempt is made to minimize the significance of these many factors by claiming they are but the efforts of certain 'radicals' and doomsday pessimists to frighten an unsuspecting public. Truly enough, the forecasts can be frightening. What they represent, however, is a broad outline of the context within which we now find ourselves; a sketch of the world as it now presents itself. These factors are central to the paradigm change now pending.

³⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 164.

5.3 IMPLICATIONS OF CONTEXTUAL MISFIT

Viewing these two contexts side by side emphasizes the extent to which all facets of the environment have changed. Corresponding changes also appear imminent in the paradigm base from which we operate. The anomalies have reached a level where they cannot be resolved merely by persistent application of the existing paradigm. As noted, it breaks down in at least 4 crucial areas: economy, ecology, politics in the broadest sense, and appreciation or the consistency of our values.³⁷

In the sequence of events which comprise paradigmatic process, we appear to be on the brink of 'revolution'. As anomalies surfaced, countless attempts have been made to adapt the paradigm through cosmetic changes. Initially, assuming the idea system was sound in concept, we pursued the 'back to the drawing board' method and tried to resolve the difficulties and alleviate inconsistencies by working things out more carefully. Jane Jacobs recognized this effort on the part of economists especially:

They have gone over and over and over what they think they already know, trying to use their tools with greater sophistication, shuffling the same old conceptions into new combinations and permutations to run through computers and legislatures.³⁸

³⁷ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 19.

³⁸ Jane Jacobs, Cities and the Wealth of Nations (New York: Random House, 1984), p. 29.

But, when in the wake of all this activity the difficulties remain unresolved, she concludes, "We must be suspicious that some basic assumption or other is in error, most likely an assumption so much taken for granted that it escapes identification and skepticism".³⁹ Jantsch also captures the essence of this realization when he says:

We knew what was good because we had a solid framework of reference for making up our minds about it. Today we begin to suspect that what we assumed as given perhaps represented just our culturally conditioned reflex, one particular point of view which no longer corresponds to our dynamic situation. If the goal is not 'correct', the efficiency with which it is served turns into something 'bad' indeed.⁴⁰

It is certain that there is no one 'right' paradigm for mankind which remains valid at all times. Our psychosocial development is an evolution through a "variety of situation-contingent 'right' policies".⁴¹ Our ability to understand and interpret the world in which we live is inextricably based on the nature of the context which presents itself at any given time, and our capacity to appreciate its ramifications. Thus, we presently stand poised on the edge of a 'new world', equipped with new insights and a heightened perception of the direction in which the next step must be taken. It now behooves us to act on the initiative the

³⁹ Jane Jacobs, Cities and the Wealth of Nations (New York: Random House, 1984), p. 29.

⁴⁰ Erich Jantsch, Design for Evolution (New York: George Braziller, 1975), p. 217.

⁴¹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 18.

countless contemporary anomalies present and explore other alternatives.



CHAPTER 6

Eng ist die Welt,
und das Gehirn ist weit.
Leicht beieinander wohnen die
Gedanken, doch hart in Raume
stossen sich die Sachen.

The world is narrow and the
mind is wide.

Thoughts live easily together,
but in space hard things
collide.

Schiller, 'Wallenstein'

Chapter VI

OUTLINING A NEW PARADIGM

Once one accepts the idea that change of paradigm is as necessary as it is integral to our development and can identify the point at which that change appears necessary and imminent, one can proceed in a serious way to investigate possible alternatives.

There may be some question as to the value of pursuing a new paradigm if, in turn, it too will become obsolete. In fact, there are those who consider the forcing of a rigid model on a fluid reality to be the greatest mistake made by all cultures. Mistake or not, however, it is the nature of man. As Kant professed, direct apprehension of reality is beyond the reach of pure reason. Man is capable of reasoning or dealing with but a shadow of all that exists at any one time. Therefore, he constructs maps and images according to what he apprehends of his surroundings.

Since the physical and social context changes, as well as the way and degree to which we understand them, one paradigm cannot endure indefinitely. During the span of their usefulness, however, these idea structures allow whole civilizations to function on the basis of what knowledge they possess until such time as the new perceptions and under-

standing thus accumulated make it possible to thrust forward again with new sense of direction.

Until men comprehend all things they cannot function as if they do. So, in spite of their relatively limited lifespan and the risk of error in their assumptions, paradigms remain a fact of human nature and development. Therefore, paradigm change represents not defeat but the opportunity to move forward again, and outlining a new paradigm takes on greater significance.

In focusing on the question of a new paradigm, one does not expect to define it as an absolute. There is much more involved than logic alone. At this point, "we are searching for some kind of harmony between two intangibles: a form which we have not as yet designed, and a context we cannot properly describe".¹ The anomalies dealt with in the preceding chapter begin to reveal the nature of the new context and the key issues raised by the current paradigm. Since these issues exceed that paradigm's capacity to resolve them, they become fundamental questions for the succeeding candidates to deal with. A brief review of the issues at this point will give us some sense of the character of the new paradigm and the parameters within which it must be designed to operate.

¹ Christopher Alexander, Notes On The Synthesis of Form (Cambridge: Harvard University Press, 1971), p. 26.

At the outset, let it be remembered that this exercise represents the search for a NEW idea system; one which is tailored uniquely to an emerging context. This paradigm will not be found amongst those employed previously.

6.1 ECOLOGICAL LIMITS

As has been alluded to in the preceding chapter, there is considerable controversy as to the dimensions of the available resource base. Whether there is only sufficient to last into the next century as estimated by Meadows et al., or whether supplies will extend much beyond that may never be unequivocally established. It remains important, however, that a forthcoming paradigm explore ecological limits. The concept of a finite earth and sensitivity to environmental concerns must be addressed. There is sufficient reason to believe as William Leiss, that "accepting the limits to growth can be the catalyst for new forms of creativity and fulfillment in our culture".²

It has been publicized that in terms of energy efficiency, Canadians are among the highest per capita consumers of energy resources in the world. The fact that these types of analyses and comparisons are surfacing implies a move towards more conscientious and efficient use of resources as a moral principle aside from the whole question of scarcity. It is highly likely that a new paradigm will incorporate

² William Leiss, Limits To Satisfaction (Toronto: University of Toronto Press, 1976), p. 130.

these new values.

6.2 ECONOMIC REDIRECTION

Growth, as we have noted, has become the essence of the economic system. As attention shifts away from a purely exponential kind of increase, fundamental changes must correspondingly be made in the economic structure.

Jane Jacobs provides some very succinct commentaries on economics and urban life. In doing so, she focuses on economic and financial structures in an attempt to deal with the absolutely blatant anomalies she perceives. One of the greatest strengths of Cities and the Wealth of Nations is its prescriptive content. The types of issues and alternatives she suggests may well be the primary focus of the economic component of the new paradigm.

Jacobs looks to the city in remedying economic decline because feedback loops or self-corrective mechanisms on a national level have not proven effective. She advocates a movement towards import replacement by individual cities in order to refortify the local economies. Efforts to make local production more diverse and self-sufficient have numerous potential benefits. The number and kinds of jobs available are increased, alternatives to enterprises which are waning and dying out are made available, there are new uses for developing technologies, and more city capital is generated.

Coupled with the import replacement emphasis is a move away from the 'transactions of decline' which are crippling the economy but remain acceptable in general practice. According to Jacobs, these include: unremitting and prolonged military production, welfare programs which attempt to make standards of living more uniform but consume large amounts of city earnings in doing so, and all other heavy, unremitting subsidies which must be continually increased in order to sustain their beneficiaries. In general then, it appears that the new paradigm must advocate greater diversity, independence and a return to production on the local level.

6.3 QUALITY OF LIFE

Another realization which has come from our experience with the growth paradigm is that commodities in and of themselves are not fulfilling nor compensatory for the amenities they have been allowed to preclude. Though it has taken many years, we reluctantly admit that "static notions such as happiness have eluded us in spite of all our attempts to satisfy material needs and desires".³

The growth orientation is excessively materialistic, focusing so intently on expansion of commodity markets that other less quantitative factors which contribute to quality of life have been edged out. Beckerman cites "the visual

³ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 30.

amenities of our towns and country, our ability to communicate with our fellowman, our sense of aesthetic and moral values and even our pride in our work"⁴ as some of these devaluated factors. Certainly the lack of emphasis on some of these components has been felt. The growing awareness of the necessity of qualitative aspects will undoubtedly be reflected in the new paradigm.

6.4 PROGRESS REDEFINED

If one was to summarize the new paradigm, it would be the redefinition of the concept of 'progress'. As we will remember, the equation of progress with quantitative and economic growth was the preliminary assumption of the present paradigm. All other developments became corollary to that premise. Success became easily identifiable through simple numerical indices.

A redefinition of progress in terms of qualitative variables is much less succinct. For this reason, according to Kenneth Galbraith, "progression on the present agenda will be much less measurable than that which associates all progress with percentage increases in the Gross National Product or percentage levels of unemployment".⁵ He attributes this to the extreme complexity of life which must be accommodated by a broader definition.

⁴ Wilfred Beckerman, Two Cheers For The Affluent Society (New York: Saint Martins' Press, 1975), p. 3.

⁵ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 390.

Redefining progress presupposes a value revolution. Other aspects of life must be valued to a certain extent before they can be aspired to through collective pursuits. Therefore, of all the things the new paradigm must encompass, this new value system and goal orientation becomes one of the most vital, although unquestionably, one of the most difficult to achieve.

6.5 NONGROWTH PROTOTYPES

Although it is still difficult to know in exactly what form the new paradigm will be articulated, it is certain that it will be generated in response to the issues raised by the incumbent paradigm. Accordingly, there have been a number of significant attempts to map in advance of its emergence, the specifics of a new paradigm based on the perceived issues. To date, however, these alternative proposals have predominantly been a reaction against growth. Assuming growth is no longer corrigible as an ethic, the obvious alternative is its opposite, nongrowth. Nongrowth options have been investigated and promoted under a number of different titles: zero growth, steady or stationary state, sustainable community, and so forth.

Jantsch claims that the concept of absolute equilibrium is not new, but is an age-old idea stemming from the 5th century when Parmenides posited the model of a static mathematical cosmos. He saw the entire cosmic system as being

one of static order and perfected balance.⁶ The concept remains in force in the scientific community today. In addition, many other ideological and terrestrial systems have been found to operate on a similar equilibratory basis. It is not unusual then, that efforts have been made to equilibrate the economy and value system in a similar way.

William Orphuls is one of the proponents of 'steady-state' economics. Among his writings we find a number of definitions and prescriptive concepts which are useful in understanding the principles of steady-state as it is currently being advocated. He defines the steady-state economy as a system characterized by "great frugality in the consumption of resources and by deliberate setting of limits to maintain the balance between man and nature".⁷

Orphuls appeals to Kenneth Boulding's 'spaceman economy' concept in describing the world situation. With overpopulation and limited resources, the world begins to resemble a spaceship of finite dimensions and capacities. Hence, the focus must be on maximizing the use of minimal resources. "A steady-state society is one that has achieved a basic long term balance between the demands of population and the environment that supplies its wants."⁸ This balance is not

⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 23.

⁷ William Orphuls, ECOLOGY AND THE POLITICS OF SCARCITY: Prologue to a Political Theory of the Steady State (San Francisco: W.H. Freeman & Company, 1977), p. 2.

⁸ William Orphuls, ECOLOGY AND THE POLITICS OF SCARCITY: Prologue to a Political Theory of the Steady State (San

static by any means, but represents "a dynamic equilibrium affording ample scope for continued artistic, intellectual, scientific and spiritual growth".⁹

The theme of the 1985 Canadian Institute of Planners General Conference was "Sustainable Communities". In the preface to the conference agenda are outlined some of the features of the sustainable community. The focus, as in any nongrowth alternative, is on 'development' rather than quantitative growth. There are a number of new indices suggested as a means of gauging the degree to which this qualitative development has been achieved. Increasing job autonomy, the total well-being of the population, habitability of the built environment, durability of domestic appliances, and the types of products sold, would all be indicative of qualitative improvement as opposed to conventional indices of scale like population, employment and the volume of retail sales. In addition, the conference committee has defined the sustainable community as one in which population and unemployment vary by no more than 7% over a decade and the proportion of basic needs such as food, clothing, shelter, energy, health and education which are provided for within the community exceeds 51% of total requirements.

Francisco: W.H. Freeman & Company, 1977), p. 13.

⁹ William Orphuls, ECOLOGY AND THE POLITICS OF SCARCITY: Prologue to a Political Theory of the Steady State (San Francisco: W.H. Freeman & Company, 1977), p. 13.

6.6 IMPLEMENTING A NEW SYSTEM

As we have seen, nongrowth alternatives seek to relieve anomaly through an economic tour de force which restricts consumption, limits population and generally, redirects output towards activities and development of greater social than economic value. Although most accounts of nongrowth society are highly descriptive and explicit in terms of fundamental issues and form around a similar conceptual base, they vary quite markedly in nature and detail as to how the specific political, economic and social structures would be implemented. There is usually some indication, however, that force would be necessary in one form or another to realize the change. Some feel the pressure of impending ecological crisis will be sufficient, while others, such as Orphuls, advocate a form of political 'coercion' based on an aristocracy formed by those found 'fittest to rule'.

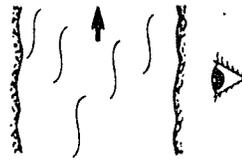
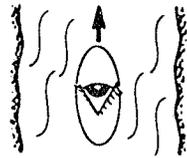
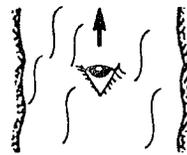
The fact that these alternative paradigm proposals assume the use of calculated force in order to become operative is strong indication that they will not be the likely outcome of the current pre-revolutionary rumblings. A paradigm must be generated in several key sectors at the same time and on a level sufficiently broad to have appreciable and sustained effect. This social cycle is not an academic exercise, therefore, new direction cannot be imposed by the logic of an isolated few. One can dictate a series of policies but they are ineffective without the requisite transformation in

thinking which must accompany them. We cannot impose a new form of perception and value. There is merit, however, in attempting to stimulate changes. In this sense, it is valuable to appeal to an academic and theoretical approach as a means of clarifying the issues and developing likely scenarios.¹⁰

6.7 A PREFERRED ALTERNATIVE

Of all the proposed alternatives, the one which appears preferential as a means to forming the new paradigm is that presented by Erich Jantsch. He refers to his viewpoint as the 'evolutionary approach' and describes it with reference to a life 'stream'. In dealing with this hypothetical stream, there are a number of alternatives illustrated in the figure below.

¹⁰ As an academic exercise, the preceding summary of non-growth systems is useful to a point, however, as a basis for a new paradigm it is not entirely sound. The fundamental premise of the environmentally conscious perspective is that resources are in increasingly short supply. Should this assumption be wrong and resource depletion is a perceived rather than real phenomenon, then the whole argument crumbles. Even if resources are finite as claimed, slowing growth only prolongs the inevitable, and zero growth or increases by any other percentile become entirely arbitrary.

(a) Rational approach(b) Mythological approach(c) Evolutionary approach

The three modes, or levels, of perception and inquiry illustrated by the image of a stream. At the rational level we are outside the stream, at the mythological level we try to steer our canoe in the stream, but at the evolutionary level we *are* the stream.

ILLUSTRATION 7: Levels of Perception

(Jantsch, Design For Evolution, p.98)

There is a 'rational approach' (a) represented by a position on the bank where the flow of the stream is observed in a nonparticipatory way. This approach is objective and mechanistic but also has the tendency to exclude key elements of the nature of the stream itself. Frequently, even the view of the opposite bank is obscured. 'In essence, only a portion of the whole stream is perceived and even that portion runs the risk of giving a highly distorted impression of the whole.

Jantsch's 'mythological approach'(b) is similar to navigating a canoe downstream. Although both banks and the direction of flow are perceived, action consists of responding to immediate forces exerted in each situation. It is a very local process in which the responses are most commonly reactions rather than free actions. Essentially, a mythological approach is homeostatic, seeking to maintain the state which currently exists. Nongrowth and other adaptive alternatives represent this form. They are primarily reactive--a response to an immediate situation, and are designed so as to maintain, as long as possible, the current orientation in the 'stream' or local environment. Obviously, cutting down the rate at which goods are consumed ensures their availability over a greater length of time.

The approach which Jantsch advocates as superior to either the rational or mythological is the 'evolutionary' perspective. Here, we are in the stream and have a heightened sense of our relationship to it as part-to-whole. Instead of steering a course between two sets of opposites as in the mythological approach, or merely solving a series of anomalous issues, the evolutionary method becomes a true 'flow process'. The difference is one of 'homeorhesis', the counteracting of opposing forces in such a way as to move the whole process up to where it would have been left undisturbed, instead of back to where it was as is the case in 'homeostasis'.¹¹

¹¹ Erich Jantsch, Design For Evolution (New York: George

Translated into paradigmatic terms, the evolutionary approach limits as well as enables human action by focusing on a longer range perspective and direction. This incorporates the higher and qualitative values which the new context intimates. The balance in the 'stream' is achieved through movement. Rather than fluctuating between situations of imbalance resolving to balance to maintain an overall equilibrium in a rocking motion, Jantsch envisions a form of balance in each movement. Such balance can only be achieved through an intimate and constant sense of the hypothetical stream. Within this awareness are the environmental sensitivities called for in the new paradigm. Instead of searching for forms of 'technological forward escape'¹² to push back the perceived limits, or fixing arbitrary boundaries in an attempt to maintain an equally arbitrary equilibrium, the evolutionary approach is 'boundary-oriented', considering and dealing with limits as they present themselves. The change in emphasis consists of "maximizing the probability of success" as opposed to "minimizing the chance of disaster".¹³

In essence, the evolutionary level evolves a paradigm which includes not only a heightened awareness of the many life forces and a more qualitative emphasis, but a flexibil-

Braziller, 1975), p. 92.

¹² Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 275.

¹³ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 275.

ity and responsibility in the application of the paradigm. Methods for gauging the degree of 'fit' are embodied in the paradigm. In other words, "in an evolutionary world, there is nothing to be learned merely through deduction and induction, but all through operation through an evolving moment and the experience streaming from it".¹⁴ "It can guide us toward 'tuning-in' to a reality whose nature is systemic and dynamic, and it can encourage us to accept our predicament as cybernetic actors on earth."¹⁵

6.8 IN SUMMARY

The challenge for the new paradigm is not only one of dealing with issues which we are incapable of resolving with the current one, but of reflecting a highly complex and changeable world by drawing upon higher levels of human ability. The context in which the modern paradigm must be set no longer forms a simple monograph. Similarly, our increased understanding of man's cognitive capacities negates the option of adopting paradigm formats below our potential. What we presently know and what we must deal with in the world around us prevents us from reverting to the past for solutions. As Marilyn Ferguson suggests, the difference between our current situation and changes which have occurred previously is that today, for the first time,

¹⁴ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 24.

¹⁵ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 47.

we have the capacity to understand the change and how the transformations take place.

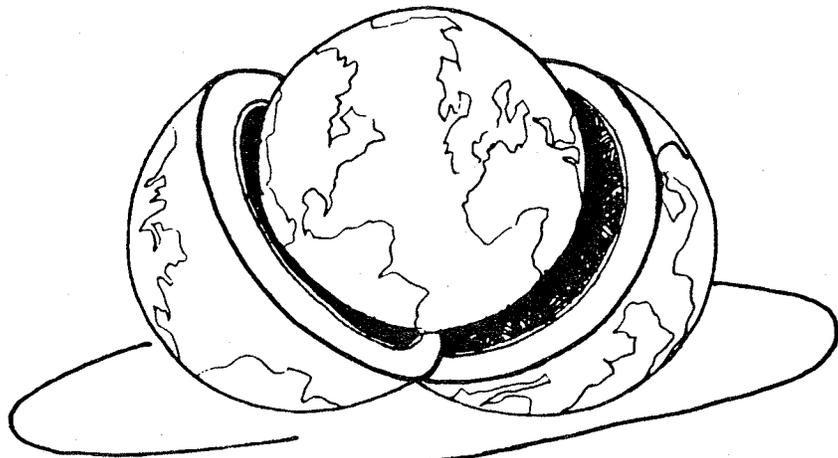
The challenge for the new paradigm is substantial, but greater still is the personal challenge of rising to the occasion which this process represents.

We are still facing what appears to be a basic dilemma between opting for a secure and perfectible but static world--a monument to life rather than an expression of it--and a risky and elusive but dynamic world in which our fate evolves with the forces of life in and around us. The dilemma is within ourselves, the clash between images of the world which we conceive.¹⁶

In conclusion we might ask, "to what extent can we become flexible--ultimately fluid--in the regulation of our personal lives and the lives of our social and cultural relationships and systems"?¹⁷

¹⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 22.

¹⁷ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 25.



CHAPTER 7

Man must explore himself--his
goals and values--as much as
the world he seeks to change.

D.H. Meadows

Chapter VII

DIFFICULTIES IN IMPLEMENTING CHANGE

Changes of the magnitude we have been discussing are fraught with difficulties. The dilemmas involved once the transition begins to occur are very real.

Although change and revolution, in the paradigmatic sense, are part of man's developmental processes, resistance to change is an equally powerful fact of life. It is unrealistic to discuss change without reference to the difficulties involved in its realization. Developing a new paradigm on a conceptual level is only part of the process. Therefore, the following chapters are devoted to a discussion of the implementation of change and the inherent difficulties.

Change has always presented difficulties for mankind. The need for stability and the reaction against insecurity brought about by change are basic to human nature. Consequently, there have been many attempts to avoid or neutralize the unsettling effects of a changing world and changing ideas. In most cases, these efforts have consisted of establishing an artificial sense of security through the

imposition of various, often arbitrary constraints and restrictions. In studying stability and change in human systems, Kenneth Boulding found that "the internal stability of traditional societies is a direct result of the sanctions which they place against novelty. It seems almost the essence of society to impose such sanctions".¹

Along with sanctions which inhibit changes from occurring, or at least from being acknowledged, security is often derived from clinging to the experiences and practice of the past, recent or distant. Edward Shils explored this phenomenon of tradition at length and drew the following conclusion:

One of the main reasons why what is given by the past is so widely accepted is that it permits life to move along lines set and anticipated from past experience and thus subtly converts the anticipated into the inevitable and the inevitable into the acceptable.²

These characteristic needs for security and the resistance to change are as evident today as they ever have been. The frequency and freedom with which we now discuss change seems to imply a certain ability to deal with it, when in fact, its too-familiar parlance of change has perhaps obscured our true sense of its occurring. Boulding claims that "we are so accustomed to change in our society and have institutionalized it to so great an extent that we do not

¹ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 94.

² Edward Shils, Tradition (Chicago: The University of Chicago Press, 1981), p. 198.

realize what a rare, difficult and utterly incomprehensible phenomenon it is."³

In contemporary vernacular, therefore, the word 'change' is in relatively common usage, however, the prospect of that change remains as fearful as ever. The fact remains that "any change from settled ways of life involves a fearful plunge into the unknown (and) it will not be taken unless either there is great dissatisfaction with the existing routine or unless there is something in the society which puts a high positive value on change itself".⁴

Resistance to rapid change is a social as well as individual coping device. Jantsch said, "Our whole institutional fabric functions with the explicit and implicit aim of keeping firmly to a given rigid policy".⁵ There exists a very common 'institutional homeostasis' which acts to resist change in favor of the status quo. It "has evolved to provide a stable environment for social interchange and orderly cultural evolution."⁶ This is one of the reasons that the weight of inertia continues to rest with the status quo.

³ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 93.

⁴ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 94.

⁵ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 19.

⁶ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Co., 1979), p. 153.

Not surprisingly, resistance to change is also an aspect of paradigm. Every paradigm needs some degree of tenacity in order to be effective. It must elicit a certain amount of dogmatic support over a period of time. Without this, "the repercussions and ripples started by the slightest failure could grow wider and wider until they are spreading too fast to be corrected".⁷

All of these anti-transitory devices, whether operating on an individual or societal level or as part of an established paradigm, are useful as means of creating necessary security, but only to a certain point. Typically, these resistive forces overstep their usefulness by becoming a power unto themselves. Herein lies the difficulty:

So desperate is our dependence on viable models and myths that we subconsciously try to elevate them from the muddy world of human emotions and interests to the crisp, clear heights of established truth... and yet all these models and myths are human artifacts.....We keep forgetting this.⁸

Boulding made another observation about this tendency:

Curiously enough, it is often the most successful images (paradigms or institutions) that become the most dangerous. The image becomes institutionalized in the ceremonial and coercive institutions of society. It acquires thereby a spurious stability. As the world moves on, the image does not.⁹

⁷ Christopher Alexander, Notes on The Synthesis of Form (Cambridge: Harvard University Press, 1971), p. 52.

⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 194.

⁹ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 79.

Consequently, when necessary changes must be made, they are severely impeded by the once-healthy forces which have become disproportionately strengthened. Their rigidity stifles the natural process through which more creative and better-adapted solutions are constructed. Thus, the very mechanisms which work to avoid changes when they are not necessary can also be counter-productive at times when change is needed. Processes initially intended to secure and benefit the system can, by quirk of human nature, weaken that same system in certain instances.

Unwavering application of the same pattern or system is extremely useful in organizing and co-ordinating human efforts, however, the reluctance to relent can also become a considerable restriction. Louis Mumford demonstrates the effect of such entrenchment in the following way:

The 'belief' that the world was flat was once upon a time more important than the fact that it was round, and that belief kept the sailors of the medieval world from wandering out of sight of land as effectively as would a string of gunboats or floating mines.¹⁰

We might again consider the case of Christopher Columbus who set sail westward with the belief that if he pursued his course far enough he would reach the Indies. He was credited with discovering America, however, he never realized what he had done and went to his death apparently still believing that he had found a way to the Indies. "The fact that he

¹⁰ Louis Mumford, cited by Elizabeth Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 113.

did not find what he was expecting to find was a message incapable of penetrating the image of the unbroken ocean westward from Spain to the Spice Islands."¹¹

The same scenario is acted out again and again in modern times. Men and institutions are as locked into their paradigms and patterns as any of our predecessors in times past were to theirs. This becomes particularly evident as these belief systems fall increasingly suspect and we begin to sense a need for a redirection. As Mishan rightly observed:

Contrary to their fashionable phrases about the need to face change, those who proclaim themselves to be in the vanguard of new thought prove to be in the iron clutch of economic dogma, much of it provided by famous economists of the past as a guide to policy in a world different from our own.¹²

Thus, to a large extent, men remain "captives of their own misconceptions rather than masters of their fates and captains of their souls".¹³ The situation is aggravated in the modern context by the rapidity with which external changes now occur.

External change is now more rapid than at any time in human history. Society's usual internal mechanism for change cannot keep pace. As a result, the resistance to change which is normally beneficial now serves to block rapid change when it is most needed.¹⁴

¹¹ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 124.

¹² E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. xiii.

¹³ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 113.

Dealing with the resistive forces, both naturally and culturally-imposed, is one of the first great difficulties involved in changing today's paradigm. Evidently, it is not a strictly rational problem and cannot be dealt with solely through an appeal to one's rational senses. However, in understanding the nature and extent of this particular difficulty, one would expect it can be confronted more directly and, in time, more successfully.

7.1 OTHER OBSTACLES

In addition to the aforementioned reactions to change, there are numerous other situations and circumstances which form impediments to change generally, and to paradigmatic revolution specifically.¹⁵

In his book, Growth: The Price We Pay, E.J. Mishan considered in some detail the factors which serve to perpetuate allegiance to growth and inhibit development and adoption of new sets of rules and prospects. Several of these should be noted here.

¹⁴ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 153.

¹⁵ It is interesting that the apparent obstacles to change equal if not outnumber the reasons for which it is thought to be necessary! This is undoubtedly one of the reasons change is so slow and difficult to achieve.

7.1.1 GRADUAL EVOLUTION

Mishan claims there is a general belief in the slow process of evolution despite evidence of the extreme rapidity of change in recent years. The concept of gradual evolution or transition accounts for the leisurely attitude towards making necessary changes which is currently so prevalent. It is this attitude which Galbraith was lamenting when he said, "There is massive change, but, except as the output of goods increases, all remains as before."¹⁶ Believing that significant events take time to occur, we are content to wait and see how they'll evolve. There is faith that the current situation can and will remain relatively unchanged in spite of forces acting to change it. Mishan's words provide a most appropriate summary of this difficulty:

Men are conditioned to detect in the passage of events familiar patterns and parallels, and lulled their apprehensions whenever catastrophe appeared imminent with aphorisms about the illusion of change and about the basic sameness of the world in spite of appearances to the contrary.¹⁷

7.1.2 OVER-OBJECTIVE EVALUATION AND EDUCATION

In addition to the perception of a much expanded agenda for change, there is a tendency to study and evaluate the current context without making serious value judgements. Huge amounts of data are constantly being generated, yet in their extreme objectivity, these figures do not provide a vital

¹⁶ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 1.

¹⁷ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. xiv.

reading of the situation. The type of evaluations which could potentially put in question the accepted ideas and methodologies, for the most part, are not made.

There is no doubt that this is at least partially the result of education. We are not trained to question the fundamental elements of the existing pattern. Education, as we know it, is the perpetuation of established principles; instruction in what is acceptable. Rather than going beyond what has been done to broaden understanding of alternatives, scholars tend to perpetuate the current thinking by narrowly focusing their research upon it. Enquiry is increasingly directed towards finer and finer details of the existing paradigm. Criticism which arises outside academic fields is also largely based on details of how the existing system might be improved or enhanced. Fundamental questions as to its validity are rarely addressed.

7.1.3 QUANTITY AND 'FACING CHANGE'

Mishan is also convinced that the preoccupation with quantitative indices is another significant impediment. Social and economic well-being are gauged too heavily by numerical standards. The assumption is that larger numbers are 'better' than smaller ones in terms of production. Therefore, if the numbers and statistics are 'agreeable', or on the increase, the situation is deemed to be a healthy one regardless of other consequences.

Closely linked to the quantitative emphasis is the confusion as to the definition of change. 'Facing change' has been misconstrued to mean keeping up with the increased competition, efficiency and, above all, the faster pace of economic growth. Accordingly, individuals who actively promote growth are convinced they are keeping abreast of 'change', when actually they are only perpetuating the declining paradigm. It is evident that this definition is a direct derivative of the growth paradigm.

7.1.4 GROWTH AND WELL-BEING

One of the factors which is counter-productive on a world scale is the belief that as we become larger and more prosperous, our capacity to cure social and economic ills will similarly increase. Unfortunately, this has never been borne out in experience. In fact, after years of unprecedented growth, Western countries find the economic and social disparities even more acute. Even more unfortunate, however, is the adoption of a similar belief by developing countries. With the great poverty they experience, economically and technologically, there is tremendous pressure to increase productivity as rapidly as possible, thus setting in action the curing mechanism they believe growth to be. So, as Western countries gradually realize the deception of economic growth, the non-Western majority are only beginning to explore its possibilities. It will be extremely difficult to deter them from their course.

7.1.5 DISSATISFACTION

Consumerism is one of the last factors Mishan cites as an obstacle to constructive change. People have been conditioned to expect more and more. Consumerism has become a way of life, a right that we now expect to maintain. "It is evident...that in advanced economies, tastes change rapidly--if only because consumers' wants do not exist independently of the products created by industrial concerns."¹⁸ The market is a 'want-creating' rather than a 'want-satisfying' mechanism.

Rising industrial capacity is fostered by an economy which creates rising needs and wants. We are no longer dealing, however, with a set of basic needs because the public's perception of what it needs is changing continually in an upward spiral. William Leiss deals extensively with this topic in Limits to Satisfaction. He attempts to define the behavioral phenomenon of escalating expectations and proportionally reduced satisfaction. Much of the dilemma which exists stems from a basic confusion between 'wants', which he defines as a person's subjective desires and felt requirements, and 'needs', one's objective or true requirements.

Since wants arise in our inner states of feeling, presumably we always know what we want, but since needs are objective requirements, it is possible that we may not know what we need.¹⁹

¹⁸ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 94.

¹⁹ William Leiss, The Limits To Satisfaction (Toronto: Uni-

The incredible number of commodities coming onto the market intensifies the confusion.²⁰ Each commodity professes to satisfy certain needs while at the same time promoting dissatisfaction with existing items. There is no resolution because there is no definitive satisfaction. There is no end to the number of products trying to satisfy a single want. In reality, it is the market that can never be satisfied. In order to perpetuate itself, it must foster continual dissatisfaction.

Such fickle dissatisfaction is not only at cross-purposes to personal fulfillment, but acts as a counterfeit for the true or constructive dissatisfaction which spurs change. Bernard Shaw described dissatisfaction with the status quo as the mainspring of progress. This differs markedly, however, from the consumer dissatisfactions which are so prevalent today. They have become a 'habit of mind', "a by-product of the commercial society that brought them into being and a condition for the advancement of that kind of society".²¹ As such, today's dissatisfactions are essentially impotent and only serve to mask dissatisfactions of a constructive nature.

versity of Toronto Press, 1976), p. 61.

²⁰ For example, considering only those items intended for sale in supermarkets, we find that each year in North America 1,500 new products appear, 80% of which are withdrawn that year to be replaced by another assortment. (Leiss, p. 14)

²¹ E.J. Mishan, Growth: The Price We Pay (London: Staples press, 1969), p. 113.

In addition to the ideas presented by Mishan, there are a number of other factors which merit some attention as we investigate the difficulties inherent in changes of the magnitude of paradigms.

7.1.6 TECHNOLOGY

Firstly, the modern world is a technological world. We must accept that as fact. There have been unparalleled advances in every aspect of our technological ability. Our perceptions of that technology, however, remain strangely juvenile. In the words of Elizabeth Drews:

It is the tragic paradox of this century that our technological development has vastly outstripped our moral growth, with consequences that have already proven calamitous.²²

Basically, technology is the "systematic application of scientific or other organized knowledge to practical tasks".²³ It has been so effectively applied that we have developed an immutable faith in its power and potential to solve all problems, present and especially future. As Galbraith states, "It is a commonplace of modern technology that there is a high measure of certainty that problems have solutions before there is knowledge of how they are to be solved".²⁴

²² Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 84.

²³ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 12.

²⁴ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 19.

The belief that technological innovations will create alternatives which will allow us to perpetuate current practices has been a comforting one, especially in face of much speculation to the contrary. But, technology alone cannot save industrialism or even have substantial effects in reversing current trends. "Technology is the servant of industrialism, not its savior."²⁵

Also, technology as we defined it, is the application of knowledge to the solution of practical problems. "It is thus based on the production of material knowledge through scientific research (and) research is highly dependent on the availability of capital."²⁶ Therefore, since it develops in direct proportion to the economy, technology necessarily slows down when funds must be concentrated elsewhere. As we have all witnessed, "in times of economic decline, technology is among the first of human enterprises to be afflicted".²⁷ Although it will be difficult to convince the majority otherwise, we must seek elsewhere for the solutions we need.

²⁵ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 158.

²⁶ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 157.

²⁷ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 159.

7.1.7 VESTED INTERESTS

Vested interest is another factor whose influence is appreciable.

So entrenched are the interests involved, commercial, institutional and scientific...that economic growth has embedded itself in the ethos of our civilization.

Despite the most blatant disamenities caused by the postwar economic expansion, despite the visible symptoms of a disintegrating civilization, no one today looking to advance his position in the hierarchy of government or business fails to pay homage to this sovereign concept (growth).²⁸

Many decision-makers arrived at their positions during periods of growth. Since their terms of office are short, they look for short-range benefits which unavoidably lie within the context of growth as they know it. There is no incentive to plan for a distant, largely unknown, and potentially unpopular future.

It is often suggested that government and other large institutions should be the ones to lead in movements toward change. In light of the interests just mentioned, however, it becomes evident that such initiative must come from elsewhere. Mishan claimed that government systems evolved during periods where the pace of advancement was much slower. Therefore, they adopted mechanisms to deal with problems only as they arose. This is obviously the case, but it is more likely that the pressure to maintain the status quo exerted by vested interest is the true source of governmen-

²⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 161.

tal and institutional inability to either initiate or promote change. One must conclude, as did Galbraith, that "only the innocent reformer or the obtuse conservative imagines the state to be an instrument of change apart from the interests and aspirations of those who comprise it".²⁹

Jantsch places economists in a similar position. Given the supremacy of growth economics, the economist occupies a responsible professional position. In fact, "economists are the highest arbiters of social policy".³⁰ Their interests in the established economic system are understandable. One would not expect the casual sacrifice of their eminence.

All those who have vested interest in growth, malevolent or otherwise, represent a formidable obstacle for any redi-rective action which may be undertaken. Not only do they perpetuate often obsolete ideas and practices, but they also tend to spread false optimism about the state of affairs in which we find ourselves. In dealing with the media, such share-holders in growth tend to de-emphasize negative developments and fracture the type of reports given in such a way as to obscure the overall picture of the situation.

The intent here is not to portray government and other institutional networks as inherently evil and conspiring. That form of value judgement has no relevance to this thesis. The object of the preceding discussion was to acknowl-

²⁹ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 381.

³⁰ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 410.

edge the position of such organizations relative to the paradigm currently in force and, more importantly, to any rival paradigms which may challenge it, as and when they may develop. In summary then, "to a considerable extent, the public conception of reality is managed and determined by the government and other large institutions",³¹ and for the time being, the fact must be accepted in order to develop other alternatives.

7.1.8 MASS MEDIA

It is interesting to focus very briefly on the role of mass media in the process of idea reformations. As previously mentioned, attempts at obtuse optimism through the media do not effectively mask indications to the contrary. Alternatively, meaningful changes are not promoted to a greater degree by sensationalizing the realities either. It is a well-known fact, as Beckerman suggests, that "Bad news has always been better for publicity than good news". In fact, "Catastrophe is good news."³² Attempts to over-dramatize the situation have so far only lead to alarm or cynicism and loss of credibility. It is to be remembered then, that media, given their present usage, are more an impediment than a tool for change.

³¹ Kenneth E.F. Watt, THE TITANIC EFFECT: Planning For The Unthinkable (Stamford, Connecticut: Sinauer Associates, 1974), p. 175.

³² Wilfred Beckerman, Two Cheers For The Affluent Society (New York: Saint Martins' Press, 1975), p. 25.

7.1.9 TIME

The last point to be discussed, as we consider the difficulties involved in paradigm shifts, is the aspect of time. "It is simply not in the nature of societies to discard all parts of the past at uniform rates."³³ In spite of the fierce anomalies which arise--and the deleterious effects they may have--changes must await their opportunity. As Boulding observed, "Sometimes the time seems to be right and there is no harvester. Sometimes there is a harvester and no harvest".³⁴

New systems cannot be forcibly imposed. To be effective and meaningful, new directions, new ideas and new paradigms must attend the appropriate moment. As Kuhn described it, the transition is a form of Gestalt Switch, based on the spontaneous alignment of many factors at a single time. Their assemblage at a given moment triggers the thrust into a new paradigm. The timetable of events is much beyond the control of any individual. In spite of the immense frustration this represents to those sensitive to the rumblings of change from their onset, "Evolution...is patient"....³⁵ and so must we be.

³³ Edward Shils, Tradition (Chicago: University of Chicago Press, 1981), p. 40.

³⁴ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 76.

³⁵ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 76.

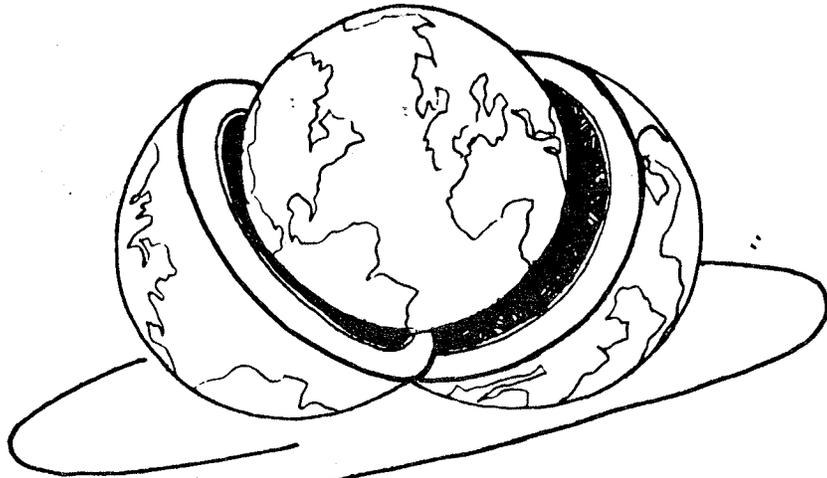
7.2 IN SUMMARY

In the course of reviewing the various difficulties change presents, one is quick to note that many of the factors discussed take the form of beliefs.³⁶ By nature, these beliefs are less tangible and yet of infinitely deeper entrenchment than any physical obstacle might be. This makes them not only more difficult to deal with, but extremely stubborn to dislodge when necessary.

Attempting to articulate these various difficulties in no way guarantees they will be vanquished. A new paradigm will likely be set in place in spite of their impedance. Many will never be finally dislodged until that new paradigm takes effect.

Notwithstanding these eventualities, there are many insights to be gained into the complexity of human systems from such an inventory. The innumerable variables involved are so intertwined and so incessant that we cannot underestimate the calibre of change necessary to make inroads and eventually succeed. Attempts to formulate new paradigms with assumptions reduced to only the most elementary are ineffectual and noncredible. Herein lies the basic failing of our alternatives thus far. We must anticipate the forthcoming paradigm on a level of complexity equivalent to the complexity of the problem.

³⁶ It is little wonder that Vickers pictured human experience as "buried beneath the mythology of our culture"!
(Jantsch, p. 234)



CHAPTER 8

The dogmas of the quiet past are inadequate to the strong present. The occasion is piled high with difficulty, and we must arise with the occasion. As our case is new so must we think anew and act anew.

Abraham Lincoln

I know of no safe depository of the ultimate powers of the society but the people themselves.

Thomas Jefferson

Chapter VIII

A ROLE FOR PLANNERS IN THE PROCESS

We have discussed at some length the dynamics of an idea system known as paradigm, its relationship to the context in which it evolves, as well as the companion phenomenon of change and its implications and difficulties. The human mind, and by extension, social systems, exhibit identifiable patterns of action and development as well as opposition to it. Having discovered many of these factors, it is important to consider their implications for planning practice and their applicability in a practical sense. Again, it must be stressed that one does not expect to revolutionize human nature or rebuild social structures with these insights. Rather, they become the basis for addressing how changes may be anticipated and realized in closer accordance with them.

It is necessary to begin where we are in the current system and proceed from there, hopefully with heightened sensibility as to the true nature of the undertaking. In the minds of many reformers and philanthropists there is frequently a 'clean slate' on which models of a new world can be built. In reality, no such clean slate has ever been found or created. Current problems can never merely be

swept away in order to 'start again'.¹ Our critical necessity is to establish more appropriate and effective ways to deal with the world on its own terms.

As we consider the fundamental problem of an obsolete paradigm and the apparent need for an alternative, it is necessary to discuss how the conversion will be accomplished and to whom we can look for direction and leadership. Obviously there are no absolutes. One cannot cite only one alternative as correct or one person or group as solely responsible. By the same token, every individual and group, in ways not too dissimilar, has some role to play and potential contribution to make. For the purpose of this thesis, it is appropriate to focus on the role of the planner as a case in point.

This section is not intended to be a critique or evaluation of planning practice. The intent is not to debate the relative merits of what exists, but instead, to outline a potential role for planners in light of the demands of an emerging new context. Under the circumstances, it behooves us to operate on the premise that it is more valuable to explore new potentials than to continue to dwell on less effective aspects from the past.

¹ Even in such traumatic events such as the Russian Revolution, a clean slate could not be achieved. Having destroyed several social classes and all institutions, there remained a deeply engrained national psyche.

8.1 THE PLANNER; THE INDIVIDUAL

Although any profession or organization has its own peculiar biases and interests to maintain in a collective sense, there is always room for flexibility on the part of the individuals who comprise them. Thus, it is at this level, the realm of the individual planner, that discussion will initially commence. The real potential for effectiveness begins here, for changes in the individual's thinking must and do occur long before they are reflected in social structure and belief systems.

Most individuals, and therefore most planners, fall into one of two categories: either 'traditionalists' or 'radicals'. Tsanoff defines the traditionalists as those "who honor and guard the old, established customs and beliefs. They preserve the continued stability of the common life".² Radicals and reformers, by contrast, are those who are "ever-critical of the old order and strive to change and improve it according to their own preferred designs".³ Both positions have merit and the planner need not necessarily be on one side as opposed to the other. As Tsanoff was careful to point out:

Conservation and change, stability and spurring advance are both needed, for their active interplay and counterplay make possible the expansive vitality of social institutions.⁴

² Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 336.

³ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 366.

The key is obviously the word 'active'. The individual planner must be actively involved on the side he chooses. This implies exerting conscious effort to reinforce this position at least within himself. Serious consideration must be given to questions of "not only how people (and systems) do behave but also whether they might behave better".⁵ Essentially, this amounts to an ongoing process of critical analysis which ultimately leads to greater awareness of the reality of one's own position in relation to various aspects of the context in which he operates.

There are those who would have us believe that the 'crucial gap' in efforts to introduce change lies "between those who anticipate a continuation of present trends and those who insist that a drastic change is absolutely necessary".⁶ In other words, only those who place themselves on the side of the reformers will contribute effectively to change when necessary.

It should be stressed again that declaring oneself a radical does not forcibly place that individual in the vanguard of the transition process. Classification as one type or another does not necessarily imply one possesses the fea-

⁴ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 366.

⁵ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 69.

⁶ Educational Policy Research Center, Alternative Future and Educational Policy (Menlo Park, CA: Stanford Research Institute, February 1970), p. 8.

tures most necessary to be effective: awareness and critical analysis. Whether as a conservative, one begins with the assumption the existing situation is valid and then, seeking to improve upon it, arrives at an agenda for change, or as a reformist assumes the present system is invalid and seeks elsewhere for alternatives, the end result will be much the same.

Elizabeth Drews cites numerous examples of individuals who have succeeded in putting forward new insights and suggesting new directions while remaining well within their professional labels. She stipulates, however, that these individuals "transcended the narrowness of the formal disciplines attached to their names" by becoming "generalists and humanists first, specialists second".⁷

It is not one's professed allegiances but the broader perspective or attitude from which one operates which is crucial. Hence, in the final analysis, it is the planner who is sufficiently sensitive to the indicators which present themselves who will make the more vital contribution, regardless of his initial point of departure. Merit lies not in blind acceptance or rejection of established beliefs and systems, but in understanding the nature of the reasons for doing so.

⁷ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 69.

8.2 EDUCATION

Since quality of mind, or as Galbraith describes it, "comprehension and skepticism",⁸ becomes central to a planner's effectiveness, it is important to investigate briefly how one develops such a facility. Although to some it may already exist as a particular facet of their character make-up, for the majority these abilities must be learned. Education plays a major role in fostering the comprehension and skepticism. It is, Galbraith claims, "an apparatus for effecting belief and...inducing more critical belief".⁹

In actual practice, institutions of higher learning have largely been committed to supporting the existing paradigm. The learning process is one of immersing the student in the 'facts' relative to that paradigm and outfitting him with a master equation.

He learns a technique which can be applied without asking the reason why...As a consequence, he has become...content to solve ...a routine problem, a problem of applying what one has learned.¹⁰

Success in this educational process involves "showing that the ruling theory can be properly and satisfactorily applied in order to reach a solution of the puzzle in question".¹¹

⁸ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 372.

⁹ John Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Company, 1971), p. 372.

¹⁰ Karl Popper, "Normal Science and Its Dangers", in Criticism and the Growth of Knowledge ed., Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970), p. 53.

¹¹ Karl Popper, "Normal Science and Its Dangers", in Criti-

Such a system affects the thinking and attitude of the students participating in it. Karl Popper describes contemporary students as placid automatons of indoctrination.

They merely want to 'know the facts'. Theories or hypotheses which were not generally accepted but problematic were unwanted; they made students uneasy. These students only wanted to know those things, those facts, which they might apply with a good conscience and without heart-searching.¹²

It is not surprising that Popper advocated a considerably different form of education, one which offers "training and encouragement in critical thinking".¹³ Others have advocated the same thing and offer various suggestions as to how greater freedom from paradigm-induced academic dogma might be achieved.

Galbraith felt the most important step towards this autonomy was through more direct control of university budgets by the universities themselves. He advocates that the colleges and universities must assume the ultimate responsibility for the direction they take. And, in his mind, the only way to avoid governance by external forces is to be more financially independent. This may be more easily pre-

cism and the Growth of Knowledge, ed. Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970), p. 53.

¹² Karl Popper, "Normal Science and Its Dangers", in Criticism and the Growth of Knowledge, ed. Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970), p. 53.

¹³ Karl Popper, "Normal Science and Its Dangers", in Criticism and the Growth of Knowledge, ed. Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970), p. 53.

scribed than achieved!

Kenneth Boulding reasoned that old ways would be less engrained if less were taught.

The academic world generally goes on the assumption that the more we know of everything the better. The student has always known better than this. He has usually operated on the principle of knowing as little as he can get away with. It is time, perhaps for this principle to be made respectable.¹⁴

With less time spent on rote learning, there would be more opportunity for exercises in critical analysis and more creative problem-solving.

Education, then, becomes the first step in effective planning. By fostering more flexibility in thinking and a greater sense of creative enquiry, academic institutions could go a long way towards preparing planners for a more dynamic role. As Paul Valery believed, "Educating means to prepare the young for situations that have never been".¹⁵ Indeed, "learning to plan involves planning to learn".¹⁶

Tsanoff cited the two conditions necessary for progress as: 1) independence, and 2) tolerance of critical thinking. Fostering these two qualities in individuals through an educational system is an important achievement, however, it

¹⁴ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 163.

¹⁵ Paul Valery, as cited in Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 234.

¹⁶ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 224.

does not ensure meaningful changes will follow. Margaret Mead wisely observed:

You don't sit down with a group of bright people and invent the change. Everyone has to take part in it. If social change is going to be really meaningful, you have to have the active enthusiasm of at least a proportion of the population.¹⁷

Such is definitely the case. An isolated group of free-thinking individuals do not represent the solution to problems of a general nature nor the final say in directions to be taken by the majority. This introduces the next aspect of discussion. Once an individual or planner is capable of analyzing the circumstances which confront him in a more meaningful way, and develops certain insights into the nature of both the problem and possible solutions, how does he communicate those insights to others? How do individuals so-prepared expand their influence? Marilyn Ferguson discussed the change of perception which results from expanded forms of thinking in her book, The Aquarian Conspiracy. She suggests that the greatest struggle for such individuals may come after they have experienced the change. Explaining the 'awakening' to others presents many difficulties.

In studying the writings of some of the major thinkers in the area of social systems analysis, philosophy and behaviorism, one derives a sense of the direction one might take in order to communicate his insights more effectively to others. From the suggestions offered, it is possible to

¹⁷ Margaret Masterman, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 24.

outline an approach appropriate for use as a guide for planning. In essence, it becomes the synopsis of a planner's role in the process of paradigm change.

8.3 PUBLIC AWARENESS

The first of these aspects involves public awareness. Planners can be involved in promoting greater awareness of two important areas: human nature, and the realities of the contextual predicament which confronts us.

For the most part, we are untrained and unfamiliar with recognizing change or expecting it to occur. This is especially true of the fundamental changes which a paradigm shift represents. Most people are unaware that any such idea system and process exist. Thus, in advocating this form of awareness, the planner appeals, in a sense, to the principle of psychotherapy wherein simply pointing out to an individual his own processes results in a deepening contact with reality.¹⁸

The other area of awareness which must be promoted is contextual. More objective information as to the conditions and anomalies which must be dealt with is needed. The situation has never been spelled out consistently for the average person without sensationalism and over-dramatization of the implications. This detail is not insignificant. Widespread understanding of this kind is prerequisite to change. For, "as on many occasions in the development of mankind,

¹⁸ The Unfolding Man, p. 74.

awareness of a problem results in measures taken for a solution".¹⁹ Barry Commoner echoed this idea when he said, "People invent ways of acting once they understand the situation".²⁰ Obviously, the effect will not be spontaneous. There must always be a certain incubation of information before it begins to influence thinking to an appreciable degree and on a broader scale.

In her writings on hierarchies of values, Elizabeth Drews said, "Man has capacities which he could call upon at will if he so desired".²¹ Recognizing this, she also posed some serious questions: "Why does he not choose these options? Is it that he does not even know that there are choices he could make?"²² A fundamental lack of understanding of available options and alternatives could well be the problem. Constance Perin summarized it thus:

There is the argument, 'We know the right things to do--we just need more money and higher priorities for them'. But we do not, I believe, yet know what these right things are. A means of visualizing the future of man in his environment that brings together the inevitable inventions of science and technology with our increasing insights

¹⁹ Kenneth Boulding, The Image (Ann Arbor, Mich: University of Michigan Press, 1977), p. 139.

²⁰ Barry Commoner, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 170.

²¹ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 23.

²² Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 23.

into human development and fulfillment is missing.²³

Planning easily recognizes its part in this regard. In fact, 'visualizing the future of man' is the definition of the profession in many senses. New ways of thinking and operating need to be explored and identified. Planners are equipped to point out many of these potentialities. Erich Jantsch referred to it as 'anticipatory action'.²⁴

As such a search for alternatives moves closer to being adopted in paradigm form, "there will be powerful messages issuing from the pioneers who have tried the new method and found it successful".²⁵ Boulding also feels confident that these messages "can easily reorganize the images of the laggards in turn".²⁶ It all begins, however, with the efforts of a few to stimulate thinking in new directions. Then, "once new ways of thinking are legitimized, once it is accepted that boundaries can vanish and multiple impressions can merge, values also change in that new kinds of relationships come to be understood and prized".²⁷

²³ Constance Perin, WITH MAN IN MIND: An Interdisciplinary Prospectus for Environmental Design (Cambridge: MIT Press, 1970), p. 4.

²⁴ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 93.

²⁵ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 94.

²⁶ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 94.

²⁷ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 19.

As new ideas are introduced, they must be considered and analyzed. Each claims to be a possible alternative, but the degree to which it is plausible has always to be determined. In this respect, the planner becomes a type of 'crisis-provoker',²⁸ or "the channel for the introduction of cultural instabilities, of the continuous search for cultural renewal".²⁹ The encouragement of dissent and the introduction of instabilities is not intended to make change anarchic, but an attempt to alter the rigidity with which existing ideas are entrenched. The most valuable intervention of the planner in this area remains his advocacy of increasing dialogue with the people-at-large on the subject of basic values and viable options. Without a forum for discussion, there is no way to gauge the degree to which information has been communicated nor to maintain the momentum which emerging ideas require to be effective.

Throughout the entire process, the planner's role involves persuasion. Consider the following scenario:

An image which is about to collapse of its own weight is frequently supported far beyond its time by the efforts of misguided people to push it over. The attacks of the reformers produce defensive mechanisms on the part of the holders of the image. It is identified in the value system with other dearly held values and hence, any messages inconsistent with it are rejected.³⁰

²⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 282.

²⁹ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 282.

Pressure and intensity on the part of any group or subgroup more often than not meets with a similar reaction. The result is a net loss in terms of advancement towards change. Hence, pressure is not the essence of persuasion.

It is well to remember A.J. Toynbee's statement: "While we are partly conditioned, we also have partly free will".³¹ It is this 'free will' portion which must be appealed to. Frequently, it lies beneath layers of fear and conditioning which trigger their own defensive mechanisms on contact. Thus, "leery of trusting the promise of an oasis, we defend the merits of the desert".³²

Persuasion is based on the assumption that eventually change will occur and involves the use of "argument, entreaty, and expostulation".³³ Thus, the process of changing minds is necessarily a slow one. Marilyn Ferguson offers a fitting summary of the nature of persuasion which might best be employed by planners:

Aware that deep change in a person or an institution can only come from within; they are gentle in their confrontation.³⁴

³⁰ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 122.

³¹ A.J. Toynbee, in On Growth, ed. Willem L. Oltmans (New York: Capricorn Books, 1974), p. 31.

³² Marilyn Ferguson, The Aquarian Conspiracy (Los Angeles: J.P. Tarcher Inc., 1980), p. 33.

³³ Websters Dictionary, p.631.

³⁴ Marilyn Ferguson, The Aquarian Conspiracy (Los Angeles: J.P. Tarcher Inc., 1980), p. 37.

After all, "while hindsight reveals to us the follies of our ancestors, we must depend upon humility to persuade ourselves that our behavior is no less irrational and hypocritical than theirs seemed to us".³⁵

8.4 NETWORKING

Aside from promoting change and alternate belief systems among the public at large, there is also merit in the linkages which can be formed between those of similar insight and disposition. This "networking"³⁶ represents an increasingly useful means of magnifying the influence of particular sets of ideas. In transitional periods throughout history, scattered individuals have been discovering and pointing to a larger view, offering alternatives. However, although there have always been those who have 'sensed' changes, there has never been, until today, an effective means of linking their insights and communicating their ideas to others. Modern forms of communication have now made it possible.

It is reasonable to assume that one of the keys to succeeding with the transformation already in progress is networking of this nature. The coalition between like-minded persons becomes infinitely more effective than scattered,

³⁵ E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 109.

³⁶ Marilyn Ferguson, The Aquarian Conspiracy: Personal and Social Transformation in the 1980's (Los Angeles: J.P. Tarcher Inc., 1980).

often random, individual efforts. Marilyn Ferguson becomes almost mystic about the operation of these cognitive affinities. In fact, the 'Aquarian Conspiracy' is a form of expose of this 'cosmic caring'. Ferguson advances the assumption that if man can heal himself through the mind, collective mental efforts can heal society. Whether the situation is as intense as it appears in Ferguson's portrayal, or merely a spontaneous action on the part of various individuals is not crucial. It is the concept of coalition which remains applicable to planning. As these systems develop, planners may do well to keep abreast of their progress, if not to join with them.

Creating awareness, identifying alternatives, encouraging public dialogue, persuasion, networking: all of these contribute to and hasten the transition process. Undoubtedly, these aspects will be brought into play as the planner's role similarly evolves and changes. However, none of them guarantee any spontaneous result.

In answering the question of how scientists are brought to make paradigmatic transitions in science, Thomas Kuhn wrote..."They are very often not".³⁷ As further explanation, he cites Max Planck's 'Scientific Autobiography':

A scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a

³⁷ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 150.

new generation grows up that is familiar with it.³⁸

Charles Darwin similarly recognized the difficulty. At the end of Origin of Species, we find his conclusion that seasoned practitioners are unlikely to be converted to ideas which are new and entirely contrary to those they've held throughout their careers. Ultimately, he sees fundamental changes occurring through the younger generations who "will be able to view both sides of the question with impartiality".³⁹

Conversion from one paradigm to another cannot be forced and most often no real progress is witnessed for the space of a generation. It remains important, in any event, that the sparks of change continue to be fanned in preparation. In planning, as in any profession, there will be opposition to a different role emphasis just as there is opposition to the new thought it advocates. Opposition, however, has never been sufficient cause to desist. Individually, there is need for a new type of planner and a new type of role for planning collectively. Thus, to planners and all professionals:

Since the phase in which we are living now is the most dynamic one mankind has ever known--at least as far as the most influential part of mankind is concerned--and changes involve ever shorter time

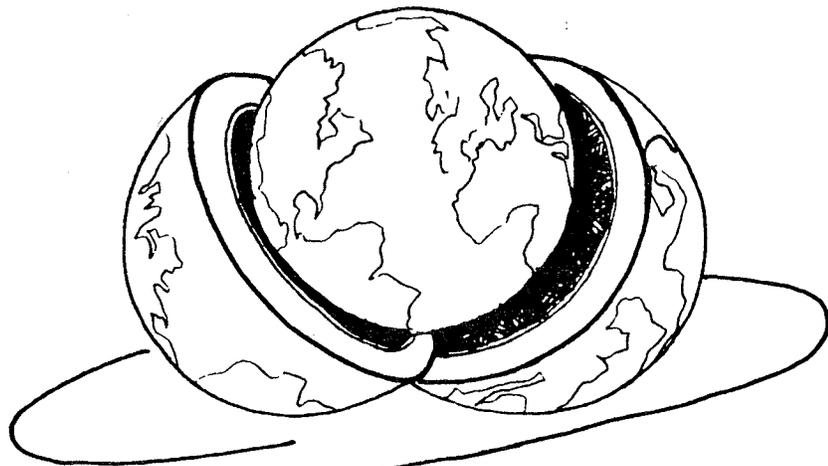
³⁸ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 151.

³⁹ Thomas S. Kuhn, The Structure of Scientific Revolutions 2nd ed., (Chicago: University of Chicago Press, 1970), p. 151.

factors, we must become particularly aware of the demands made on us in this evolving situation.⁴⁰

"One can resist the invasion of armies, but not the invasion of ideas." (Victor Hugo)

⁴⁰ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 18.



CHAPTER 9

Come....my friend, 'Tis not
too late to seek a newer
world.

Alfred Lord Tennyson

Chapter IX
IN CONCLUSION

Man is a creature of immense complexity. So is the world in which he lives. We understand relatively little about either and yet, in the way of things, it is provided that incredible advancement can be made nonetheless. With each ensuing era of change we understand more clearly man and his universe.¹

Where knowledge and understanding are always incomplete, certain widely held assumptions have formed the critical base from which he operates. Paradigm. The phenomenon has existed much longer than the word. Only recently, however, have we begun to recognize its motion.

As real as the need for concensus around a given paradigm is the need for each paradigm to change, to give way in favor of another which aligns itself more closely with the contextual world. These changes are always painful because they upset another deeply rooted human need--the need for stability and sameness. Each paradigm represents the attempt to fix time at a particular point. We anticipate calendrical change but secretly assume all tomorrows will look exactly like today. We talk of change although we view

¹ Maybe it is only the complexity of which we are more aware.

it as ever-tangent to our life pattern, observable in the distance but ultimately ineffectual. Clearly,

there is no security in movement, nor can perfection ever be reached and maintained...Yet history is strewn with the consequences of man's longing and striving for static security, stability, a permanent state of harmony.

This longing is often expressed through a static notion of 'happiness' as a goal, or a state, which can be attained, a reference point or level which...is supposed to be sought and maintained through some sort of homeostasis, through adaptation to changes in the world around us.²

Paradigms have always needed to change and will continue to do so, for we have neither reached nor invented a satisfactory end-state at which to stop. If a form of 'happiness' is to be experienced, it will come as a result of carefully fitting and refitting our paradigms to life. The upward spiral towards fuller, more meaningful life is traced incrementally as one paradigm, with the package of experience, accomplishment and other memorabilia which it fostered, makes possible the establishment of another more finely tuned model. Through the course of the preceding paradigm, there is yet another set of events, experiments and consequences which open a new sense of vision and direction to be assumed by yet another paradigm.

There are few linkages or remnants which are held over from paradigm to paradigm. One is incommensurable with the next, for once the vision changes, the entire groundwork upon which the paradigm was built is shifted. In light of

² Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 7.

the new understanding, the old pattern is invalid.

One generation cannot predict the form changes in succeeding generations may take, nor exactly when they will occur. Many factors contribute to these revolutions. There is no means of calculating when their alignment will be such that change will result. In the words of Kenneth Boulding, "No matter how great our fancied understanding of society, no matter how great our presumed sophistication, history always has its surprises for us".³

With the mounting failures of the incumbent paradigm, we of today are forced to look forward to tomorrow. Through the anomalies which that paradigm uncovers, we begin to glimpse the form of its successor. Although as yet it is a hazy silhouette, we realize that "till now man has been up against nature; from now on he will be up against his own nature".⁴ In other words, the new paradigm must include greater emphasis on the value of man, or more specifically, on his peculiar human qualities. The current paradigm has taught us that there are essential elements which lie beyond the realm of quantitative description. We have become aware that "the questions that are beyond the reach of economists--the beauty, dignity, pleasure and durability of life--may be inconvenient but they are important".⁵

³ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 123.

⁴ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 264.

⁵ John Kenneth Galbraith, The New Industrial State (Boston:

The values now called for may not always be objective. Increasingly, it appears that they will be based "upon a wise human insight which science and technology cannot formulate but which is a fundamental need in this age".⁶ Looking toward the next paradigm, we must conclude that now "the progress of humanity depends not on the unfolding of some impersonal objective forces, but on the subjective awareness of the values that guide our behavior".⁷

As a goal, these subjective human values are not as distinct as those numerically-based threshold markers we have been accustomed to striving for. By contrast, the goals which now become important are "no longer well-defined points which can be attained; rather, as we find in various sports, (they are) an area where many people can score in different ways...in the upper righthand corner as well as in the lower lefthand corner and in the center, and repeatedly so".⁸ New goals will mark an area of focal interest to which many contributions are possible at various times. In pursuing these new values and broader goals we in fact move towards genuine historical progress, "progress in truer understanding of the ideal goals as well as progress in

Houghton Mifflin Company, 1971), p. 411.

⁶ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 324.

⁷ Elizabeth M. Drews, Policy Implications of a Hierarchy of Values (Menlo Park, CA: Stanford Research Institute, August 1970), p. 85.

⁸ Erich Jantsch, Design For Evolution (New York: George Braziller, 1975), p. 211.

realizing them".⁹

This implies a new, more dynamic dimension in the planner's role. In order to be at the vanguard of change rather than lagging conspicuously behind, he must be aware of the process taking place and involved in the change as it transpires. More specifically, this calls for ongoing critical analysis or review of the paradigm/context relationship, as well as a willingness to pull away from the existing paradigm as contextual shifts necessitate. Rather than adhering doggedly to the initial straightline relationship between paradigm and context at Point A, the planner becomes involved in a more consciously dynamic process of circular testing and feedback which naturally gives way to the pursuit of an alternative paradigm as the necessity arises. This concept can be diagramed in the following manner:

⁹ Radoslav A. Tsanoff, Civilization and Progress (Lexington: University Press of Kentucky, 1971), p. 356.

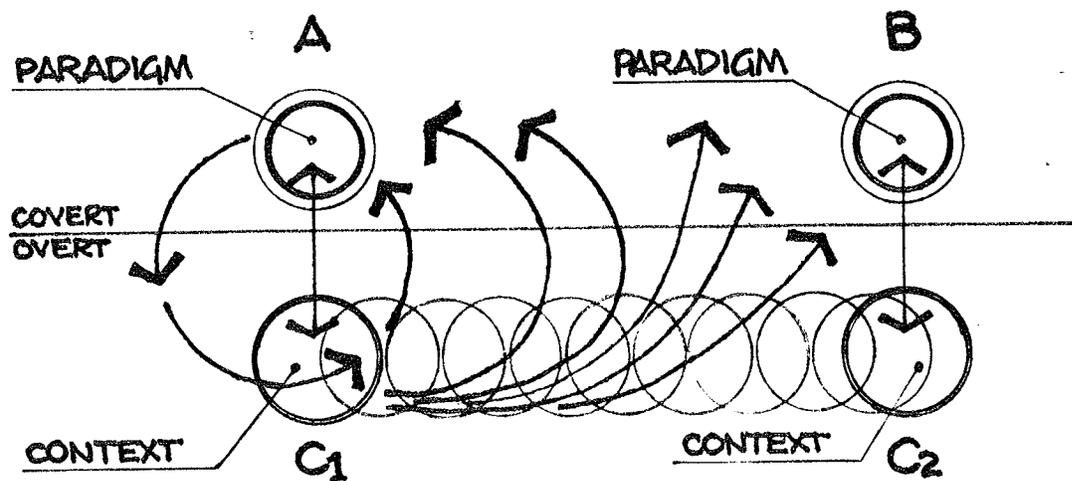


ILLUSTRATION 8: Planning Feedback and Paradigm Change

Given the current scenario, the break from one paradigm to another may be quite dramatic, however, with sustained awareness of the situation, planners can consciously place themselves within the forward thrust of events where their contribution can be effective and appropriate.

In all of these things the onus returns to the individual. Much has been said and written about human nature, paradigm and change. Much more undoubtedly remains to be said. We are yet on the verge of knowing their true nature. However, understanding of the events in the process and seeing them transpire is in itself insufficient. As in Boulding's

analogy, "If there is a tiger in the room, the man who doesn't see it is about as well off as the man who does".¹⁰ Similarly, understanding paradigms is no guarantee of any form of success. In the final analysis, it is "our capacity to learn and change (which) may become the yardstick of human survival".¹¹

A great deal hinges on our ability to move ourselves forward. Essentially, this is an individual pursuit. As we experience the disamenities and growing discontinuity during this prelude to revolution, there is much within us which seeks to continue to cling to that which we've always believed and held true. However, even he who digs in his heels most earnestly is not entirely immune to the stirrings which anticipate a new paradigm.

Sheer force of will and intellect may, for awhile, enable him to act so as to appear to be adapting himself and coping...but there is much in the rest of his being that will continue...to protest at the growing stresses to which it is subjected.¹²

We cannot simplify the event or realistically substitute other forms of acting, however, as planners and professionals especially, we would do well to develop a fuller understanding of these systems, these phenomena, these paradigms; a broader perspective....and then, turn our attention

¹⁰ Kenneth Boulding, The Image (Ann Arbor, Mich.: University of Michigan Press, 1977), p. 168.

¹¹ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 282.

¹² E.J. Mishan, Growth: The Price We Pay (London: Staples Press, 1969), p. 107.

inwards to investigate where we stand in relation to the process.

History now calls on us to bid the past farewell without regret, and to open our hearts and minds to the new.¹³

¹³ W. Jackson Davis, THE SEVENTH YEAR: Industrial Civilization in Transition (New York: W.W. Norton & Company, 1979), p. 283.

BIBLIOGRAPHY

1. Alexander, Christopher. Notes On The Synthesis Of Form. Cambridge: Harvard University Press, 1971.
2. Alternative Futures and Educational Policy. Menlo Park, CA: Stanford Research Institute, February 1970.
3. Anderson, Stanford. Planning For Diversity and Choice: Possible Future Alternatives and Their Relations to The Man-Controlled Environment. Cambridge: MIT Press, 1968.
4. Beckerman, Wilfred. Two Cheers For The Affluent Society. New York: Saint Martins' Press, 1975.
5. Boulding, Kenneth. The Image. Ann Arbor, Mich: University of Michigan Press, 1977.
6. Burnham, Daniel H., and Bennett, Edward H. Plan of Chicago. New York: Da Capo Press, 1970.
7. Cole, H.D.S.; Freeman, C.; Jahoda, M.; and Pavitt, K.L.R. Models Of Doom: A Critique of 'Limits To Growth'. New York: Universe Books, 1973.

8. Campbell, Angus. The Sense of Well-Being in America.
New York: McGraw-Hill Book Company, 1971.
9. City of Toronto Planning Board 1966. Proposals For A
New Plan For Toronto. Toronto: City of Toronto Planning
Board, 1966.
10. Daly, Herman E., ed. Toward A Steady-State Economy.
San Francisco: W.H. Freeman & Company, 1973.
11. Davis, W. Jackson. The Seventh Year: Industrial Civili-
zation in Transition. New York: W.W. Norton & Company,
1979.
12. Drews, M. Elizabeth. Policy Implications of a Hierarchy
of Values. Menlo Park, CA: Stanford Research Institute,
August 1970.
13. Drucker, Peter F. The Age of Discontinuity. New York:
Harper and Row, 1969.
14. Ferguson, Marilyn. The Aquarian Conspiracy: Personal
and Social Transformation in the 1980's. Los Angeles:
J.P. Tarcher Inc., 1980.

15. Galbraith, John Kenneth. The New Industrial State. Boston: Houghton Mifflin Company, 1971.
16. Gaylin, W.; Glasser, Ira; Marcus, S.; and Rothman, D. Doing Good: The Limits to Benevolence. New York: Pantheon Books, 1978.
17. Goodman, William I., ed. Principles and Practice of Urban Planning. Washington, D.C.: International City Managers' Association, 1968.
18. Hirsch, Fred. Social Limits To Growth. Cambridge: Harvard University Press, 1978.
19. Jacobs, Jane. Cities and The Wealth of Nations. New York: Random House, 1984.
20. Jantsch, Erich. Design For Evolution. New York: George Braziller, 1975.
21. Kuhn, Thomas S. The Structure of Scientific Revolutions. 2nd ed. Chicago: University of Chicago Press, 1970.
22. Lakatos, Imre, and Musgrave, Alan. Criticism and The Growth of Knowledge. Cambridge: Cambridge University Press, 1970.

23. Leiss, William. The Limits To Satisfaction. Toronto: University of Toronto Press, 1976.
24. Meadows, D.H.; Meadows, D.L.; Randers, J.; and Behrens, W.W. The Limits To Growth. New York: Universe Books, 1972.
25. Mishan, E.J. Growth: The Price We Pay. London: Staples Press, 1969.
26. Oltmans, Willem L. On Growth. New York: Capricorn Books, 1974.
27. Orphuls, William. Ecology and The Politics of Scarcity: Prologue to a Political Theory of the Steady State. San Francisco: W.H. Freeman & Company, 1977.
28. Perin, Constance. With Man In Mind: An Interdisciplinary Prospectus for Environmental Design. Cambridge: MIT Press, 1970.
29. Polanyi, Michael. Personal Knowledge. Chicago: University of Chicago Press, 1958.
30. Shils, Edward. Tradition. Chicago: University of Chicago Press, 1981.

31. Tsanoff, Radoslav A. Civilization and Progress. Lexington: University Press of Kentucky, 1971.

32. Watt, Kenneth E.F. The Titanic Effect: Planning For The Unthinkable. Stamford, Connecticut: Sinauer Associates, Inc., 1974.

33. Wormhoudt, Daniel T., "Paradigms and The Practice of Environmental Planning", in Design Methods and Theories, Vol 12, No. 3/4 (September-December 1978): 140-155.

34. Yankelovitch, Daniel. New Rules. New York: Random House, 1981.