

CI
AN INVESTIGATION OF THE RELATIONSHIP BETWEEN
CULTURAL VALUES AND CITIZEN OPINIONS
ON GROWTH OF GREATER VANCOUVER

by

ANITA LOUISE OLIVER

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School of Community and Regional Planning

The University of British Columbia
Vancouver 8, Canada

Date April 25, 1973

ABSTRACT

The work undertaken in this thesis was for the purpose of examining the significance of the Greater Vancouver Regional District's conclusion that citizens are against further growth of the region. Growth in terms of population increase, urban expansion, and economic productivity has always been highly valued by North Americans, and it was felt that genuine rejection of the growth ethic would imply an important shift in the goal preferences of the society.

A redirection of the growth ethic was discussed in relation to the structural changes that are becoming increasingly prevalent in our society, which some observers interpret as the emergence of a post-industrial society. It was emphasized that successful adjustment of the society to the conditions of post-industrialism is to a large extent dependent upon the adoption of new, more appropriate cultural values to replace those which have evolved to suit the needs of an industrial society.

In order to de-emphasize continuing growth as a major goal of the society, it was suggested that those cultural values which support the growth ethic must first be modified. Specifically, it was hypothesized that those individuals who are in favor of continued growth will have more traditional values than those who are not in favor of continued growth. Three value orientations were chosen as examples of the kind of attitudes which are related to disposition to favor or

reject growth.

A questionnaire was devised to determine perceptions of and opinions on four aspects of growth, and to ascertain value preferences on the three dimensions defined. It was administered in person to 159 Vancouver residents.

Indices of growth orientation and scales which aggregated the value preferences were constructed from the raw data. Correlation coefficients were obtained to determine if there is a consistent relationship between an individual's values and his opinion on growth. A significant relationship was shown to exist, from which it was concluded that the hypothesis was supported. The implication of these findings is that shifts in the goal preferences of the society rest upon attendant shifts in the supportive value structure.

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CHAPTER ONE

PURPOSE OF THE RESEARCH

A. Introduction to the Problem

The question addressed in this thesis is, are citizens' "no-growth" opinions associated with a shift in the cultural values of the society? The initial interest in this topic stemmed from the findings of a public participation program (the Livable Region Program) which has been carried out over the past year by the Planning Department of the Greater Vancouver Regional District. This study concluded, from talking to several hundred residents of Greater Vancouver about goals for the future of the region, that there are strong feelings of "no more growth" prevalent in the general public.

The basis for the feeling that no-growth opinions are of particular significance is that growth has always been an important goal of North American society, and rejection of continued growth suggests that perhaps other goals are coming to be of more importance. For example, a greater emphasis on qualitative rather than quantitative and efficiency aspects of urban life might be associated with a tendency to favor no-growth goals.

The possibility that continuation of present rates of growth for an indefinite period could lead to serious problems of resource depletion, pollution, and inability to adjust to the rapid change rate, suggests

that the question of whether or not to pursue further growth is, indeed, a relevant one. It is of value to understand as well as possible the cultural roots of the growth ethic, so that this can be taken into account when assessing the acceptability of alternate growth strategies. It is most important that we become aware of the cultural context in which adoption of policies to manage growth will be undertaken.

B. Hypothesis

Speculation as to the meaning of contemporary no-growth opinions led to the suggestion that, in order to be genuine, no-growth opinions should be a reflection of more fundamental changes of outlook. This has implications for any future attempt to de-emphasize growth as an important goal of the society.* The contention of this work is that we will not be able to slow down or redirect growth to any appreciable extent until the values which support the growth ethic are first modified. Further, it is suggested that the relevant values are considerably broader than the simple affirmation that "growth is good"; that the values encouraging growth extend to perceptions and attitudes beyond those immediately associated with physical and economic growth. This contention can be formalized in a hypothesis as follows:

It is hypothesized that those individuals who are in favor of continued growth will have more traditional values than those who are not in favor of continued growth.

* Chapter Two discusses why this might be desirable.

Two important clarifications of terminology should be made, concerning the usage of the term "growth" and the meaning of "traditional values". Firstly, for purposes of testing the hypothesis, the ambiguous nature of the term "growth" was reduced somewhat by separating growth activities into four distinct components: population growth, physical growth (in effect, growth of the built-up area), growth of economic activity, and increase in the amount of material goods which we consume domestically. It is anticipated that the hypothesis will be most valid with reference to economic growth.

Secondly, it is necessary to explain what the relevant values supporting the growth ethic were defined to be. Three value orientations which influence attitude to growth were defined. They are not necessarily the most important influences, and they're certainly not the only ones; they were selected on the basis that each of them represents an interesting social (and philosophical) dilemma of the times, and it is the purpose of this investigation to demonstrate that desire for continued growth is rooted in basic premises, such as these, on the nature of man and the goals of human existence. At this stage of the thesis, the relevant value orientations will be expressed in the form of value neutral questions. How the value orientations will be operationalized, and their reformulation in terms of a traditional-progressive dimension, will be dealt with in Chapter Four.

I Our notion of human progress: do we view progress primarily in terms of technological advancement, or in terms of

social betterment?

- II How we view man in his relationship to nature: to what extent are we willing to exploit the physical environment for human purposes or, conversely, what values do we place upon maintenance of the physical environment in its natural state?

- III Our preference for material goods: are all commodities desirable and necessary, or should we do without a lot of them?

The key variables in the testing of the hypothesis will be the four growth components and the three value orientations. The research undertaken for this work will attempt to find out if the hypothesized relationship between these variables actually exists. In addition, the research will address the following questions: are contemporary citizens' no-growth feelings directed exclusively toward population and physical growth, as represented by rejection of further urbanization? What are citizen attitudes toward continued expansion of industrial and commercial enterprises, and toward increase in the rate of material goods consumption? And, more basically, do citizens in fact perceive that growth is taking place in each of the four component sectors? Explanation of the research technique employed to answer these questions, and to test the hypothesis, will be preceded by two chapters which

discuss the historical and theoretical aspects of the growth ethic, in order to further develop the context for interest in the topic and formulation of the hypothesis.

C. Scope of the Study

It should be stated at the outset that this work is concerned with the anti-growth feelings of citizens, and not with the economic state of no-growth. The bias which will be apparent throughout this thesis is that present rates of growth (in terms of all four components) cannot, and should not, continue forever; and that expectation of, and desire for, indefinite continuation of growth is inappropriate to emerging social and environmental realities. For this reason, then, concern here is with the cultural motivation for the growth we are experiencing at present, and the conditions under which this motivation might be lessened or redirected, rather than with the more technical question of the economic implications of a no-growth state. It is believed that the input of citizens to the decision-making process is becoming of greater importance, and that, therefore, public support for solutions to the problem of continuing growth (if, indeed, it is accepted that this is a problem) is essential. The change in cultural values required to obtain this support is of interest in this work.

CHAPTER TWO

THE GROWTH ETHIC OF INDUSTRIAL SOCIETY

The question of whether we need more growth and, especially, whether more growth is desirable, has become a salient one in recent years. The basis for concern about population growth is fairly obvious, on a world scale at least. The reality of food shortage and, in many parts of the world, lack of sufficient living space as well, have convinced most people that natural limits to the proliferation of human numbers do exist.

Limitations to economic growth are not nearly so well recognized or accepted, however. The expectation of continued economic growth persists among a majority of North America's* population. The practice of extrapolating past performance and rates of increase into the future encourages the belief that economic productivity can, and should, become even greater than at present. On the surface, there don't appear to be too many reasons to doubt that high level production of material goods can continue indefinitely. Technology is constantly upgrading the productive capacity of most enterprises, and there is a widespread belief that the problems resulting from intensive use of the earth's resources can be solved by yet further application of technology

*This discussion will be limited to North American context.

in a remedial capacity.¹ **

A. Development of the Growth Ethic

The historical roots of our "growthmania"² are no doubt deep. The possibilities for material betterment have seemed virtually endless since the time of the industrial revolution, and throughout the industrial era expansion of economic activities has been equated with progress. It is likely that the ideological roots of this driving force are contained in the development dynamic of the Protestant Ethic. According to the interpretation of Max Weber,³ material prosperity, which symbolized spiritual prosperity in the early days of capitalism, had to be striven for unceasingly; it could be attained only by sustained motivations of achievement, acquisition, and upward mobility. Not to prosper became a sign of wickedness. These values supported the developing entrepreneurial part of the society, whose welfare (prosperity) had become of central importance. This doctrine has evolved through the centuries so that today the religious basis for growth and productivity has all but disappeared. The equation of material wealth with progress, however, is still a very real one in the industrial folklore of North American society. Materialism has become, in the words of one observer, "the credo of American life", with "more" and "better" the guiding symbols in that quest.⁴

It is easy to appreciate the real physical needs toward the

** Footnotes are used to cite the source of information, and the references may be found following the text.

satisfaction of which mechanical production was first directed. Existence for the majority of people has no doubt been both prolonged and enhanced by the initial benefits which technology was capable of bestowing. Difficulties originated where the aroused momentum of the industrial machine began to be directed towards production of goods which are not, strictly speaking, necessary. Many of these may be considered useful, but at some point additional goods become superfluous, and the want for them must be manufactured along with the product.⁵ It is evident that today a large proportion of our economic productivity--or at least the increase in this productivity--consists of the latter class of goods, which represent trivial rather than basic needs. The assumption of infinite wants, or the "postulate of nonsatiety" as the mathematical economists call it,⁶ is the basis for a lot of economic theory. "Economic man" is supposed to know his needs and to know also how to satisfy them; this is presumed to be a matter of personal freedom, regulated only by the market.⁷ That the collective consequences of such individual decisions might be a matter for concern is seldom realized.

In spite of the apparent redundancy of continuing efforts to maximize both the stock and the flow of wealth, there are numerous pressures to maintain this situation. As mentioned, the growth ideology itself is a powerful force: even when a man as consumer stands to benefit only marginally (if at all) from further goods production, he will nonetheless support this goal if he believes that this is the way progress is made. From the other direction, very real and substantial monetary benefits accrue to those who, through advertising, built-in obsolescence and

minor product innovations, are encouraging maximization of the flow of goods. This constitutes a substantial pressure for the encouragement of growth as a desirable end in itself.

Additional pressures are applied as well from the negative aspects of non-growth: if economic growth was to halt or slow down significantly, two closely related problems inherent in the present structure of our economic and social system would have to be faced.⁸ First, growth is necessary to maintain full employment. Only if it is possible for nearly everyone to have a job can the income-through-jobs ethic of distribution remain workable. Second, growth takes the edge off of distributional conflicts--if everyone's absolute share of income is increasing, there is less of a tendency to fight over relative shares, especially since such fights may interfere with growth and even lead to a lower absolute share for all. These problems can only be kept at bay while growth is taking place and, unfortunately, the realization of this has only reinforced the development of expedient policies which emphasize growth as the solution, rather than facing the underlying distribution issues squarely.

Perhaps the most unfortunate aspect of growthmania is the feeling of inevitability which accompanies it. Reisman recognized as long ago as 1958 that "the belief that one cannot stop inventions, cannot stop technological progress, has itself become a tradition, indeed a form of realistic insanity".⁹ We tend to take for granted the notion that growth in population, material assets, and gross national product is inevitable, in spite of the frequent recognition that it is not always

desirable. The growth dynamic tends to supercede other values we possess, and once growth as such becomes a value, every development can be seen either as growth or as the necessary price of growth.¹⁰

B. Problems Associated With the Growth Ethic

Continuation of the kind of economic growth that we have today may be logically absurd, even morally repulsive, but arguments against growth can be made on a more concrete basis than this. Fundamental concern is being expressed ever more vocally these days for the environmental effects of growth and related activities.¹¹ Basically, the problem stems from the sequence of activities which economic production entails: since matter and energy cannot be created, production inputs must be taken from the environment, which leads eventually to depletion. Since matter and energy cannot be destroyed, an equal amount of matter and energy in the form of waste must be returned to the environment, leading to pollution. Completion of the cycle through recycling of industrial output is not a widespread practice. Higher rates of production result in higher rates of throughput. The limits regarding what rates of depletion and pollution are tolerable are not precisely known--except that they cannot be infinite. Whatever limits exist are set by ecological thresholds which, if exceeded, will cause a breakdown of the system.¹² This is, of course, an oversimplification, but the fact that the life chain does operate according to such rules and relationships stands in stark contradiction to our implicit assumption that the earth's bounty is limitless.

Just precisely what the limits are is a matter of considerable debate today. Limitations to the capacity of the physical environment can be recognized in five separate areas.¹³ The relevant areas are: population, pollution, natural resources, agricultural production and industrial production. The Club of Rome¹⁴ group has attempted a simulation model of the world in terms of these five factors. They have experimentally set various limits to the capacity of each of these factors. They conclude that, given the exponential nature of present growth, no matter what the exact limits to available resources and carrying capacity are in reality, they will be exceeded within the next few decades if present consumption practices continue. In other words, growth cannot continue forever.¹⁵

In addition to environmental problems associated with continued economic growth, some writers have recognized less tangible side-effects of growth and materialism, in relation to the kind of society we have become. We have, for example, come to define "progress" and "civilization" in terms of material and technological achievement. By itself, this may appear to be justifiable in a certain sense; but the consequence of this interpretation of progress is that other aspects of human endeavour have become less important. As Dubos put it, "gentle behaviour, humane laws, limitations of war, a high level of purpose and conduct have been forgotten in the bargain."¹⁶ This is akin to the distinction often made between quantitative and qualitative aspects of human endeavour. Fromm extends the suggestion that over-emphasis on material growth and consumption discourages more

meaningful and productive experiences: in our culture "consumption is essentially the satisfaction of artificially stimulated phantasies [sic]...a performance alienated from our concrete, real selves.¹⁷ He concludes that ecological balance, and healthful balance between production and consumption in individual lives, may be congruent needs.

There is another aspect to the problems associated with economic growth in the developed nations, that is one of ethics. North America and European nations are consuming and polluting at levels far exceeding those of the underdeveloped nations of the world. On a per capita basis we consume considerably more food(in terms of protein particularly), more energy, and more natural resources than non-western peoples. This is a serious distribution problem in a moral sense, and at the political level it is bound to become even more of an issue as awareness of these discrepancies spreads. If it were simply a question of producing and otherwise making available to the rest of the world the advantages which we enjoy, the solution would not be so difficult; but it is doubtful that enough resources are now, or ever will be, available to provide the rest of the world with a standard of living which approaches our own.

C. Redirection of the Growth Ethic

If the possibility of continuing to fight environmental limitations by technological means is not a feasible one, then it would seem desirable, even necessary, that expectations of continued growth be revised before natural limits are imposed. This will involve fundamental

changes to most of our current economic practices and consumption habits. Various suggestions have been made as to the shift which economic productivity should begin to make.

To illustrate the nature of the transition which is desirable, we can (to use an analogy coined by Daly)¹⁸ compare the human economy to an ecosystem moving from an earlier to a later stage of succession; as with the ecosystem, the natural course of events for the economy is that production, growth and quantity should evolve into protective maintenance, stability, and quality, respectively, as the major social goals. The basic needs which stimulated a demand for production, growth, and quantity have been largely satisfied (in North America, at least), and we are in a position now to redefine progress in qualitative terms.

What this would involve is a change in emphasis from economic growth consisting of material goods production to economic growth in terms of nonphysical goods.¹⁹ This is, in effect, a substitution of time-intensive activities for material-intensive commodities. Typical of the former group are education and leisure activities.²⁰ In addition, health care and other social services would be emphasized. Economic productivity and growth based primarily on provision of services instead of goods would have the advantage of being non-polluting, of not consuming resources wastefully, and of providing more meaningful work for a larger number of people. This redirection of economic growth (in a traditional sense, it is "non-growth") would have extensive social implications. In what kind of society could such redirection be brought about?

CHAPTER THREE

THE EMERGENCE OF A POST-INDUSTRIAL SOCIETY

The changing emphasis of economic productivity suggested in Chapter Two cannot likely be achieved within the structural and cultural framework of industrial society. Changes of this magnitude require related shifts of emphasis in other aspects of the society as well. The transition from an industrial to a post-industrial society is the context for the redirection suggested.

A. Characteristics of a Post-Industrial Society

In the words of Bertram Gross,

one of the silliest of all American myths is the present-as-culmination illusion...This is the myth that we in the United States have arrived, that countries like India and Nigeria are 'transitional' societies close to the 'take-off' toward 'self-sustained growth'. This misses a central fact of this century: that the United States is itself a transitional society in the throes of a great transformation from the last stage of industrialism to the first stage of post-industrialism.²¹

References to revolutionary social change of this nature are becoming more prevalent in the literature. Although there are a wide variety of explanations for, and descriptions of, this change process, there is considerable consensus that western society is at a major turning point, and that future society will differ vastly from contemporary society.²² Basically, the conclusion that a transformation of such

significance is actually occurring rests on two related perceptions: first, the observation that certain social trends and other indications of fundamental change are becoming more pervasive, and that persistence of these trends would constitute profound alteration to the structure of the society; second, the realization that the cultural values and adjustment strategies which evolved to meet the needs of industrial society are inadequate for coping with these structural changes, and that the eventual adoption of new cultural values to match the structural changes would constitute profound alteration to the social fabric of the society.

Opinions vary as to the speed of this transformation. Trist²³ feels that, structurally, the existence of post-industrial society is already established. His analysis of the nature of the structural changes which have taken (or are taking) place is probably the most thorough and comprehensive in taking into account all aspects of society. For present purposes this discussion will be concerned mainly with providing an overview of the most common themes in the literature regarding the nature of the structural changes.

The underlying condition leading to this social transformation is the science-technology revolution, characterized by uneven, accelerating, and changing rates of change.²⁴ The rate of discovery and invention has been explosive during the past two decades, and we have come to accept rapid change as a normal, no-change condition.²⁵ There is every indication that new technologies will continue to be created and this, coupled with expanding knowledge of physical, biological, and

social systems, is triggering off a great increase in our capacity to modify those systems. The possibilities extend beyond the limits of our present ability to cope with change, and raise serious questions concerning the limitations of human adaptation.²⁶ Trist²⁷ describes this environment of rapid change and instability as a turbulent field, arising from the increased complexity and size of the total environment. It is from this technological revolution that changes to the structure of industrial society are emanating.

The change in the character of the economy, from production of primarily material goods to a mix of material goods and services (discussed previously), is already beginning to be evident.²⁸ This constitutes one of the most significant phase changes in the transition from an industrial to a post-industrial society; quite literally, the designation "post-industrial" is appropriate for a society whose economic activities are increasingly involving the provision of services rather than the production of goods. As Trist²⁹ has pointed out, when goods and goods-related services are separated from service-related services and person-related services, the latter group now account for more than half the GNP, for more than half of total employment, and for most of the gains in numbers employed (based on U.S. data). Related to this is the emergence of the non-market sector as a major source of wealth--by some accounts the non-market sector is beginning to exceed the market sector.³⁰ This trend will no doubt increase as the need to absorb social costs in addition to market costs becomes more unavoidable. This is particularly true for the public costs which will necessarily be

incurred in the restoration of environmental quality.

The changing nature of work is one of the most salient characteristics of the transition from an industrial to a post-industrial stage of development, in its repercussions on the social organization of the society.³¹ Many observers are predicting that the time is coming where to work will be the privilege of a well-educated elite.³² The stages through which human society has evolved in this regard indicate how profound a change of this nature would be: in pre-industrial times work was a necessity for life; in the early industrial era work was considered to be man's duty and pride; in the late industrial era work became a right; and now we are witnessing the beginning of a situation in which work will become not a right, but a status symbol.³³ It is already evident that those who are most highly educated and who have the most interesting and important jobs work considerably longer hours than do the working class and lower echelons of the white collar ranks. The automation which moved men from the farms into the factories and, more recently, from the factories to offices, will in the near future likely take over many of the routine office-based paper-work occupations as well. The onset of these changes is currently reflected in the widespread recognition that most of the unskilled and under-educated can expect to be excluded from the labor force today, and the further realization that careers are likely to be serial rather than single, due to the obsolescence of certain jobs and the infusion of new ones in the professional and service sectors.³⁴ The implications for our value system of the long-range forecast that it will not be necessary, and

indeed not possible, for everyone to work are enormous.

Another salient aspect of the transition process is represented by the information explosion.³⁵ The rise of cybernation and various means of rapid electronic communication have, in effect, eliminated the space and time limitations which until this point in history had inhibited greatly the sharing of knowledge and information at the local as well as the global level. At the same time as these techniques are proving effective in disseminating information, they are strengthening the knowledge basis as well through advanced research and analytical techniques. As mentioned above, this is leading to many realistic possibilities for intervention in the life support systems. Another result of information becoming the most important new technology³⁶ is the advancement of the knowledge industry into the centre of influence and power, with scientists and professionals coming to replace financiers and industrialists as the politically most influential establishment.³⁷ This will most likely have consequences for the type of goals which the society chooses to pursue in the future.

Fundamental shifts in the patterns of formal organizations can be observed.³⁸ We are accustomed to think in terms of large, single-purpose organizations which are functionally efficient in their concentration on isolated problem areas. The misconception here is the belief that any problem can in fact be "isolated". Chevalier³⁹ has described the emergence of an essentially new kind of problem which demands new administrative approaches; the meta-problem, as he defines it, is the perception of clusters of problem areas as a single, massive

problem, in effect, an aggregation composed of many dynamically integrated elements or sub-elements. To deal with these requires a cooperative approach achieved through increasing functional overlap and administrative mergers. This new approach is resulting in the transition from the initial large-scale formal organization to still larger clusters and constellations composed of intertwined corporations, associations, and agencies at all levels.⁴⁰ Resistance to the need for adaptation of this nature results in the well-known symptoms of bureaucratic inefficiency and ineffectiveness. Recognition of the existence of the meta-problem is a hopeful indication that this scale increase is not simply a quantitative jump to yet larger bureaucracies, but rather a step in the direction of more comprehensive and relevant decision-making.

Another distinction between industrial and post-industrial society is in terms of response to the future. Through most of the industrial age, the future was seen as closely resembling the present; where conditions and events would depart from the present, the response was to accommodate to those conditions and events.⁴¹ The big change is the current shift away from that image and accommodative response, and a greater willingness to acknowledge that a non-intervention approach will not solve problems, as it was presumed to do in the past. With the emergence of the post-industrial stage of development, the future is coming to be seen by many to depart drastically from the present, and there is increased interest in designing the future, so to speak. There has been a rapid rise in the quasi-science of futurism⁴² and, similarly,

in the use of simulation models on a variety of scales. Forecasting and planning of one sort or another are further encouraged by the availability of the expanded technology and knowledge base discussed above.

That these trends are very much in evidence is seldom disputed; that, taken together, they signify or constitute social change of revolutionary magnitude is not so generally accepted. Harman⁴³ has made a study of historical occurrences of revolutionary cultural and political change, from which he has come up with the following list of "lead indicators of revolutionary change", or typical occurrences in the period leading up to that change. They are:

- 1) decreased sense of community
- 2) increased sense of alienation and purposelessness
- 3) increased occurrence of violent crimes
- 4) increased frequency of personal disorders and mental illness
- 5) increased frequency and severity of social disruptions
- 6) increased use of police to control behaviour
- 7) increased public acceptance of hedonistic behaviour
- 8) increase in amount of noninstitutionalized religious activities

There is an impressive coincidence between the behaviours listed and the increasing frequency with which occurrences of this kind have been reported in the newspapers (for example) over the past decade, much more so in the United States than in Canada, however. At any rate, there

is no need to debate here the validity of the revolutionary change interpretation of the trends under discussion. The point is that profound changes to the structure of industrial society are becoming increasingly prevalent, that many observers feel we are ill-prepared to cope with these--and that the indications of social unrest cited above may or may not be the product of stresses related to these changes.

B. The Role of Value Change in the Transition to Post-Industrialism

The importance of value change in bringing about successful adjustment to the new conditions cannot be emphasized too strongly. For one thing, "it is very nearly a truism that most of our severe societal problems are essentially the consequence of our technological and industrial successes."⁴⁴ The nature of these problems is such that many analysts seriously question whether those basic values and premises which have served to build up our present technological and industrial capabilities are now suitable for the humane application, or even rational control, of those powers. Forms of adaptation, both personal and organizational, developed to meet a simpler type of environment no longer suffice to meet the higher levels of complexity now coming into existence. The structural emergence of the post-industrial society has not been accompanied by appropriate cultural values to facilitate adjustment to, and management of, the new conditions.⁴⁵

To take just one example, an area of much potential confusion and conflict is in the realm of the changing nature of work, discussed above.

Under industrial conditions, where jobs were available for most of the labour force, the expectation that work was necessary, and that individuals would support themselves through participation in the job market, was a realistic one. As the work force shrinks to encompass progressively smaller numbers of workers, two problems are in sight: first, another means of income distribution than through jobs will have to be devised; and, second, a new ethic for use of leisure time will have to be created to replace the mores which have for so long assured us that work is more virtuous than idleness. Today, with the first indication of chronic unemployment, we see that public reaction does not appear to favour a post-industrial solution to either aspect of this problem. Instead, as suggested in Chapter Two, "more growth" is the solution sought.

Most observers do not go so far as to suggest in specific terms just what acceptable cultural values might be; to use Trist's⁴⁶ analogy, new and appropriate trends are nearer the horizon than the main sky. Trist's own paradigm of "changes in emphasis of social patterns in the transition to post-industrialism" is probably the most comprehensive and explicit attempt to suggest what cultural values of the future might be like. His suggested trends are, indeed, very credible ones and the details of this paradigm are included in Appendix A.

Of more general interest, certain suggestions found in the literature might be indicative of values which should be encouraged.

- 1) greater emphasis on communal actions, more cooperation and

less competition⁴⁷

- 2) more time spent in participation in politics and planning⁴⁸
- 3) increasing interest in humanistic and transcendental values⁴⁹
- 4) greater demand for educational and cultural facilities⁵⁰
- 5) greater acceptance of social diversity and cultural pluralism⁵¹
- 6) affirmation of man as a part of nature⁵²
- 7) declining interest in acquisition of material goods⁵³

This is not an exhaustive list, nor are the items independent of one another. It is simply a suggestion as to the direction in which we may be heading. To some extent these values are beginning to take hold in certain strata of contemporary society. It can be observed that "the persistence of outmoded forms is unevenly distributed among the many strata and sectors which make up a large pluralistic society".⁵⁴ In the future it will be of some value to recognize the conditions under which the cultural lag problem is more or less pronounced, in order to aid the change process.

CHAPTER FOUR

METHODOLOGY

The research technique employed to test the hypothesis was formulation and administration of a questionnaire to a sample of Vancouver residents. This chapter will detail, in sequence, the clarification of the value orientations referred to in the hypothesis (Section A); the formulation of the testing items (Section B); the content of the Questionnaire (Section C); selection and characteristics of the sample (Sections D and E); preparation of the data (Section F) for statistical analysis (Section G); and the pre-test of the Questionnaire (Section H).

A. Clarification of the Value Orientations

The hypothesis utilized a distinction between traditional and non-traditional values. For each suggested value orientation, a judgment has been made as to what constitutes a traditional orientation and what is considered a progressive orientation. The frame of reference for this distinction is identification of the value orientation with either an industrial or a post-industrial cultural outlook: a value orientation appropriate to a post-industrial culture is deemed to be progressive, while a value orientation which is generally associated with an industrial society is considered to be traditional. Support for this interpretation

in the case of values II and III (man's relationship to nature and preference for material goods) can be derived from the reference to these particular value orientations by several contemporary writers as significant ones in the transition to post-industrialism (see page 23). Accordingly, a judgment is being made here as to which value-set is most desirable for the society to encourage. Re-statement of the value neutral questions posed in Chapter One are on the basis of this judgment is as follows:

- Value I: The traditional emphasis in industrial society on technological advancement as an important criterion of human progress should be modified to emphasize social betterment and cultural improvement as the primary indicators of progress in a post-industrial society.
- Value II: Willingness to exploit the physical environment for human purposes is a traditional tenet of industrial society. It is related to the view that man is separate from nature, and that the natural environment exists primarily for man's benefit. This point of view should be replaced by a greater valuation of the physical environment in its natural state, and an appreciation that its existence contributes to man's well-being in more important ways than provision of material benefit.
- Value III: Emphasis on convenience, use of time- and labor-saving devices, and substitution of natural substances with manufactured ones, are basic characteristics of industrial society; willingness to adopt more "organic" and less complex modes of consumption is a pre-requisite for rejection of further material growth

These value orientations will at times be referred to by the assigned numbers, since the sense of each is not easily condensed into a convenient word or phrase.

B. Operationalizing the Hypothesis

Testing the hypothesis required a means of measuring the three value orientations and attitude toward growth. The latter is most easily explained, and will be dealt with first.

Measurement of attitude toward growth consisted of, first, discerning a respondent's perceptions of growth and, second, finding out his opinion on this growth or non-growth. It was considered to be of some interest and importance to first of all verify the assumption that everyone is aware of the relatively high growth rate of the Greater Vancouver region. In order to obtain more accurate insight into what citizen reactions are to particular aspects of growth, a distinction was made between population growth, physical growth, economic growth, and increase in material goods consumption, as outlined in Chapter One. This was considered to be the finest level of distinction which could be made while still maintaining recognition of the separate components through the use of everyday descriptions thereof. The third growth sector, economic activity, is, at this level of generality, open to question as to which type of economic activities it implies. Where this enquiry was raised by those filling out the questionnaire, a standard explanation of "business in general, meaning all types of industry and retail activity", was used. The intention was to exclude

welfare, cultural and service activities from consideration here, in order to measure as accurately as possible orientation toward material growth, which is traditionally the industrial conception of economic activity. The actual testing items (consisting of seven questions) constructed to determine awareness of, and attitude toward, these growth sectors are included in Appendix B.

Note that the fourth growth sector--material goods consumption--is closely tied to growth of economic activity as defined above. The query on material goods consumption is in a sense simply a different way of asking the same thing, except that it is more to the point and possibly will provide responses which are a more accurate reflection of an individual's material growth orientation. Practically speaking, material goods are in many ways both the result of and the impetus toward increased economic activity. For this reason, then, desire for greater consumption of material goods is assumed to be closely allied with an individual's disposition to favor economic growth.

Operationalizing the three value orientations was a less straightforward procedure. Discerning and measuring an individual's values is a difficult and complex task. Direct questioning on the subject is seldom useful. Some means of indirect assessment is a more accurate gauge of priorities and values. For this purpose, a series of attitude statements was constructed to form three measurement scales, one relating to each of Values I, II, and III. The intent was that an individual's agree or disagree response to each attitude statement would reflect to some extent his orientation on the related value, and that, cumulatively,

the value scales (each of which was composed of all the attitude statements relating to that value) would reflect with some degree of accuracy a respondent's position on the values in question.

Initially, the idea of using attitude statements to tap various aspects of more fundamental beliefs was derived from a review of McKechnie's Environmental Response Inventory.⁵⁵ His study employs large numbers of such items, carefully chosen to measure the relative strength of various impulses and orientations on specific aspects of the natural and cultural environment. The dimensions which McKechnie was measuring are not similar to the three with which this study is concerned (with the exception that the scale formulated to measure Value II overlaps somewhat with his Environmental Adaptation scale), but examination of the logic on which his study is based was useful for deriving a procedure for this work.

The task of formulating appropriate and valid attitude statements was a laborious one. On the first attempt to create a testing tool, most of the items were borrowed from McKechnie. Subsequently, all but seven of these items proved to be insufficiently related to the values being studied, to be of use. The majority of the attitude statements ultimately used were formulated specifically for this study, by a process of intuition and informal content analysis. At first the procedure was largely guesswork, although as a core group of relevant attitude statements evolved for each value orientation, it became easier to make up additional related items.

The attitude statements are one-sentence value judgments with which

a respondent could agree or disagree on a five-point scale. Condensation of the wide spectrum of opinion which exists on any given issue to a choice of five standardized responses to an unqualified statement is a crude measure at best, but, for the sake of quantification, this simplification of issues and opinions was necessary. It was anticipated (and substantiated by later observation) that many respondents in the study would experience difficulty in categorizing their response to some of the items, because of the fact that most of the statements are of a general nature. In a sense it is true to say that everyone could claim both agreement and disagreement with a large number of the attitude statements, depending on what conditions and qualifiers one thinks of when assessing the statement. It is maintained here that this generality does not invalidate the significance of a response: the choice of response ultimately made will in most cases reflect an individual's priorities and his assessment of whether the positive or negative implications of the statement are most important. Two examples from each scale will help to clarify what is meant here.

Value I: You can't stop progress.

Welfare benefits should be given to all those in need, whether they are willing to work or not.

Value II: Preservation of wilderness areas is not particularly important where these are not accessible for enjoyment by the public.

The best use for a piece of land can be determined by economic studies.

Value III: I would rather have a canoe than a motor boat.

An electric can opener is a desirable convenience to have in a kitchen.

Note that, to be consistent, an "agree" response to the first statement of Value I would have to be matched by a "disagree" response to the following attitude statement. This response set is considered traditional. By the same token, an "agree" response to the first statement of Value III requires, for consistency, a "disagree" response to the next statement; this response set was judged to be indicative of progressive values. The loading or response bias of each attitude statement was taken into account in the coding of responses to the item (see Section F below).

Notice also that the subject matter of the statements varies widely. While superficially it may appear that a statement does not have much in common with the value orientation as described, in fact the subjective content of the statement is in most cases of little importance. The basis for the usefulness of the item is often not its literal meaning, but rather its inference, the underlying assumptions on which response to the manifest content is made.

The question of content validity of the value scales constructed was approached with formal statistical analysis. There are two levels on which this may be examined: first, how does one know that the statements which have been classified together are really measuring the same thing? Second, how can we know that this "same thing" is in fact the

value orientation that it is purported to be? To address the second question first, the only validity criterion available is to examine all the related statements together and (presuming the first requirement above has been satisfactorily met) try to describe, on the basis of their aggregated content, the value areas which are involved. In the case of the three value scales used in this study, it is believed that there is sufficient literal similarity between the content of the statements and the sense of the respective value orientations, to correctly assume that the statements adequately delineate the particular value orientation.

The first question raised was formally addressed by means of a pre-test, which is described in Section H of this chapter.

C. The Questionnaire

As mentioned at the beginning of this chapter, a questionnaire was formulated to test the hypothesis. Personal interviews with respondents, in their homes, was the method chosen for administering this questionnaire. A mail survey could have been undertaken but, because of the importance of having each respondent complete the questionnaire on his own,^{*} and the generally lower response rate and longer time requirement of mailed surveys of this sort, it was felt that time spent conducting the research in person would be worthwhile. An additional factor was the desirability

*The controversial nature of many of the questions aroused the suspicion that this requirement would not be fulfilled unless an interviewer was actually present.

of having the opportunity to observe first hand the responses and reactions to the questionnaire items, inasmuch as this would contribute greatly to familiarity with the data obtained.

The complete questionnaire is shown in Appendix B. It will be recalled that questions 1-7 on this questionnaire deal with perception of, and attitude toward, the four components of growth. Questions 8-68 consist of the attitude statements (see Section H for discussion of how these were selected). In addition, certain demographic data were noted for each respondent, in order to determine the characteristics of the sample. What these items were, and why they were included, will be commented upon briefly.

1. Sex: this was included as a control item. In a situation where the proportion of males and females in the sample is significantly unequal (which was anticipated), it is important to know whether this imbalance is a source of bias in the overall results.
2. Age: it was anticipated that a respondent's age would be correlated with his values and level of awareness. The actual age, rather than an age category, was used.
3. Education: this was included to test the prediction that low formal education would be correlated with traditional values. A six-point scale was used: 1--grade school; 2--some high school; 3--high school completion; 4--some university, nursing diploma, technical

or vocational training beyond high school; 5--university degree;
6--post-graduate degree.

4. Native Language: an attempt was made, primarily by avoiding certain parts of the city, to exclude from the sample those persons whose mother tongue was not English. The reason for this is that a different native language almost always indicates a significantly different cultural background and, hence, a different perspective on the values and opinions being studied here. This study is not of sufficient scale to include such variables. Native English speakers were coded '0' on the questionnaire, and non-native English speakers were coded '1', so that it may be noted from response correlations with this variable if any bias resulted from inclusion in the sample of a small number of non-native English speakers. No questions about native language were asked; the only criterion was whether or not an accent could be detected in the respondent's speech. If the level of English was so low that the respondent would have difficulty with the questions, only the first seven questions were asked (verbally) and the answers were not counted.

5. Location in the City: respondents whose address was labelled East were coded '1', and those whose address was labelled West were coded '0'. In the case of non-numeric street names, Main Street provided the East-West boundary line. This division corresponds roughly with the socio-economic distribution of Vancouver residents. As a

crude two-variable index it is possibly not very meaningful, but it will be of interest as a control variable. The relatively small sample size does not permit further areal breakdown. A direct question on income, to determine socio-economic status more accurately, was not asked because, first of all, a simple income variable is influenced by many things (stage of the life cycle, for example), to the point where in many cases it is invalid as an indicator of socio-economic status, and the trouble of obtaining a more complex index was not felt to be worthwhile; and, secondly, asking personal questions such as this can make the interviewee uncomfortable and disturb the rapport.

D. Selection of the Sample

The research objective was to administer the questionnaire to a sample of approximately 150 Vancouver residents. There did not appear to be a need to obtain a rigorously random sample; the main concern was that the sample contain different groups of age, socio-economic status, and life styles. The latter criterion is believed to be associated with value preferences and, therefore, it was of importance, since testing the hypothesis required that there be a significant number of respondents in the sample who adhere to what has been designated non-traditional (progressive) values. The method chosen for obtaining such a sample was to select households, from which to obtain respondents, on the basis of their location in the city.

The actual selection of households was done by designating major districts in the city, and then arbitrarily choosing, in advance, streets

in the district. One day per district was the limit set for interviewing in most cases, and every household on the block selected was approached. Whoever in the household was willing to be interviewed was used, provided that they could speak English. When one block was exhausted, the adjacent block was surveyed, as time permitted. Appendix C contains a map showing location of respondents within the city, and includes the addresses of the blocks surveyed.

Since most of the interviewing (roughly three-quarters) was done in the daytime, a high rate of absenteeism was found. Also, overall the refusal rate was relatively high. No advance letters were sent, so to a certain extent this was to be expected. The refusal rate varied widely, from three or more refusals per completed interview in some parts of the city, to only one refusal in ten completed interviews in others. The refusal rate was consistently higher on the east side of the city, but was considerably reduced when the introduction was prefaced with the announcement that "I am not selling anything". In addition, part of the reason why there were fewer men than women in the sample (see Section E below) is that there was a notably high refusal rate among men over age 40. This pattern was found in all parts of this city, and overall it is estimated that the 40-50 age group, especially males, is under-represented in the sample.

E. Characteristics of the Sample

A sample of 159 respondents, all living in the City of Vancouver, was obtained by the procedure described. The sample consisted of the

following:

1. 106 women and 53 men, a 2:1 ratio.
2. Average age of 38.8 years, with a range of from 17-82 years.
3. Average education of 3.3, which is slightly better than high school level. Possibly the average was skewed upwards somewhat by the fact that the scale was not accurately weighted to the actual distribution of the population: the upper part of the scale made finer distinctions, by means of a larger number of categories, than the lower part and, therefore, higher deviation from the average was weighted more heavily than lower deviation from the average.
4. 20 respondents, or 12% of the sample, were non-native English speakers, from a variety of backgrounds (not documented). Most of these spoke English very well, and all were at least competent in the language.
5. 105 respondents were from the west side of the city, and 54 were from the east side (again, see map and table in Appendix C).

It will be noted from Appendix C that one-third of the sample was from different parts of the Kitsilano area. This is a distinct over-representation, but it seemed desirable for two reasons: first, practicality and convenience for interviewing; and, second, interest--a

greater diversity of life styles is found in this area than elsewhere in the city, and the aim was to include in the sample a sufficient number of respondents who were likely to have non-traditional values, for the sake of a more balanced comparison. Because of this, it may be less valid to generalize the results to the population at large, but for the purpose of this study, the need to have a significant number of respondents with non-traditional values, against whom to test the hypothesis, has been fulfilled.

F. Preparation of the Data for Analysis

Before statistical analysis could be undertaken to test the hypothesis, the raw data first had to be aggregated into manageable variables. To do this involved deriving a value I, a value II, and a value III score for each respondent, and also deriving growth scores for each of the component sectors.

To deal first with the value scores, recall from Section B that three value scales were formed, consisting of the attitude statements included in the questionnaire. Appendix D indicates to which value scale each of the attitude statements was assigned. These scales provided the means of measuring each of the value orientations.

To derive three measurements, or scores, for each respondent was a matter of summing his responses to the attitude statements which relate to each of the three scales. Responses were easily quantified, with coding as follows: strongly agree=1; agree=2; no opinion=3; disagree=4; and strongly disagree=5. For most of the statements, the code number

could be added in a straightforward procedure, and the higher the resulting score, the less traditional the value orientation of the respondent. This was so because the nature of most of the attitude statements was such that they were affirming traditional values, and the respondent who did not share the value expressed by the statement was obliged to disagree with it. For a disagreement response he would receive 4 or 5 points, as compared with 1 or 2 points for the respondent who agreed with the traditional value being expressed. About three-quarters of the attitude statements are biased in this direction, simply because, on the whole, more subtle statements were produced by wording ideas this way. Those statements which are a positive affirmation of progressive values (the opposite) were scored by reversing the code number and, for example, adding 2 points for a disagree response, etc. This procedure was used to obtain three scores for each of the 159 respondents.

Growth scores were required for each respondent as well. Basically, this involved translating each respondent's opinions on the desirability or undesirability of population, physical, economic and material growth into a numerical equivalent. Accordingly, responses to questions 1-6 of the questionnaire were combined^{*} and coded as indicated below.

1. A respondent was said to be in favor of growth if he said

* For this procedure, responses to questions 1 and 2, 3 and 4, 5 and 6, had to be combined to determine the respondent's opinion, since in each case the opinion response was contingent upon the answer to the preceding perception question.

that (i) a particular growth sector was increasing, and that this was desirable, or (ii) the growth sector was declining (or staying the same) and that this was undesirable; a pro-growth opinion was coded 1.

2. A respondent was determined to be against continued growth if he said either that (i) a particular sector was growing, and that this was undesirable, or (ii) the growth sector was declining (or staying the same) and that this was desirable; an anti-growth opinion was coded 3.

3. In all cases a noncommittal opinion ("don't know") was coded 2.

Responses to question 7, regarding material goods consumption, could be coded by a straightforward translation: preference for use of more material goods was coded 1, use of the same amount of material goods was coded 2, and use of fewer material goods was coded 3. This is parallel to the desirable/undesirable coding scale noted above.

For interest, it was decided to measure overall orientation to growth as well, by cumulating opinions on all four growth components to form a "Total" growth index. The code numbers assigned to the separate growth responses were summed to produce this overall indicator of orientation toward growth. The "Total" score which was derived for each respondent ranged from 4 (4 x 1 point) to 12 (4 x 3 points). And, as with the value scales, a higher score represents a less traditional orientation than does a lower score, since an anti-growth orientation was

judged to be non-traditional.

Derivation of a sixth growth score involved basically the same procedure, the difference being that opinions on only two growth sectors were summed to make a partial index--the economic activity and material goods consumption aspects of growth. They were combined to make a separate index (labelled material-economic growth orientation) because intuitively it was felt that these growth components would be the most salient in terms of the hypothesis, and it would be of interest to observe how their interaction affected the correlations obtained.

G. Statistical Analysis

The calculations performed on the aggregated data (which, with the raw data, made a total of 82 variables) were done by the computer, utilizing a TRIP program. This is the shortened name for Triangular Regression Package. The TRIP program consists of a number of different routines, which will perform very simple as well as very complex analysis problems. The routine which satisfied all the needs of this analysis was the INMSDC routine. The INMSDC routine is used to read raw data, weight observations, extract subsets of the observations, and produce means, standard deviations, and correlations. The last three calculations were the only ones required for present purposes. The correlation coefficients were most important. They specified the extent to which any combination of pairs from the 82 variables were related to each other.

H. Pre-test

In the course of constructing an appropriate questionnaire, many different versions of the testing tool were tried out. Several informal pre-tests were carried out with "convenient" respondents (friends and acquaintances), and one formal pre-test was conducted by knocking on doors in the Kitsilano and Point Grey areas of Vancouver. A sample of 17 was obtained in this way and, while it was by no means random, this procedure yielded a diversity of respondents.

The primary purpose of carrying out a pre-test was to check the content validity of the attitude statements. This was in response to a question raised in Section B of this chapter, which suggested the importance of verifying that those attitude statements grouped together are in fact measuring the same value disposition. The content validity check for each attitude statement was made by noting its correlation coefficient with each of the value scale scores. To be a valid measure, it was expected that each statement would (1) correlate better with the scale to which it had been assigned than with the other two scales, and (2) correlate above the .05 significance level with the appropriate scale. What this means, in effect, is that the statement in question has contributed more to items on its own scale than it has to items on the other scales; and, most important, that responses to that statement are not random, but are in fact associated with predictable responses to other statements on that scale.

To summarize the interpretation of the pre-test analysis, several changes to the questionnaire were made on the basis of the content

validity check. Of the sixty-five original pre-test attitude statements, forty-nine were included in the final questionnaire, some with minor modifications. Other changes included switching an item from one scale to another if the correlations obtained warranted a reassignment. Subsequently, twelve new attitude statements were constructed and assigned, without benefit of pre-test, in order to ensure that each value scale had approximately twenty items relating to it.

CHAPTER FIVE

RESULTS I: CITIZEN PERCEPTIONS OF AND OPINIONS ON GROWTH OF GREATER VANCOUVER

The responses to four of the first seven questionnaire items were readily tabulated by simply taking tallies for questions 1, 3, 5 and 7 (the first three concerning perceptions of growth and the latter regarding preference for material goods). Responses to questions 2, 4, and 6 (the opinion questions) had to be compiled by the procedure described on pages 38 and 39. Table V.1 shows the results of these tabulations.

A. Comments on Perception of Growth

Perceptions of growth were on the whole realistic. The small percentage of respondents who appeared not to be aware of population and physical growth is probably the same proportion who are generally unaware of what's happening in their city. It is of some interest to note, however, that respondents were less likely to perceive growth in the economic activity sector, than in the population or physical growth sectors. From verbal comments made by respondents during the interview, three explanations are offered as to the basis for responses to question 5. Detailed notes on this were not made at the time of the interview, so the extent to which each explanation is valid can only be estimated.

1. roughly half of the 77% who perceive that economic

activity is increasing appeared to be quite certain of this, and stated so with no hesitation.

2. approximately the same number of respondents indicated that they were not sure what the state of economic activity was--not because it was difficult to find out, but because they hadn't thought about it at all. The line of reasoning pursued by this group in choosing a response was that, since population and built-up areas are growing, then economic activity must be increasing as well.

3. the 23% of the sample who did not perceive economic activity as increasing were, from the interviewer's observation, actively dissatisfied with the state of the economy. All but one of this group of respondents stated that this non-growth was undesirable. Possibly it would have been interesting, for subsequent correlations, to code this group separately as being more in favor of growth than those who were merely satisfied that the economy is increasing. Such distinction in coding was not made, however.

TABLE V.1

SUMMARY OF PERCEPTIONS AND OPINIONS ON GROWTH

1. Respondent Perceptions of Population Growth

	<u>No. of Respondents</u>	<u>Percentage of Respondents</u>
increasing	154	97%
staying the same	5	3%
decreasing	0	-

2. Respondent Opinions on Population Growth

desirable	52	32%
undesirable	79	50%
noncomittal	28	18%

3. Respondent Perceptions of Physical Growth

increasing	152	95%
staying the same	7	5%
decreasing	0	-

4. Respondent Opinions on Physical Growth

desirable	60	38%
undesirable	86	54%
noncomittal	13	8%

5. Respondent Perceptions of Economic Growth

increasing	123	77%
staying the same	26	16%
decreasing	10	7%

Table V.1 cont'd

6. Respondent Opinions on Growth of Economic Activity

desirable	107	67%
undesirable	30	19%
noncommittal	22	14%

7. Respondent Preferences for Use of Material Goods

use more	43	27%
use same amount	56	35%
use fewer	60	38%

B. Comments on Opinions on Growth

Opinions on the desirability of increasing population, physical, economic and material growth varied widely. For population and physical growth, approximately the same proportion of respondents (50-54%) were against further growth in each case; similarly, approximately the same proportion of respondents (32-38%) were in favor of further growth in each of these sectors. However, observations made while interviewing suggest, and correlations shown in Table V.2 confirm, that similar opinions on the two sectors do not necessarily occur together: it was quite possible for a respondent to be against population growth on the one hand, and at the same time be in favor of increasing physical growth, or vice versa.

Generally a respondent would know his opinion on population and physical growth without having to give too much thought to the question,

although it is of some importance to note that having an opinion on whether or not growth is desirable was, in the view of some respondents, irrelevant, since the main point was the inevitability of growth in any case. These respondents were reluctant to express any other opinion than that growth is inevitable, although it turned out that a decision, when finally taken, was not always "don't know".

By far the greatest support for more growth was in the economic activity sector; fully two-thirds of all respondents supported this goal, in the main without apparent hesitation. It is interesting to note that this is 40% more than are in favor of increasing further the use of material goods. If these two variables are related (as was suggested), and if economic activity was perceived as including only goods production and retail activity (as was intended), then logically there should not be such a wide discrepancy between the two figures. Two explanations are plausible. First, it could be that economic activity was considered to include activities not related to material goods production and marketing. This is a possibility, but in my view an unlikely one, since the verbal explanation given excluded implicitly other categories of economic activity. Moreover, it is believed that the majority of respondents were not sufficiently sophisticated in their conception of the economy to think of including service activities as a major component of economic activity. The second, more likely, explanation is that the pro-growth response here was basically just a habitual one, based on the frequently unquestioned assumption that growth means progress, and progress is always desirable. A pro-growth orientation is presumed

to follow the latter line of reasoning, and this is the basis for the hypothesized relationship between an individual's concept of progress and his opinion on growth.

One comment should be made regarding the tallies for question 7. It is quite possible that the 38% figure for those in favor of using fewer material goods is higher than it would be for the general population of Vancouver. This could be one ramification of the fact that the Kitsilano area was over-represented in the sample. The inclusion in the sample of a relatively large proportion of respondents with a more youthful life style, which was desired as a means of obtaining a variety of value orientations, probably is related to the propensity to reject consumption of material goods. There is no reason to believe that this sample bias affected the other growth opinions in the same way, however.

C. Relationship Between Opinions on Growth Components

An attempt was made to get an idea of how opinions on one growth sector were related to opinions on the other sectors. Correlation coefficients form the basis for comparison. Table V.2 lists the correlation coefficients which were obtained from the statistical analysis.

TABLE V.2
GROWTH SECTOR CORRELATIONS

	Population	Physical Growth	Economic Activity	Material Goods Consumption
Population	1.00			
Physical Growth	.58	1.00		
Economic Activity	.39	.38	1.00	
Material Goods Consumption	.26	.50	.40	1.00

No revealing pattern seems to emerge from these correlations. One suggestion for interpretation may be made; that is that the correlations are low enough to lead to the conclusion that "growth" is not thought of as a single phenomenon, and that the separate components as defined here are perceived and evaluated individually.

D. Interpretation of Opinions on Growth

Except for the material included in the questionnaire to test the hypothesis, this research did not provide any data which would aid in interpretation of opinions on growth. For example, no questions were asked as to the reasons which respondents had for desiring or rejecting further growth. The explanation of the no-growth phenomenon offered by those involved with the Livable Region Program is included

here for purposes of discussion.

The authors of A Report on Livability⁵⁶ readily acknowledge that the strongest feelings about growth come from what people have experienced; in other words, changes or threats of change in his own neighborhood are the most salient features of growth in the mind of the individual expressing no-growth feelings. The term "growth" was often used to summarize all the unpleasant changes in the environment. Many things of importance to people are perceived as being threatened by growth in its present form--including the natural environment, clean air and water, maintenance of suburban residential densities, preservation of historic places and communities of a scale where personal involvement is possible. The speed with which many of these desirable amenities are transformed no doubt contributes to the feeling people have that growth is getting out of control.

The interpretation given by GVRD to the no-growth phenomenon is that

these anti-growth sentiments contrast with the more traditional view that growth means progress, that we should concentrate on keeping the community attractive to development. This view is still held by a minority of persons...who say growth is inevitable...but far more say 'no more'...⁵⁷

The findings of this research do not reveal such overwhelming support for no-growth as the Livable Region Program suggests. This is particularly true for economic growth. The Livable Region Program did not make clear distinctions between the various aspects of growth, although it is probably true that most of the comments made by citizens

were directed toward the population and physical components of growth.

It is likely that sample differences contributed to the discrepancy in assessment of the extent of no-growth feelings: the Livable Region Program's sample consisted primarily of suburban residents (i.e. those living on the outskirts of Vancouver) who were, moreover, mostly homeowners, whereas my sample were not necessarily homeowners, and all were residents of Vancouver proper. Thus, since they are physically removed from a lot of the growth which is taking place in Greater Vancouver, they are likely to be less aware of and less concerned about the loss of rural amenities as urbanization proceeds up the Fraser Valley.

In addition, the method used to discover citizen opinions was probably a factor in the differential results. The dynamics of a public meeting (which the Livable Region Program employed) can encourage participants to change their opinion, or to express an opinion more vehemently if they are supported by others in the group. This is not to suggest that the opinions are invalid, only that the consensus and vehemence which appeared to exist may be exaggerated due to the circumstances. Taking this into account, then, the proportion of respondents in my study who favored no-growth is probably a conservative estimation; no encouragement was given to express this opinion, and it is probably true that, if a distinction is made between population and physical growth, as opposed to economic growth, a larger number of respondents would have chosen an anti-growth response if a suggestion had been made as to why they should do so.

This insight raises an interesting question as to the real

nature of no-growth opinions. That is, what do those who say "no more growth" really want? Is the wish for no-growth strictly a negative reaction to the undesirable side-effects of growth as we know it today? To extend this speculation further, perhaps it is true to say that if we could have growth and control pollution, if we could continue to urbanize and make our urban structure of a higher quality, and so forth, then citizens might in fact be in favor of more growth. This may be the case, but there is no way of establishing this with the data available. I would suggest, however, that if no-growth is really just "second best", a refusal to accept the negative trade-offs associated with growth, then it's not really genuine at all; desire for no-growth should stem also from the recognition that further growth (particularly material growth) is in many ways unnecessary. Where there is a recognition that the quantitative and material needs of the society have been largely satisfied, then "no-growth" becomes, in effect, a positive desire for more qualitative kinds of growth--an active interest in pursuing other goals, and not simply a reaction to a still-cherished dream which has got out of hand. Formulation of the hypothesis, which will be tested in the next chapter, was an attempt to discover if desire for different social goals, as inferred from the espousal of values contrary to those which encourage growth, was associated with the no-growth phenomenon.

CHAPTER SIX

RESULTS II: HYPOTHESIS VERIFICATION

A. Results

The correlation coefficients which resulted from statistical analysis of each value score with each growth score are shown in Table VI.1.

TABLE VI.1
COEFFICIENTS OF CORRELATION BETWEEN
VALUE SCORES AND GROWTH SCORES

	(Concept of Progress) Value I	(Man in Nature) Value II	(Consumption Preferences) Value III
Population Growth Score	.29	.30	.20
Physical Growth Score	.46	.49	.39
Economic Growth Score	.44	.36	.33
Material Consumption Score	.60	.62	.54
Total Growth Score	.60	.60	.49
Material-Economic Growth Score	.63	.59	.52

Accepting a correlation coefficient of .16 as being significantly different from chance at the .05 level (based on a sample size of 150), then it is clear that there exists a highly significant relationship between a respondent's value predispositions and his opinions on the growth of Greater Vancouver.

On the basis of these figures, it is safe to say that higher scores on the value scales (indicating a preference for non-traditional values) are most often associated with higher scores on the growth indices (indicating an anti-growth bias) as well. Conversely, individuals who, by agreement with traditional values, obtained lower scores on the value scales, are on the whole more in favor of continued growth as well. Note that the strength of the relationship varies quite a lot, depending on the particular value scale and growth index involved. The strongest relationship is that between the combined material-economic growth orientation and concept of progress, which suggests, quite logically, that interpretation of progress in technological terms is strongly associated with desire for more material goods and economic activity. On the other hand, the weakest relationship appears to be that between preference for consumption of material goods and total growth orientation, although the correlation obtained here is significant nonetheless.

The high correlation coefficients obtained suggest that the hypothesized relationship actually exists, and that it is consistently in the predicted direction. But, by itself, this does not yield information as to the predictive strength of the relationship. The

question may be asked, what is the actual relationship between the phenomena being observed? In other words, to what extent do these phenomena co-exist in reality?

The standard manipulation used to quantify the degree of coincidence between two phenomena is to derive the percentage overlap by squaring the correlation coefficient. This procedure applied here yields the figures in Table VI.2.

TABLE VI.2
PERCENTAGE OVERLAP BETWEEN GROWTH BIASES
AND VALUE ORIENTATIONS

	(Concept of Progress)	(Man in Nature)	(Consumption Preferences)
	Value I	Value II	Value III
Population Growth Score	8%	9%	4%
Physical Growth Score	21%	24%	15%
Economic Growth Score	19%	13%	11%
Material Consumption Score	36%	38%	29%
Total Growth Score	36%	36%	24%
Material-Economic Growth Score	40%	35%	27%

While these figures are nowhere near 100%, they do nonetheless indicate

an appreciable level of strength of prediction in most of the relationships in question. Note that the squaring procedure causes the level of overlap to drop more rapidly than the correlation coefficient, and to approach zero with the minimum significant correlation coefficient. A correlation coefficient of .40, or 16% overlap, can be considered adequate for predictive purposes. If this is used as a criterion, then it is clear that the population growth score does not overlap with the value orientations to an acceptable degree. In effect, these figures denote the percentage of one phenomenon that can be accounted for by the other, and for these data most of the percentages are high. This does not imply a causal connection, however, and speculation on whether the relationship is in fact a causal one will not be attempted here.

B. Discussion of Results

It is interesting that three of the six growth indices obtain a noticeably higher level of correlation with the value scales than do the other three. The material consumption index of growth clearly shows a more reliable relationship to the value scales than do the other three growth components and, approached from the other side, the population index is undoubtedly the growth sector with the least reliable relationships. What is inferred from this is that being against population growth does not necessarily imply adherence to non-traditional values, whereas being against material growth is much more likely to

involve value change. It was suggested earlier that feelings of no-growth in terms of population increase may be just a negative reaction to threats of change to valued amenities, such as low densities. Use of more material goods, on the other hand, is probably not perceived by most people as leading to environmental deterioration or threats to valued amenities and, therefore, a no-growth stance in terms of material goods is much more likely to be based on an actual rejection of extraneous material consumption and, at the same time, a positive desire for alternate personal goals.

To carry speculation on the meaning of the population correlations a step further, an intuitive impression noted during the interviewing should be mentioned. This is that being against population growth was not meaningfully associated with any of the other growth opinions or values being investigated, whereas being in favor of population growth almost always seemed to be associated with pro-growth feelings on the other growth sectors as well and, most often, with traditional value orientations. Although the analysis undertaken cannot support such an interpretation, this distinction is probably the basis for what little overlap there is between stance on population growth and value orientation.

It is interesting to speculate on the basis for the overlap between a particular growth sector and the value scale with which it correlates most highly. For example, a high correlation was shown between opinions on growth of the built-up area (physical growth) and the "man in nature" value scale (II). Since expansion of the built-up area frequently

involves destruction of the natural environment, it can be seen that, theoretically at least, where a trade-off between increasing physical growth and preservation of the natural environment is resolved in favor of the former, it is usually at the expense of the latter. In this sense, then, the more one is in favor of physical growth, the less one can be concerned about preservation of the natural environment. The data substantiates that this seems to be the case, and this is in fact the connection on which the hypothesis was based.

One comment can be made regarding the coding of responses to the question on material goods consumption. It is my feeling in retrospect that the three options provided on the questionnaire do not constitute an equal-interval scale, in the sense that preference for use of the same amount of material goods is a truly middle position on an abstract scale measuring the importance of material goods to an individual. It would seem that the choice between using more material goods versus using the same amount of material goods is not really a reflection of orientation toward materialism as much as it is, for example, a reflection of the respondent's economic status. The meaningful distinction is between choice of the first two options as opposed to preference for use of fewer material goods. It would have been of some value to take this distinction into account when coding, although not having done so could only mean that higher correlations are obscured, and not that actual correlations obtained are artificially high.

To sum up, a comment may be made as to the significance of the two cumulative growth indices, represented by the total growth score and

the material-economic growth score. These, along with the material consumption score, were the most salient growth measurements in terms of the hypothesis. Why should this be so, when the total score, for example, is simply an unweighted aggregation of the four separate growth sectors--three of which obtained considerably lower correlations with the value scales? This suggests that the total index may be, by itself, the best overall indicator of disposition to favor growth. Particular combinations of "pro", "anti", and "don't know" lose their importance, and the measure of strength of this disposition becomes the total number of "pros" and "antis". Possibly this is because the range of scores (from 4 - 12) for the total index is so much greater than the range for any of the component indices (from 1 - 3), and thereby finer distinctions are made between respondents' opinions. There is thus a greater possibility of accurately measuring intensity of opinion. If the hypothesized relationship between growth orientation and value dispositions is a valid one, then the existence of this relationship will be shown more decisively where the growth orientations and value dispositions are measured accurately. For the same reason, it was important to have a large number of attitude statements (twenty per scale) to measure value biases: each statement by itself is not a perfect measure, but a pattern can emerge from twenty or so estimations.

C. Content Validity of the Value Scales

Recall from Chapter Four the content validity technique which

was employed in the pre-test to verify that the attitude statements grouped together consistently elicit similar responses from respondents. Forty-nine of the sixty-one attitude statements on the questionnaire were shown to be valid on the basis of the pre-test analysis. With a big increase in sample size, however, and the addition of a dozen previously untested attitude statements, the pre-test validity of the items may not have been maintained in the final data.

Appendix E documents the results of the content validity check in two ways: first, attitude statements are listed by scale, so that all the statements which correlate significantly with a scale are shown in rank order in that scale's column; second, each statement is listed by number on the questionnaire, showing the correlation coefficient obtained with the value scale with which it correlates best.

To summarize these results, it can be observed that (1) all attitude statements correlate with at least one scale (and usually all three scales) beyond .16, which is the required .05 significance value; and (2) the range of acceptable correlations is from .16 to .80, although all but fifteen of the attitude statements correlate with the assigned scale above .45, which is a very high level of correlation. Note also that, although all but eight attitude statements correlated best with the value scale with which they had been scored, the correlations obtained with either or both of the other two scales are usually not a great deal lower than this. This suggests that the three value orientations defined are not all that different from one another, or at least that they can be measured with the same testing items. The question of how

distinctive the value scales are was approached with further analysis, which will be described in Chapter Seven.

D. Demographic Correlations

Demographic variables were included in the analysis primarily to ensure that the sample was fairly well balanced according to the criteria established. Correlation of growth scores and value scores with these variables is not particularly important in relation to hypothesis testing, but it is interesting to note to what extent personal characteristics are associated with the values and opinions being measured. Table VI.3 shows the correlation coefficients obtained.

TABLE VI.3

DEMOGRAPHIC CORRELATIONS

	Sex	Age	Education	Language	East or West
Population Growth Score	-.08	-.19	.05	.01	-.02
Physical Growth Score	-.02	-.19	.24	-.13	-.14
Economic Growth Score	-.13	-.22	.20	.00	-.08
Material Consumption Score	-.10	-.21	.32	.08	-.22
Total Growth Score	-.04	-.27	.29	-.07	-.16
Material-Economic Growth Score	-.14	-.25	.33	-.05	-.20
Value I	-.16	-.38	.47	-.02	-.26
Value II	-.19	-.42	.48	-.14	-.30
Value III	-.08	-.39	.42	.02	-.26

Correlations on the basis of sex and language are generally of trivial significance or no significance at all. The age and education variables, however, have proven significant in the direction anticipated: younger and better-educated respondents have significantly higher scores on all counts. The east-west variable correlates significantly with scale scores as well, but inasmuch as this variable is a rather crude and insensitive one (recall discussion in Chapter Four), possibly the differences are really just camouflaged differences in education level (for example), since the west side does tend to be more highly educated (-.41). All of these variables, in fact, probably interact with each other to a considerable extent, so that not too much should be made out of any one piece of information. Suffice it to say that younger and better-educated respondents tend to be both less traditional in their value orientations, and more anti-growth as well.

CHAPTER SEVEN

REFINEMENT OF THE MEASUREMENT TECHNIQUE

It can be observed from Appendix E that there are large differences in the content validity of the sixty-one attitude statements. While all are statistically significant correlations, the marginal coefficients obtained with a few of the statements confirms the impression I had when interviewing that these items are too vague to be of much use in measuring the value orientations. This raises a question as to whether the statements with low content validity perhaps had a detrimental effect on the validity of the scale as a whole. As an experiment, the fifteen (arbitrary) attitude statements which were shown to be the least valid measures, were deleted from the scale scores to determine the effect this would have on the distinctiveness of the scales. Appendix F lists these items.

To summarize the changes in correlation which occurred between each of the remaining forty-six statements and the scale scores, the following points are pertinent:

1. the content validity of the attitude statements, as measured by their correlation with the score of the value scale to which they had been assigned, was improved in 31 cases, stayed the same in 9 cases, and was decreased in 6 cases.

2. the correlation coefficients obtained between each statement and the other two value scores was improved in 8 cases, stayed the same in 6 cases, and was decreased in 29 cases.

Clearly, then, removal of the least valid attitude statements had the effect of creating more unique scales, composed of items which relate more to each other, and less to components of the other scales. Furthermore, these deletions had no significant effect on the correlation coefficients obtained between the value scales and the growth indices.

It appears that, although refinement of the value scales did not result in greater support for the hypothesis, it would be worthwhile for future research of this nature to select attitude statements more rigorously, by means of the content validity tests, prior to scale construction. Correlations obtained from the analysis are bound to be more useful if one can say with accuracy just what it is that's being correlated.

Methodical scrutiny of the inter-correlations between the individual attitude statements revealed that a small number of the statements correlated with each other very highly (.30 or higher), and at the same time, this group correlated at a much lower level (statement by statement) with another small cluster of statements which have high inter-correlations. What this means is that, from the available pool of sixty-one attitude statements, five core items from scale I and eight from scale II were found to be the most valid and unique measures of the related values. These are shown in Table VII.1.

TABLE VII.1

CORE ATTITUDE STATEMENTS FOR IMPROVED VALUE SCALES

Value I: Concept of Progress

- 21. Our society has progressed a lot in the last century or so.
- 58. If a better "mousetrap" can be built, then it should be built.
- 64. Jet air travel is one of the great advances of our society.
- 65. We are fortunate in having more material advantages than our parents had.
- 67. You can't stop progress.

Value II: Man in Nature

- 13. Wilderness areas would serve the public better if they were provided with adequate auto access, commercial facilities and trailer camps.
- 26. Gullies and ravines can sometimes be useful for the disposal of domestic refuse.
- 32. Preservation of wilderness areas is not particularly important where these are not accessible for enjoyment by the public.
- 42. A community whose population is increasing is probably more progressive than one whose population is constant.
- 48. Pollution of a river in an unpopulated area is not as bad as pollution of a river near a town.
- 51. A beach or park is of little value if the public can't drive to it.
- 61. Wherever possible swamps should be drained to make them useful for construction.

There are too few statements on these revised scales for purposes of testing the hypothesis; the reason for including them here is to suggest that construction of additional, similar items would produce scales which more accurately depict the particular value orientations. The "fuzziness" of the original scales employed to test the hypothesis was not detrimental to the goal of showing that value orientations are related to growth biases, although if it was of importance to know precisely what the value orientations are, then the scales should be purified as suggested.

CHAPTER EIGHT

CONCLUSION

A. Overview of Results

The discussion in this work has ranged over a variety of topics: from the hypothesis of a relationship between attitude toward growth and personal values, through a discussion of the growth ethic in a historical and a future context, including empirical investigation of citizen opinions of growth. The suggestion was made that the structural transition to post-industrialism (of which a redirection of the growth ethic was shown to be an important part) requires an appropriate shift in cultural values as well, in order to facilitate adjustment to the new conditions. This work was an attempt to support this contention by examining one aspect of the transition--redirection of growth--in relation to the values which support it. The hypothesized relationship was shown to exist. To this extent, then, it may be concluded that an individual's conception of what constitutes progress, his view of man in relationship to the natural environment, and the extent of preference for material consumption, are associated with disposition to favor or reject further growth.

Although the data is not sufficiently extensive to warrant broad generalization, a suggestion will nonetheless be offered as to the meaning

of the findings. The interpretation placed on these findings is that virutally all major social goals and environmental attitudes are closely interrelated with basic assumptions and values regarding the nature of man and the goals of human existence. The implication here is that shifts in the goal preferences of the society rest upon attendant shifts in the supportive value structure.

Two examples will illustrate the relevance of this insight to contemporary problems (other than growth). Preference for use of the private automobile and for single family houses is deeply ingrained in North American culture. From a layman's point of view this is not a "problem", and this question is not the debatable point here. But if it is anticipated that, in the future, continuing emphasis on this mode of transport and this housing style will entail increasingly unacceptable consequences for the quality of urban development, for example, then some means of encouraging shifts in consumption preferences will be necessary. A strictly functional view of either cars or houses is likely to overlook the extent to which these assets fulfill non-material needs as well; an automobile is not simply a means of transport, and a house is more than just a place to live. And, as with growth, desire for them will not likely be diverted until an alternative value framework is adopted which will support the shift in consumption preferences to more appropriate modes. Just what values are involved, and in what direction they should be shifted, is a matter for social science research. But the implications for planning are immediate and readily discernable.

B. Implications for Planning

On the basis of the conclusions derived from this work, and in light of the impending transformation of the industrial structure of our society (as discussed in Chapter Three), it is maintained here that the planning profession has a responsibility to become actively involved in the process of social change, for the purpose of guiding the society towards an acceptable future. This involves two things: first, more future-oriented planning, and second, acceptance of planning as a political activity. Amplification of this will involve, first, an examination of the adequacy of the futurist tradition as the planning profession has traditionally interpreted this to be.

Planning is most necessary where the future will differ greatly from the past. There are many bases for the prediction that future society will differ radically from what we know today. Yet this creates a dilemma for the planner: rapid change makes planning more necessary and, at the same time, more difficult, since the future cannot be planned on the basis of the present.

On what basis, then, should future plans be made? Planners have traditionally used a variety of forecasting techniques and extrapolative methods to construct plans for the future. Characteristically, our long-range plans and predictions have been based on present trends and past performance of whatever system is under review. This process is essentially looking toward the future in the image of the past. It may be said that

city planning has never really been oriented to future change. Despite the long range horizons and the utopian

traditions that have marked this field...it has been guided by a future-directed ideology that has looked backwards.⁵⁸

Extrapolation of past trends is no longer adequate to the task of planning for the future, because extrapolation implies that past determinants of trends will persist into the future, whereas it is very likely that they will not. Similarly, it cannot be assumed, as in the past, that social organization and social objectives will remain stable during the time period under review, or that there is a society-wide consensus on development goals.⁵⁹

Projections for the future will have to take into account the precedence of qualitative over quantitative change. This will require innovative solutions to many of our current problems. To avoid using the past as a guideline for these changes requires that we have (1) more and better information; (2) better methodologies and techniques of forecasting and prediction; and (3) new values on which to construct models of alternative futures. The first two requirements are recognized to a certain extent, and steady progress is being made in expanding the knowledge base and predictive techniques relevant to the planning process. With regard to the third requirement, however, planning which is both anticipative and encouraging of alternate values, is seldom done.

The argument made above can be extended further: anticipative planning by itself is not enough. It is also necessary for the planner to "dirty his hands in pushing for or selling the plan to which he is committed by influencing the values, biases, etc. of those who will select

the plan to be implemented".⁶⁰ Irrespective of whether or not it is a question of selling a particular plan, the contention made here is that the planning profession has a responsibility to encourage a questioning attitude toward current assumptions and values (many of which, as we have seen, are responsible for some of the problems that are faced now), and to suggest and promote alternate values which would facilitate adoption of innovative solutions to problems.

Traditionally, it has been considered desirable for the planner to maintain a "value-neutral" position in professional decision-making and dealings with the public. This posture of neutrality was compatible with a professional role which saw the planner as an "expert", with technical knowledge which could be divorced from social processes and value judgments. The values and goals by which decisions were made and plans were formulated were, in theory at least, those of the client group, usually by way of their political representatives.

It is a matter of debate as to whether this supposed value-neutrality of planners has at any time been either accurate or appropriate. In any case, there are many reasons why such a professional role is inadequate to the needs of planning today. The problems we face at this point are not technical problems related to efficiency needs, rather they are political problems pertaining to distribution of benefits and power to make decisions. The public interest which the planner is supposed to serve consists of ever more diverse and fluctuating sub-groups, many of whose "interests" the planner is not in a position to know.

Getting the planner away from the task of designing projects, and into the larger task of evaluating policies and proposing innovative alternatives, requires that he assume an active responsibility for influencing (but not dictating) the goals and values of the society. The impetus for social change will hopefully be other than sheer necessity, and it is believed that the planner is in a good position professionally to stimulate interest in and awareness of a wide variety of problems and issues. Increasingly, the public will take on a greater role in decision-making, and it is to this amorphous public that the planner has a direct responsibility to provide information and civic education. Doing this properly requires that discussion and continuous evaluation of values and goals be a necessary input into the decision-making process. For, in the long run, social change, and not technical solutions, is required to solve urban problems.

FOOTNOTES

¹Willis Harman, "Alternate Futures and Habitability," Fields Within Fields...Within Fields, Vol. 3, No. 1 (1970), pp. 23-24.

²Use of this term was borrowed from Herman Daly, "Toward a Stationary-State Economy," in Patient Earth, ed. by John Harte and John Socolow (New York: Holt, Rinehart and Winston, Inc., 1971).

³Max Weber, The Protestant Ethic and the Spirit of Capitalism, as adapted by Eric Trist, The Relation of Welfare and Development in the Transition to Post Industrialism (Socio-Technical Systems Division, Western Management Science Institute, UCLA, 1968), Appendix VII, pp. 58-59.

⁴E.D. Eddy, Colleges for our Land and Time (1957), as quoted in V. Potter, Bioethics, Bridge to the Future (Englewood Cliffs: Prentice Hall, 1971), p. 44.

⁵Geoffrey Vickers, Freedom in a Rocking Boat (London: Allen Lane, 1970).

⁶Daly, op. cit., p. 241.

⁷Vickers (1970), op. cit., p. 22.

⁸Daly, op. cit., p. 239.

⁹David Reisman, "Work and Leisure in Post-Industrial Society," in Mass Leisure, ed. by Rolf Meyersohn and Eric Larrabee (Glencoe, Illinois: Free Press, 1958), p. 366.

¹⁰Vickers (1970), op. cit., p. 24.

¹¹For example, see René Dubos, "The Despairing Optimist," in American Scholar, Vol. 40, 1970 (Summer and Winter); Raymond Kohn, ed., Environmental "Education", published by the U.S. National Commission for UNESCO (Washington, 1971); Donella Meadows, et al, The Limits to Growth, (New York: Potomac Associates, 1972).

¹²Daly, op. cit., p. 232.

- ¹³Meadows, op. cit..
- ¹⁴Ibid.
- ¹⁵This conclusion is supported by Dubos, op.cit.; Meadows, op. cit.; and Vickers (1970), op. cit.
- ¹⁶Dubos, op. cit., p. 390.
- ¹⁷As quoted in Kohn, op. cit., p. 43.
- ¹⁸Daly, op. cit., p. 237.
- ¹⁹See, for example, Daly, op. cit.; also John Maddox, The Domsday Syndrome (London: Macmillan, 1972).
- ²⁰Daly, op. cit., p. 238.
- ²¹Bertram Gross, "The City of Man: A Social Systems Reckoning," in Environment for Man: The Next Fifty Years, ed. by Ewald, W.R. (Indiana University Press, 1967).
- ²²Melvin Webber, Planning in an Environment of Change (Institute of Urban and Regional Development, University of California, Berkeley, 1969), p. 183.
- ²³Eric Trist, "Urban North America - the Challenge of the Next Thirty Years," in Plan Canada, Vol. 10, No. 3 (1970).
- ²⁴Gross, op. cit.
- ²⁵Webber, op. cit., p. 179.
- ²⁶Alvin Toffler, Future Shock (New York: Random House, 1970).
- ²⁷Trist (1968), op. cit., p. 37.
- ²⁸Maddox, op. cit., p. 200.
- ²⁹Trist (1970), op. cit., p. 7.

³⁰Ibid.

³¹Ibid., p. 9.

³²Reisman, op. cit., p. 375.

³³Webber, op. cit., p. 185.

³⁴Trist (1970), op. cit., p. 8.

³⁵Gross, op. cit.

³⁶Trist (1970), op. cit., p. 6.

³⁷Webber, op. cit., p. 184.

³⁸Trist (1970), op. cit., p. 11.

³⁹Michel Chevalier, Social Science and Water Management: A Planning Strategy (Policy and Planning Branch, Dept. of Energy, Mines and Resources, Ottawa, 1969).

⁴⁰Gross, op. cit.

⁴¹Webber, op. cit., p. 180.

⁴²Ibid., p. 181.

⁴³Willis Harman, "Key Choices of the Next Two Decades," in Fields Within Fields...Within Fields, Vol. 5, No. 1 (1972), p. 30.

⁴⁴Ibid., p. 26.

⁴⁵Trist (1970), op. cit., p. 5.

⁴⁶Ibid., p. 12.

⁴⁷Ibid.

⁴⁸Trist (1970), op. cit.; Webber, op. cit.

⁴⁹Harman (1972), op. cit.; Reisman, op. cit.

⁵⁰Reisman, op. cit.; Webber, op. cit.

⁵¹Gross, op. cit.; Webber, op. cit.

⁵²Harman (1972), op. cit.

⁵³Reisman, op. cit.; Vickers (1970), op. cit.

⁵⁴Trist (1968), op. cit., p. 21.

⁵⁵McKechnie, George. "Measuring Environmental Disposition with the Environmental Response Inventory." Edra II. (Pittsburgh: 1970).

⁵⁶Greater Vancouver Regional District, A Report on Livability (Vancouver, 1972), p. 4.

⁵⁷Ibid., p. 5.

⁵⁸Webber, op. cit.

⁵⁹Ibid.

⁶⁰Ronald Singer, "The Planner as Value-Neutral: A Useless Myth?" Plan Canada, Vol. 11, No. 2 (1970), p. 112.

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APPENDICES

APPENDIX A

APPENDIX A

Changes in Emphasis of Social Patterns
in the Transition to Post-Industrialism*

Type	From	Towards
Cultural values	achievement self-control independence endurance of distress	self-actualization self-expression inter-dependence capacity for joy
Organizational philosophies	mechanistic forms competitive relations separate objectives own resources regarded as owned absolutely	organic forms collaborative relations linked objectives own resources regarded also as society's
Ecological strategies	responsive to crisis specific measures requiring consent short planning horizon damping conflict detailed central control small local government units standardized admini- stration separate services	anticipative of crisis comprehensive measures requiring participation long planning horizon confronting conflict generalized central control enlarged local government units innovative administration co-ordinated services

*

from Trist (1970). See Bibliography for complete reference.

APPENDIX B

APPENDIX BThe Questionnaire

Please indicate your answer to the following questions.

1. In your estimation is the population of Greater Vancouver
 - a) increasing
 - b) staying the same
 - c) decreasing

2. In your opinion is this
 - a) desirable
 - b) undesirable
 - c) don't know

3. Do you believe that the built-up area of Greater Vancouver is
 - a) expanding
 - b) staying the same
 - c) decreasing

4. Do you feel this is
 - a) desirable
 - b) undesirable
 - c) don't know

5. To your knowledge is the amount of economic activity taking place in Vancouver
 - a) increasing
 - b) staying the same
 - c) declining

6. In your opinion is this

- a) desirable
- b) undesirable
- c) don't know

7. Which alternative do you feel is on the whole the best for Canadians?
(For each alternative please assume we are talking in terms of the average person.)

- a) to obtain more of the material goods which we have today
- b) to continue to use the same amount of material goods that we use today
- c) to use fewer material goods than we use today

The following items are statements of opinion, some of which you will agree with and others of which you will disagree with. Please read each one carefully and then determine your assessment of the statement according to the following scale:

- 1) strongly agree
- 2) agree
- 3) no opinion
- 4) disagree
- 5) strongly disagree

8. Sooner or later, as traffic volume increases, most two-lane roads should become four-lane roadways.

9. Natural resources are for man's benefit.

10. I would rather go for a walk than watch television.

11. The opportunity for most people in our society to own their own car is an indication that we are more advanced than societies where such widespread private car ownership is not possible.

12. Even if building a dam on a particular site would cause ecological disruption, it should be built anyway if the power is really needed.

13. Wilderness areas would serve the public better if they were provided with adequate auto access, commercial facilities and trailer camps.
14. Minute rice is bad food.
15. It would be fun to have a skidoo in the mountains.
16. A colour television is a lot more desirable than a black and white television.
17. I would like to see more of my tax money spent in support of artists, libraries and musicians, and less spent on building new roads.
18. It would be fun to have a vacation in Las Vegas.
19. It speaks well for our society that the average household is able to have its own washer, dryer, vacuum cleaner, etc.
20. Going to a health spa is one of the best ways to get exercise.
21. Our society has progressed a lot in the last century or so.
22. I don't consider any plant to be a weed.
23. British Columbians should try to cut down on the amount of electricity that they use in their homes.
24. I think it's quite important that a person keep the lawn around his house cut short.
25. Metrecal and other diet foods are good things for the person who wants to lose weight to use.
26. Gullies and ravines can sometimes be useful for the disposal of domestic refuse.
27. Rising average incomes are a good indicator of the well-being of Canadians.
28. Watching television is for me a pleasant passtime.
29. A person has the right to do what he wishes with any property that he owns.
30. I don't like to see a wig on anyone except a person who is balded by disease.
31. Chemical fertilizers improve the quality of food.

32. Preservation of wilderness areas is not particularly important where these are not accessible for enjoyment by the public.
33. Making rain by artificially stimulating clouds is a beneficial technological advance.
34. Adoption of a guaranteed annual income for all Canadians would be a progressive measure.
35. You can't change human nature.
36. Deodorants are unnecessary.
37. I don't like to eat prepared frozen dinners.
38. Given enough time, science will solve most human problems.
39. Welfare should be restricted to those who are incapable of working.
40. Where pests are troublesome, crops should be protected with pesticides.
41. Plastic flowers can brighten up a room.
42. A community whose population is increasing is probably more progressive than one whose population is constant.
43. Going to the moon is a sign of the greatness of American society.
44. Modern communities are plastic and ugly.
45. Any mining venture which is economically feasible should be encouraged.
46. Some of the synthetic Christmas trees you can buy are as desirable as real trees.
47. A person should spend the time and effort to look their best.
48. Pollution of a river in an unpopulated area is not as bad as pollution of a river near a town.
49. I would rather camp in a tent than in a trailer.
50. The amount of taxes which a proposed development will bring in is an important factor in determining the desirability of the project.
51. A beach or a park is of little value if the public can't drive to it.
52. I prefer a stick-shift car to one with an automatic transmission.

53. An electric can opener is a desirable convenience to have in a kitchen.
54. It's alright to leave behind tin cans when camping as long as they are buried in the ground.
55. Extension of welfare benefits could be disastrous for Canada.
56. For the average city-dweller, a power lawn mower is a big improvement over a hand mower.
57. I would rather go to live theatre than to a night club.
58. If a better "mousetrap" can be built, then it should be built.
59. It's nice to have a new car every year or so.
60. Most women should shave their legs.
61. Wherever possible swamps should be drained to make them useful for construction.
62. I would rather have a canoe than a motor boat.
63. The best use for a piece of land can be determined by economic studies.
64. Jet air travel is one of the great advances of our society.
65. We are fortunate in having more material advantages than our parents had.
66. Welfare benefits should be given to all those in need, whether they are willing to work or not.
67. You can't stop progress.
68. A woman isn't properly dressed without her make-up on.

The age and educational attainment of the respondent were determined by oral questions on completion of the written questionnaire.

The respondent's sex, address, and native language were noted by the interviewer.

APPENDIX C

APPENDIX CLocation of Respondents by AddressA. West Side

<u>District</u>	<u>Street Address</u>	<u>Number of Respondents</u>
West End	1800 - 1900 Nelson	11
Kitsilano	1800 Trafalgar 3000 West 3rd Ave. 3000-3100 West 7th Ave. 2900-3200 West 8th Ave. 2600-2700 West 11th Ave 2300-2400 West 13th Ave. 2300-2400 West 14th Ave.	56
Dunbar	2400-2500 West 18th Ave. 3600-3800 West 20th Ave.	19
Point Grey	4300 West 11th Ave.	8
South Cambie	500-700 West 50th Ave. 6600 Tisdall	9
Total		<u>105</u>

B. East Side

<u>District</u>	<u>Street Address</u>	<u>Number of Respondents</u>
Sunset	000-100 East 56th Ave. 000-100 East 57th Ave. 000-100 East 58th Ave.	9
Grandview- Woodland	vicinity Adanac and Victoria Drive	7

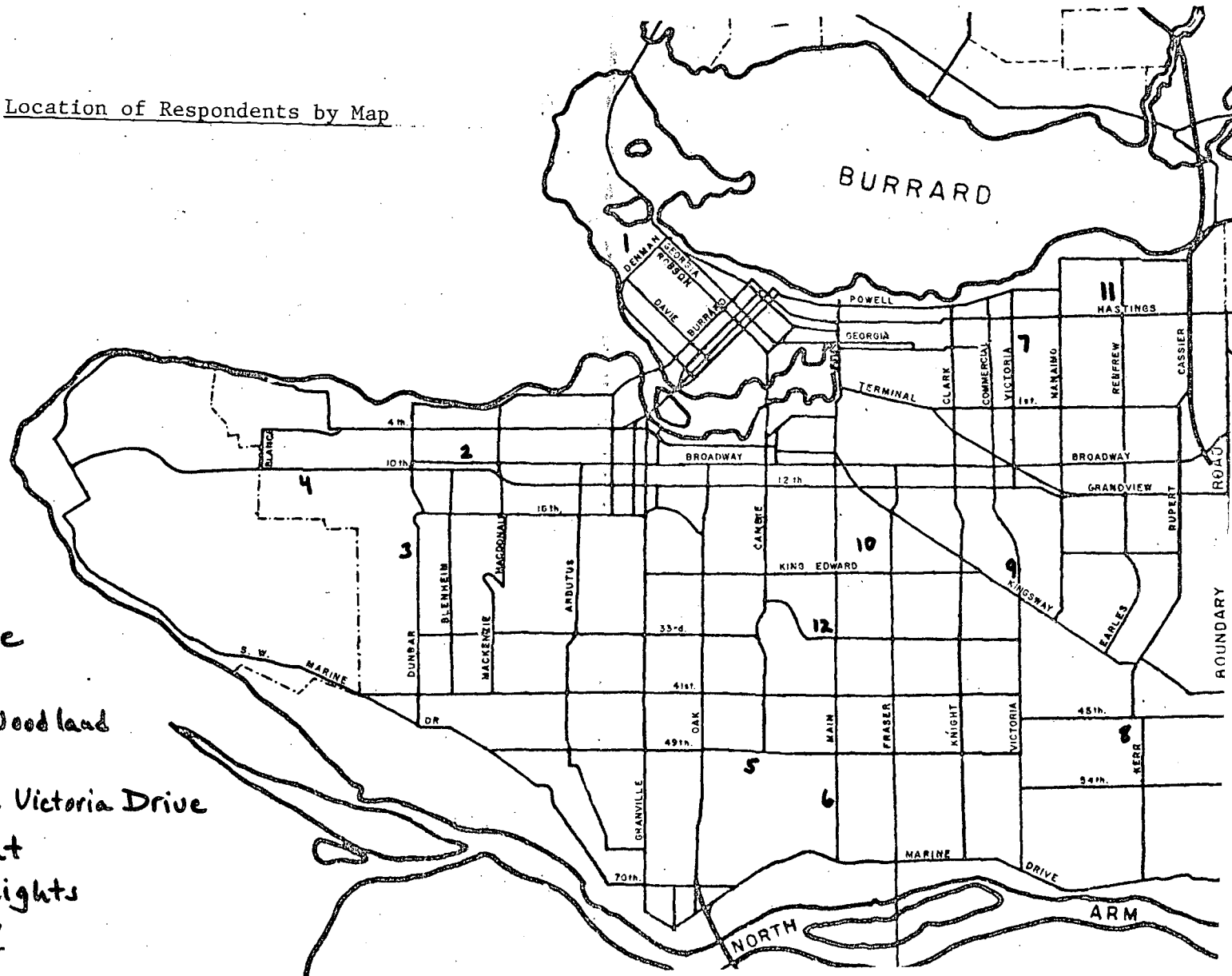
...cont'd

East Side

<u>District</u>	<u>Street Address</u>	<u>Number of Respondents</u>
Killarney	5800-5900 Lancaster 6000 Kerr 5800-6100 Rupert 3000 East 45th Ave.	9
Kingsway and Victoria Drive	2000 East 24th Ave. 2000 East 25th Ave. 2000 East 26th Ave. 2000 East 27th Ave. 2000 East 28th Ave.	8
Mt. Pleasant	400 East 20th Ave.	9
Renfrew Heights	2700 Franklin	3
Riley Park	4700-5000 Quebec	9
	Total	<u>54</u>

Location of Respondents by Map

1. West End
2. Kitsilano
3. Dunbar
4. Point Grey
5. South Cambie
6. Sunset
7. Grandview-Woodland
8. Killarney
9. Kingsway and Victoria Drive
10. Mt. Pleasant
11. Renfrew Heights
12. Riley Park



APPENDIX D

APPENDIX DScale Assignment of Attitude Statements **

<u>Value Scale I</u> (concept of progress)	<u>Value Scale II</u> (man in nature)	<u>Value Scale III</u> (consumption preferences)
11	8	10 (-)
16	9	14 (-)
17 (-)***	12	15
19	13	18
24	22 (-)	20
27	23 (-)	21
33*	25	28
34 (-)	26	30 (-)
35	29	37 (-)
36 (-)	31*	41
39	32	46
42	38*	47
43	40	49 (-)
55	44* (-)	52* (-)
56	45	53
58	48	57 (-)
60	50	59*
64*	51	62 (-)
65	54	68
66 (-)	61	
67	63	
<hr/> 21 items	<hr/> 21 items	<hr/> 19 items

* items borrowed (some with modifications) from McKechnie's Environmental Response Inventory.

** the attitude statements are referred to by their number on the questionnaire.

*** negative sign denotes that the code number for the statement was reversed when scoring with the value scale.

APPENDIX E

APPENDIX EContent Validity of Attitude Statements

I. By Number on the Questionnaire

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
8	Sooner or later, as traffic volumes increase, most two-lane roads should become four-lane roadways.	II	.56
9	Natural resources are for man's benefit.	II	.28
10	I would rather go for a walk than watch television.	III	.43
11	The opportunity for most people in our society to own their own car is an indication that we are more advanced than societies where such widespread car ownership is not possible	I	.60
12	Even if building a dam on a particular site would cause ecological disruption, it should be built anyway if the power is really needed.	II	.61
13	Wilderness areas would serve the public better if they were provided with adequate auto access, commercial facilities and trailer camps.	II	.62
14	Minute rice is bad food.	III	.35

* not the scale with which the question was scored

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
15	It would be fun to have a skidoo in the mountiains.	III	.39
16	A colour television is a lot more desirable than a black and white television.	III*	.38
17	I would like to see more of my tax money spent in support of artists, libraries and musicians, and less spent on building new roads.	I	.55
18	It would be fun to have a vacation in Las Vegas.	III	.60
19	It speaks well for our society that the average household is able to have its own washer, dryer, vacuum cleaner, etc.	I	.61
20	Going to a health spa is one of the best ways to get exercise.	III	.46
21	Our society has progressed a lot in the last century or so.	I*	.64
22	I don't consider any plant to be a weed.	I*	.28
23	British Columbians should try to cut down on the amount of electricity that they use in their homes.	II	.30
24	I think it's quite important that a person keep the lawn around his house cut short.	I	.71
25	Metrecal and other diet foods are good things for the person who wants to lose weight to use.	II	.53
26	Gullies and ravines can sometimes be useful for the disposal of domestic refuse.	II	.55

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
27	Rising average incomes are a good indicator of the well-being of Canadians.	II*	.49
28	Watching television is for me a pleasant passtime.	III	.50
29	A person has the right to do what he wishes with any property that he owns.	II	.53
30	I don't like to see a wig on anyone except a person who is balded by disease.	III	.26
31	Chemical fertilizers improve the quality of food.	II	.36
32	Preservation of wilderness areas is not particularly important where these are not accessible by the public.	II	.68
33	Making rain by artificially stimulating clouds is a beneficial technological advance.	II*	.19
34	Adoption of a guaranteed annual income for all Canadians would be a progressive measure.	I	.39
35	You can't change human nature.	II*	.25
36	Deodorants are unnecessary	I	.39
37	I don't like to eat prepared frozen dinners.	III	.51
38	Given enough time, science will solve most human problems.	II	.46
39	Welfare should be restricted to those who are incapable of working.	I	.51

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
40	Where pests are troublesome, crops should be protected with pesticides.	II	.49
41	Plastic flowers can brighten up a room.	III	.57
42	A community whose population is increasing is probably more progressive than one whose population is constant.	II*	.62
43	Going to the moon is a sign of the greatness of American society.	I	.54
44	Modern communities are plastic and ugly.	II	.42
45	Any mining venture which is economically feasible should be encouraged.	II	.79
46	Some of the synthetic Christmas trees you can buy are as desirable as real trees.	III	.60
47	A person should spend the time and effort to look their best.	I*	.57
48	Pollution of a river in an unpopulated area is not as bad as pollution of a river near a town.	II	.62
49	I would rather camp in a tent than in a trailer.	III	.57
50	The amount of taxes which a proposed development will bring in is an important factor in determining the desirability of the project.	II	.42
51	A beach or a park is of little value if the public can't drive to it.	II	.71
52	I prefer a stick-shift car to one with an automatic transmission.	III	.60

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
53	An electric can opener is a desirable convenience to have in a kitchen.	III	.58
54	It's alright to leave behind tin cans when camping as long as they are buried in the ground.	II	.37
55	Extension of welfare benefits could be disastrous for Canada.	I	.60
56	For the average city-dweller, a power lawn mower is a big improvement over a hand mower	I	.52
57	I would rather go to live theatre than to a night club.	III	.49
58	If a better "mousetrap" can be built, then it should be built.	I	.63
59	It's nice to have a new car every year or so.	III	.61
60	Most women should shave their legs.	I	.46
61	Wherever possible swamps should be drained to make them useful for construction.	II	.80
62	I would rather have a canoe than a motor boat.	III	.59
63	The best use for a piece of land can be determined by economic studies.	II	.64
64	Jet air travel is one of the great advances of our society.	I	.62
65	We are fortunate to have more material goods than our parents had.	I	.54

<u>Question #</u>	<u>Question</u>	<u>Scale with which it correlates best</u>	<u>Correlation coefficient</u>
66	Welfare benefits should be given to all those in need, whether they are willing to work or not.	I	.56
67	You can't stop progress	I	.61
68	A woman isn't properly dressed without her make-up on.	III	.59

II. By Scale*

SCALE I		SCALE II		SCALE III	
<u>Ques. #</u>	<u>Correlation coefficient</u>	<u>Ques. #</u>	<u>Correlation coefficient</u>	<u>Ques. #</u>	<u>Correlation coefficient</u>
24	.71	61	.80	61	.63
45	.68	45	.79	59	.61
61	.68	51	.71	45	.60
21	.64	32	.68	52	.60
58	.63	63	.64	18	.60
64	.62	42	.62	46	.60
19	.61	48	.62	62	.59
67	.61	13	.62	68	.59
63	.61	12	.61	53	.58
55	.60	24	.59	49	.57
11	.60	8	.56	41	.57
42	.57	19	.56	21	.55
47	.57	26	.55	24	.54
66	.56	43	.54	63	.53
8	.55	29	.53	58	.51
17	.55	25	.53	43	.51
13	.54	58	.52	37	.51
43	.54	53	.51	28	.50
68	.54	68	.51	17	.50
65	.54	49	.50	57	.49
56	.52	23	.50	8	.48
52	.51	51	.50	42	.48

* If a question did not correlate to a scale at the .05 significance level (.16) it was not listed with that scale.

<u>Ques. #</u>	<u>Correlation coefficient</u>	<u>Ques. #</u>	<u>Correlation coefficient</u>	<u>Ques. #</u>	<u>Correlation coefficient</u>
39	.51	21	.49	47	.48
51	.50	27	.49	19	.47
59	.49	40	.49	48	.47
12	.46	17	.48	51	.47
53	.46	56	.48	20	.46
60	.46	11	.47	65	.46
32	.45	59	.47	23	.46
48	.45	64	.47	13	.45
62	.44	67	.47	56	.45
18	.44	38	.46	25	.43
27	.44	62	.44	12	.42
25	.43	63	.44	11	.41
41	.43	55	.43	67	.41
38	.42	44	.42	32	.39
26	.42	47	.42	44	.39
20	.41	50	.42	64	.39
23	.41	20	.42	60	.38
40	.41	41	.41	27	.35
44	.41	46	.40	40	.35
49	.41	18	.39	36	.34
46	.40	37	.38	38	.34
29	.39	54	.37	26	.33
34	.39	31	.36	29	.33
36	.38	28	.35	31	.33
16	.35	39	.33	55	.31
37	.35	60	.32	50	.28
28	.29	36	.31	66	.27
57	.29	57	.30	30	.26
31	.23	10	.28	39	.26
35	.21	66	.28	34	.25
54	.21	22	.27	22	.21
15	.20	35	.25	35	.16
14	.19	14	.22		
9	.18	15	.22		
10	.18	34	.22		
		16	.19		
		33	.19		

APPENDIX F

APPENDIX FAttitude Statements^{*} Deleted

<u>From Scale I</u>	<u>From Scale II</u>	<u>From Scale III</u>
16	9	10
33	22	14
34	31	15
35	44	30
36	50	
	54	

^{*}listed by number on the questionnaire