ORGANIZATION OF HIGHER EDUCATION FOR IMPROVED ACCESS-EQUITY AND SPATIAL JUSTICE IN PRIMARY RESOURCE REGIONS: THE CASE OF NORTHERN ONTARIO, CANADA

Dissertation for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY
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1979

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ABSTRACT

ORGANIZATION OF HIGHER EDUCATION FOR IMPROVED
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by

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The study represents culmination, in structured format, of a longstanding concern with a problem whose content is higher education and whose dimensions are geographic--more specifically, spatial. Socially, extension of higher education has long been the subject of much academic attention, and has occurred largely within the metropolitan heartland. Spatially, extension of higher education introduces the context of what are herein termed Primary Resource Regions. These occur universally. The case of Northern Ontario, Canada, is here examined specifically.

Recent literature reports occurrence of access-inequity and spatial injustice as problems central to such regions. This study is intended to add to examination of these problems as they apply to higher education for the Primary Resource Region of Ontario. Its significance is viewed as its being (1) an addition to a relatively recent attempt to fill a void in academic inquiry, and (2) a contribution to such addition from a perspective called for in the literature--an internal perspective which, though subjective, is essential in having its sensitivity added to assessment of regional need. Moreoever, just as Primary Resource Regions are universal in occurrence, parts of solutions to their higher education problems may well have universal applicability.

Various institutional and government-commissioned studies emerge from experience with the above spatially-related problems. In methodological literature, a model/systems approach to planning for solution to such problems is advocated.

Regional higher education experience has encompassed problems resulting in a present largely dysfunctional or 'non'system of higher education in Northern Ontario. Yet, an effective higher education system is both a component of and an instrument toward effective regional development. Effective regional development has undergone transition from 'economic-quantitative' to 'people-qualitative' orientation.

Assuming acceptance of these realities, study content is directed from (1) merging the geographic and higher education conditions underlying the problem(s) as applied to the study region, to (2) viewing the problem-dimensions for the study region, to (3) placing higher education into the regional development context, to (4) placing potentials for improved organization within a regionally relevant framework, to (5) offering a model (with underlying constructs) whose application may be useful as the spatial component of a solution aimed at improving higher education organization for the region.

Should the model be worthy of consideration for adaptation and application, such application must be nurtured by long-term commitment and support. This must come from government and the established university system, as well as from the public at large, and be directed to the idea of a system aimed at access-equity and spatial justice.

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James Kenneth McLarty

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Administration and Higher Education

1979

DEDICATED WITH GRATITUDE

To my parents, Alex and Etta McLarty (Posthumously) for

the gifts of

Life, Potentials, and Love for Learning and for Humanity

. . .

To my Brothers and Sister

Jean, Grant, Keith

for giving

Constant Loving Encouragement

. . .

To My Dear Wife

RHONA

And Our Precious Children,

JOANNE, CAROLYN AND BLAIR

for

Sustaining Love and Support

. . .

and

To Chosen Family, Friends, Advisors, Teachers and Colleagues;

for Caring.

ACKNOWLEDGMENTS

Any attempt to include all those deserving specific mention invites exclusion. Some have assisted, encouraged, and criticized constructively from the initial stages. As advisors, these have earned my lasting respect and gratitude. They are:

> Dr. Walter F. Johnson, who is widely known as a caring teacher, motivating advisor, and thorough scholar. He, along with his gracious wife, Mary Jane, have become to many, warm and valued friends. I have become thankful for the opportunity to be included in that group over the past three years.
>
> Dr. Richard L. Featherstone, who possesses the gift of cultivating respect and admiration among all those he encounters. He is a care and compassionate man and a friend.
>
> Dr. Howard Hickey who is a spontaneous, sensitive and dedicated teacher and scholar. His keen insight into the real meaning of 'community' has opened new perspectives.
>
> Dr. Gary Manson who has performed the rather difficult role of 'outside' advisor with continuing concern and constant availability. His help has been appreciated sincerely.

Dr. Vandel C. Johnson, Departmental Chairman, and members of the Department of Administration and Higher Education faculty and staff, have provided a friendly and supportive environment within my 1978-79 year. They have made the year a stimulating, demanding and rewarding one.

My graduate colleagues, whose friendship has been important to me, are numerous. With apologies to the others, I ask that Carol Hopper, Al Smith, Ralph Weeks, George Wallman and Don Moore may represent them.

I am indebted to Algoma University College, Sault Ste. Marie, Ontario, Canada, for making possible the sabbatical leave during which the study completion has been achieved.

I trust I will be able to compensate for the unselfish sacrifices of my family during this time.

> The laziest, the stupidest, the wildest student takes away with him from college, often unconsciously, noble, sweet and brilliant ideas and phrases . . . Truly, the young man fresh from college, who has not permitted his body to become a slave to his mind, is among the happiest of mortals.
>
> I. Allen Jack, "The Academy and the Grove in Canada", (1878).

Much has been recorded about the concern for those denied the right to be among the happiest of mortals' for reasons of SOCIAL separation. The present study is undertaken in the interests of those who face equally unjust deprivation for reasons of SPATIAL separation.

PREAMBLE

It should be understood clearly at the outset that successful organization of higher education for optimum delivery and program for the Primary Resource Region, as dealt with herein, does not have the prerequisite of

(1) obliging additional qualified candidates to remain for postsecondary study in the region

or

(2) persuading experienced, highly qualified, and recognized faculty to leave the chosen metropolitan campus to serve in regional institutions.

Rather, the goal would be achieved in a situation marked by equity of access to opportunity for those who wish to study and remain/become resident within the Primary Resource Region, instructed by those who choose to reside and profess within that region.

It should be noted, in addition, that the topic addressed, with all its dimensions, is too broad for treatment within the scope of a doctoral dissertation. The intent has been to identify a variety of related research areas which should be deserving of more detailed examination by educational and geographic researchers.

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CHAPTER I

INTRODUCTION

1. The Problem

In the following study, the problem addressed is a complex social problem which has developed on a relatively simple physical base--one of separation.

Nations and states are made up of differing natural (physical) environments: grassland, forest, desert, tundra, uplands, highlands. In the course of development, certain regions are favored because of positive combinations of conditions. These become the most highly developed among regions, and the physical separation between them and areas less favorable for settlement takes on philosophical dimensions: adaptation to less hospitable environment and less-ready access to many social services (including higher education) lead to unique regional characteristics. The specific problem of inequity in access to services for people in these Primary Resource Regions (see p. 8) has been presented in another way by Knox (1975).

> . . . since we do not expect to discriminate against people on the basis of race, religion, colour, or social class, neither should we discriminate against people on the basis of area of residence. Territorial discrimination may be less individualistic in its manifestations, and have less immediate effects than, for example, racial discrimination, but it should be equally important to a society which claims to be egalitarian, as most Western societies do. (p. 3)

As the contrast in character between metropolitan and Primary

Resource Regions has become intensified, the social problem of separation has become increasingly complex. The base of physical separation still exists in terms of distance or space. It is logical, therefore, that any workable solution to the problem must, of necessity, incorporate a spatial dimension (Coates, Johnston and Knox, 1977).

The problem is a universal one (Rogers, 1972). All states possess Primary Resource Regions, and the search for solution to the problem also becomes a universal one.

2. Scope and Organization of the Study

The study is viewed as a vehicle by which the problem may be examined as it exists in the Province of Ontario, Canada. Development has resulted in creation of a Primary Resource Region in the northern part of the province (Figure 1). There is a marked contrast in the pattern of higher education delivery in the northern and southern parts of the province (Figures 2 and 3).

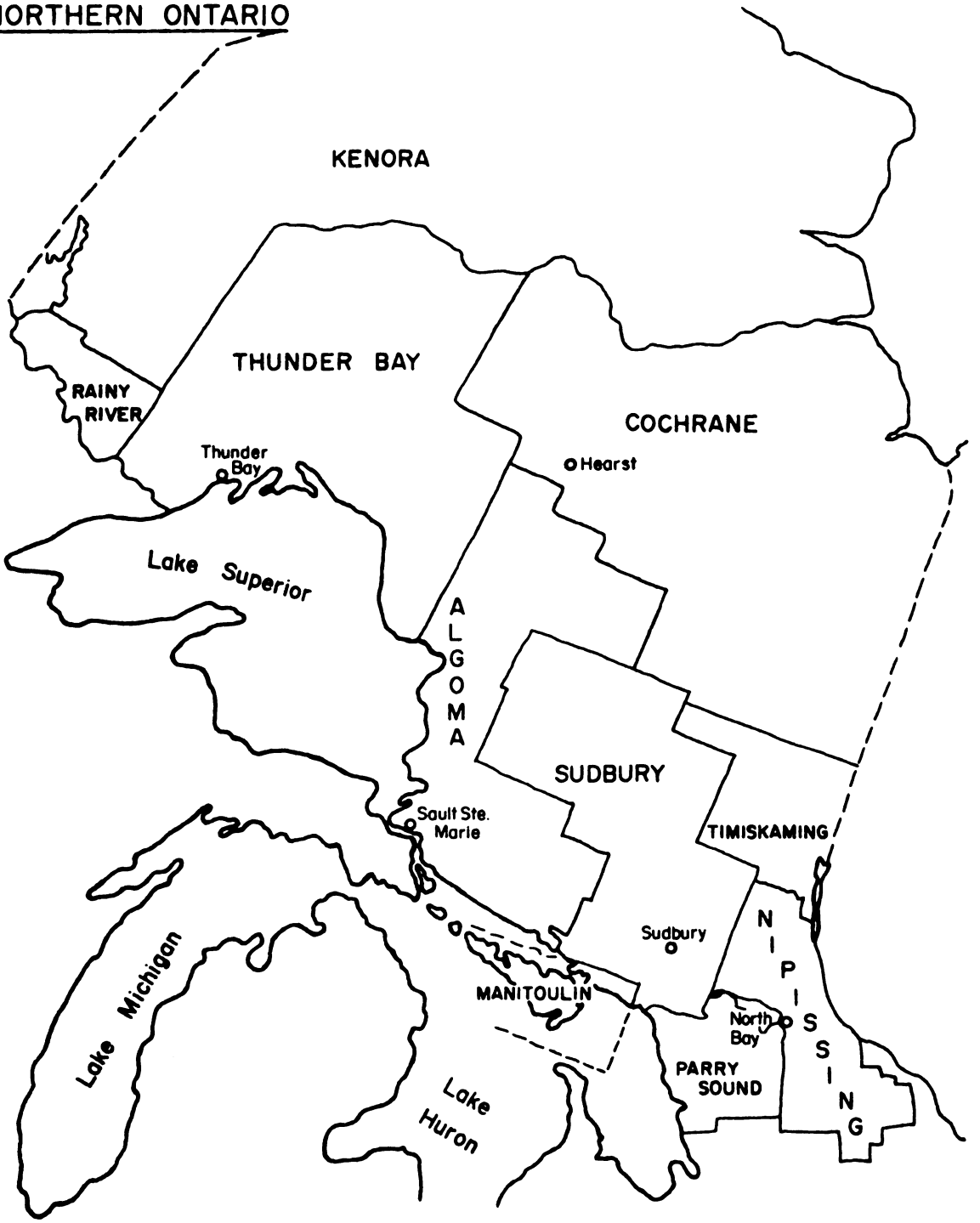
The problem, as it applies to higher education, is based upon the same separation as above, differential development, as above, and growth and expansion in recent decades (Trow, 1973; Ontario Council on University Affairs White Paper, 1978; Figure 4). An analysis of background to the problem--physical, human and higher education background--is, therefore, an essential early component in the study. Also surveyed are problems in the specific areas of form, function, and perception as they have been a part of regional higher education. These have resulted in the present existence of a virtual 'non' system for the north.

Higher education is a component of regional development, and also


Figure 1
Hudson Bay
MANITOBA
James Bay
QUEBEC
ONTARIO
Lake Superior
Lake Michigan
Lake Huron
Lake Ontario
Lake Erie
Approximate Southern Margin of Canadian Shield.
Outline for Northern Ontario.
Base Map from Ontario (TEIGA) 1976 (a)
STUDY AREA
GENERAL SETTING

HIGHER EDUCATION DELIVERY SOURCES:
NORTHERN ONTARIO

Figure 2

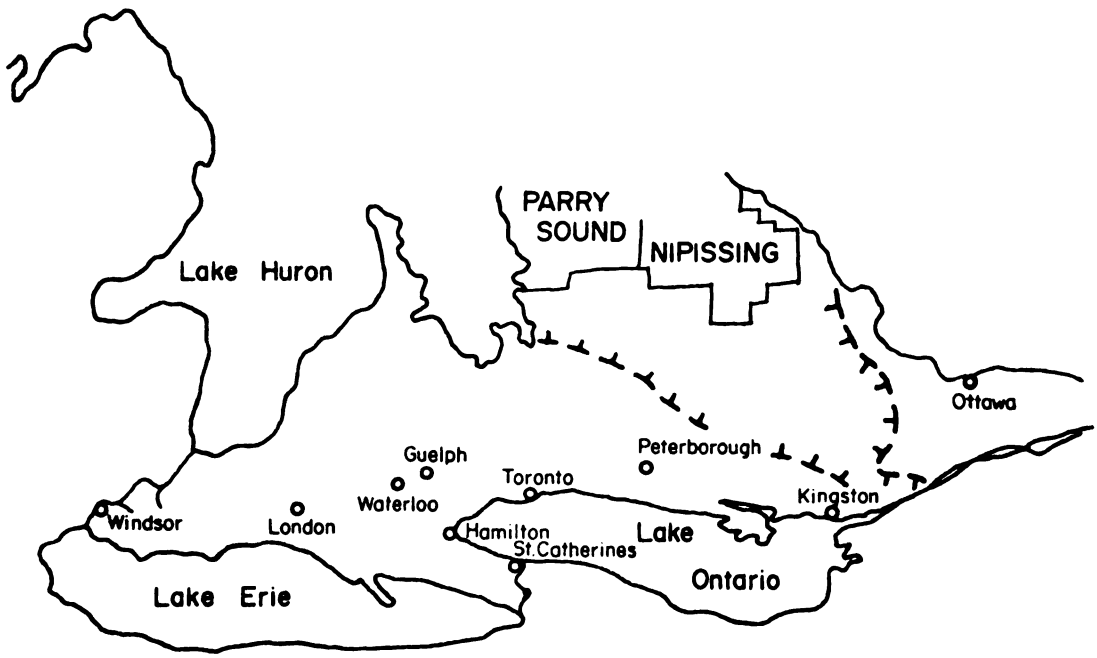


Thunder Bay - Lakehead University
Sudbury - Laurentian University
(Laurentian 'system' includes Collège de Hearst, Algoma University College - Sault Ste. Marie, and Nipissing University College - North Bay.)

Base Map adapted from Ontario (TEIGA) 1976 (a)

Figure 3

HIGHER EDUCATION DELIVERY SOURCES: SOUTHERN ONTARIO

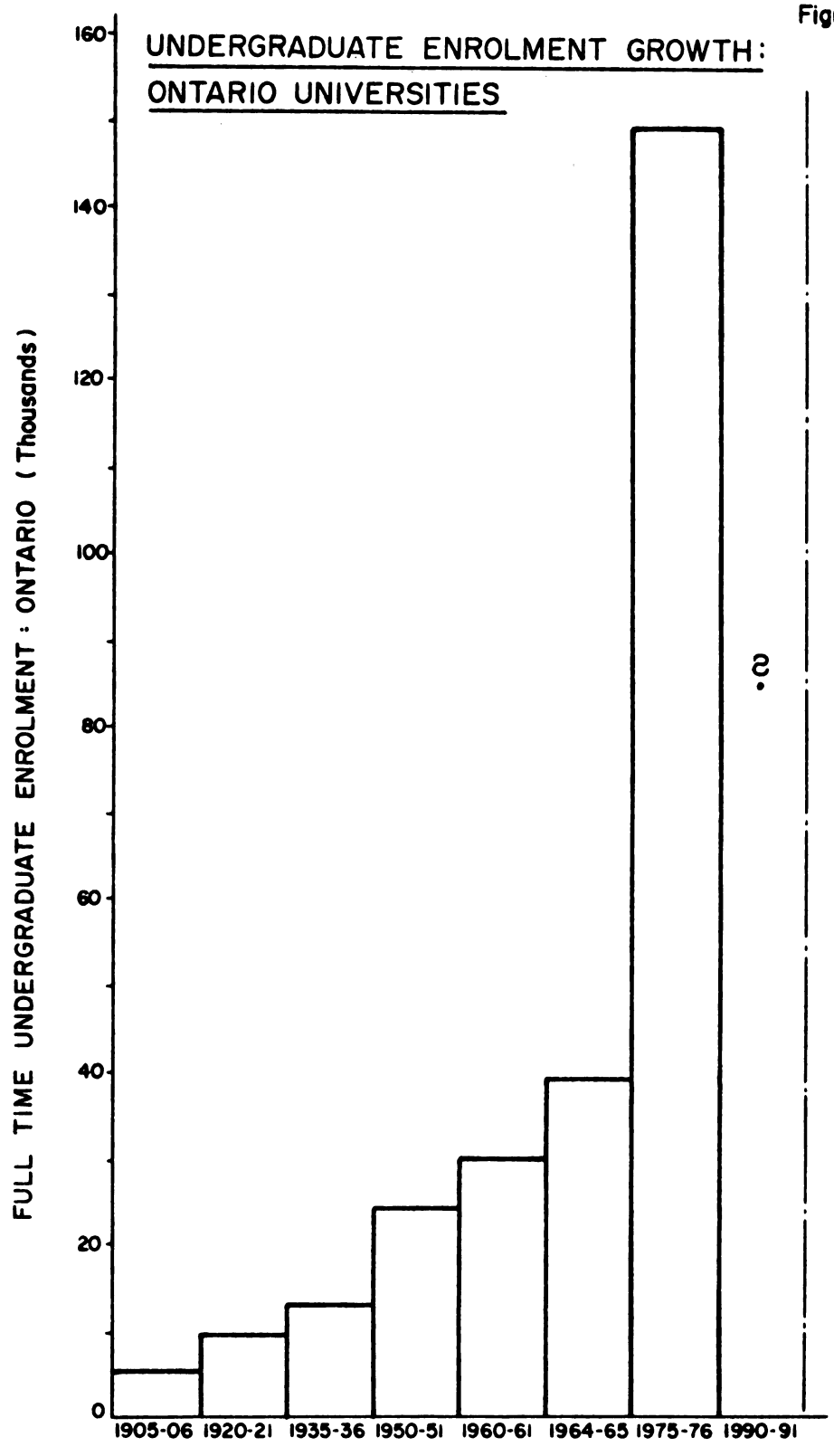


Guelph - University of Guelph
Hamilton - Mc Master University
Kingston - Queen's University
London - University of Western Ontario
Ottawa - University of Ottawa, Carleton University
Peterborough - Trent University
St. Catherines - Brock University
Toronto - University of Toronto, York University
Kitchener - Waterloo - University of Waterloo, Wilfred Laurier University
Windsor - University of Windsor

⊥⊥⊥ *Approximate margin - Canadian Shield*

Base Map adapted from Ontario (TEIGA) 1976 (c)

Figure 4



Information adapted from Harris (1966) and Ontario U.S.I.S. (1976)

an instrument by which regional development can be encouraged and directed. The importance of higher education to regional development, in traditional and contemporary contexts, becomes a major segment of the study. This leads naturally to structuring of a framework within which potentials for improved higher education organizations are arranged and viewed.

A sequence of constructs with spatial significance for the problem as it exists within the study area leads to proposal of a model with potential for improvement through its application.

Summary statement and implications for further research comprise the last section of the study.

3. Aim of the Study

The study is focused first on an analysis of origins of the problem in the study area. Secondly, it is intended that the research should center attention on that dimension of the problem which is only beginning to receive its due share of interest--the spatial dimension.

Overall, the study is aimed at developing and proposing a model whose application might lead to improvement in equity of access to higher education opportunity for Northern Ontario. This would be a significant step toward greater spatial justice for the region in terms of social services in general.

Finally, the research, by concentrating upon organization for improvement, is aimed at proposing the kinds of suggestions generalizable to other Primary Resource Regions.

4. Research Interest

Interest in undertaking research on this specific theme developed from a lifetime of residence in the selected Primary Resource Region, and from a professional (Geographer's) concern for regional well-being relative to higher education among other social opportunities. Beyond this, the concern extends to better operation of the larger higher education system, and through this, to a better process of regional development, with higher education instrumental in that process.

Combined with this motivation has been a long-standing feeling, recently legitimated by the literature (Bucksar, 1969; Harvey, 1972), that the insights of indigenous people, though subjective, possess a sensitivity to regional reality and need which make them a necessary input into this kind of research.

5. Definition of Terms

PRIMARY RESOURCE REGION (ECONOMIC COLONY)

This term describes a region identified mainly on the basis of a resource (mineral, timber) or combination of resources, removed from the region with no (or little) value added by processing. Return benefits are largely related to maximizing resource removal. The destination of resources may be a metropolitan region within the same country, or in another country. In the Ontario context, Northern Ontario is the Primary Resource Region. In the North American context, Ontario might be considered the Primary Resource Region.

In this study, the main resource consideration is the human resource: the tendency has been for people from the

Primary Resource Region to migrate to metropolitan centers.

PRIMARY SETTLEMENT FRONTIER

Frontier areas in this category have been described by Prescott (1965) as 'historical features'. Each is usually characterized by a potential for development of a variety of economic activities. Resource combinations are generally favourable, hence settlement can advance uniformly along a front. Population densities will generally be found to be moderate to heavy, and development can be relatively uniform.

SECONDARY SETTLEMENT FRONTIER

When an inhospitable frontier area is encountered, (desert, rainforest), the advance of settlement will be focused upon a single resource (such as minerals) or made possible by technological development (irrigation). The potential variety of economic activities is limited, settlement advance will frequently be along lines, to become clustered at points, and overall densities will generally be light.

RESOURCE TREATMENT (PROCESSING)

Basic: Physical resources undergo initial stages of processing (refining) to make shipping more economical. In an educational sense, elementary education is provided.

Secondary: Physical resources undergo processing to a semi-finished stage. In an educational sense, secondary academic and vocational education is provided.

Tertiary: Physical resources are made ready for the

consumer market. In an educational sense, migration to the metropolitan region has been and remains largely necessary.

VERTICAL (SOCIAL) DIMENSION OF SEPARATION

In this study, separation from access to opportunity by reason of sex, color, economic circumstances, family background and such criteria, is termed the social or vertical dimension. Such separation or deprivation may occur within the metropolitan area, and may increase with distance away from that area.

HORIZONTAL (SPATIAL) DIMENSION OF SEPARATION

Separation from access to opportunity is by reason of increasing distance from the metropolitan center. Linear distance may be increased by such conditions as topographic constraints, climatic constraints, and land-water relationships.

TERRITORIAL DISCRIMINATION (SPATIAL INJUSTICE)

This is the kind of discrimination that Knox, (1975) and of injustice that Harvey, (1972) see practised against people on the basis of where they reside. In this study, such discrimination (injustice) takes the form of low-order service-provision and general lack of access to various opportunities. It is usually accounted for by high provision-costs related to distance, low density population, and highly scattered population distribution.

ACCESS INEQUITY

Whereas equality per se may be impossible, the right of

access to opportunity for self-fulfillment should be available in all regions. The need to migrate from the Primary Resource Region for many such opportunities perpetuates access inequity.

AFFILIATION

Traditionally, in the academic context, an emergent institution enters into an affiliation agreement with a mature, established institution. This senior partner arrangement allows for assistance in becoming established and provides for protection of academic standards.

PHYSICAL/PHILOSOPHICAL SEPARATION

Where settlement has been extended into a different kind of physical (natural) environment, (woodland to plains), different response to environment and resources usually leads to different values, attitudes, practices and outlooks.

SOCIAL WELL-BEING

Smith (1973) uses this term in place of social welfare to emphasize the fact that groups (rather than individuals) identified by place of residence are the center of attention. This is a particularly useful term when dealing with the problems of the Primary Resource Region. It means that emphasis is, as Smith suggests, on geographic distinction rather than on distinction in terms of government policies.

REGIONAL DEVELOPMENT

Economic-Quantative Orientation: The traditional emphasis in regional development for the Primary Resource Region has been one of realizing maximum economic return with maximum resource

extraction from the Primary Resource Region.

People-Qualitative Orientation: The more contemporary emphasis in regional development for the Primary Resource Region is one of balancing management of resources with extraction, and providing increased facilities and programmes for social well-being opportunity within the region.

PRESCRIPTIVE PLANNING

Trow (1973) suggests that prescriptive planning has been the common approach, in advanced societies, toward higher education planning. It has included emphasis on estimates and projections; economics and resources available; and detailed design for future facilities, content and methods of instruction.

SYSTEMS PLANNING

Trow, again, portrays systems planning as requiring placement of emphasis on diversity and flexibility. These are necessary in responding to change, brought about by what Trow calls secular trends and unforeseen developments, based largely upon values and attitudes.

INTERACTIVE CONSORTIUM

The organization within this construct allows for any number and combination of mutually beneficial agreements and cooperative programmes between institutions of the Primary Resource Region and of the metropolitan region. The operation is termed interactive on the assumption that input of values can originate in either region for transfer to the other. In

the model, the consortium is the total of all cooperative efforts, monitored for effectiveness and as a basis for planning and coordinating spatial distribution of higher education service. The representative body responsible for functions would be the Consortium Council as discussed in Chapter VII.

UNDERLYING CONSTRUCTS

This sequence of diagrams and explanatory text in Chapter VII is used to illustrate the most important features of preceding discussion placed into combined spatial and functional frameworks. Each, then, becomes an input to understanding and appreciating the model and its potential application.

STUDENT MOMENTUM

The prestige of major metropolitan universities, combined with the residual loyalty and sentiment toward them as previously developed within the Primary Resource Region (prior to the introduction of higher education facilities) accounts for resistance to the acceptance of new 'in situ' facilities. Unless new facilities are well-distributed, this momentum will make a 350 mile or more trip to university of little more consequence than a trip of 150 miles, plus or minus.

6. Methodology

The research adheres largely to those elements of scientific inquiry summarized by Sarre (1972). Much of the content is based upon OBSERVATION 'of the phenomena which are of interest'. This includes observation through direct life-experience, professional involvement, formal studies, and exposure to literature.

The second stage is represented by DESCRIPTION of information gathered. Description and analysis are presented 'verbally, graphically and mathematically', as well as by the three in combination.

In the third stage, the researcher, utilizing 'abstraction and generalization' HYPOTHESIZES 'that what he has described are variants of a situation which is generally true'. Because the main interest is in the pattern of organization (for improvement), and the researcher is (as a Geographer) 'more interested in spatial patterns than are other social scientists', the culmination of the study occurs in advancement of an 'ideal type model'.

The fourth stage, 'DEDUCTION from the theory about what will exist or happen in another place with its own circumstances' awaits the tests of time and acceptance, to measure for verification of the theoretical model in application--in the study area, and generalized to other Primary Resource Regions.

Similarly, stage five, 'OBSERVATION . . . to test the predictions made in the previous stage' awaits the same tests as in stage four.

Background to the systems approach and the model component of methodology are dealt with in the text and in Appendix C.

CHAPTER II

BACKGROUND OF THE PROBLEM

A. GEOGRAPHIC BACKGROUND

It is difficult, but necessary, to separate the physical and human geographic background components of the present problem. This problem is only one of many deriving from the inhospitable character of the Canadian Shield environment. In the broader sense, Watson (1968), suggests that

> Canada is size and ruggedness, northness and marginality; it is also competition, conflict, tolerance and accommodation; the physical environment is one of challenge, if not frustration, to which the human response has been one of unremitting effort, courage and ingenuity. (p. 42)

Specific to the Canadian Shield, Wolfe (1968), comments

> . . . the Canadian Shield long resisted economic exploitation, beyond the rather primitive form of gathering wood and furs. It was and remains a barrier to stable settlement and to communication. (p. 192)

1. Physical Geographic Background

A series of mountain-building processes through Cambrian and pre-Cambrian times created the mountain systems whose remnants are collectively referred to as the Canadian Shield. This physical phenomenon accounts physiographically for more than half of Canada's surface area. Exposed outliers occur in the United States west of Lake Superior, and also as the Adirondacks, whose link is via the Frontenac Axis, (Thousand Island area), east of Lake Ontario.

Watson's negative impression of size, location and physiography is strongly enhanced by the presence of the far-reaching Canadian Shield. The Shield possesses barrenness as a heritage of its northern location and its having been subjected to the impact of the successive ice ages. These left their negative net effect from the processes of scouring, removal and compression.

Physically, the surface of the Shield possesses characteristics directly related to these glacial-linked processes. The landscape is generally lake-strewn and grained in a north-south orientation, with major rivers draining the watershed into the Arctic-Hudson Bay and Great Lakes-St. Lawrence catchment basins. With the exception of post-glacial lake bed areas, soils are largely thin, stony, and acidic. Vegetative enrichment of soils is limited with the dominance of coniferous species. Regional drainage is largely irregular, with low lying areas of marsh and bog presently experiencing infilling and vegetative masking.

Geologically, the rock formations of the Shield have been endowed with a variety of economic minerals in various combinations and concentrations. Most significant have been copper, iron ore, gold and silver, nickel, lead and zinc, and uranium. Vegetatively, the Shield area supports the northern limits of the Great Lakes-St. Lawrence mixed deciduous-coniferous forest, as it blends northward into the dominantly coniferous Boreal Forest unit. The hydrology of the area, while irregular, is characterized by numerous occurrences of rapids and waterfalls.

As the keystone province of Canada, Ontario stands as representative (physically and historically), of the formidable dichotomy between Shield and non-Shield land area. The southern part of the province is

overlain by the deeper Paleozoic sediments, derived from the north through glacial transport and consolidated into some of Canada's most productive soil areas. The area north of a line taken from the Thousand Islands westerly to the eastern extremity of Georgian Bay is characterized largely by exposed scoured bedrock, disorganized drainage, shallow stony soils, distinctly grained landscape, dominantly coniferous vegetation, and limiting climatic constraints. This is Ontario's portion of the Canadian Shield.

The inhospitable side of this area's physical character has been portrayed by some of Canada's better known poets and artists. F. R. Scott (1967) refers to the Shield with the suggestion that

> It leans away from the world with songs
> in its lakes
> Older than love, and lost in the miles. (p. 91)

E. J. Pratt (1967), in greater detail, captures the immensity and awe:

> On the North Shore a reptile lay asleep-
> A hybrid that the myths might have conceived,
> . . .
> She lay snug in the folds of a huge boa
> Whose tail had covered Labrador and swished
> Atlantic tides, whose body coiled itself
> Around the Hudson Bay, then curled up north
> Through Manitoba and Saskatchewan
> To Great Slave Lake. In continental reach
> The neck went past the Great Bear Lake until
> Its head was hidden in the Arctic Seas. (p. 61)

Even the literary personification of the physical reality is negative: reptilian. Watson's "human response . . . of unremitting effort, courage, and ingenuity" captures the human background to date and sets the stage for consideration of the present problem.

2. Human Geographic Background

The central problem-theme of the present study is a link in a chain of human-response concerns founded on the negative power of the Shield characterized in the last section--the power to separate.

The main pre-agricultural interest in North America's land area, as projected by the European founding countries, was focused upon a singular resource--furs. For this resource, the conditions present in the Shield area were optimum, and human conflict and compromise found early New World roots. Ironically, the impact was profound. Clark and Innis (1968) capture the irony in the suggestion that

> It was to the misfortune of a country for which the fur trade has been relatively unimportant economically for more than a century that these (Canadian-U.S.) boundaries were fixed, for almost all their length, by the heavy hand of that trade, the logic of its changing geographies of transport, supply and rivalry, and an unconcern or negative feeling about settlement and other kinds of resource exploitation. (p. 36)

The main impetus to frontier and settlement in North America was not, however, to be furs, but rather agriculture. And it is in this respect that the Shield exercised its lasting separating function. Canadian westward expansion in terms of agricultural settlement followed the Great Lakes-St. Lawrence Lowland, remaining south of the barrier presented by the Shield front. The uniform primary settlement frontier of the agrarian advance could not extend its uniform pattern onto the inhospitable Shield surface in being projected toward the Prairies of the west. That step had to be taken through the United States midwest. Nelles (1974) notes that

> In Canada the interaction between political values and geographic environment did not permit one conception

> of landuse to dominate the entire framework of resource alienation. The liberal, philosophical foundations for agrarianism were weaker, and the rocky margin of the Shield clearly limited the very conditions of its existence, namely prime arable land. (p. 44)

The fundamental philosophical contrast imposed by the inhospitable Shield upon land alienation practice in Canada and the United States set the pattern for development and settlement which has held to the present. Whereas the progressive agrarian expansion in the United States was accompanied by belief in transfer of land from public to private ownership, the barrier of the Shield encouraged, in Canada, retention of land rights by the Crown. As a result, the resources of land, minerals, sawtimber and pulpwood, waterpower, and later, recreational and aesthetic resources and areas, awaited development essentially on the basis of license or leasehold from the Crown and external domestic and foreign capital.

Such development became characterized by the point and line pattern unique to the secondary settlement frontier. Settlement occurred and remains primarily focused upon mineral occurrences, at the juncture of river and lakeshore, on pockets of productive soils, at industrial sites, and along linear routes linking combinations of these. In the larger sense, the 'national dream' of a transcontinental rail line to enhance the political ideal of a single country from Atlantic to Pacific faced one of its most formidable challenges in crossing the Shield counter to its north-south 'grain'.

Area organization in Ontario's northern Shield region is, therefore, significantly different from that in the southern antecedent agrarian-industrial region. North of the line approximating the southern front of the Shield, (Figures 2, 3), territory is divided into

Administrative Districts rather than Counties as in the south. The land in these districts is largely unorganized for municipal purposes, and such area is administered by the Ministry of Natural Resources. Most of the population, on the other hand, is clustered in small areas which are organized for municipal purposes, and possess local government facilities. One result of this dichotomy is the frequently voiced emphasis on extremely low population density within the administrative districts. The view taken in this study is that density for the districts should more realistically derive from an 'organized area' rather than 'total area' base (Appendix E).

It is within the context of this background of area separation--sometimes inadequately referred to as metropolitan/non-metropolitan dichotomy--that delivery of all public services, including higher education, has faced its problems. It is within this context that the present study incorporates an examination of higher education access-inequity for the Primary Resource Region as found in the northern part of the Provice of Ontario.

B. RELEVANT HISTORICAL HIGHER EDUCATION BACKGROUND

One might be tempted, in the present context, to trace facets of the character of a university and its function back to antiquity. Instead, the decision has been taken here to examine some of the significant changes which have occurred in the telescoped time-frame since the latter part of the nineteenth century. This period encompasses the evolution of Ontario's university system per se. The changes are related, wherever possible, to what are taken as the most significant macro and micro level forces within an expanding environment whose

increasing complexity has created reaction problems for the university and its people.

While the forces involved are numerous, their significance will be seen here in association rather than in enumeration. A time scale for higher education has been structured, on the basis of these forces, with a view to generating a specific focus upon one central problem hypothesis--spatial inequity in access to opportunity.

It should be helpful first to place the broader spatial conditions and forces into a framework into which the more specific and interactive processes have had their fit.

Entering into the latter portion of the nineteenth century, national populations were predominantly rural-based. Since that time, the profound process of urbanization has been accompanied and intensified by specialization, division of labour, and increasing complexity, mobility, and attitudinal shifts in environment, perspective, and perception. The more spontaneous forces responsible for intensifying the impact of the larger process have frequently skewed higher education from its gradual response to the urbanizing trend. World Wars I and II, along with regionally-focused lesser conflicts, created expanding international awareness of relative conditions and values. As time and space contraction increased the ability of media to make populations more acutely aware of their status as global citizens, and perhaps of the need for greater moral responsibility, a growing global conscience developed.

Interwar phases of 'boom and bust' added to the complexity created by war-related phenomena--massive production, high levels of employment, and victory-related optimism, (or defeat-related recovery assistance).

Higher education became subject to reacting to more 'instant' type demands than ever before: provision of places for massive numbers of returnees who would be assisted in access to higher education opportunity, and a broadening of curriculum whose relevance could cope with accelerating social and technological change.

The elasticity of the university came to be tested increasingly with time. It would become less possible to maintain a profile of shaping thought for an expanding and changing new world, the majority of whose inhabitants would never enjoy its environment. At the same time, the university was entering into relationships which would eventually generate questions and, in many instances, problems recognized and articulated from within and without. Resident of the increasingly important urbanizing areas of most jurisdictions, it naturally became increasingly separated physically and philosophically from the bulk of population in the agricultural and non-agricultural settlement frontier areas.

As ties between regions grew more tenuous, ties within regions intensified in nature and complexity. Kerr (1972) refers to

> developments (which) have effected such enormous changes in the intellectual orientation and aspiration of the contemprary university as to have made the university we knew as students now seem a strangely underdeveloped, indeed a very simple and an almost unconcerned kind of institution. (p. 7)

The tensions of a cold war which could account for the world-wide state of unprecedented anxiety set the stage for the late 1950s when Sputnik demonstrated a competitive edge. Higher education in the free world faced new dimensions of challenge. The complexity of solutions with which response to such challenge would become associated would

demand new response patterns: ushering a generation through the leap to the cybernetic revolution; creating consciousness, within nations, of social injustices existing domestically as well as internationally; creating an ethic which could challenge the mounting problems derived from overemphasis on anthropocentrism, centralization, and integration of economic activities.

The ethic of environmentalism would enjoy a meteoric rise in the 1960s, and would meet its formidable challenge from employment lobbying in the inflationary 1970s. And, along with this reversal, universities would find themselves facing, as never before, the need to justify their academic existence by economic standards.

The institutional response has not been impressive system-wide. Government, with a necessary higher profile in higher education because of spiralling costs, has seen fit to fragment the principles and mechanisms by which higher education is justified, financed, and delivered. New names have appeared with greater and lesser relevance to the realm of higher education per se: lifelong education, vocational education, continuing education, adult education, . . . The labels themselves are ambiguous enough, and defy interpretation adequately, to accommodate new departures in process and program. (An immediate problem is defined as unemployment, and education to render people 'employable' is an immediate response.)

By and large, the university has been growing in response to societal and corporate 'needs' along a variety of lines, but has been becoming 'vertically' and 'horizontally' more removed from access for the 'new' populations it should be serving. As mentioned previously, such populations may appear spontaneously as happened after World War II.

On the other hand, there are populations whose need for access has eluded attention, or has had attention focused upon it gradually to the response point. In the latter case, political and academic institutions have responded in recent years to mounting demands for greater access to opportunity in higher education across the socio-economic spectrum. This is the kind of access defined herein as vertical, and has been the subject of much attention.

The present study is primarily concerned with the separation of the university in its present form, as the metropolitan multiversity, from populations in the non-metropolitan regions of most jurisdictions. This 'horizontal' separation has resulted in the condition referred to as 'territorial discrimination' expressed through access-inequity and spatial injustice. It is the existence of this discrimination which lies at the root of this study.

New forces and processes have appeared in recent years, and gained necessary support, to the extent that they appear to possess potential for advancing attempts to correct territorial discrimination from the 'lip-service' stage to the 'action' stage. The need for consultation regarding the best means of rationalizing higher education has been reflected in a number of recent studies (Appendix A). The encouragement of regional (state) colleges and universities apart from metropolitan areas has, in turn, been encouraging. The rise in demand for humanism may place in question certain realities associated with the metropolitan multiversity, as will be considered. The demand for egalitarianism, brought into proper focus and adapted to the spatial problem, will enhance remedial actions. The appearance of new technologies at economic levels of availability will probably leave the academic community

dragging its feet. And recognition by society that developed countries have stepped from the industrial to the post-industrial era may swing educators from reliance upon crisis-response, band-aid adjustments in higher education, to more effective and stable 'goal-specific' adjustments.

In summary, the assumption taken here is that metropolitanism, with all its attendant phenomena, has forced the university to conform in similar fashion to the urban center: to accept growth as good; to attempt to be all things to all people; to develop mind-boggling relationships and interdependencies; and to adjust by crisis-response rather than by stable, carefully planned design.

Economies of scale have been demonstrated to possess serious diseconomies. Rapidly acquired size has been demonstrated to possess inflexibility and depersonalization. Attitudes associated with the 'bigger is better' myth may be academically unsound and dishonest. Higher education's community must reacquire the lead-position in directing society, rather than retain its present follow-position in responding to society.

Application of values which are consistent with a service and leisure-based society's qualitative and well-being orientation, as opposed to a traditional industrial-based economic and quantitative orientation, is important. These values are not new to the university; it has always possessed them. It needs now to project them.

CHAPTER III

A REVIEW OF REPRESENTATIVE LITERATURE

A review of literature for the present study might be seen as taking the form of a synthesis from areas such as higher education, sociology, geography, history, cultural anthropology, philosophy, social welfare, basic systems analysis, social psychology, communications, and management science. On the applied side, sources include cooperative institutional studies, government commissioned reports, and government publications dealing with regional analysis, strategy, and policy.

A construct which has been found helpful in appreciating that there is a rational form for the synthesis (and which is dealt with in detail relative to the model in Chapter VII) is the VERTICAL/HORIZONTAL ACCESS-EQUITY construct (Figure 5). The first three categories of literature dealt with represent the change in emphasis from the vertical to the horizontal dimension of concern with access equity. The fourth category includes institutionally prepared and/or commissioned reports. The fifth deals with methodology, examined for purposes of incorporating sound constructs into the model in Chapter VII.

1. Non Theme-Specific Literature

The vertical component of access has been the subject of much concern and investigation over considerable time. Most prominent among the writers dealing with this component have been sociologists. The primary focus for most of the work has been the urban/metropolitan environment,

and concern has been with access to opportunity as affected by such criteria as race, sex, color, religion, socioeconomic background and family background. The landmark study in this connection was summarized in the report by James S. Coleman and Associates (1966), commissioned by the U.S. Office of Education. Response to the report of Coleman, et al. was consolidated in a publication edited by Mosteller and Moynihan (1972). The work is further taken up by Jencks (1973). Micro level studies related to the construct are exemplified further by the work of Brookover, et al. (1977). Expanded studies are represented by Persell (1977). The foregoing illustrate the attention paid to the matter of social deprivation/inequity/injustice as applied to education. Thus, the attention has been directed almost exclusively to the vertical dimension of the construct.

2. Transitional Literature

There is another category of literature whose main thrust is directed at the social dimension, but which intentionally or unintentionally touches upon the matter of spatial (HORIZONTAL) deprivation/inequity/injustice. This is the matter which stands at the core of the present study.

Warren Bryan Martin (1976) suggests that chance should be distributed equally, although achievement is destined to be unequal. This has definite implications in the spatial context. The Carnegie Commission on Higher Education (1973) identifies purposes additional to those traditionally associated with higher education. One of these is defined as educational justice or equal access. Fred J. Harcleroad, et al. (1969) focus on the problems associated with growth, and suggest that

the problem of territorial needs is not associated originally with increasing numbers, but with a pressure to accommodate local high school graduates lacking transportation facilities and hampered by distance. W. G. Fleming (1974) suggests that facilities of more remote or poorer areas should be brought up to qualitative levels 'not scandalously below' those of more central, concentrated and wealthier areas. This has profound geographical relevance.

Everett Rogers (1976) in dealing with Communication and Development, defines concisely the Primary Resource Region concept dealt with in this study. He attributes to every state the possession of interior region(s) which act as economic colony(ies) for another part of the state. This describes the situation of Northern Ontario. This is the kind of area whose residents Harcleroad, et al. are concerned with. More specific to the Ontario context, and considering the work of historian H. V. Nelles (1974), we find that, in the same area of communication and development, the purposeful 'use' of education has been as 'agent of promotion', a use sanctioned and encouraged by government in the 'development' of Northern Ontario's government-owned timber, mineral, and water power resources.

John D. Millett (1974) suggests that traditional alignment of higher education with the wealthy, the powerful, and the influential, has resulted in an immoral, imperialist, and racist society. The second descriptor further legitimates the present study as it informally defines the relationship of the Primary Resource Regions.

3. Theme-Specific Literature

A relatively recent body of literature has its interest focused

upon the HORIZONTAL dimension of the access-equity construct as described. The principal contributors are geographers, including primarily Harvey (1972), Smith (1972, 1973, 1974), Knox (1975), and Coates, Johnston and Knox (1977). Understandably, the emphasis is upon SOCIAL GEOGRAPHY, a field generally assumed to be treated adequately under the Cultural Geography label. Knox identifies the 'new responsibility':

> One of the fundamental objectives of human geography should be to determine spatial variations in human welfare, yet until recently, little of its literature has directly considered questions of this nature. (Preface)

At this critical juncture in the literature, recognition is given the need to incorporate a separate focus upon the previously mentioned horizontal dimension of concern relative to the distribution of well-being: as David Harvey terms it, just distribution, justly arrived at.

D. M. Smith (1974) sees social deprivation as a significant feature of regional makeup. He sees the need for geographers as humanists to augment Eliot Hurst's 'geographer as mechanic'.

In concert with those who view the responsibility of liberal education as providing a humanizing education for students, Smith sees the present time-frame as being opportune for the geographer who possesses 1) the tools and sophisticated approach derived from the 'quantitative revolution', combined with 2) the socially conscious concerns of the 'qualitative revolution' aimed at improving the human condition. Such a geographer becomes a key participant in that contemporary 'qualitative revolution'. In a sense, Smith, along with Harvey, bridges the literature gap in suggesting opportunity for geographic innovation directed toward judging spatial distributions from the perspective of social

justice. Smith suggests that geographers should meet the qualifications for 'feeling human beings' as well as for 'skilled scientists, technicians, managers, and teachers'.

David Harvey advances this opportunity to the application stage. He sees need for the economically-biased efficiency criterion in location theory to be supplemented by a spatial/territorial allocation criterion based upon social-justice principles. The skeletal framework for this new concept is a 'just distribution, justly arrived at', and he presents a normative framework for analysis based upon 'need, contribution to the common good, and merit'. In addition, and of particular interest, he allows for the value of input from the long-term indigene whose input, though admittedly subjective, profits from a sensitivity to local need. He further relates the colonial construct to a natural capital flow in industrialist/capitalist society, and similarly presents the logic of selecting between centralized and decentralized decision-making as relating to the initial conditions existent in the setting.

P. L. Knox sees discrimination against people on the basis of where they live as being no more justifiable than discrimination for social/racial/economic reasons. In his view, a society which claims egalitarian philosophy as its own can logically tolerate neither.

Coates, Johnston, and Knox consider the importance of spatial solutions in the treatment of problems associated with spatial inequity/injustice. Such solutions do not address the causes of the problem; they are insufficient in themselves; but they are a necessary dimension of any problem-oriented social policy.

4. Documentary Literature

The 1969 report of the Atlantic Provinces Higher Education Commission contains reference to the lack of proper priority as applied to the development of human resources in the past, and also to the underdevelopment of people as a continuing major factor in retardation of regional progress economically and socially. The authors cite the need for assumption by institutions of higher education of "the high degree of responsibility that is a necessary concomitant of autonomy", and for increase in the kind and effective delivery of information aimed at enabling the general public to "comprehend and appreciate the value and importance of higher education for the well-being of the area". These needs are, in turn, indicative of the need for adequate support and firm commitment from government. Regional organization should possess a kind of student/professorial 'mix' which can offset the "essential unity of the region and the danger of narrow provincialism being fostered among professors and students concerned only with one province or small region". (pp. 91, 92)

In the 1976 report on higher education in non-metropolitan areas, based on a study and series of hearings in British Columbia, Canada, some of the features associated with the importance of non-metropolitan delivery of higher education are identified. Referring to the experience of smaller regional facilities, it is suggested that

> their graduates appear to be more prepared than do metropolitanly trained students to pursue long-term careers in the smaller cities of the Province . . . The overall goal of the proposal is to discover means by which education opportunity in the Province can be partially equalized . . . While many potential students in the interior are in a position to relocate at the coast, many are not. It is considerably cheaper for a student to live at home and

> commute to a university than it is to obtain accommodation away from home but this alternative is not available to students from the Interior. Some people have family and employment responsibilities in Interior centres and are thus not able to relocate to the coast. . . . of a less concrete but probably equally important nature is the unwillingness of many students to move to the coast. Many do not wish to live in a big city away from family and familiar surroundings. Such unwillingness should not serve as a bar to participation in the senior postsecondary system. (Insofar as what is to be done is concerned, the report suggests that) it is only after a wide ranging debate concerning the means of instruction, admissions policy, the nature of curriculum and the appropriate institutional structure that any consensus can be achieved. (pp. 33, 34, 40)

D. M. Cameron (the Cameron Report, 1978), examines the background to the present situation in the Primary Resource Region of the present study. He goes on to discuss the matter of institutional reorganization, placing emphasis upon failure of existing structure to meet the potential for imaginative and responsive programs. Organizational change is seen as being essential at two levels: in the internal network, and in provincial/institutional relations. Justification for effort directed toward policy improvement is summed up in the words

> certainly northern Ontarioans deserve the attempt . . . It has not been malevolence toward the north so much as indifference to its special circumstances which has bequeathed the problems with which this study has sought to grapple. (p. 191)

The Ontario Government Royal Commission reports, (Algoma University College, 1977-78) contain the most intensive micro-level analysis of existing program and delivery problems for the region. The findings led the commissioner to recommend closure of the institution effective June 30, 1978. This followed clear assertion in the preliminary reports that closure was an alternative, but not an acceptable one. On

January 13, 1978, the government announced a five year 'stay-of-execution', with supplementary funding to be provided by the new Ministry of Northern Affairs, with time allowed for demonstration of viability.

The statement released by the Ontario Council on University Affairs (1968) and dealing with the Northern Ontario problem, has reference to the north in two compartments--northeastern and northwestern--as do the Cameron Report and the Design for Development programme. The OCUA authors envision a University of Northeastern Ontario, with its main campus at Sudbury, (Laurentian University), and satellite campuses in the other major northern centers. The main concerns expressed, to which rationalization should be addressed, are the meeting of community needs and the avoidance of further buildup of fixed instructional resources. In fact, though not in word, the authors advocate continuance of the existence of the same affiliation situation which has been central to many of the 'system' problems in the past.

Remaining documentary literature, including consortium agreement, (South Dakota), consultant study and cooperative study, (University of Minnesota, Duluth; University of Wisconsin, Superior; and St. Scholastica), and the earlier COPSE (Commission on Postsecondary Education in Ontario), provide valuable philosophical and operational insight for the present study.

5. Methodological Literature

Since the present study is built largely upon a geographic bias, and assumes to undertake development of a model with distinct spatial significance, resort is taken to one of the finest basic, generalist-

oriented sources on geographic models, by Chorley and Haggett (1967). The major assistance sought from, and provided by, this source is a sense of clarification on meaning, purpose, categories, and potentials of models (Appendix C).

The somewhat philosophical 'model' provided by Trow (1973) is adapted, modified, and given spatial applicability by Kerr (1978). In the latter case, the categories are less 'negatively-loaded' and service-area scale for different levels is introduced.

For a general framework within which the model is to be seen as fitting and operating, the natural selection is a system framework. In this connection, Millett (1974) clearly presents a case for 'systems planning', as contrasted with the more traditional (in educational settings) 'prescriptive planning'. Also, Alice Rivlin, (1971) advocates the need for, and superiority of, well-funded and more generally encouraged 'systematic experimentation' as compared with the more commonly applied 'random innovation'.

Harclearoad, et al. (1969) present an interesting conceptual framework based on a two-dimensional classification (Figure 7). The dimensions range between collegiate and university functions in the vertical (non-linear) dimension, and between applied and theoretical in the horizontal dimension. The framework is of particular interest in the present case for its potential adaptation to the spatial realm.

The works of David Harvey and D. M. Smith have valuable methodological insights for application into the present study. Their concepts and adaptations-to-geography are dealt with earlier in the 'theme-specific' literature section.

Finally, the concept of mobility as a vehicle to offsetting

inequality of educational opportunity is viewed in the light of its potentially negative consequences by Fleming, Winegard, et al. (British Columbia study), Rivlin, Harcleroad, et al., Smith and Harvey. This is another geographic concept which shall be significant in development of the model.

CHAPTER IV

THE OPERATIONS PROBLEM: REGIONAL EXPERIENCE IN HIGHER EDUCATION PROGRAM AND DELIVERY

1. Problems in Form

The region for study has been identified. Briefly in summary, it is separated by distances ranging from approximately 200 miles and up, from the southern metropolitan region with Toronto at its heart. The physical character of the northern region is such that the distance separation is intensified. The 'metropolitan-frontier' dichotomy causes further exaggeration of the problem. Resources and attendant benefits derive primarily from the north and accrue primarily in the south. The irregular occurrence of mineral resources and similar scattering of optimum site factor combinations for basic production and processing activities results in occupance pattern yielding low total area density.

The northern region of the province has been very much, historically, the counterpart of Canada's national northern region. In both cases, the land area has been subdivided into Administrative Districts with most administrative decisions being made in the respective provincial and federal metropolitan regions.

This form-pattern has been reflected in the delivery of social services for the northern region of the Province of Ontario, including education in general, and higher education in particular. Those from the region qualifying for university opportunity have always possessed

the option of facing the financial and convenience costs involved in taking up a minimum three years residence at one of the southern university centers. Those unable or unwilling to do so, and still desiring liberal arts opportunity have availed themselves of an improving combination of extension services from the south.

Prior to the 1950's, there were a few small colleges with religious affiliation offering a limited range of postsecondary courses in Northern Ontario. The majority of candidates undertaking liberal arts programs while remaining in residence in the north, registered for correspondence courses offered by established universities. Credits thus earned could be augmented by costly travel to these same universities for temporary residence periods of six to eight weeks during the summer months.

The catalyst for increasing this type of part-time demand came with the introduction into the elementary schools of the province of the 'category' system for salary. In this system, teachers would advance by plateaux, (clusters of university credits, provincial Department of Education credits, or combinations of the two), to maximum salary levels. In Sault Ste. Marie, for instance, the increased number of candidates registered for 'extension' courses from the University of Western Ontario in London. The instructor of each course concerned would visit the Friday evening-Saturday class sessions on a few occasions during the September to April term. The balance of course and sessions were coordinated by a local person with highest qualifications available in the particular subject area. A number of those involved as candidates in this approach combined this opportunity with summer residence on campus to complete requirements for the three year General Arts degree

in a three to four year period.

As mentioned in the introduction, the 1960's marked the presence of higher education 'in situ' within the northern region with legislative creation of Laurentian University in Sudbury in 1960 and Lakehead University at Thunder Bay in 1962. This physical presence opened access to opportunity to a considerably larger and more varied clientele group. The presence was expanded at the two sites and within the region through processes of amalgamation, federation and affiliation. Again, as mentioned previously, these processes bestowed continuing problems upon the experience. Some of these problems as they relate in particular to the process of affiliation will be considered in more detail.

2. Problems in Function

The discussion of problems will here begin with the implementation of the 'plan' whereby extension of higher education opportunity at the university level would be affected through permanent regional facilities.

It is well here to note that the concept of decentralization from the metropolitan south has normally been reflected in the northern region. It is here that the application of decentralization in higher education, because of the nature of the university, could cause problems of function to appear and persist. The application dealt with will be that which occurred in the eastern part of northern Ontario, incorporating Laurentian University. This application is the more complex and the more familiar to the writer.

The traditional concept of university has at its center the idea of autonomy. Legislative creation of Lakehead and Laurentian in the

early 1960's, therefore, decentralized higher education in Ontario into a region largely non-autonomous with respect to services essentially under provincial jurisdiction. The two universities, physically separated within the region by a distance of approximately 600 miles, would have little difficulty operating independently of one another.

In the eastern portion of the region, the function of delivering higher education opportunity was further extended through Laurentian University by the process of affiliation--with Le College de Hearst in Hearst, Nipissing College in North Bay, and Algoma University College in Sault Ste. Marie (Figure 2).

In Southern Ontario, where the university system grew in a region largely compatible with uniform agrarian expansion and subsequent intensive industrial development, the early period of that growth was marked by the significant involvement of religious denominations and of the provincial government, the latter especially where professional education was involved. In more recent time, newly emerging institutions experienced a period of affiliation, but with a difference from that in the earlier context.

Implicit in the concept of affiliation is the idea of mature parental direction offered by a senior established institution to an emergent institution. For example, the University of Western Ontario provided this senior function during the emergence of the present University of Windsor and University of Waterloo.

In Northern Ontario, then, where development requires superimposition on a framework of scattered settlement nuclei, separated further internally by a largely inhospitable environment as described earlier, the process of affiliation was applied with senior-partner status

bestowed upon an institution in its own emergent phase and subject to its own peculiar growing pains.

The intent here is not to discredit the process of affiliation nor the parties to this particular application thereof, nor to present it as the singular problem of function in the context. It should be obvious, however, that where pre-existing and lasting ties had been developed with major established institutions (Appendix C, Table 3), and affiliation was externally introduced into a significantly different environment, such affiliation could represent the basis for any number of additional problems.

3. Problems in Perception

Any number of problems in perception could be derived from the present context. In fact, the problem central to the study is primarily a perceptual one: What will be perceived as the best kind of higher education organization for the Primary Resource Region? The perception of this researcher, conditioned by life, work, and academic experience within a Primary Resource Region, lies at the foundation of this attempt to justify and devise a spatial/functional model aimed at contributing to resolution of the question.

The purpose here is to point out some of the errors in perception which have led to program and delivery problems to this point. The first of these errors, recurrent in history, relates to the kind of perceptual inflexibility and lack of innovative design which the systems kind of planning attempted later in the study is designed to overcome.

From the era of North American colonial experience, it has been pointed up that the transplantation of institutions from one environment

into another would face constraints not anticipated prior to the attempt. Efforts to establish new Oxfords and Cambridges in the New World environment were found impractical, yet such efforts were made. The institutions were to face such changed variables as clientele groups with different values, expectations and life-styles, and a society whose focus was turning upon the urban center (Rudolph, Chap. 1).

The perception of a centralized university to accommodate broad political areas has underlain perennially expressed ideals. The National University ideal of George Washington and his successors down to the time of Jackson (Rudolph, p. 42), the idea of a University of Ontario (Harris, Chap. 1), and the idea of a University of Northeastern Ontario (OCUA White Paper, p. 45), cover a span of 188 years and have common basis in the concept of effectiveness of centralization. In fact, such perception stands counter to the human realities of provincialism and sectionalism (Rudolph).

The inability to fit into one's perception the unanticipated changes which owe their existence to time as well as setting accounts for additional difficulties in plan implementation. The diminution of religious influence and affiliation across time concurrent with the increase of government influence, and the appearance of new and more popular forms of 'higher education' which compete for the 'scholar and the dollar' must enter into the planning process for higher education.

4. The Non-System

Seldom is the process of education mentioned in the present that it is not linked with the term 'system': elementary, secondary, post-secondary systems; urban, rural, state (provincial), national systems;

regional systems, and so on. The use of the linkage is understandable, but the legitimacy is questionable.

Basic general systems theory identifies the system as consisting of elements, objects and conditions; the relationship between and among these; and their relationships with their environment. Systems are identified as open or closed, as incorporating different kinds of relationships (series, parallel, feedback), and as being self-regulating in the event of interruption.

The problems discussed earlier in this section raise some questions regarding the system assumption for the educational context. In the present study, it has been pointed out that the concern is one of making accessible the appropriate higher education program into Primary Resource Regions. Yet, as their name implies, such regions have traditionally evolved on the basis of an outflow of resources and value added thereto (including the case of the human resource). Is the operation of an educational 'system' working at odds with this traditional regional 'system' possible? Further, can the educational 'system' and the economic system operating between metropolitan and frontier regions be considered closed and independent of one another? Scarcely, since many of the current decisions regarding education are based upon economic criteria.

The university has been considered traditionally an autonomous institution. This separates it considerably from other social institutions (services) whose form and function are under far more direct control by government. Yet, the tendency in current programs is to consider social services as common components in a social service system.

It has been shown that the successful operation of elements, objects

and conditions within a given environment will not necessarily be transported successfully into another environment whose characteristics are markedly different. It has further been demonstrated that a process which governs component-environment relationships will not necessarily, without adaptation, serve as well in allowing operation of the same relationship in a different environment.

Throughout the discussion of the foregoing problems, one feature stands out--that the governing of relationships within the 'system' has continued on the basis of a 'central place system' assumption. The problem identified at the outset is one of separation between two regions of markedly different character. Successful rationalization of the system requires some degree of decentralization. Planning for the proper degree of decentralization requires consideration of the degree of change in the institution, its fit into the different regional context, and its continuing interaction with the traditional model from which it has derived.

CHAPTER V

THE IMPORTANCE OF HIGHER EDUCATION TO REGIONAL DEVELOPMENT

The process of regional development within the Ontario experience can be viewed conveniently in two time frames. The first period selected is that of the last and first decades of the nineteenth and twentieth centuries respectively. It was during this time that Ontario's development tradition became established. The development concept was essentially an economic one, and the role of education was supportive of this bias. The almost exclusively economic dimension has largely prevailed.

Ontario's development focus has been a dual one, made necessary by the physical and resource separation made evident and emphasized earlier in this study. Development south of the Canadian Shield occurred with a dominant focus upon the land resource as required for agriculture, and later urban-industrial growth. The generally thin and stony soils in the Shield area turned the focus to the forest, mineral, and water resources of that area, and later to those scattered sites associated with the basic processing of area resources.

The second period selected for consideration can be termed that of the contemporary view. It was formally introduced in the Ontario context by the Prime Minister of the province on April 5, 1966, in a statement entitled Design for Development. Still mainly economic in its substance, the document expresses the government's intention to formalize and diversify its development efforts.

In the earlier period, government intervention into the development process through its influence on higher education took the form of direct funding. This largely unsolicited funding was labelled for creation of professional programs seen by the government as necessary in advancing the economic development of the Shield area's resources.

In the latter period, government's stated intention, from the outset, has been to encourage, directly and indirectly, the realization of social equity for the northern region, in addition to the realization of economic benefits for the provincial treasury. Of primary significance to the present study is the potential meaning of this philosophy. Its implementation can alter the traditional single-direction transfer of resource benefits out of the northern region of the province into the Southern Ontario heartland or across the border into the United States. This study concentrates on the challenge facing achievement of greater equity as it applies to the traditionally least emphasized resource--the human resource--and the kinds of organization for higher education through which part of this development objective might rationally be attained.

A. TRADITIONAL VIEWS

The attitudes which have emerged (traditionally) as expressed views on development for primary resource regions like northern Ontario need to be considered in two categories.

1. External

This category incorporates those attitudes characteristic of nations, governments, financiers, industrialists, and other interest

groups whose perception of the region has been its convenience as a storehouse of resources which may be tapped to serve as the basis for industrial economy.

The result has been the creation of global and local patterns of physical resource 'extraction-transport-production- value added-consumption-disposal' dominated by minimal 'origin area' benefits and maximal 'recipient area' benefits. These patterns have linked urban-industrial core areas to resource frontiers or economic colonies both internal and external to the jurisdictions exerting control.

The role of governments relative to such spatial patterns has been mainly to referee the interaction of various interest groups, including themselves, in seeking to optimize benefits derived from resource possession and use. In Ontario, the government retained ownership as well, as related by Nelles (1974).

> From the outset the unoccupied region of what was to become Ontario had been thought of in propietary terms. These 'waste lands of the crown' existed to be administered in the interests of the state, either as a source of war materiel, revenue, or as a repository for settlers. Through an accident of geography much of the natural wealth of this community, its water-powers, minerals and forests, was to be found on these lands. How these resources were to be allocated and how public and private claims upon them would be balanced become, therefore, important political questions. (p. 2)

The infrastructure associated with these 'waste lands of the crown' has developed in a fashion consistent with the view reflected above. Transportation corridors follow lines of least topographic resistance and focus on the metropolitan south. Financial services are extensions of those developed in the south. Social services and facilities are usually carbon copies and extensions of those developed

within and for the metropolitan region.

The external traditional view of the human infrastructure has been that it should be adequate to serve the region's function in the above-mentioned transfer pattern. Where environmental conditions are least hospitable and where isolation is most extreme, social amenities deemed necessary for the contentment and well-being of regional residents have been provided in unique 'company towns' or government designed and facilitated 'improvement districts'. In such cases, these have been viewed by the external interest groups as essential in gaining and maintaining maximum production of the resource(s) involved.

Until the 1960's, the population resident in Northern Ontario had direct access to educational opportunity up to the secondary level only, with the exception of small Roman Catholic colleges in Sudbury and Hearst. This was again consistent with a traditional external view which held that resources from the region would most logically have the bulk of value added outside the source region. "Within those two decades (1890-1910) Ontario had acquired a new image of itself. The barren north suddenly became New Ontario and the province an Empire." (Nelles, p. 51)

In order that resources of this 'barren north' might be tapped, maximum productivity and limited processing, combined with the external view, left the concept of access to formal education beyond the secondary level with a low priority. As mentioned previously, those desiring postsecondary opportunity were required to leave the region for 'tertiary processing'. Again, the straight line system of resource movement was reinforced, with the larger portion of those involved remaining to add the benefits of this processing to the metropolitan region.

Within the external perspective of development for the primary resource region, the use of education by the Ontario government is identified by Nelles in his chapter entitled Promoting New Ontario.

> In this development process government agencies acted as intellectual entrepreneurs, carrying information, ideas and opportunities to labour and capital. The continuous stream of information and statistics . . . had as its prime objective the education of domestic and foreign capital. Then, to render the eventual application of capital to resources as effective as possible the government adjusted the formal education system to improve the professional and technical skills of the labour force. Finally, the publicity of government agencies and its echo in the press strove to heighten popular awareness of resource development for the long range purposes of broadening the horizon of acceptable occupations and loosening the conservative savings and investment patterns as well as for the immediate purpose of explaining and justifying public spending. Education, in this broad sense, thus became the most dynamic and probably most permanently influential of the state's promotional functions. (p. 152)

Specific to higher education, applied utility was recognized as the application of professional expertise to insuring the best possible efficiency in realizing maximum quantity in resource extraction. The professions emphasized, therefore, were those related to the Shield area's dominant resources--timber and minerals.

> In the universities . . . the provincial government also established schools of mining and forestry. . . the Mowat government supported the foundation of the Kingston School of Mines in 1893 with a $5000 annual grant. (This school later became affiliated with Queen's University.) . . . Although the University of Toronto had offered geology courses for some time . . . the imperatives of inter-university rivalry did not force the creation of a chair of mining and metallurgy until 1908 . . .
>
> In 1901 he (W. L. Goodwin) had the terms of reference of his own (Kingston) School of Mines expanded to encompass forestry education, and it was at Goodwin's

> invitation and at his institution that Bernhard Fernow, the most distinguished of American foresters delivered his famous "Lectures on Forestry" in 1903. Such vigorous activity at Queen's provoked an immediate response at the University of Toronto which announced a one-year diploma course in forestry in 1904. . . . (A Royal Commission Report) brought down in 1906 strongly urged the government to provide the university (of Toronto) with sufficient funds to establish a forestry school and one year later just such a faculty was created within the reorganized University of Toronto, with Bernhard Fernow as its dean. (Nelles, p. 143)

During the period in which such traditional views as the foregoing prevailed, the essential function of education was to reinforce those views.

2. Internal

Internal traditional views have had their character largely moulded on the physical separation from the antecedent area of settlement and the inhospitable qualities which delayed initial development of Northern Ontario. Such has been the case with primary resource regions universally.

> . . . many Australian writers agree that a strong feeling of group solidarity and loyalty developed out of the sense of isolation in the bush . . . (this also underlay the) already strong feeling of mateship and their propensity to mutual aid. (P. Jones, p. 18)

Such expressions of cooperative outlook may be taken as a second stage of perception development in the resource frontier, and build logically upon the initial concept of individual versus challenges of a hostile environment. This initial concept is well elaborated upon in the U.S. experience by the historian Frederick Jackson Turner (1893) in his 'frontier thesis' and by the cultural geographer Wilbur F. Zelinsky (1973) in his perception of American cultural attributes.

In the northern Ontario context, there were these same environmental processes working to establish outlook and views different from those earlier peculiar to the agricultural yeomen of the southern region. Those who would cross into that separated region described earlier responded to a variety of pull factors: free or low cost land grants rendered more appealing by a government program of designing and building colonization roads into apparent pctentially productive agricultural areas; the lure of instant wealth associated with the discovery of minerals; employment in the lumber camps and mining camps; and opportunities to provide services for those in the other categories. In many instances, the environment made involvement in one activity sufficiently marginal that the individual was seasonally or periodically engaged in another. Such necessity is not uncommon in the area to the present day.

Also in the Northern Ontario context, there were processes present and different from those in similar separated frontier regions in other settings.

> Precisely because the Shield laid down a definite and underlying boundary to the limits of prime arable land, it frustrated the application in Ontario of a unitary socio-political conception of the environment similar to the agrarian homestead which so radically affected American resource alienation policies. (Nelles, p. 42)

What was described earlier as a clear-cut dichotomy between the two parts of the same political unit increasingly exerted its impact on the emergence of 'socio-political conceptions of the environment' as they became interpreted into constraints awaiting settlers.

> The possessive individualism of an agrarian frontier made incursions upon, but did not eliminate, the tradition of crown ownership. In the woods and the forests the rights of the crown were not those of eminent domain; they were proprietary. The late

> nineteenth century homestead farmer on the northern Ontario frontier neither owned nor had prior right to the pine growing on his land (beyond what he needed for his buildings), the precious minerals beneath the soil, or the waterfalls in his river. These natural resources remained the property of the crown and their use was regulated by statute in accordance with prevailing notions of the interests of the state. (Nelles, p. 2)

For the new breed of people facing the inhospitable new environment, largely engaged in subsistence activity as opposed to the commercial activities of the southern region, so called 'need' for secondary and postsecondary educational opportunity would be a gradually developing perspective. The relative instability and uncertainty of existence combined with transportation technology which made the concepts of 'Southern Ontario' and 'university' remote images to most, made access to such opportunity a reality shared by few.

B. CONTEMPORARY VIEWS

Counted among those forces which have served to alter traditional views of development in Primary Resource Regions (and associated significance of higher education) in general, and for Northern Ontario in particular, are the following:

- transportation technology and personal mobility which have reduced dramatically the effect of distance and therefore the concept of remoteness
- universal transitions in higher education from elite to universal to mass, and from privilege to right to obligation
- mid-20th century phenomena, especially World War II, creating new social awareness, social consciousness, and social conscience
- the growing wave of egalitarianism and its broadening of the definition of freedom beyond political terms

- the rise of 'quality' values to challenge 'quantity' values in the area of development, peaking with the environmental movement of the 1960's

- increasing complexity in resource extraction-transport-production-disposal processes calling for increasing skills and technological/political/social/individual innovative capacity

- unanticipated crises exerting real and potential impact upon complex, vertically-integrated systems: (economic downturn, enrollment decline, . . .)

As components in the massive change in perception/values systems, these representative forces are clearly and strongly interconnected. Higher education faces the present dilemma of maintaining its social leadership role with a creativity and flexibility capable of conforming to the impact of the multiple forces and changing views.

> The question is whether a society that has been conditioned to value higher education for its economic benefits will at last value higher education for its contributions to the personal development of individual human beings and to the creation of a humane society. The true crises faced by U.S. higher education today is whether this transition can be made . . . It (the possibility) could mean that higher education will be focused increasingly on development of intelligent and humane people and on the advancement of a rich civilization rather than on economic development. (Bowen, 1975, in concluding observations)

The latter chapters of this study, assuming that creativity and flexibility will meet such challenge and focus as it applies to effective program and delivery for a primary resource region, will incorporate suggestions for building these features into the present 'system' in Ontario.

1. External

The external contemporary views germane to the present discussion find consolidated expression in the efforts of the provincial government,

since 1966, to construct a DESIGN FOR DEVELOPMENT for all regions of Ontario, including northeastern and northwestern. The intended design is largely structured on the ideals contained in Bowen's observation, and a consolidation of principles, goals, and objectives from the first three design reports is presented in Appendix III.

Briefly, the broadening of government views from the aforementioned narrower economic perception is readily apparent in such expressions as the following from Ontario's Design for Development Reports (1966, 1971, 1976 respectively).

- this government accepts the responsibility of guiding, encouraging and assisting the orderly and rational development of the province . . . we believe that our efforts should be complementary to the private sector of the economy in helping to create an atmosphere for growth and development. (1966, p. 2)

- two of our principal objectives . . . provision of the best possible environment for our people . . . creation and maintenance of an atmosphere which will encourage the economic growth and development throughout the province . . . both qualitative and quantitative benefits to all people in the province. (p. 3)

- The need for postsecondary education . . . is pressing. Increased public investment in education in the lower-income regions of Ontario is perhaps the best long-run key to development. (p. 9)

  At all times, we shall be seeking means for ensuring that people in all parts of the province share in the benefits of economic and social development . . . . (p. 24)

7. EDUCATION

   Goal: To provide opportunities and encouragement for each individual to achieve his highest potential of intellectual, personal and social development.

   Educational facilities and level of attainment are continually improving in Northeastern Ontario, although the region is still well behind other parts of the province. (1971, p. 242)

c. EDUCATION

24. The province should continue the development of community-based education through broad community representation and through retention of existing schools. (1976 (a), p. XVII)

B. The Social Strategy

1. Social Development Goals

- The four major urban centres of Sudbury, Sault Ste. Marie, North Bay, and Timmins have social infrastructure similar to those of other major cities in the province . . . the strategy also emphasizes the service role the large centres must play in providing many of the higher level social facilities (postsecondary education, specialist medical services, broadcasting facilities, etc.) required by the rest of the region.

c. EDUCATION

- Such responsiveness relies on decentralized administration, community-based delivery, opportunities for participation, and a strong commitment to formalized continuing education. (1976, p. 49)

For its part, industrial enterprize and some service sectors, in response to increasing social demand and to complexity of operation, as well as to demand for higher level knowledge and skills within labour force, have taken a supportive stance with respect to postsecondary education, including incentive to employees to improve academic standing.

The public-at-large and educational sectors, apart from government, must exercise the leadership role in altering traditional external perspective.

> The number of full-time equivalent university level researchers in the Northern part of the Province is clearly inadequate if this region is to break free of the exploitive pattern of development experienced in the past. The diminishing base of funding for the universities means that even if adequate research grants were to be available there will not be sufficient manpower to take advantage of them, and the opportunities for breaking economic patterns which have held Northern communities at a disadvantage in the past will be missed. (OCUFA Brief, p. 12)

2. Internal

The traditional internal view toward development and higher education was earlier portrayed as being strongly conditioned by such forces as 'frontier mentality', crown ownership of resources, contrast in regional physical identity, extraction and primary processing, isolation, and work/income instability.

These conditioning forces as applied in the Northern Ontario context have been subject to considerable alteration.

Levels of income and working security as well as work-related benefits, have improved considerably, largely through the efforts of organized labour in the resource-oriented industries of the region. A side effect which should be mentioned has been the increase in intra-regional disparity between the urban centres where industry is concentrated and the inter-urban non-industrial areas. Working to counter this disparity has been the increase in government subsidy, incentives, consultation services, extension services, and welfare services outside the industrial areas.

The transition from the narrow economic to the broader quantitative and qualitative emphasis in development has, in fact, served to translate negative aspects of the environment into positive assets. This transition has been enhanced by the widespread increases, at the personal level, of mobility, disposable income, and leisure time. Together, these have turned the attention of an increasing seasonal resident/itinerant visitor population from Southern Ontario, the United States, and presently even from Western Europe, upon the qualitative dimensions of the regional resource base.

This base is still positioned on the same resources--rocks, trees and water--as in the traditional sense. However, their attractiveness, while still deriving from minerals, lumber and pulp, and hydro-electric power, has appealed to the increasing market population in terms of

- scenery composed of an infinite variety of changing topographic conditions
- predominantly forested inter-urban landscape
- clear (and naturally potable) waters in countless and accessible lakes and rivers

The same combination which provides resource for the passive viewer provides also (with the pronounced seasonal change) for the preferences of increasing numbers of anglers, hunters, alpine and cross-country skiers, hikers, water-sport enthusiasts, rock-hounds, and naturalists.

The new perspective of resource utilization possesses the potential of altering the earlier described straight-line, single direction flow of benefits derived from regional resources to external areas. Most of the new uses are based upon quality rather than extraction, and most represent 'in situ' utilization. The resources and their quality are increasingly exported as the subject of recollection or photographic record. The renewability of resources is no longer a matter of animal-vegetable-mineral origin: renewability becomes increasingly a matter of management. Informed management of resources requires kinds and levels of expertise not associated with traditional resource use. This will be recognized increasingly by inhabitants of the region as a part of the more and more complex potential offered by the resources surrounding them, and will place increasing demands upon higher education.

> . . . Northerners have a substantial store of factual knowledge about the renewable resources that are the

> basis of their livelihood. But they sense, correctly, that they have much to learn in systematizing and interpreting their knowledge so that it may be used for management. (Larkin, 1976, p. 20)

The increase in demands upon higher education will be more than quantitative. Properly engineered for optimum benefit to the region, response to demand must combine that part of the traditional and that part of the innovative that can best enable the systematizing and interpreting of knowledge referred to here.

As the major centers of the region experience most of the region's growth, residents come to recognize the complexity that accompanies urban growth and development. Rational expansion requires new knowledge for creation of master plans, extension of services, adjustment to changing preferences and life styles, accommodation of urban social-service functions, catering to seasonal visitors, and so on. Again, knowledge of the environment requires combination with the ability to systematize and interpret that knowledge. Effective organization of higher education, which develops a cadre of residents possessing both, emerges as potential and preferable practice to that of relying on consultation by 'experts' 'parachuted in' from a different region with a different environment.

> The universities and university colleges of Northern Ontario are not only resources which could profoundly alter the economic circumstances of the region, they also represent and convey standards of excellence to Northerners. In this respect it is critical that quality programs continue to exist and are strengthened. (OCUFA Brief, p. 12)

The major centers of the region have approached or passed the 100,000 population mark.

> It may be reckoned that a city with a population of 100,000 will produce rather over five hundred students for a university in that city. A considerable number of these will be young people who would not or could not, have gone away to university. The establishment of new universities, while serving more communities and equalizing educational opportunity would also increase the total scope of the problem in the difficult years just ahead . . . (Woodside, 1958, p. 112)

This concept is a rational one when considered in light of the nature of settlement patterns in Northern Ontario, and in light of the reliance for responsiveness upon decentralized administration and community-based delivery. It leads to the latter recommendation calling for a system of Universities of Northern Ontario.

In addition to the ascribed qualities of rugged individualism, group solidarity, and loyalty developed out of a sense of isolation, resource frontier residents and communities have characteristically exhibited those qualities of provincialism and sectionalism earlier mentioned. The latter qualities, taken as parallel to parochialism, were there suggested as standing against the concept of a centralized university serving to accommodate broad political areas. While these are not generally taken as admirable qualities, they nevertheless exist in the scattered urban nuclei of the Northern Ontario Primary Resource Region. The failure of a process (affiliation), applied successfully in Southern Ontario, to function as smoothly in the northern context, was partially ascribed to other conditions earlier. To those, among others, the above characteristic quality can be added. As suggested earlier,

> . . . spatial solutions to inequalities are, in themselves, insufficient. They may be ideal for reducing some inequalities, . . . but they do not attack the causes . . . But spatial planning is a necessary component of any overall policy . . . (Coates, Johnston, and Knox, p. 4)

The present study has thus far emphasized the physical and socio-environmental separation existing between the northern and southern parts of the province. It takes the hypothesis that a very real part of the improvement in organization of the province's higher education 'system' resides in spatial solutions and spatial planning.

CHAPTER VI

SELECTED POTENTIALS FOR IMPROVED ORGANIZATION: A FRAMEWORK

> . . . universities, like individuals, are dynamic living systems that undergo change in the context of changing social conditions. In order that such systems be able to survive, they must be responsive and adaptive to changes in their external circumstances or environment. (Buss, 1975, p. 429)

Increasingly in the 1970's, writers and researchers have indicated growing awareness of the organic nature of the higher education 'system'. From this perspective and from recent emergence out of the 'quantitative revolution', one becomes more conscious of the need for systematic analysis of the system (organization), its climate, the environment within which the climate originated and evolves, and the interrelation between climate and environment. Further, because of the organic nature and the inevitability of change, there is also need for examination of the characteristics of change components, and of the impact of change upon its agents and upon those affected. (Zaltman, et al., 1977). Analysis/examination becomes less rigidly mechanistic and more flexibly humanistic as the environment of change becomes less economic/quantitative-oriented and more people/qualitative-oriented.

In dealing with these systems and various dimensions of their dynamics, different writers and involved groups have considered ideas, processes, frameworks, techniques, and concepts basic to analysis/examination as described. The better of these may be viewed as potentials for improvement in the operation of the system under study. This section

will identify and briefly assess some from among such potentials in the light of their appropriateness to the spatial separation problem identified for Northern Ontario, especially as it impacts upon higher education. The following chapter will propose a normative/descriptive model (and underlying constructs) which synthesizes from the potentials and facilitates improved system function.

Such a model will necessarily reflect consideration not only of separation, but also of other conditions--less visible but nevertheless significant--which have served to intensify its seriousness. (Expressed another way, it will reflect consideration of some of the questions without benefit of which many of the answers to date have been offered.) Briefly stated, such conditions might include:

- geographic proximity of parts of Northern Ontario to other jurisdictions (Michigan, Minnesota, Wisconsin, Manitoba)
- cultural proximity of parts of Northern Ontario to the Province of Quebec
- 'access to institutional-proximity' to Manitoba and Michigan
- 'legislatively created proximity': in-state tuition for Northern Ontario students at Lake Superior State College in Michigan
- residual and continuing sentiments and loyalties dating to the higher education servicing of Northern Ontario by 'extension' programs from Southern Ontario universities (Appendix C, Table 2)
- student momentum possessed relative to established institutions and overriding recently established 'intervening opportunities'
- economic costs incurred with travel/accommodation for study at established southern institutions and therefore, maintenance of 'elite' practice within a framework of 'democratic' philosophy
- social costs incurred with disruption of family ties and vocational circumstances; impact of change upon sense of community and self-identity

- heterogeneity of student body composition on the increase (in terms of age, ability to pay, academic background, . . .)
- the transport of past practices (affiliation, funding) not inclusive of adjustment to realities of new environment
- Cameron's 'crisis of authority' atmosphere (declining influence of church and family) within which recent numerical and territorial growth has occurred
- 'exclusivity of program' concept recognized widely during evolution of Southern Ontario 'system' and narrowly during evolution of Northern Ontario 'system'

This brief overview of conditions, all with spatial implications, serves to illustrate another feature of potentials to be selected and dealt with: optimum model design must embody awareness of the complex need for organizational improvement as it applies at the local, regional, provincial, national and international levels. Because of obvious practical limitations, however, selectivity in this study will assume primary emphasis upon the regional and provincial levels, with secondary inclusion of others.

The point of view in what remains to be presented is, as Harvey describes, that of one of "those who have lived and worked in a community (region) for a long period of time (and) are often capable of drawing upon their experience to provide subjective assessments which are nevertheless good indicators of need". (p. 94)

The following is presented as a framework for potentials which are recognized as being basic to change. Sample potentials for overcoming the spatial/philosophical separation problem can be perceived on the basis of

1. Spatial constraints/liabilities
2. Spatial opportunities/assets

3. Extent to which items under (1) are convertible to (2)
4. Assumptions made
5. Degree of desire for reorganization and restructuring
6. Time frame for reorganization and restructuring
7. Logic of program exclusivity/sharing
8. Contribution to social well-being (distributive justice)
9. Available 'benefits from past experience'
10. Currently expressed principles re higher education
11. The practice of 'politics of the possible'
12. Quantitative to qualitative transition in values
13. The centralization/decentralization debate
14. Technological assets/liabilities

1. Spatial Constraints/Liabilities

Distance defined in terms of access to desired opportunity is the most obvious of the spatial constraints/liabilities for a primary resource region. It will be used here as representative. This distance is generally conceived of as a linear concept, and therefore is viewed as operating at the provincial or higher levels. However, distance effect may be intensified by a variety of physical/social factors, (terrain, climate, time-off-work, transporation costs, . . .), thus increasing distance-significance at local and regional levels.

Various potentials have been related to this distance constraint. These range from scholarships, bursaries, awards to compensate for travel and accommodation costs, to the offering of correspondence/extension courses, to the provision of on-site facilities and faculty.

The most recently promoted potential, articulated by the Ontario Council on University Affairs, is the structuring of delivery through a University of Northeastern Ontario, integrating Laurentian University and its affiliated university colleges as a 'system'.

> with four, or even more, campuses to serve the needs of the region. Faculty would be assigned, and programs offered, on a pro-tem basis in response to local needs. (p. 45)

Assessment of this potential immediately arouses the following concerns, with

> perpetuation of the concept of centralized authority
>
> perpetuation of an unfortunate 'in loco parentis' role for Laurentian University introduced with the previously discussed 'poor fit' of the affiliation process into the Northern Ontario situation
>
> perpetuation of the same short sightedness toward the northern context displayed by the provincial government since the creation of the College of Applied Arts and Technology system; (recently expressed concern for 'avoidance of fixed instructional resources' in the north in the university sector, almost simultaneous with the announcement of a $2.3 million expansion program at Sault College in Sault Ste. Marie)
>
> perpetuation of the myth that 'needs' are a latent phenomenon within a given setting, requiring only the appearance of expertise and facilities for spontaneous expression
>
> perpetuation of the myth which holds that a structure consolidated in name can overcome the 'group solidarity and loyalty' phenomena born of isolated existence in frontier areas
>
> perpetuation of spatial subdivisions which ignore homogeneity, but satisfy convenience (focus on Northeastern Ontario instead of Northern Ontario)

2. Spatial Opportunities/Assets

Through spatial organization of territory, it frequently happens that primary resource regions, while remote in terms of linear distance from the metropolitan region of their own jurisdictions, may be relatively convenient access-wise to metro areas or service facilities of another jurisdiction. This occurs in consideration of jurisdictions to

the international scale. The city of Sault Ste. Marie, in northern Ontario, is almost 200 miles distant from the nearest chartered university in northern Ontario, and over 350 miles from the nearest southern Ontario university. It is less than two miles distant from the campus of Lake Superior State College in Sault Ste. Marie, Michigan.

In a recommendation related to this apparent spatial asset, the Third Report of the Royal Commission of Inquiry: Algoma University College, (June 30, 1977), reads

> that Lake Superior State College and Sault College of Applied Arts and Technology be acknowledged as those institutions reponsible for undergraduate education (in the region, following closure of Algoma University College): the former in the area of arts and science, the latter in the area of applied arts and technology. (p. 52)

There are implications in this recommendation whose impact would have rendered impracticable the formation of the also recommended 'Sault Region Education Planning Council'. Such implications include the

> assumption of higher education functions by an institution operating on the basis of (1) input from an entirely different secondary school system, and (2) guidelines derived from an entirely different legislative system
>
> lack of appreciation of constraints facing assurance of adequate Canadian content in degree programs at a U.S. institution (an implication which touched off the strongest widespread reaction to the commission's recommendations)

The point to be taken here is that measures such as inter-system and international cooperation may be possible and desirable, but must be considered in the light of this and such other categories of potentials as time frame, currently expressed principles of higher education, and politics of the possible.

Without such cross-system-potential consideration, enrollment-driven funding used by itself as an action-criterion over the short run will lead to unfortunate consequences.

> Program redundancies will have to be declared which, in a short-term financial crisis, will strike down those parts of the university enterprise which are apparently least cost effective but which are at the same time most essential to the true nature of the university community. The natural evolution of discipline groups will be interfered with; forced marriages of disparate entities such as universities and community colleges may occur; and the temptation to view affiliated colleges as 'overflow plants' to be closed down as demand falls will become too strong to resist. (OCUFA Brief, p. 12)

3. Extent to Which Items Under (1) are Convertible to (2)

Keeping in mind that education 'systems' are, (or should be), dynamic and organic sets of elements and relationships, one is constantly aware that there is potential for moving conditions from the constraint/liability category to the opportunity/asset category. This alteration will occur under the influence of general social forces (values and attitudes) over brief or prolonged time periods. It will also occur as a result of purposeful trends and events in the areas of politics, economics, social well-being, and community interest/action.

> Changes in the organizational structure of postsecondary education occur by slow evolution. Rarely are dramatic innovations launched from within the institutions of higher learning themselves. As institutions perceive changes in external circumstances in the general economic, social, cultural and political setting, they recognize the need for some new organizational response. (Martorana and McGuire, p. xi)

Alice Rivlin suggests as one of her models for improving the effectiveness of social service delivery the community control model. The

practice of community-based delivery is also included among the objectives of the Ontario 'Design for Development', and various other sources cited in the review of literature earlier.

The whole concept of community-based delivery/community control is philosophically consistent with Martin Trow's 'most significant secular trends' (growth, democratization, and diversification). It is politically consistent with the recognition of need (Lappin) to create within people of Knox's 'territorially discriminated against' regions a 'spiritual vitality' linked with participation, in place of 'spiritual poverty' linked with separation and isolation from opportunity. It is temporally consistent, and 'climatically' consistent, with the transition from economic/quantitative orientation in development to people/qualitative orientation. Finally, it should be consistent with the application of organizational change models, such as the Proactive/Interactive Change Model of Zaltman, et al. (See Figure 8), and the model proposed in the next chapter of this study.

The above are presented as representative of the numerous general and specific forces within the social environment which possess singly, and in combination, the potential for transforming spatially-related liabilities such as isolation into assets based upon independent thinking, involvement, and decision-making within non-metropolitan regions. The Ontario 'Design for Development Strategy' (1976a) points out that major urban centres of the (Northern Ontario) region have the "emphasized service role . . ." in providing many of the higher level social facilities "including postsecondary education".

4. Assumptions Made

It would seem reasonable to consider next some of the potentials for improved system operation as they relate to certain spatially-associated assumptions. There are among these assumptions some which are soundly reinforced by empirical evidence.

Engin I. Holmstrom points out that the term 'student' has come to represent in recent decades, (concurrent with Trow's democratization trend), an increasingly complex group of individuals. Trow himself breaks down the growth phenomenon relative to student populations into separate components which have each generated their own problems: rate, size, age grade/cohort. With some degree of geographic bias, he might have been inclined to add distributive imbalance/injustice. This was subsequently done by Harvey.

The Report of the (Winegard) Commission, (British Columbia study 1976), expresses an assumption which is central to the whole issue of social service delivery for non-metropolitan regions.

> These graduates (of Interior institutions) appear to be more prepared than do the metropolitanly trained students to pursue long-term careers in the smaller cities of the Province. (p. 32)

This speculation addresses strongly the potential for fixed facilities in enhancing qualitatively and quantitatively the improvement of the whole social service delivery experience within the primary resource region. The proportion of 'non-traditional' higher education students has a tendency to run higher in such a region. Their freedom to be mobile is generally less than that of the traditional student. These factors combined with the strong potential just cited underline the need for greater distributive justice.

5. Degree of Desire for Reorganization and Restructuring

In 'The Northern Dilemma', Cameron discusses the zeal with which groups in such Northern Ontario centers as Sault Ste. Marie, Sudbury and North Bay sought to establish 'in situ' access to higher education within the region. Their efforts were responsible for the regional 'system' as it exists today. This may be taken to represent the spatial 'base line' of degree of desire.

Subsequent to the December 13, 1977 announcement of closure for Algoma University College, these earlier efforts were reinforced by a demonstration of concern from across the community, a demonstration which was significant in bringing about the 'stay-of-execution' granted. Also, the Province of Ontario has expressed its desire for and commitment to reorganization and restructuring in the various reports on the Design for Development program (Appendix D).

Alice Rivlin emphasizes the desirability of the federal government's taking strong leadership in the organization, funding, and evaluation of 'systematic experiments' into various ways of delivering social services (including education). She stresses the gains made with such federal involvement in, and commitment to, the areas of nuclear energy, space, and other fields, and asks whether education is not deserving of similar attention.

Interest has frequently been expressed as to the opportunity for innovation in the area of international education at a site such as Sault Ste. Marie. The interest found expression in the report of the Royal Commission on Algoma University College. Details of the recommendation were unfortunate and untimely, and lead logically to consideration of potential in terms of time frame conditions.

6. Time Frame for Reorganization and Restructuring

Improvement in the delivery of higher education opportunity into Northern Ontario will require that identification of potentials be organized clearly on a time frame for consideration and for expectations regarding achievement. Normally, placed on a spatial scale, this time frame would call for initial consideration of those potentials which apply at the local level, and later consideration correspondingly for the regional, provincial, national, and international levels.

In fact, the time scale and the spatial scale are not easily separable. Moreover, neither is easily 'orderable'. Since we are dealing with an 'organic' system, the logic of orderly sequence cannot be expected to hold. With the need for qualitative considerations and the concurrent calls for education as a 'preparation to live a life--a creative, humane and sensitive one' (Silberman, 1975, p. 57), it will become increasingly common for traditional structures designed for different 'climates' and environments to fall short of potential for imaginative and responsive programming.

Potentials for responsive program will have to be allowed a degree of 'free-floating' status, just as faculty will become 'increasingly members of a free-floating profession' (Kerr, 1972, p. 10). These situations possess special implications which will defy time scheduling and accuracy of prediction.

7. Logic of Program Exclusivity/Sharing

Kerr suggests that 'the university needs to create for faculty an environment that gives a sense of stability, security, continuity and equality' (1972, p. 95). It goes without saying that the other

constituencies of the academic community and the public at large, will become increasingly concerned with these qualitative characteristics as they apply to higher education and access thereto.

For the primary resource region in particular, there has been present in the traditional structure and programme (in their spatial extension) little evidence of any of these qualities. This would appear to legitimize a search for potentials which can give to nothern higher education the maximum possible levels of stability, security, continuity and equity.

> Long-term stability, through adequate protection from economic vicissitudes of a resource-based area, is essential if further progress is to be made. (OCUFA Brief, p. 11)

Two potentials come to mind immediately. The first is suggested by what is probably the closest to a stable program in the north at present --the Forestry Degree program at Lakehead University. The stability virtually assures the other qualities. From the granting of its charter in 1962, Lakehead University has had exclusive right, apart from the University of Toronto, for the offering of this programme. There is potential for logical application of this same kind of arrangement elsewhere in the north.

The second such potential has to do with a unique structural arrangement. This would lead to a multiple cooperation/affiliation/sharing arrangement for each northern institution with southern 'majors'. The advantages to be realized would include not only institutional stability but also a degree of 'system' stability. Such an arrangement would introduce the 'attraction' power of established traditional programme components (identified with the 'majors'--Appendix C, Tables 1, 2 & 3)

into northern centers, provide specific and more predictable movement of students for senior/graduate/professional opportunities in the south (thus reinforcing and stabilizing the concept of 'provincial system of higher education'), and would provide an interesting environment for innovation.

Combination of these potentials with others similar would allow for some interesting 'system rationalization' possibilities. Specific examples are dealt with in the next chapter.

8. Contribution to Social Well-Being

There are a number of respects in which improved higher education access/equity has potential for positive contribution to social well-being in the Primary Resource Region. Lappin would see it as going far toward reducing 'spiritual poverty' within such a region. The Science Council of Canada would recognize its value in providing for those who already possess abundant knowledge of their resources the ability to 'systematize and interpret' that knowledge.

Robert Maynard Hutchins indicates, like Lappin, preference for a kind of 'spiritual revolution' through education. This kind of revolution is taken here as being analogous with Lappin's idea above: a revolution leading to the elimination of a poverty of spirit which has come to be appreciated by some as the most significant criterion of poverty in the Primary Resource Region. The potential for an appropriate higher education system to encourage this kind of revolution is great.

9. Available Benefits from Past Experience

As early as 1797, the legislative assembly of Upper Canada (later

to become the Province of Ontario), in petitioning the crown for an education system to the higher education level, claimed that His Majesty's loyal subjects undertaking to develop the pioneer area should not be deprived of such opportunities because of spatial isolation (Harris, 1966, p. 10). The logic of such appeal has identical application for Primary Resource Regions universally today, and the potential seen here is one of creating widespread awareness of that logic. The present study aims at becoming an instrument in creation of such awareness.

There are experiential benefits to be derived from the critical years in establishment of the Southern Ontario system between 1890 and 1910, as viewed by Harris. The potential for such benefits in the present context depends on awareness of changes and fundamental differences in the 'place and time' environments. In terms of J. M. Cameron's (1978) 'Crisis of Authority' for instance, developing education systems today lack the nurturing support of the family and the church present in past institutional evolution.

Benefits are available, but need to be analyzed in terms of their nature as elements in a system and their interrelationship with other elements.

10. Currently Expressed Principles of Higher Education

Harry S. Broudy (1975), in joining others who have dealt with educational alternatives, sees the need to provide alternatives which increase students' freedom to achieve 'occupational adequacy, civic adequacy, and personal adequacy'. He suggests that some pressures for alternatives have, in fact, represented a flight from responsibility for, and commitment to, formal schooling. He further suggests that

creative diversity, (which is usually sought) is not random pluralism, (which is often achieved).

Broudy is not dealing with higher education specifically, but the trends and forces which have evoked his observations have been as damaging to higher education as to the public elementary and secondary levels. His random pluralism appears to parallel the 'random innovation' of Alice Rivlin, and the two may be perceived as outcomes of the continuing use of Martin Trow's 'prescriptive planning' (as opposed to 'systems planning').

In Ontario, the creation of the CAAT* system in the expansionary 60's responded to a need for much-required attention to the vocational side of postsecondary education. The Cameron Report, (The Northern Dilemma, 1975), in its recommendations, points out the need for cooperative planning and programming, in the major urban centers of the north, between the universities/university colleges and the CAATS. Various efforts and limited successes have paralleled this recommendation to date. In order that this kind of potential can achieve effective input into system improvement, the integrity of both philosophies must be guaranteed protection, and this can only happen with a clear mutual understanding of the principles of each.

Kerr issues a caution which should prevail in advancing toward cooperative structures without appropriate awareness of built-in constraints based upon principle and philosophy.

> It is a monumental historical error to try to accommodate mass and universal access enrollments within an elite framework. (1978, p. 268)

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* College of Applied Arts and Technology

11. The Practice of Politics of the Possible

The existing 'reciprocity agreement' by whose terms Northern Ontario students attending Lake Superior State College are granted in-state tutition privileges, is, in fact less than reciprocal. Michigan colleges/universities are accessible to grade twelve graduates. Ontario universities are accessible to grade thirteen graduates. Ontario CAATS are accessible to grade twelve graduates as well as to grade thirteen graduates. The complexities apparent in connection with a relatively simple straightforward agreement as cited should serve as example to show that few constraints are resolvable by action at any one level.

As interesting as the ideas of an international university and an integrated postsecondary education system may be, potentials in such directions will be realized only through exercise of politics of the possible.

12. Quantitative to Qualitative Transition in Values

This ongoing phenomenon constitutes a major element of the conceptual framework within which the present study fits. As suggested earlier, expression of qualitative interest in the resources of the Northern Ontario region has been largely responsible for converting the traditional one-way movement of benefits (north to south) to the contemporarily emerging two-way flow.

As the same kind of transition is reflected increasingly in the area of higher education (Smith, Harvey), one is encouraged to believe that much of the qualitative development upcoming will be dependent upon higher education. This will become an expanding potential as educators present

> an education which combines the technical strengths of the model-building era with a passionate concern for the condition of mankind. (Smith, 1972, p. 296)

13. The Centralization/Decentralization Debate

Many of the potentials for improvement of higher education organization for Northern Ontario hinge on resolution of the centralization-decentralization debate. The traditional view of development, dealt with at length earlier, operated according to the concept of centralization. The contemporary view of development is more dependent upon the philosophy of decentralization. Harvey suggests that selection of the appropriate approach is largely based on the initial condition in the non-metropolitan area. Decentralization he sees as being more appropriate where the initial experience was essentially an exploitive one. This is largely the experience of Northern Ontario, and with most Primary Resource Regions universally.

The concept of mobility is at the focus of centralization-decentralization consideration: mobility may apply to people, goods, services, information, ... Rivlin and Harvey both sound a note of caution with respect to centralization of people (through ease of mobility) in seeking well-being: mobility focussed toward the core region can reduce the level of well-being (sense of identity, sense of community) for the mover; it can reduce the level of well-being (quality of life) for those already there.

The model presented in the next chapter seeks to minimize these latter negative consequences by pursuing higher education improvement using an interactive model. In such a model, the optimum quality higher educational experience depends upon input into a system by both metropolitan and Primary Resource Region. In this situation, each is called

upon to provide system components for which it possesses the greatest potential.

14. Technological Assets/Liabilities

Technology related to delivery of higher education for the Primary Resource Region has both its assets and liabilities related to spatial considerations as well as to professional, institutional and social system considerations. One of the most interesting spatial considerations in this connection is the contrast which occurs in applicability of technology in the transition from metropolitan area to Primary Resource Region.

It has long been the assumption that technologies conceived and developed for massive consumption markets have direct applicability into low-to-moderate consumption markets as exist in Primary Resource Regions. This assumption has been the cause, sometimes hidden, of failure for assistance schemes applies at the global level, and of resentment within recipient areas to the 'benevolent' donor areas. George McRobie, director of the Institute for Intermediate Technologies in London, England, refers to technologies involved in such misapplication as 'violent' technologies (1977, p. 97).

Similar situations can arise with assumption made regarding the potential of technologies directed at improving social service delivery into such regions. What will usually be discovered is that considerable adaptation to the technology or its application must be worked out after its inappropriateness or 'violence' has been expressed in the context of relatively low-level use. Aside from inappropriate scale of application, delivery technology faces numerous other constraints. Meierhenry (p. 3),

has pointed out a number of problems which have prevented such technologies from achieving full measure for potential possessed. At the academic/institutional level, these include faculty resistance to utilization, faculty governance, individual (faculty) curriculum development, lack of integrated support services, student concern for humanism, and rise of student governance.

Harley (1976), refers to

> cable's unique capacity for affording relatively simple two-way interactive service (which) will also be extremely important some day. (p. 297)

The potential for cable delivery in the Primary Resource Region is essentially limited to those nuclei focused upon the major extractive/processing centers already linked by existing cable/microwave connections and then only within the most densely built-up areas of such communities. The most promising potential for this kind of region rests in the application of 'relatively simple two-way interactive service' and this concept is carried forward into the construct/model system synthesized in the next chapter.

There is limited potential for an in-line series-linked delivery system, which would at best hold limited interactive potential. The most promising <u>existing</u> potential technologically (to combine with the organizational) appears to be in the use of satellite communication.

> Because the flexibility of satellite technology allows easy networking, another intriguing possibility would be the development of school 'systems' that are educationally related in some way, but not geographically contiguous. (Harley, p. 298)

This reference to educationally related school 'systems' is the core component of the improvement-oriented model arising from this study

and built upon the Interactive Consortium concept. Such a concept, bringing together the technological and organizational components of the problem identified, is selected as the best of the potentials which have been examined in this connection.

> The special quality of the satellite technology is not merely that it facilitates cooperative undertakings of unprecedented scale and scope. The satellite also appears to have a potent psychological effect of placing people and things, jealousies and rivalries, terrestrial imperatives and status prerogatives in a new and larger perspective. As Charles Wedemeyer observes, 'It is one medium that need not be parochial; it sees the whole community, not only the school; it sees the state, not only the community; it sees the region, not only the state'.
>
> . . . distance need no longer be a barrier to the organization and application of our best educational and social resources. In addition, the satellite would permit service to special audiences which are too small to be economically viable in one community, but can be aggregated across the nation into a 'market' of sufficient size. (Ibid.)

These statements aptly sum up what has gone before: they add to validity for the interactive consortium concept approach to the spatial inequity/injustice problem as one which has the potential to address INSTITUTIONAL, PROFESSIONAL, PSYCHOLOGICAL, TRADITIONAL, PHILOSOPHICAL, and most important to this study, TERRITORIAL constraints.

CHAPTER VII

THE PROPOSED MODEL AND UNDERLYING CONSTRUCTS

> The geographical problem is to design a form of spatial organization which maximizes the prospects of the least fortunate region. A necessary initial condition, for example, is that we have a socially just way of determining the boundaries of territories and a just way of allocating resources among them. (Harvey, 1972, p. 98)

Much of the foregoing comprises a dedicated effort by this researcher to determine the boundaries of a territory, (Primary Resource Region), 'in a socially just way'. What remains to be done is to synthesize a construct/model system which derives from model theory, planning theory, educational theory, geographic theory, social theory, and theories of spatial justice. This model will consolidate from a number of constructs to offer a spatial/organizational construct worthy of consideration as being part of that spatial planning regarded by Coates, Johnston and Knox as a 'necessary component of any overall policy' aimed at 'a just way of allocating resources among them' (territories). (p. 4)

R. J. Chorley and P. Haggett, in Models in Geography, (1976), present an anatomy of models as used in geographic application. A summary of this anatomy is presented in Appendix C of this study. In addition to that summary, they deal with those models definable as 'internalized', whose distinctive feature is a 'parochial view of reality'. In addition, 'paradigms' are described as models with broad significance with value to a 'wide community of scholars'.

The model to follow herein is seen as placing emphasis upon principles and features from Appendix C as follows:

a structured idea
a relation
reasoning by means of translations in space and/or time
a simplified restructuring of reality (higher education)
a highly subjective approximation
an obscuring of incidental detail
a reasonably high probability of application
an appropriateness to a wide range of conditions
a highly selective attitude to information
an emphasis on connections from reality rather than on aspects
an emphasis on organic nature of relationships
suggestions for its own extension and generalization
a concentration on general systems theory
interest in input/output variables rather than internal status variables
an attempt at the paradigm's broad significance
a dependence upon paradigm rules derived from own 'education' and subsequent exposure to the literature

The approach to, foundation for, and construction of the model consciously employs selected dimensions of scientific activity as defined by Philip Sarre (1972, p. 129), as follows:

observation of phenomena of interest
description and analysis verbally, graphically, and mathematically
attention to processes rather than simply patterns
abstraction and generalization underlying basic hypothesis
advancement of ideal-type 'pattern model'
deduction utilizing 'pure' logic
assumptions about relationships between patterns and process
predictions about the situation in particular places at some point in the future

The follow-up presently anticipated will consist of involvement-oriented activity directed at improving organization of higher education for the Primary Resource Region in question. Concurrence of events and opportunity encountered late in the preparation of this study are

confirming the validity of the study within the Ontario context and are enhancing the likelihood of personal involvement in improvement efforts in that context.

Such follow-up involvement will permit application of Sarre's last step in scientific activity: continuing observation "designed to test the prediction made in the previous (next to last - deduction) stage", (p. 180) confirmation of prediction support theory, and recognition of failures as a stimulus to refinement.

A. STAGE I: VERTICAL/HORIZONTAL ACCESS-EQUITY CONSTRUCT (Figure 5)

K. Patricia Cross suggests that

> The new clientele for higher education in the 1970s consists of everyone who wasn't there in the 1940s, 1950s and 1960s. There are four distinctive but overlapping groups: (1) low academic achievers who are gaining entrance through open admissions; (2) adults and part-time learners who are gaining access through non-traditional alternatives; (3) ethnic minorities; and (4) women who are gaining admission through public conscience and affirmative action. (p. 32)

Cross is dealing with access along one dimension only. This study has referenced that dimension as the SOCIAL dimension of traditional deprivation. Within the study, the important SPATIAL dimension of deprivation from access to opportunity has been identified and added. The spatial component of solution to this contemporary problem has been focused upon organization for improved programme and delivery. Cross suggests that

> The problem for the future is not so much in the generation of new technology and new products as in better distribution systems, broader-based knowledge and greater concern for individual development. The way to raise the standard of living for everyone is no longer to train leaders but rather to educate the masses to their full humanity . . . .

> . . . A concept of education for all the people requires new methods of delivery to take education into prisons, homes and industrial plants. (p. 31)

It is appropriate at this point to introduce the graphic representation of the VERTICAL/HORIZONTAL ACCESS EQUITY CONSTRUCT (Figure 5). Cross' latter concept calls for delivery into constituencies which may all be found in the metropolitan region. The present study calls for delivery into constituencies apart from the metropolitan region, into the Primary Resource Region.

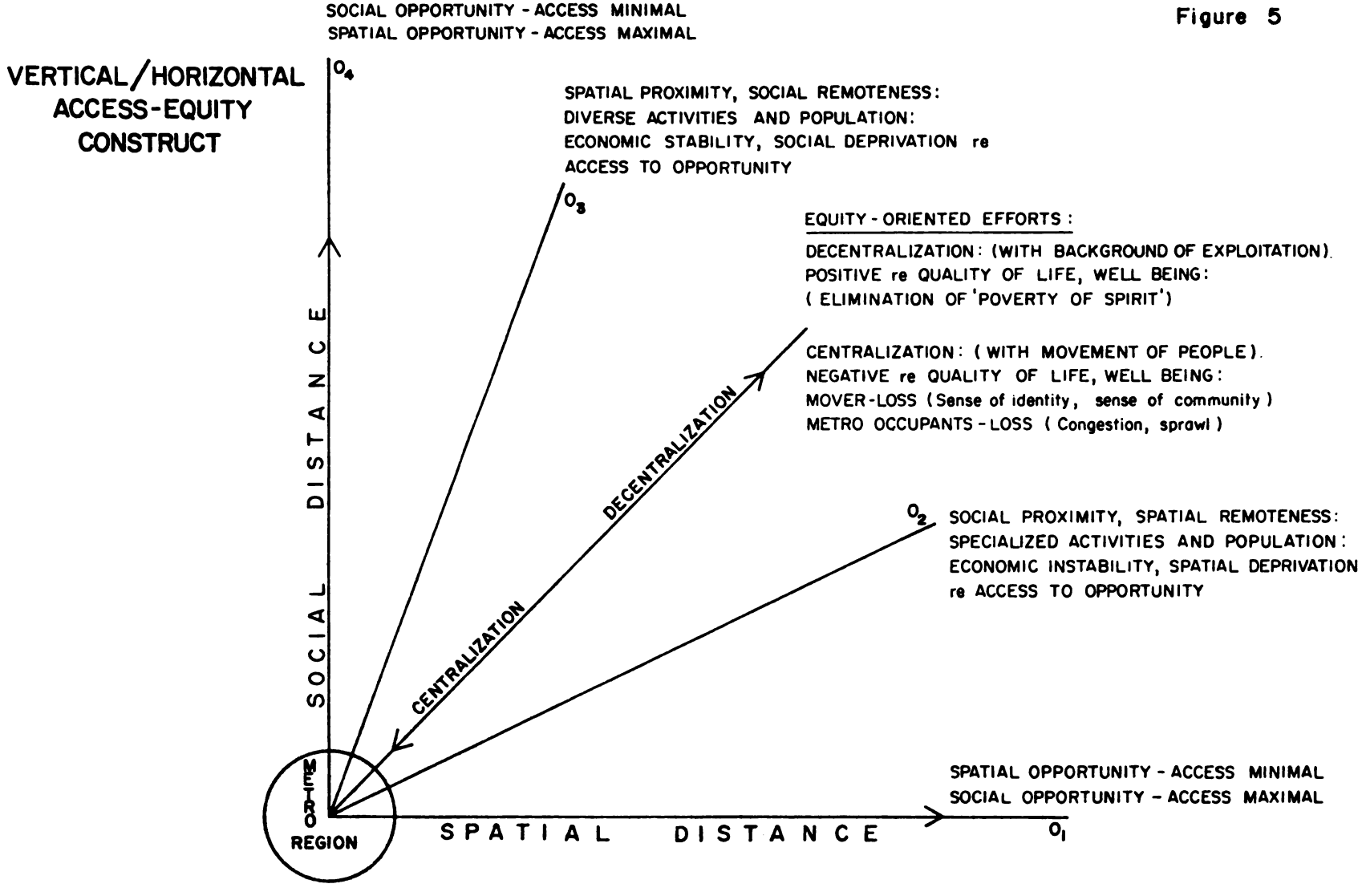
The vertical/horizontal access equity construct is presented as Stage One of the model foundation, since it provides a matrix which combines the social and spatial dimensions of access concern.

Distance along the Y-axis, (social distance), is non-scalar. It may expand or diminish with changing values and attitudes, policies, or legislation vis a vis racial and ethnic groups, color, creed, occupational and family background, income or sex. Distance (or remoteness from access) may be determined by such variables taken individually or in combination.

Similarly, distance along the X-axis finds its simplest expression in linear measure, but is inevitably made complex by such distance expanding variables as topography; climate; resource types and combinations; governmental philosophy, policy and intervention; quantity/quality perspectives and so on. Thus, the X-axis must also remain non-scalar.

With the introduction of the spatial dimension along the horizontal axis in this construct, the area enclosed allows for interesting 'overlap plotting' for the 'overlapping (social) groups' cited by Cross and the 'spatially deprived' group identified by the present study. This

Figure 5


VERTICAL/HORIZONTAL ACCESS-EQUITY CONSTRUCT
SOCIAL OPPORTUNITY - ACCESS MINIMAL
SPATIAL OPPORTUNITY - ACCESS MAXIMAL
O4
SPATIAL PROXIMITY, SOCIAL REMOTENESS:
DIVERSE ACTIVITIES AND POPULATION:
ECONOMIC STABILITY, SOCIAL DEPRIVATION re
ACCESS TO OPPORTUNITY
O3
EQUITY - ORIENTED EFFORTS :
DECENTRALIZATION: (WITH BACKGROUND OF EXPLOITATION).
POSITIVE re QUALITY OF LIFE, WELL BEING:
(ELIMINATION OF 'POVERTY OF SPIRIT')
CENTRALIZATION: (WITH MOVEMENT OF PEOPLE).
NEGATIVE re QUALITY OF LIFE, WELL BEING:
MOVER-LOSS (Sense of identity, sense of community)
METRO OCCUPANTS - LOSS (Congestion, sprawl)
DECENTRALIZATION
CENTRALIZATION
O2
SOCIAL PROXIMITY, SPATIAL REMOTENESS:
SPECIALIZED ACTIVITIES AND POPULATION:
ECONOMIC INSTABILITY, SPATIAL DEPRIVATION
re ACCESS TO OPPORTUNITY
SOCIAL DISTANCE
METRO REGION
SPATIAL DISTANCE
O1
SPATIAL OPPORTUNITY - ACCESS MINIMAL
SOCIAL OPPORTUNITY - ACCESS MAXIMAL

'overlap plotting' has the potential for examining non-metropolitan communities as their place variation on the matrix is indicative of characteristics derived from combinations of social variables and spatial variables.

The construct also provides a framework within which the concepts of centralization and decentralization can find logical directional expression in terms of relating to social/spatial characteristics of community make-up.

B. STAGE II: HISTORICAL ONTARIO DEVELOPMENT CONSTRUCT (Figure 6)

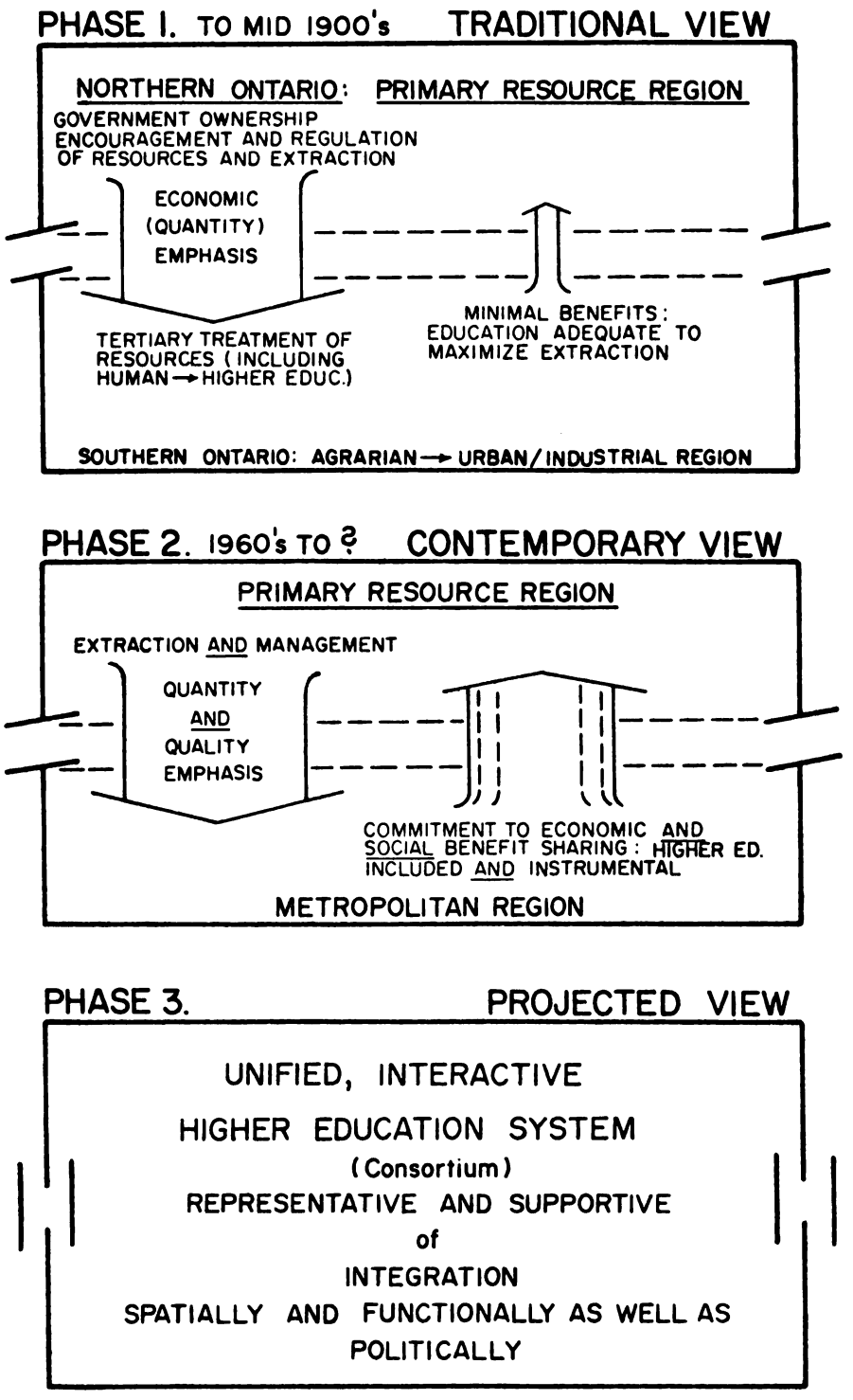
This construct is best viewed in three phases, keyed to changing levels of interactivity between the separated northern and southern parts of the province. The interactivity embodies multi-dimensional change including

government posture regarding development
resource-related attitudes
economic/social biases
quantitative/qualitative development-orientation
the role of education (especially higher education)

The first phase represents the situation to the mid-1900s, and focuses upon the traditional view of development. In this view, orientation is predominantly north-south. Natural resources of the north are owned by the provincial government, whose role is the encouraging and the regulation of quality extraction of those resources to southern markets. Education is an instrument of promotion to interest outside expertise and capital in such extractive efforts. Benefits derived from resource processing (including human resource processing--higher education) accrue primarily in the south. Return benefits, (primarily infrastructure) are adequate to maximize extraction.

Figure 6

HISTORICAL ONTARIO DEVELOPMENT CONSTRUCT



Arrows: Flow of Benefits

Dotted Line: Spatial and Philosophical Separation

Phase two, beginning in the 1960s, represents the contemporary view. Elements of change in this phase find public values toward resources emphasizing management as well as extraction, quality as well as quantity, and need to derive social benefits in balance with economic benefits and in the north as well as in the south. Government indicates commitment to enhancing quality of life in the Primary Resource Region. Part of that commitment is expressed as a need to provide opportunity for realization of individual and community potentials. And part of this need is to create access to educational opportunity with education defined as the key to economic and social development.

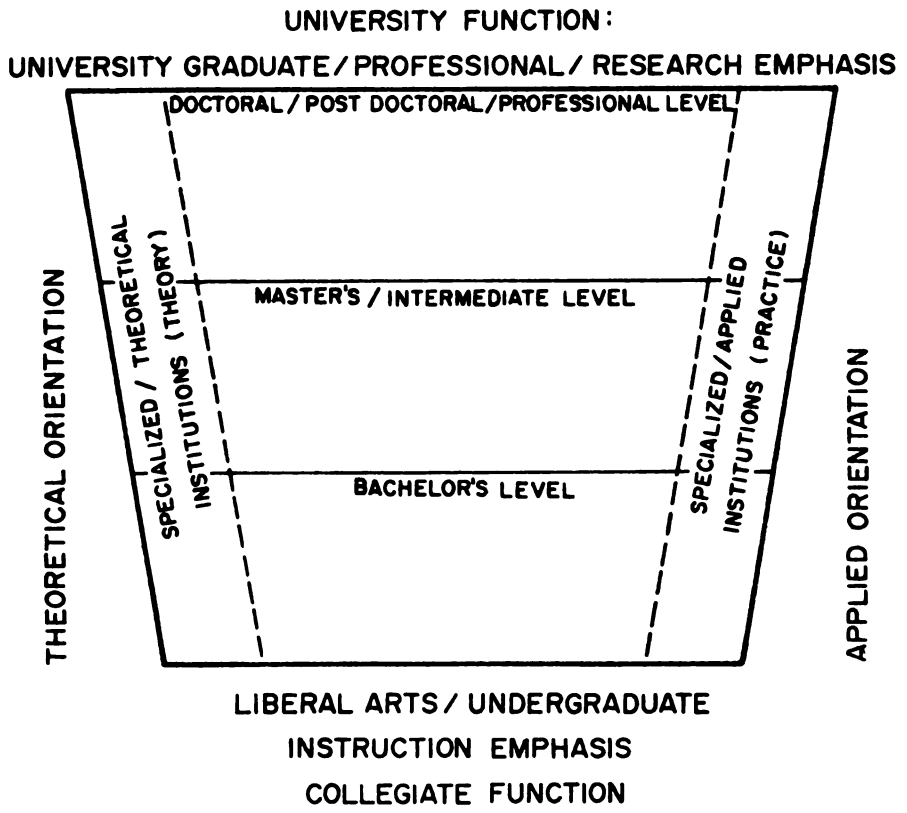
In phase three, the projected view, higher education is taken as possessing the opportunity to provide example of a system which overcomes the old physical/philosophical separation between the Primary Resource Region of the north and the metropolitan region of the south. Such a role requires interactive cooperative efforts to create a higher education system which is representative of and supportive of provincial integration spatially and functionally as well as politically.

C. STAGE III: TWO DIMENSIONAL INSTITUTION-ORIENTATION CONSTRUCT (Figure 7)

This construct, modeled on the conceptual framework offered by Harcleroad, et al. (1969) has definite spatial implications for the present study context.

The construct appears at first to provide a singularly functional matrix. The space enclosed allows for placement of differentiated institutions as judged on the basis of their instructional-level emphasis (on the vertical plane), and on the basis of their theoretical/applied

Figure 7



TWO DIMENSIONAL INSTITUTION-ORIENTATION CONSTRUCT

(after Harcelerod et al. 1969) p.102

emphasis (on the horizontal plane). Most existing institutions might be placed with relative ease somewhere within this descriptive framework.

Such a framework has value in application toward construction of a model for improved spatial justice/equity. As indicated by Urwick (1952), theory and practice each has its relative merits. Neither should be sacrificed for the sake of emphasis upon the other. As institutions develop to serve the needs of specific territorial units (such as the Primary Resource Region), the function of such institutions must be a compromise between applied orientation (community-serving and problem-solving activities), and theoretical orientation (providing interpretive, analytic and synthesizing skills and concepts, and competencies helpful in pursuing non-vocational self-actualization).

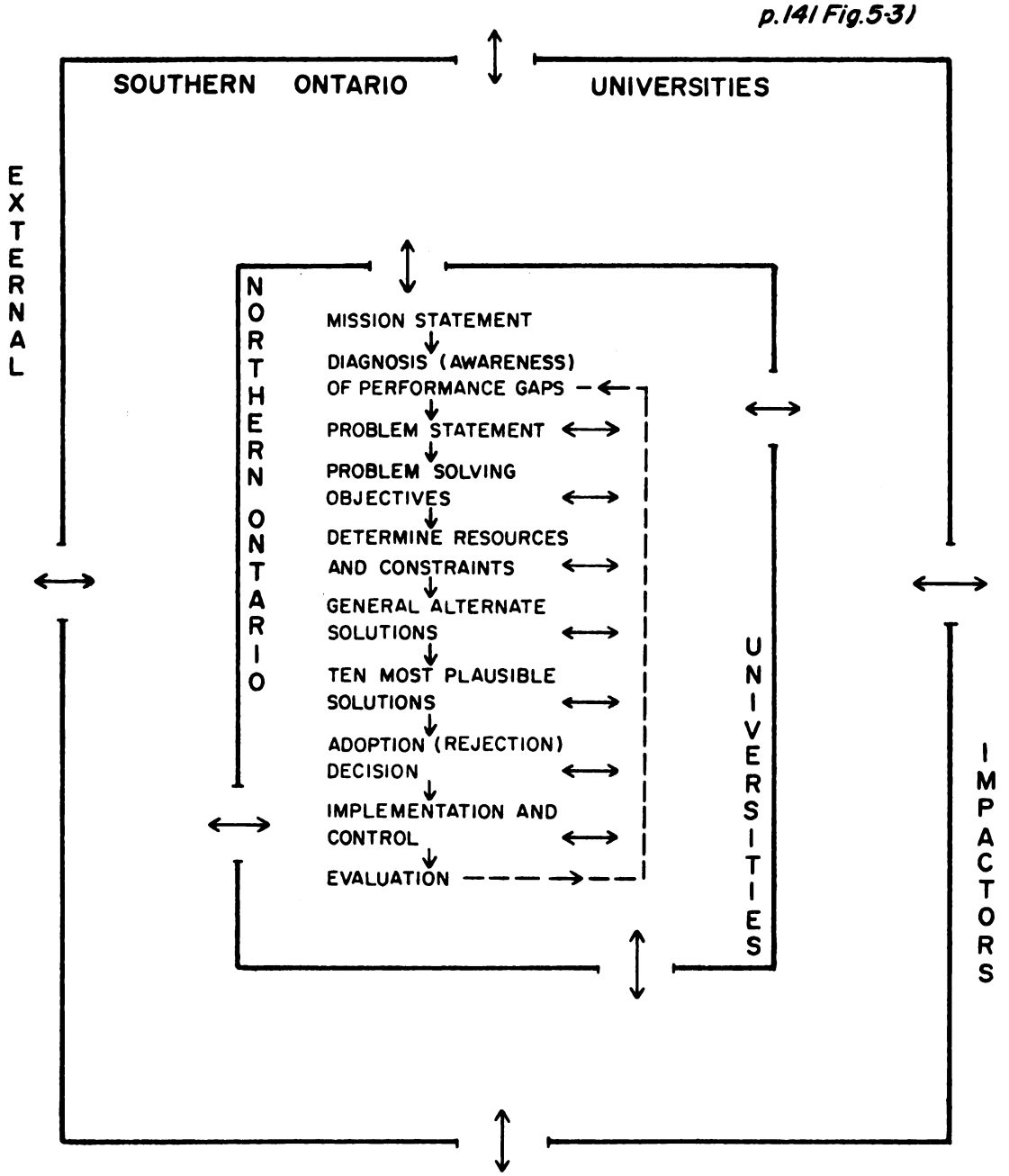
As suggested by J. M. Cameron (1975), the multiversity has frequently abandoned the interests and well-being of the undergraduate student. The base-line collegiate function in this framework has definite spatial significance in that undergraduate faculty-student contact opportunities are best maximized in the smaller liberal arts college frequently found, at present, apart from the metropolitan region. As one proceeds vertically upward within the construct framework, requirements for expertise/renown/research competencies are increasingly available. In terms of the present study, this vertical upward space from the base-line may be taken as somewhat analogous to 'Primary Resource Region to metropolitan' transition-space dealt with in discussion and in the model.

D. STAGE IV: THE PROACTIVE/INTERACTIVE CHANGE CONSTRUCT (Figure 8) (adapted from the Proactive/Interactive Change Model of Zaltman, et al., 1977, p. 141, Figure 5-3)

This stage represents a step from the generally or globally

PROACTIVE/INTERACTIVE CHANGE CONSTRUCT

(Adapted from Proactive/Interactive Change Model: Zaltman et al. p.141 Fig.5-3)



Linking with environment

Potential direct feedback and recycling from any one stage to any other

Figure 8

applicable vertical/horizontal access equity construct of stage one to a more specific spatial/functional matrix within which the study area may be placed.

In this matrix, the innermost space is occupied by the evolving higher education system of Northern Ontario. The surrounding 'environment' space is occupied by the provincial 'system' of higher education as represented by the universities of metropolitan Southern Ontario. A further perimeter 'environment' space is occupied by provincial and federal ministries, agencies and personnel representing functional (funding, advisory, support) environment for the provincial 'system'. These occupants of this environment are the 'external impactors'.

Placement within this matrix requires the assumption that the evolving Northern Ontario higher education system can generate internal forces and processes for change and can identify directions for self-renewal and self-enhancement along which these forces and processes may be applied.

The assumption must also be taken that there are critical people and groups operating in all three levels of environment who can be convinced that support for and commitment to the concept of internally generated planning for change is legitimate and desirable.

Like the dual environment model of Zaltman, et al., this construct assumes interfaces between levels of environment which are totally permeable to linkages between levels. And the same assumption of series/feedback potential for stage relationships within and between levels is also taken.

By being placed within this matrix, the problem of spatial/philosophical separation identified earlier in the study, and the related

problem of spatial injustice, can be approached from a spatial-solution perspective. The approach is also consistent with: the need for systems as opposed to prescriptive planning; (Trow); systematic experimentation as opposed to random innovation; (Rivlin); recognition of 'territorial needs'; (Harcleroad); the belief that chance should be distributed equally; (Martin); the assumption that general welfare is increased by reducing territorial differentiation; (Smith); and the goal of a just distribution justly arrived at; (Harvey).

E. STAGE V: INTERACTIVE CONSORTIUM NETWORK CONSTRUCT (Figure 9)

> . . . education is fundamental to the individual's enjoyment of certain recreational pursuits and to the fulfillment of democratic opportunities as well as to occupational status and social mobility. (Coates, Johnston and Knox, 1977, p. 13)

In the context of spatial/philosophical separation in Ontario, and the need to rectify distributive injustice, the interactive consortium construct is critical in assuring that education realizes its fundamental responsibility of enabling 'fulfillment of democratic opportunities'.

If rationalization of the 'system' to rectify injustice simply consists of perpetuating the flow of what is 'best' out of the metropolitan region to the Primary Resource Region, little is done to reverse the traditional regional cynicism regarding <u>access to</u> democratic opportunity, let alone fulfillment. To the writer, the cynical lack of desire to attempt becoming involved in the decision-making process is one of the most important, yet most under-rated, signals of poverty in the Primary Resource Region. If residents of such a region are to be convinced that they deserve input into the democratic system, they must first be convinced that that system values input which they may provide for

INTERACTIVE CONSORTIUM NETWORK CONSTRUCT

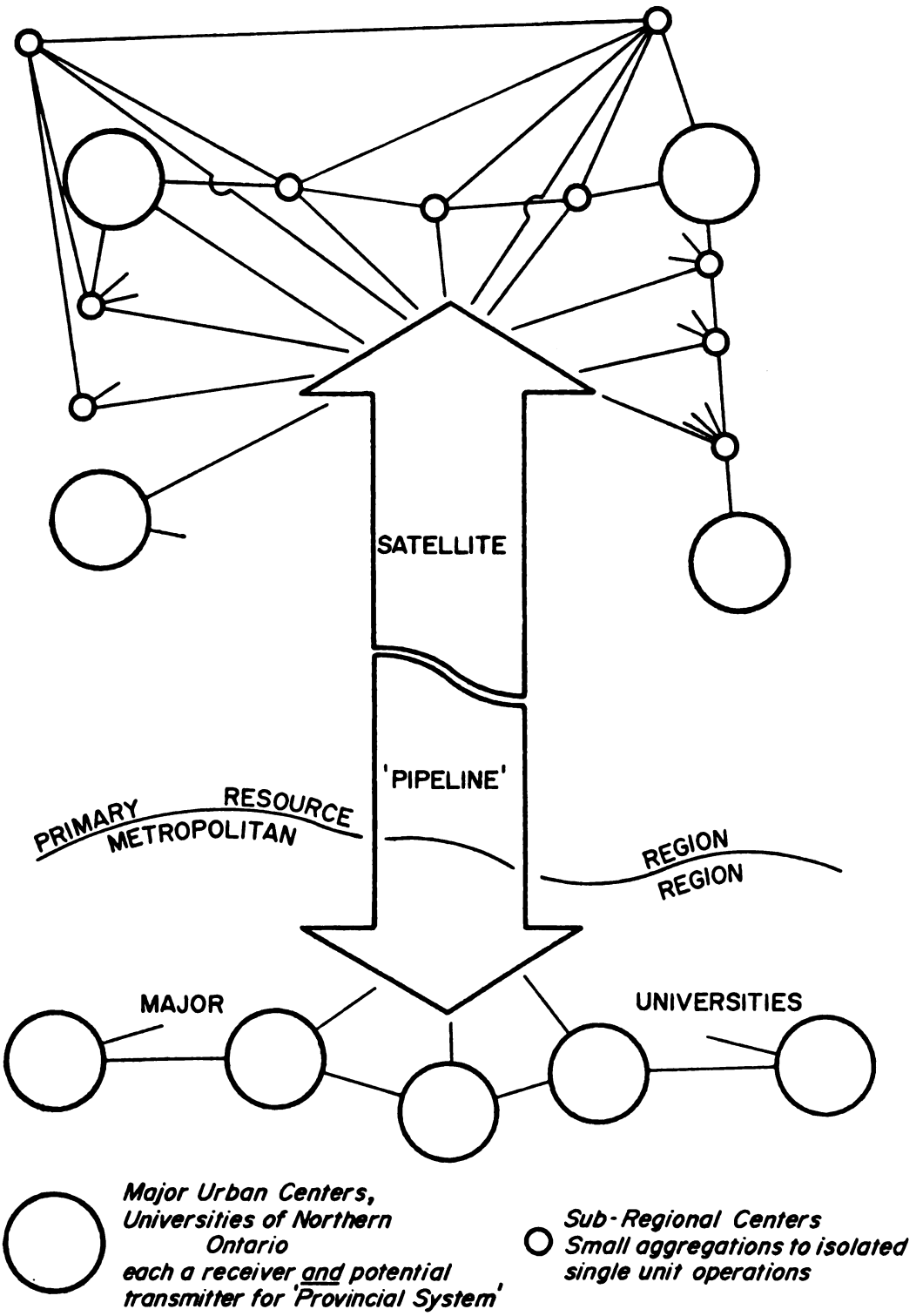


Figure 9

improvement in individual parts of that system--the social service system, and, more specifically, the higher education system.

The interactive consortium network construct is based upon the assumption that Northern Ontario institutions will be viewed as system-parters with Southern Ontario institutions, rather than system competitors. In other words, input-potentials for a better functioning system may originate in the Primary Resource Region for delivery south, as well as in the metropolitan region for delivery north. The construct as a unit has the organizational structure of a consortium, with interactive capacity maximized by the optimal technology available at present, in the form of satellite communication. In addition to actual information exchange as above, the consortium can become a medium through which awareness of opportunity for cooperative endeavors, mutual esteem for sound expertise based on differing kinds of knowledge, logical areas of programme-sharing advantage, and general common-purpose consciousness can be effected.

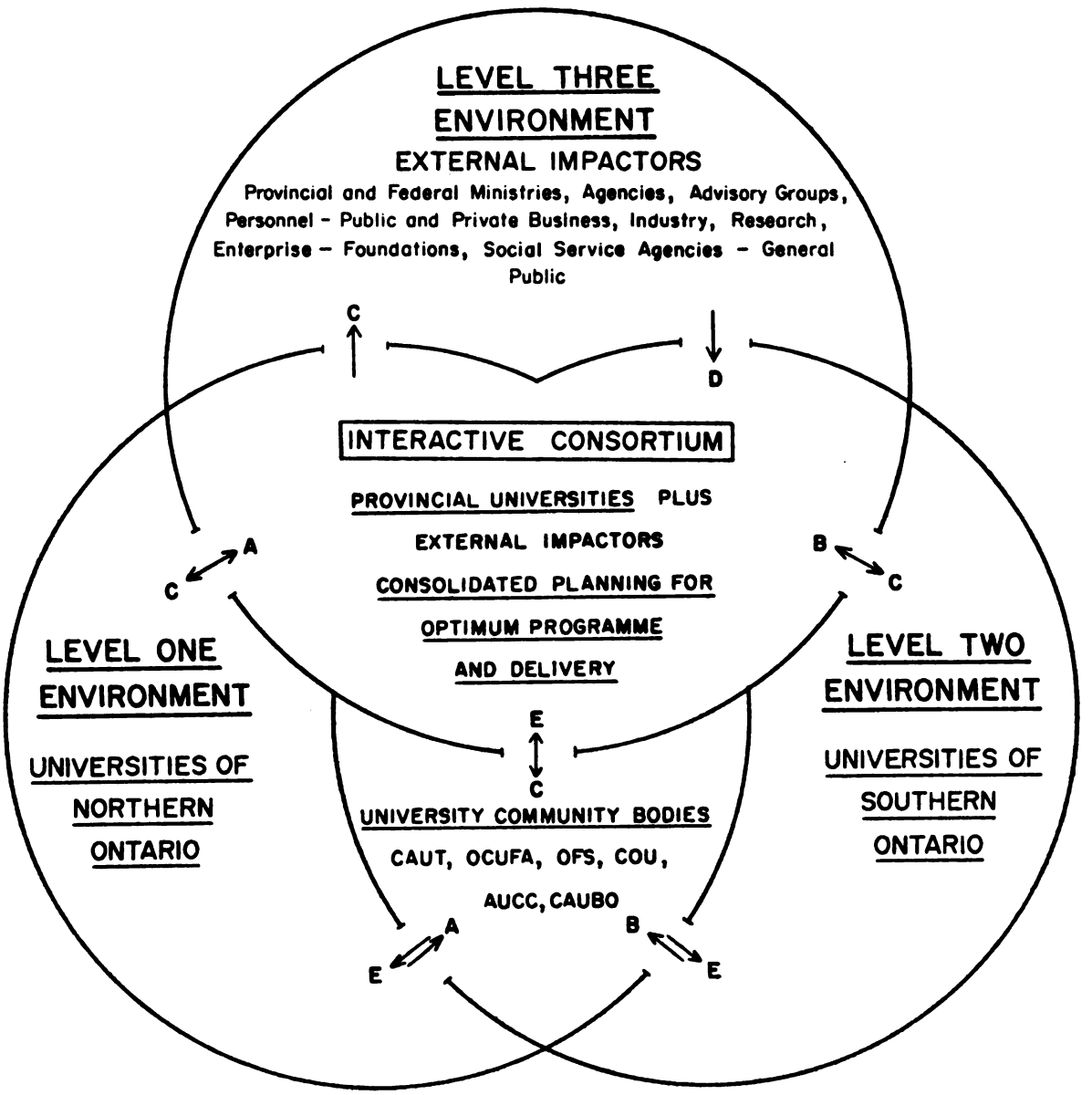
F. STAGE VI: THE STUDY AREA ACCESS-EQUITY IMPROVEMENT MODEL (Figure 10)

1. Level One Environment: Northern Ontario Higher Education 'System'

Placed in the matrix referred to in Stage One, this environment is remote spatially and socially from the metropolitan region of Southern Ontario. This places increased importance upon the process-function being initiated within this environment, as in Stage Two.

The mission statement must incorporate synthesis of higher education principle-related views and actions such as: response to changing meaning of quality education with open admissions, (value-added meaning); responsibility for educating the masses "to their full humanity";

STUDY AREA ACCESS IMPROVEMENT MODEL



CAUT *Canadian Association of University Teachers*
OCUFA *Ontario Confederation of University Faculty Associations*
OFS *Ontario Federation of Students*
COU *Council of Ontario Universities*
AUCC *Association of Universities and Colleges in Canada*
CAUBO *Canadian Association of University Business Officers*

Figure 10

"gearing up to serve a new clientele", (everyone who wasn't in higher education in the 1940s, 1950s and 1960s for Cross' social and this writer's spatial reasons); providing "learning that will foster personal development and community responsibility"; embracing of a higher education concept in which "education for all the people requires new methods of delivery" to extend education socially and spatially for greater equity; and the need to "demand of each student the higher standards of performance in the utilization of his or her talents". (Cross, 1973, pp. 31-34)

> bringing of facilities of more remote or poorer regions up to a qualitative level 'not scandalously below' that found in more concentrated and wealthier areas. (W. G. Fleming)
>
> achieving delivery improvements through application of such concepts as 'decentralization and community control'. (Alice Rivlin)
>
> improving general welfare through increasing territorial equity. (D. M. Smith)
>
> striving for 'just distribution justly arrived at' (David Harvey)
>
> reducing 'territorial discrimination' (P. L. Knox)
>
> providing 'opportunities and encouragement for each individual to achieve his highest potential of intellectual, personal and social development'; addressing, through a comprehensive approach to education in northern Ontario 'the continuing process of individual and community development and the unique needs of groups, communities and the region'. (Design for Development: Analysis)

The following is prepared as the kind of mission statement which grows out of such a synthesis.

> It is recognized that quality higher education must come to be defined as the right of a clientele significantly expanded numerically, qualitatively, socially and spatially. To accommodate that right, higher

education, (functioning as a system for the province), must undertake a self-analysis aimed at

- gearing standards to individual, community, and regional improvement linked with potentials
- finding delivery methods which will foster social and spatial equity and justice
- becoming a self-regulating, self-renewing system of mutually esteemed and mutually supportive institutions committed to serving equitably the province's total population
- maintaining those elements of traditional principle and function necessary for safe-guarding the integrity of the university as the recognized seat of formal higher education
- fostering preparation for a 'creative, humane, and sensitive' life

With the mission statement established upon a base of such principles of purpose, the balance of process steps needs to be addressed by a small representative group of 'critical', 'significant', 'involved', and, above all, 'committed' people. At best, this group will have the release time to meet frequently for sustained time periods within a specified time-frame.

For optimal regional representation, the concept of regional affiliation should be discarded from the Northern Ontario context. In its place should be established a <u>system</u> of universit<u>ies</u> and university colleges, ('Universit<u>ies</u> of Northern Ontario' as a subset of the 'Universities of Ontario'), each with mandate

1. to identify programme and outreach components best suited to its own part of the region
2. to participate cooperatively within the above group and to orchestrate its operation with others for a regional operation consistent with the mission statement
3. to seek and respond to opportunities for cooperation with any and as many southern Ontario universities as may be justified in specific areas involving joint efforts and joint expertise of mutual benefit institutionally and regionally

'Evaluation' and 'self-renewal' mechanisms need to become an important and part of the regional group's terms-of-reference in order that the regional instituions can, in fact, function as a system, as distinct from a number of 'educational empires'.

2. Level Two Environment: Southern Ontario University Community

This environment is included as a second component-level of the present model primarily because of the links it possesses, and may come to possess, with the Northern Ontario 'system'.

Mention has been made of the residual ties from parts of the north to established institutions in the south, largely developed prior to appearance of northern facilities. These southern institutions have had the time and the experience to develop sound reputations in specific academic areas, and a significant body of faculty widely recognized in these areas. Much of the foundation area of undergraduate instruction is, unfortunately, made the responsibility of graduate students. (From another perspective, admittedly, this is a fortunate situation in terms of graduate student assistance and, perhaps, experience. The bias for interpretation here is upon the undergraduate student and his best interests.)

Inasmuch as the Southern Ontario university community occupies the second of the three environment levels in the model, certain assumptions may be taken as being reasonable regarding its responsibilities and potentials from such a perspective.

First, that 'system' should be viewed as the 'nurturing system' for the emergent units in the 'Universities of Northern Ontario'. Having acquired the reputation and expertise mentioned above, its

universities also established the most direct pipelines to sources of funding, research requests, encouragement, and influence upon decision-making. Their residual ties to northern areas, along with others being developed, provide the basis for a network along which they can nurture specific undergraduate programmes and collect specific dividends from such efforts. Resources and existing facilities in the north provide a variety of potentials for associated efforts involving faculty and facilities adjusted to the realities of the northern region, working in partnership with 'status' institutions and facilities looked upon for leadership in the academic realm.

Secondly, the metropolitan region's universities possess a locational inflexibility and have come to possess a size inflexibility in terms of being able to respond adequately to the concept of spatial injustice. They possess faculty who reside in the metropolitan region by personal choice related to such factors as prestige of association with major institutions and convenience of access to varied and 'high-order' amenities. Such people are unlikely to possess strong desire for, or commitment to, direct personal/spatial-involvement in 'spatial equity' efforts. On the other hand, faculty dedicated to the emerging institutions of the north have so chosen on the basis of a variety of factors, including challenge of new ventures, quality of leisure-oriented amenities, pace of life, and intimate contact-opportunity with classes and community.

As the values and attitudes of the qualitative revolution continue to replace the values and attitudes of the quantitative revolution, it is entirely possible that increasing numbers of entrants to higher education will opt for the quality environmental advantages available with study in the north. Their introduction to the problems faced by a

developing region (as opposed to those of a highly developed region), can expose them to an appreciation of the unique circumstances and opportunities existing in the Primary Resource Region.

Coupling of the student and faculty factors considered here leads to a rationale in which the established universities of the metropolitan region encourage the development of contractual or consortium arrangements with institutions of the Primary Resource Region. In addition, it is conceivable that, with a functioning interactive consortium as considered earlier, students might be encouraged by 'prestige' institutions to divide their academic experience, so as to be provided with a first-hand perspective of the two very different parts of the higher education 'system', and of their province. In fact, success in this direction might be a critical step in achievement of a true HIGHER EDUCATION SYSTEM FOR THE PROVINCE OF ONTARIO.

3. Level Three Environment: Significant External Impactors

The occupants of this environment within the model are, in traditional practice, mainly responsible for changes in the education process. In other words, the process of adjustment has largely been initiated by these impactors. The present model includes them, but views them as acting more appropriately in a support capacity, responsive to and involved in changes necessary to effect spatial justice in the province's provision of higher education opportunity. Such changes, in the model, will be generated increasingly and internally on the basis of 'internal awareness of the performance gaps'.

Present occupants of this environment include Provincial Ministries of--Colleges and Universities; Education; Northern Affairs; Treasury,

Economics and Intergovernmental Affairs (along with influential personnel within each): professional and institutional organizations, (OCUFA, CAUT, CAUBO, COU, OFS, (Figure 10): private and public business and industry: research enterprises and foundations: social service and welfare agencies: and probably most significant of all, the general public. In most jurisdictions, as is the case with Ontario, traditional adjustments in higher education have found institutions responding to needs and trends identified, and alterations recommended, from within this 'peripheral' environment.

The present model is based upon the belief that awareness of the most significant 'performance gaps' in realizing access equity can be acquired most accurately from within the level one environment--within Northern Ontario. The process, then, of proceeding through the internal steps of the proactive/interactive change model, builds from such awareness, with support provided to the process from the other levels where and as required.

Certain examples of the fit of significant impactors into optimum model function may be derived from the selected potentials for improved organization in Chapter Five. In most instances, the role of these impactors becomes one of providing a legislative/funding/encouragement/ systematic/ . . . climate within which 'politics of the possible' can be directed to eliminating recognized constraints/liabilities. In some instances, it may be necessary to accept the addition of new impactors, (e.g., from the federal level--Rivlin), where they have a supportive and non-threatening potential.

The degree to which spatial constraints/liabilities may be converted to spatial assets/opportunities is dependent first upon the clear

identification and understanding of what those constraints/liabilities are, and what potential their conversion possesses for improved organization. The tendency has been for the level three environment impactors to suggest to institutions that they undertake efforts to effect conversion based upon their (external) perception of the situation. The frequently referred to concept of affiliation is an obvious case in point. These impactors possess the influence to encourage and create a climate in which adaptation of the concept to the northern environment has greater likelihood of creating assets from liabilities in the spatial sense.

In the case of logic of program exclusivity/sharing, the example of stability related to the forestry degree programme at the University of Toronto and Lakehead University has been discussed elsewhere in this study. Two current sets of discussions bear upon operation of the model and represent interaction at present involving, in case one, interaction between levels one and two environment, and in case two, all three levels.

Case one involves discussions between the University of Western Ontario (a possessor of strong residual ties with the community of Sault Ste. Marie), and Algoma University College in Sault Ste. Marie. A strong desire has long existed in the northern community for graduate courses in education, especially among teachers with bachelor's degrees. Graduate courses in education have been readily available in close proximity at Lake Superior State College in Sault Ste. Marie, Michigan, provided by Northern Michigan University in Marquette and Michigan State University in East Lansing. On repeated occasions over the past several years, the writer has been approached by a number of acquaintances expressing a desire to have graduate education courses from an Ontario university

made available through Algoma University College.

The discussions between Algoma and Western have intensified. Western recognizes that a number of Algoma's faculty have advanced qualifications in education, and experience in teaching at the elementary and/or secondary levels. It appears that a suitable arrangement can be arrived at to accommodate those desirous of entering a systematic Canadian content program. (Over one hundred local teachers have indicated preparedness to take advantage of such an arrangement.) This is truly a step toward the concept of interactive consortium.

Case two involves even more recent discussions in Sault Ste. Marie between representatives of the Rural Development Outreach Project at the University of Guelph and representatives from Algoma University College. The researcher had the privilege of being invited to participate in the initial discussion on March 26, 1979.

In this case, the representatives from Guelph have recognized the impact of physical and philosophical separation as dealt with earlier in this study. They carry the view that extension of their program into Northern Ontario requires the mounting of 'distant' interdisciplinary efforts and 'it is anticipated that a more fully developed project will be mounted in a location in Northern Ontario by 1980'. (University of Guelph, 1977-78) Ironically to the writer, the 'level three impactor' most prominent in this case is the W. K. Kellogg Foundation of Battle Creek, Michigan, funding sponsor for this 'helping people help themselves' project.

As a final example relating impactors to model, many people have been intrigued at various times over recent decades with the opportunity which exists for a unique 'international university' concept at Sault

Ste. Marie, Ontario/Michigan. The first step in this direction is naturally implementation of international cooperation. Legislators, (as impactors in this context), 'paved the way' for cooperation with a reciprocity agreement. From an internal perspective, this overlooks the basic system differences which render the agreement one-sided in terms of benefits.

This example is the most complex of all. It involves all three 'environment levels' and impactors all the way from the local to the national and international levels. It, more than any other example, makes obvious the need for systematic planning and efforts of all impactors to create an environment of support and encouragement, if it is, in fact, a desirable pursuit in a spatial sense.

G. CONCLUSION: MODEL STRUCTURE AND FUNCTION

The structure of the model is as portrayed in Figure 5. It consists of three circles interlocking in such a way that 'levels one and two environment' can interact across each other's boundaries or through the area common to all three--the Interactive Consortium area. Level three environment, that for external impactors, interacts directly with the Interactive Consortium, and indirectly through it with the other two levels. The 'shield' form area or remainder contains the official organizations representing the constituencies of the university community.

Just as in Buss' suggestion that 'universities, like individuals, are dynamic living systems that undergo change in the context of changing social conditions', it should be equally true of their overall organization that it be a dynamic living system--flexible, responsive, and self-regulating.

The proposed Interactive Consortium Council can enhance such organization. Its adherence to the latter descriptors can stem from structure and process safeguards consistent with its unique origin. These might optimally include:

> 'floating' calls-to-order in response to 'time and place needs' associated with the earlier mentioned performance gaps
>
> regular calls-to-order across the 'Universities of Northern Ontario' framework
>
> flexible overall membership responsive to needs as above
>
> core leadership representative of all three levels (with level three environment representative being a new deputy minister resident in northern Ontario and responsible for northern higher education affairs)
>
> a process mechanism marked by continous evaluation and totally fluid reversibility along an IDEA-ALTERNATIVE-DECISION-IMPLEMENTATION continuum (roughly analogous to the Unified Field Theory of Political Geography postulated by Stephen B. Jones)

The Interactive Consortium Council may be taken as somewhat analogous to the 'statewide planning, coordinating, and governing boards for public higher education' in the United States. (These numbered 23 in 1960 and 47 in 1970; today, 1979, 'all states and eligible territories except Wyoming have at least statewide planning boards; and in forty-eight states, plus Puerto Rico, coordinating or governing boards have some responsibilities for planning for the full range of postsecondary education'. Millard, p. 124)

At the institutional (sub-consortium) level, cooperation may be initiated along the lines called for by Governor Milliken of the State of Michigan:

> I also am calling for all private and public two-year and four-year colleges and universities to participate in regional conferences to develop program coordination among the various institutions. (Milliken, 1979)

Further, in summary, it would be well to outline the function on the basis of input by constituencies as identified in the diagram and in foregoing text description. Again, it should be noted that these inputs are representative and not exhaustive.

A. The 'Universities of Northern Ontario' should provide:

> information on community needs, and on regional performance gaps regarding improvement efforts (feedback function)
>
> awareness of unique assets for programme offerings, including environmental assets (resources, facilities, quality); student-faculty contact opportunity for undergrads; size and programme flexibility; opportunities for new research; faculty personnel tuned to problems and needs of Primary Resource Region reality
>
> continuous evaluation of programme
>
> limited graduate and professional programme components based on demonstrated suitability and competence
>
> qualified community personnel for cooperative programming with southern 'majors'
>
> regional programme focus on enhancing northern knowledge with 'interpreting and synthesizing' skills

These 'Universities of Northern Ontario' will develop from the present

> uniquely sensitive institutions of the North. Distributed throughout 80% of the land area of the Province and serving widely separated small communities in fragile economic circumstances these institutions must carry a burden of expectations perhaps quite different from those experienced elsewhere.
>
> These expectations flow from three sources: the narrow economic system of single-resource communities; the chronic underdevelopment of community services and the unpredictability of student demand from a shifting population. (OCUFA Brief, p. 11)

B. The Universities of Southern Ontario should provide:

nurturing attitude and academic atmosphere for improvement efforts

readiness to share programmes (especially at the undergraduate level) with interested and competent institutions in the north

'subcontracting' of programme segments and research project units for which northern region or part thereof best suited

senior personnel and expertise for programme and delivery planning and coordinating

assurance of intake to professional and graduate levels for undergraduate candidates from the north

C. The Interactive Consortium should provide:

intermediary function between external impactors and the provincial university community

advisory function, promotional function, coordinating function

information on system-wide needs (legislative adjustments, funding evaluation and formulae, research support, . . .)

D. External Impactors should provide:

legislative and financial support

information on externally perceived needs

non-academic support personnel for the planning and coordinating functions

a provincial 'climate' of encouragement, support, long-term commitment, and concern with equity

E. The University Community-Based Organization should provide:

observation and advisory functions regarding implications of adjustments in academic programme, delivery, faculty, student body, support staff, administration, budget, and any other resource adjustments involved in equity improvement efforts

logistical support for the 'change-planning and coordinating function', (data; information on legal implications, collective bargaining implications where applicable, professional and scholarly implications, . . .)

Inputs from the various environment levels into the Interactive Consortium may combine to become functions at that level.

A note of caution should be inserted at this point. There may be a tendency to read into the model more than the intent to which this study is directed--an improvement in spatial equity/justice. It should be understood clearly that the model was devised solely to assist this intent.

Finally, it should be stated and/or reiterated that the proposed model, in order to achieve optimum function, must be applied in company with as-near-as-possible-to-universal-acceptance of certain assumptions. These include:

> that a significant part of the improvement challenge can be addressed as a spatial challenge with spatial solutions
>
> that a higher degree of 'spatial justice' in terms of higher education access to opportunity can be achieved
>
> that a major share of the catalytic responsibility in developing alternatives for improved organization should be given the Primary Resource Region, with its proximity to regional performance gaps
>
> that established reputable universities are prepared to commit themselves solidly to achieving this spatial/social justice through seeking the supporting cooperative effort

These assumptions are consistent with the SEPARATION and EXTERNAL AWARENESS problems dealt with throughout this study. They are also consistent with a recent brief to the Ontario Council on University Affairs.

> It is clear to OCUFA that real recognition of the problems inherent in operating the Northern institutions has yet to be achieved outside the North. While Northern grants have brought some relief, a much more detailed and sophisticated understanding is required at all levels. Protecting core programs, allowing realistically for the environmental and geographic diversity of

> the region, giving incentives for experimental efforts, ensuring high quality of service, and guaranteeing equality of access and choice for Northern students--these should be the goals of the advisory councils and the government in respect to the North. (OCUFA Brief, p. 12)

This study, based upon internal perspective applied without benefit of significant external incentive for experimental effort other than what may follow, confirms, clarifies, and elaborates upon the goals cited in this brief.

CHAPTER VIII

SUMMARY STATEMENT AND IMPLICATIONS FOR FURTHER RESEARCH

Motivation for this study developed out of a lifetime of residence and several years of professional experience within the Primary Resource Region of Northern Ontario, Canada. The researcher was thus convenient to observation of a pattern of traditional extraction, with physical resources removed from the region with little processing to add value within, and therefore, benefit for, the region. In the case of human resources, the pattern of removal has been essentially the same traditionally, with people compelled to migrate south to the metropolitan region for any diversity of opportunity, including higher education opportunity.

The pattern remains much the same, and only recently has government indicated commitment to extension of equitable opportunity into all parts of the province.

The future will be marked by increasing need for greater concern toward equitable access to opportunity as well as toward equitable development for Primary Resource Regions. This will be in the best interests of the province as a whole.

There have been examples of improvement in access and development through a decentralization in such diverse countries as Brazil, Britain, Norway, and Thailand.

The compatability of the researcher with the theme addressed and the study carried out is described by Minshull:

> Ideally, the theme comes out of the region, and is in fact the expression of its most important characteristic for the geographer . . . .
>
> The geographer is selfish in indulging his own interest in a region, but in a well-written description where the geographer is not ashamed to reveal his interests, the reader may be able to share these interests and go along with the development of his ideas, although this is much more common when reading history . . . .
>
> The regional geographer assembles all the facts which may be necessary, then he thinks about them, and thinking is not a group activity. The facts are digested, analyzed, and re-synthesized into a different form, which is the geographer's personal view of reality tempered by his training. Therefore, if the task <u>is</u> too big for one man, then in the opinion of the writer the answer is not to confine each man to a single topic, and make him a general geographer, a specialist unable to communicate with other specialists, but to confine each man to a region small enough for him to comprehend, to make him a regional geographer, a complete man among men. (Minshull, 1967, pp. 141, 149, 151)

A. RESEARCH FOR THIS STUDY IN RETROSPECT

The theme for the present study came 'out of the region' and 'is in fact the expression of its most important characteristic for the (present researcher, a) geographer'. That theme is the deprivation of Ontario's Primary Resource Region population from equity of opportunity, (spatial justice), growing out of the reality of spatial/philosphical separation between frontier Northern Ontario and metropolitan Southern Ontario. Knowledge of this situation of spatial injustice is possessed by the writer by virtue of: (1) its having impacted upon his acquisition of undergraduate and graduate academic credentials; (2) its having limited the potentials of emergent higher education institutions in the north, especially the one with which the researcher has been associated for ten years; and (3) its having been largely responsible for instilling within a regional people a 'poverty of spirit' personified by cynicism toward

recent efforts by a provincial government to invite input into the decision-making process from its Primary Resource Region.

Capacity of the researcher to interpret and synthesize that knowledge comes from 'tertiary treatment' of himself as a human resource in universities of Southern Ontario and the State of Michigan.

While 'selfish in indulging his own interest in a (primary resource) region', the researcher 'is not ashamed to reveal his interests', in hopes that 'the reader may be able to share these interests and go along with the development of these ideas'. Should this be the case, the reader will be aware, by this point, of the purpose of the study: to fill a gap in current research--one created by lack of emphasis upon the spatial dimension of a social problem.

Facts and empirical evidence from the researcher's experience, observation, education, and exposure to the literature, have been collectively 'digested, analyzed, and re-synthesized into a different form, . . . (my) personal view of reality tempered by training'. The researcher presumes to characterize himself as one who, despite pressures within his discipline in the past two decades to see specialization and quantification as ends, has sought to apply enough of each to fit 'the answer . . . to confine each man to a region small enough for him to comprehend, to make him a regional geographer'. This research is presented as a product of this experience--a conceptual model framework derived from a perspective internal to Ontario's Primary Resource Region.

B. FURTHER RESEARCH

It is, of course, the aspiration of the writer to see this study become a catalyst to further research in the area of spatial injustice

as applicable to Primary Resource Regions.

As implied previously, the researcher will continue to examine the concept of spatial equity and related socio-geographic concepts as applied to higher education. The search for dimensions of these concepts most easily identified, analyzed, interpreted, re-synthesized, and articulated from an internal perspective will continue. Opportunity exists for the application of such efforts in the form of Ontario's 'Design for Development' programme, and the University of Guelph's 'Rural Development Outreach Programme' to name but two.

It is to be hoped that geographers, especially generalists with varying biases and competencies, will explore the social service delivery dimension of social geography so competently identified by Harvey, Smith, and Coates, Johnston and Knox.

Through experience, and more recently through exposure to high level expertise, academic responsibilities, and literature in the area of higher education, the writer has come to appreciate the addition of yet another component of knowledge to his own reserve. Higher education is much more than an element of knowledge and an element of social service delivery.

It is a potentially powerful instrument and vehicle to be applied in creating awareness of, and a climate for, continuing improvements in the area of social justice and 'people-qualitative' oriented development for all jurisdictions. It can exert such power best if it remains, above all, a humane process/instrument/vehicle aimed at fostering a love of learning, and at 'turning out happy (and humane) mortals!

APPENDICES

APPENDIX A

RELEVANT REPORTS AND STUDIES

Higher Education in the Atlantic Provinces for the 1970's, a study prepared under the auspices of the Association of Atlantic Universities for the Atlantic Maritime Union Study, Halifax, December, 1969.

Feasibility Study of Interinstitutional Cooperation, University of Wisconsin - Superior, University of Minnesota at Duluth, and College of St. Scholastica, February, 1975.

Report of the Advisory Task Force on Twin Ports Cooperation, Increasing Cooperation among UMD, Scholastica, and UWS, Lake Superior Association of Colleges and Universities, February, 1976.

The Learning Society, report of the Commission on Postsecondary Education in Ontario to the Ministry of College and Universities, Ontario, 1972.

Report of the Commission on University Programs in Non-Metropolitan Areas, submitted to the Minister of Education, British Columbia, September, 1976. Commissioner: W. C. Winegard.

Reports of the Royal Commission of Inquiry, Algoma University College, June, 1976 - November, 1977. Commissioner: J. W. Whiteside, Q.C.

The Northern Dilemma: Public Policy and Postsecondary Education in Northern Ontario, prepared for the Economic Council of Ontario, Discussion Paper Series, 1978.

The Ontario University System: A Statement of Issues, Ontario Council on University Affairs, 1978.

Consortium Agreement, (Criminal Justice), between the University of South Dakota and Northern State College.

Response to the Final Report of the Royal Commission of Inquiry into Algoma University College, Board of Trustees, AUC, January, 1978.

Design for Development

Statement by the Prime Minister of the Province of Ontario on Regional Development Policy, April, 1966

Northeastern Ontario Region, Phase 1: Analysis, June, 1971

Northeastern Ontario Regional Strategy, March, 1976

Statistical Appendix to NE Ontario Regional Stragegy, March, 1976

Ontario's Future: Trends and Options, March, 1976

Northwestern Ontario: A Strategy for Development, January, 1978

Statistical Appendix to Proposed Regional Development Strategy, NW Ontario Region, Working Paper 1, Statistics, April, 1975

Ministry of Treasury, Economics and Intergovernmental Affairs, Regional Planning Branch, Toronto.

Brief to the Ontario Committee on University Affairs, Ontario Confederation of University Faculty Associations, Toronto, March, 1979.

Proceedings of the Conference on Regional Development in Northeastern Ontario, Laurentian University and Municipal Advisory Committee for NE Ontario, Laurentian University, Sudbury, February, 1976.

Proceedings of the Second Annual Conference, Municipal Advisory Committee on Provincial Planning in NE Ontario, North Bay, May, 1977.

APPENDIX B

TABLE 1

1975 (FALL) 1st. YEAR INTAKE FULL-TIME UNDERGRAD STUDENTS: PROGRAM AND REGION OF ONTARIO

Program	Northern Ontario		Southern Ontario	
	Number	%	Number	%
Arts & Science (General & Yr. 1 Honours)	912	4.4	19852	95.6
Engineering	52	1.6	3235	98.4
Commerce & Business Administration	204	10.8	1691	89.2
PHRE	123	6.8	1674	93.2
Nursing	101	16.3	518	83.7
Social Work (Yr. 1)	89	36.9	152	63.1
Forestry	92	46.9	104	53.1
% of Above Intake		5.5		94.5
% of Total Population		10.5		89.5

Adapted from data derived from Ontario U.S.I.S. (1976) and Ontario MCU Statistical Summary, 1975-76.

APPENDIX B

TABLE 2

1975 DESTINATION (FALL INTAKE) FULL-TIME AND PART-TIME STUDY RESIDENTS FROM NORTHERN ONTARIO SUBDIVISIONS

Subdivision	First Choice		Second Choice	
	Full-Time	Part-Time	Full-Time	Part-Time
Sudbury	Laurentian* 45.7%	Laurentian 85.4%	Waterloo 10.9%	Ottawa 8.4%
Thunder Bay	Lakehead 62.9%	Lakehead 94.0%	Western 9.5%	Waterloo 2.8%
Algoma	Laurentian 21.7%	Laurentian 84.1%	Western 19.4%	Waterloo 5.2%
Nipissing	Laurentian 30.3%	Laurentian 85.6%	Waterloo 12.5%	Waterloo 3.7%
Cochrane	Laurentian 18.2%	Laurentian 79.9%	Ottawa 14.5%	Waterloo 7.5%
Timiskaming	Waterloo 15.6%	Waterloo 17.0%	Western 14.3%	---
Kenora	Lakehead 35.3%	Lakehead 79.1%	Western 10.8%	Waterloo 9.6%
Parry Sound	Waterloo 15.8%	Laurentian 35.4%	Laurentian 14.2%	Waterloo 9.6%
Rainy River	Lakehead 34.8%	Lakehead 89.4%	Waterloo 13.0%	---
Manitoulin	Laurentian 26.8%	Laurentian 63.6%	Guelph 14.3%	---

*In each case, Laurentian 'system' (Map 2)

Adapted from data derived from Ontario U.S.I.S. (1976)

APPENDIX B

TABLE 3

ONTARIO UNIVERSITY PROGRAMS: SHARE BY NUMBER AND % FOR LOCATION: (INTAKE-YEAR 1-1975)

	Number	%	Number	%	Number	%	Number	%	Lakehead/Laurentian	
Arts & Sci. (Gen. & Yr. 1 Hon.) 20,764	Toronto 5943	28.6	Western 3715	17.9	York 3247	15.6	Waterloo 2752	13.3	912	4.4
Engineering 3,287	Waterloo 769	23.4	Toronto 652	19.9	Qun's 429	12.1	McM 396	12.1	52	1.6
Commerce & Bus. Adm. 1,895	McM 439	23.2	Windsor 318	16.8	WLU 313	16.5	Qun's 184	9.7	204	10.8
Phys., Health, & Rec. Ed. 1,797	McM 365	20.3	Waterloo 334	18.6	West 296	16.5	Toronto 118	6.6	123	6.8
Fine & Applied Arts 568	York 350	61.6	Windsor 65	11.4	McM 53	9.3	West 43	7.6		
Hshold. & Food Sci. 423	Guelph 318	75.2	West 85	20.1	Ottawa 20	4.7				
Agriculture 316	Guelph 316	100.0								
Music 504	West 185	36.7	Toronto 106	21.0	McM 45	8.9	Qun's 43	8.5		
Journalism 162	Cltn 162	100.0								
Nursing 619	Toronto 112	18.1	Windsor 109	17.6	Ottawa 87	14.1	West 79	12.8	101	16.3
Sec. Science 106	West 106	100.0								
Forestry 196	Toronto 104	53.1	Lakehead 92	46.9					92	46.9
Social Work 241	Windsor 84	34.9	McM 68	28.2	Laurentian 54	22.4	Lakehead 35	14.5	89	36.9
Architecture 193	Waterloo 65	34.0	Cltn 64	33.0	Toronto 64	33.0				
Phys. & Occup. Therapy 87	Qun's 52	59.8	West 35	40.2						
Landscape Research 66	Toronto 36	54.5	Guelph 30	45.5						
Industrial Design 33	Cltn 33	100.0								

Data Source: Ontario U.S.I.S. (1976) and Ontario MCU Statistical Summary, 1975-76.

APPENDIX C

ANATOMY OF A MODEL (AFTER CHORLEY AND HAGGETT, 1967)

. . . a model can be a theory or a law or an hypothesis or a structured idea . . . it can be a role, a relation or an equation . . . Most important, it can also include reasoning about the real world by means of translations in space (to give spatial models) or in time (to give historical models) . . . A model is a simplified restructuring of reality which presents supposedly significant features or relationships in a generalized form. Models are highly subjective approximations . . . they do not include all associated observations or measurements, but as such they are valuable in obscuring incidental detail . . . The most successful models possess a high probability of application and a wide range of conditions in which they seem appropriate . . . (pp. 21, 22)

The most fundamental feature of models is that their construction has involved a highly selective attitude to information . . . models are structured . . . selected aspects of the 'web of reality' are exploited in terms of their connections . . . phenomena are viewed in terms of a kind of organic relationship . . . a successful model contains suggestions for its own extension and generalization . . .

. . . A model must be simple enough for manipulation and understanding by its users, representative enough in the total range of the implications it may have, yet complex enough to represent accurately the system under study. (Chorafas, 1965, p. 31) . . . Reapplication is a prerequisite for models in the empirical sciences . . .

Types of Models . . .
descriptive - stylistic description of reality: either STATIC (concentrating on equilibrium structural features) or DYNAMIC (concentrating on processes and functions through time).
normative - what might be expected to occur under certain stated conditions . . .

Another view of models concentrates upon them as systems which can be defined on the basis of relative interest of the model builder in the input/output variables, as distinct from the internal status variables . . . (pp. 23-25)

APPENDIX D

SUMMARY OR DESIGN FOR DEVELOPMENT PROGRAM

Design for Development, Statement by the Prime Minister of the Province of Ontario on Regional Development Policy, Tuesday, April 5, 1966.

Page 1, preamble

"The following statement, 'Design for Development', which I am pleased to deliver on behalf of the Government of Ontario, is a document through which the government expresses its concern that all economic regions of the province should share in a purposeful provincial development programme . . ."

Page 2

" . . . In the first place, this government accepts the responsibility of guiding, encouraging and assisting the orderly and rational development of the province. In the second place, we believe that our efforts should be complementary to the private sector of the economy in helping to create an atmosphere for growth and development . . ."

Page 3

"It is the responsibility of the Ontario Government to assess the present and future requirements of the province relating to social, economic and governmental development . . ."

"Although separate and distinct, two of our principal objectives are the provision of the best possible environment for our people and, at the same time, the creation and maintenance of an atmosphere which will encourage the economic growth and development throughout the province. These two objectives considered together in the framework of a programme designed to bring both qualitative and quantitative benefits to all people in the province."

Page 9

" . . . The need for post-secondary education, for expanded technical facilities, and for adult retraining is pressing. Increased public investment in education in the lower-income regions of Ontario is perhaps the best long-run key to development . . ."

Page 25

"At all times, we shall be seeking means of ensuring that people in all parts of the province share in the benefits of economic and social development, and that regional development will be looked upon as an integral part of this government's contribution to the development of the province as a whole."

Design for Development: Northeastern Ontario Region, Phase I: Analysis, Department of Treasury and Economics, Ontario, January 23, 1971.

Page 242
" 7. EDUCATION

Goal: To provide opportunities and encouragement for each individual to achieve his highest potential of intellectual, personal and social development.

Educational facilities and level of attainment are continually improving in Northeastern Ontario, although the region is still well behind other parts of the province. Again, a population scattered over a vast land area causes problems in the provision of both adequate facilities and a variety of educational opportunities . . ."

Design for Development: Northeastern Ontario Regional Strategy: A Proposed Strategy, Ministry of Treasury, Economics and Intergovernmental Affairs, Regional Planning Branch, March 19, 1976.

Page xvii
" c. EDUCATION

24. The province should continue the development of community based education through broad community representation and through retention of existing schools."

Page 48
" B. The Social Strategy

1. Social Development Goals

The overriding principle of all recommended social policy action in the regional strategy is that of equity in the social well-being of Northeastern Ontario: social equity for individuals, groups, and communities within the region, and for the region within Ontario. To the individual, social equity implies the right of equal access to essential services: . . . It also implies the right of equal access to developmental services providing basic choice: education, training and skill development, and communication. To the group, social equity implies the protection and enhancement of rights and identity . . .

The cost of providing a variety of social services on a scale necessary to achieve social equity for all residents of the Northeast will be extremely high. The vastness of the region and its sparse settlement pattern may make the single factor of access, for example, to educational and health facilities, a 'cost' of living in the Northeast . . .

. . . Coverage will not be uniform, and tradeoffs will have to be made in deciding upon levels of service throughout the region. This does not mean that services and facilities will not continue to be improved in the Northeast in the future; on the contrary, the province, in cooperation with other levels of government, will continue to upgrade its programs and facilities in the Northeast . . .

The four major urban centres of Sudbury, Sault Ste. Marie, North Bay, and Timmins have social infrastructure similar to those of other major cities in the province. There are no significant disparities in the provision of services or facilities with regard to health care, educational opportunity, communications . . . Therefore, this report emphasizes somewhat the need for social services in the smaller communities (apart from those named above). In doing so, the strategy also emphasizes the service role the large centres must play in providing many of the higher level social facilities (postsecondary education, specialist medical services, broadcasting facilities, etc.) required by the rest of the region."

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" c. EDUCATION

A comprehensive approach to education in Northeastern Ontario addresses both the continuing process of individual and community development and the unique needs of groups, communities and the region. Such responsiveness relies on decentralized administration, community-based delivery, opportunities for participation, and a strong commitment to formalized continuing education."

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" ii. Education has been one of the most effective ways in stimulating development in all parts of the province . . ."

APPENDIX E

SERVING AND DESERVING: DISTRIBUTION AND EXPLANATION

This text/map/table combination is intended to demonstrate the contrast in higher education serving (with 'service-area' radius proportionate to percentage of 1975 full-term full-time undergraduate freshman enrollment for each Ontario university center) and deserving, (with adjustment in the normal social-service delivery criterion--population density). Focus is on the Administrative Districts of Northern Ontario: Nipissing, Parry Sound, Manitoulin, Sudbury, Timiskaming, Cochrane, Algoma, Thunder Bay, Rainy River, and Kenora. These comprise what is defined in this study as Ontario's Primary Resource Region, the 'economic colony' for Southern Ontario.

For the SERVING map, coding shows the districts falling within service areas as follows:*

Nipissing, Parry Sound, Manitoulin	- 3
Sudbury	- 2
Algoma, Timiskaming, Thunder Bay, Cochrane	- 1
Rainy River, Kenora	- 0

The radii for the service areas, whose arcs are illustrated, are proportionate to the percentage of fall full-time enrollment for each center in the province containing at least one chartered university. Peterborough (Trent University) has the lowest share (1.7%) and has been assigned a radius of 1/4 inch. Radii for other centers are calculated from this base.

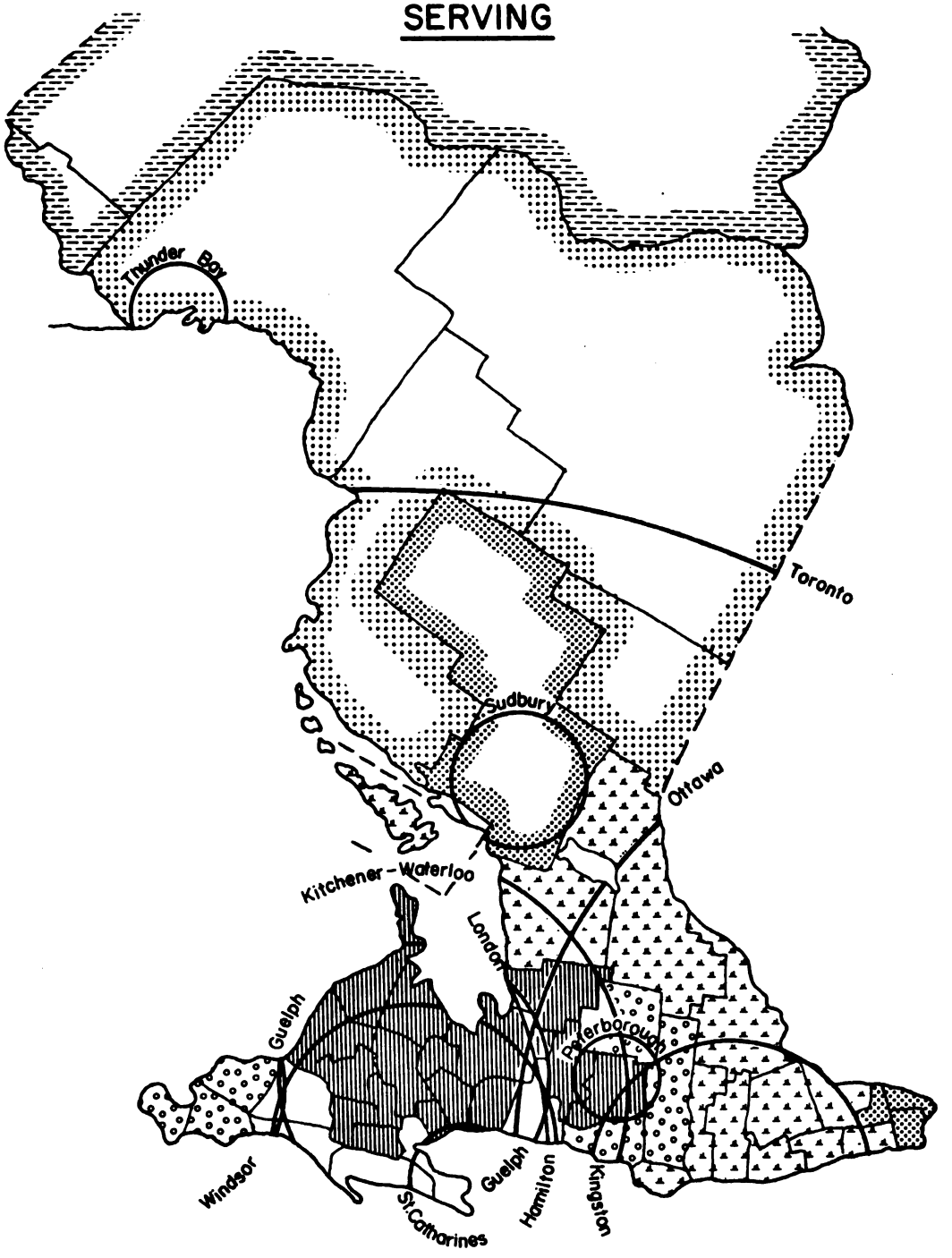
For the DESERVING map, density has been calculated on a basis of population occupying territory organized for municipal purposes, divided by the area of such territory. (Raw density, derived by dividing total population by total area is the normal calculation. These northern districts, the only provincial subdivisions with land classified as 'unorganized' by the Census of Canada, would all rank in the bottom two sextiles on this map if raw density were used.) As a result, only three are left in the bottom sextile: Parry Sound, Manitoulin and Rainy River. Only one of these, Rainy River, falls entirely outside the service areas of the SERVING map. Parry Sound and Manitoulin fall in the top service area category for the region.

Conversely, Kenora is in the bottom category service-wise, but in the third sextile on the adjusted density scale. Algoma, also in the third density sextile, is crossed by the arc of Toronto's service area only. The other district in the third density sextile, falls within three service areas. Timiskaming and Cochrane, falling within the Toronto service area only, are both in the fourth adjusted density sextile.

The two districts possessing chartered universities, Thunder Bay and Sudbury, both stand in the second adjusted density sextile. Even at this high level, they fall within one and two service areas respectively.

Figure II

SERVING



Administrative / Planning Units fully / partly within:

- *6 service areas*
- *5*
- *4*
- *3*
- *2*
- *1*
- *0*

Based on data from Ontario M.C.U. (1975-76)

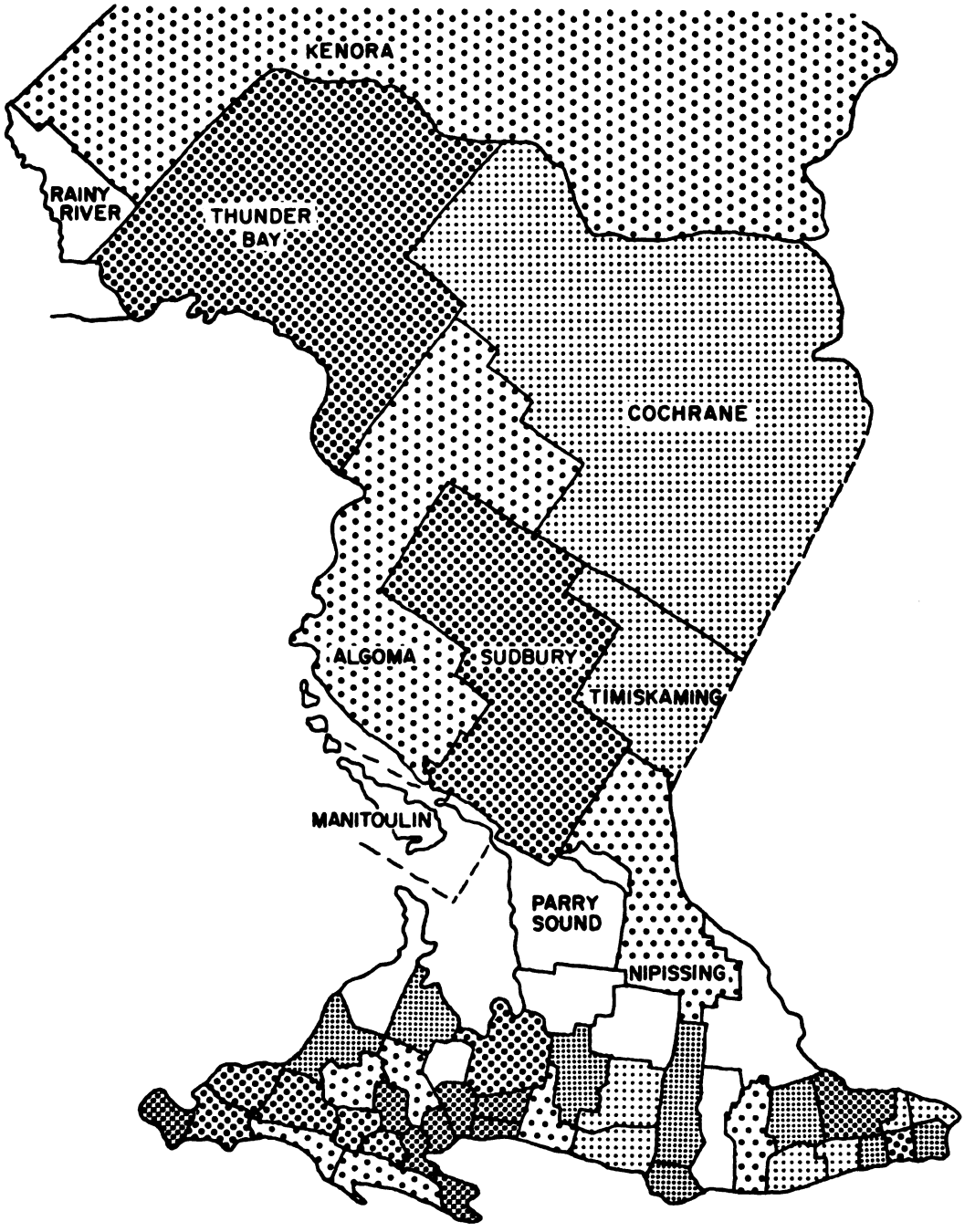
ONTARIO UNIVERSITY CENTERS' SERVICE AREAS

(Based on spatially expressed share of 1975-76 full time undergraduate enrolment)

Base map adapted from Ontario (TEIGA) 1976 (a)

Figure 12

DESERVING



Population Density (adjusted for Northern Ontario) - Sextiles -

- *First (highest)*
- *Second*
- *Third*
- *Fourth*
- *Fifth*
- *Sixth*

Base map adapted from Ontario (TEIGA) 1976 (a)

The following chart illustrates the relative positions:

DISTRICT	ADJUSTED DENSITY RANK IN PROVINCE: SEXTILES	SERVICE AREAS EMBRACING ALL OR PART
Sudbury	2	2
Thunder Bay	2	1
Nipissing	3	3
Algoma	3	1
Kenora	3	0
Timiskaming	4	1
Cochrane	4	1
Parry Sound	6	3
Manitoulin	6	3
Rainy River	6	0

Inequitable social-service delivery for Primary Resource Regions is frequently attributed to remoteness and/or low population density. Clearly, neither is a straightforward nor singular determinant of such inequity, as is evident from the SERVING/DESERVING distribution and rankings.

Obviously, the dominant space of the province occupied by this Primary Resource Region, and the DISTRIBUTION of population within that space (separated physically and philosophically from the province's metropolitan region) is the basic challenge to which improved organization efforts for greater spatial justice must be addressed. Compounding this challenge, relative to social-service delivery in general and higher education in particular, are such additional parameters as: past and present governmental policy and programme; values, attitudes and perspectives held by the general public; divergent principles and practices within higher education; changing perceptions of natural resource extraction/processing/utilization; residual and continuing traditions and loyalties; external and internal views of regional development as a process; and numerous potentials for improved 'spatial justice'.

Much of the body of this study addresses itself to consideration of these parameters.

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*Only 16 of the 41 administrative/planning units in Ontario south of the districts fall within as few as 3 service areas.

APPENDIX E

TABLE 1

RAW AND ADJUSTED POPULATION DENSITIES: NORTHERN ONTARIO DISTRICTS

Subdivision	Population (1971)	Area (Sq. Miles) Total	Organized*	Density & Rank in Province Raw	Rank	Quartile	Adjusted**	Rank	Quartile
Sudbury	198,079	17,715	1,283	11	43	IV	138	13	I
Thunder Bay	145,390	42,281	1,412	3	51	IV	96	18	II
Algoma	121,937	19,771	1,219	6	48	IV	90	21	II
Kenora	53,230	55,584	1,277	.4	53	IV	83	23	II
Nipissing	78,867	7,022	1,041	11	43	IV	70	26	II
Cochrane	95,836	153,220	415	2	52	IV	63	30	III
Timiskaming	46,485	5,850	785	8	45	IV	57	34	III
Rainy River	25,750	6,493	1,366	4	50	IV	25	49	IV
Parry Sound	30,244	3,815	911	8	45	IV	19	51	IV
Manitoulin	10,931	1,421	622	8	45	IV	11	52	IV

*Organized for Municipal Purposes

**Calculated on basis of Organized Territory and Population therein

Adapted from data derived from Ontario Design for Development, 1976, and Census of Canada, 1971, Agriculture and Population.

LIST OF REFERENCES

Bowen, Howard R. U.S. Higher Education in a Changing Society. In Barbara Burn, (Ed.), Higher Education and the Current Crises. International Council for Educational Development.

Brookover, Wilbur, et al. Schools Can Make a Difference. Michigan State University, East Lansing, College of Urban Development, 1977.

Bucksar, Richard. Northerners in Glass Houses. Canadian Welfare, 1969, Vol. 45, 17-21.

Broudy, Harry S. Educational Alternatives--Why Not? Why Not. In John Martin Rich. Innovations in Education: Reformers and Their Critics. Boston: Allyn and Bacon, Inc., 1975.

Buss, A. R. Systems Theory, Generation Theory and the University: Some Predictions. Higher Education, 1975, Vol. 4, 429-445.

Cameron, D. M. The Northern Dilemma: Public Policy and Postsecondary Education in Northern Ontario. Toronto: Ontario Economic Council, 1978.

Cameron, J. M. On the Idea of a University. Toronto: University of Toronto Press, 1978.

Carnegie Commission on Higher Education. The Purposes and Performance of Higher Education in the U.S.: Approaching the Year 2000. New York, McGraw-Hill, 1973.

Chorley, R. J. and P. Haggett. Models in Geography. London: Methuen & Co. Ltd., 1967.

Clark, Andrew Hill and Donald Q. Innis. The Roots of Canada's Geography. In J. Warkentin, (Ed.), Canada: A Geographical Interpretation. Toronto: Methuen, 1968.

Coates, B. E., R. J. Johnston and P. L. Knox. Geography and Inequality. London: Oxford University Press, 1977.

Coleman, James, et al. Equality of Educational Opportunity. Washington, D.C.: Office of Education, 1966.

Commission on Post-Secondary Education in Ontario. Draft Report. Toronto: Queen's Printer, 1971.

Crean, John F., Michael M. Ferguson and Hugh J. Somers. Higher Education in the Atlantic Provinces for the 1970's. Halifax: Association of Atlantic Universities for the Maritime Union Study, 1969.

Cross, K. Patricia. The New Learners. Change, 1973, Vol. 5, 31-34.

Feasibility Study of Interinstitutional Cooperation: University of Wisconsin - Superior; University of Minnesota at Duluth; College of St. Scholastica. Prepared by Roderick Grove, Deputy Director of Academic Planning, Board of Regents, State of Illinois, February, 1975.

Fleming, W. G. Educational Opportunity: The Pursuit of Equality. Scarborough, Ontario: Prentice-Hall of Canada, Ltd., 1974.

Government of Ontario. Design for Development. Statement by the Prime Minister of the Province of Ontario on Regional Development Policy, April, 1966.

Government of British Columbia. Report of the Commission on University Programs in Non-Metropolitan Areas. Commissioner: W. C. Winegard. Vancouver, B.C.: 1976.

Government of Ontario. Reports of the Royal Commission of Inquiry, Algoma University College, June 30, 1976 - November 15, 1977. Commissioner: John W. Whiteside, Q.C., Toronto: 1978.

Harcleroad, Fred F., et al. The Developing State Colleges and Universities: Historical Background, Current Status, and Future Plans. Iowa City, Iowa: The American College Testing Program, 1969.

Harley, William. Public Broadcasting and the New Communication Technology. In Douglass Cater and Michael J. Nyhan, (Eds.), The Future of Public Broadcasting. New York: Praeger Publishers, 1976.

Harris, Robin S. A Provincial University in Ontario. In D. F. Dadson, (Ed.), On Higher Education. Toronto: University of Toronto Press, 1966.

Harvey, David. Social Justice and Spatial Systems. In Richard Peet, (Ed.), Geographical Perspectives on American Poverty. Antipode Monographs in Social Geography, No. 1, Worcester, Mass.: 1972.

Hutchins, Robert Maynard. Education for Freedom. Baton Rouge: Louisiana State University Press, 1943.

Jack, I. Allen. The Academy and the Grove in Canada. In Carl Ballstadt, (Ed.), The Search for English Canadian Literature. Toronto: University of Toronto Press, 1975.

Jencks, Christopher, et al. Inequality. New York: Harper and Row, 1973.

Jones, Phillip. Education and Aspiration. Education in Australia, (Duplicate copy of article: publishing information not indicated).

Jones, Stephen B. A unified Field Theory of Political Geography. Annals Association of American Geographers, 1954, XLIV, 111-125.

Kerr, Clark. Higher Education: Paradise Lost? Higher Education, 1978, Vol. 7, 261-278.

_____. The Uses of the University with a "Postscript-1972". Cambridge, Mass.: Harvard University Press, 1972.

Knox, Paul L. Social Well Being: A Spatial Perspective. London: Oxford University Press, 1975.

Lake Superior Association of Colleges and Universities. Report of the Advisory Task Force on Twin Ports Cooperation. (Increasing Cooperation Among U.M.D., Scholastica, and U.W.S.: Consortium Federation, Merger). February, 1976.

Lappin, B. W. Community Development and Canada's Anti-Poverty Programs. In Benjamin Schlesinger, Poverty in Canada and the United States: Overview with Annotated Bibliography. Toronto: University of Toronto Press, 1966.

Larkin, Peter. Science and the North: An Essay on Aspirations. Science Forum, 1976, Vol. 9, 17-24.

Martin, Warren Bryan. Equality and Quality: An Introduction. In D. W. Vermilye, (Ed.), Individualizing the System. San Francisco: Jossey-Bass, Inc., 1976.

Martorana, S. V. and Gary W. McGuire. Regionalism and Statewide Coordination of Postsecondary Education. University Park: Penn State University, (Center for the Study of Higher Education, Report No. 26), 1976.

McRobie, George. Intermediate Size Technology for Economic Development. Proceedings, Second Annual Conference. Municipal Advisory Committee on Provincial Planning in Northeastern Ontario, North Bay: May 5-6, 1977.

Meierhenry, W. C. Can the College and the University Survive? The Journal of Biocommunication, 1977, Vol. 4, 2-6.

Millard, Richard M. Postsecondary Education and the Best Interests of the People of the States. The Journal of Higher Education, 1979, Vol. 50, 121-131.

Millett, John D. Strengthening Community in Higher Education. Washington, D.C.: Academy for Educational Development, Inc., 1974.

Milliken, Gov. William S. State of the State Address. Quote in Special Programs, College of Education, M.S.U., Richard Mancino, (Ed.), January 26, 1979, 6.

Minshull, Roger. Regional Geography: Theory and Practice. Chicago: Aldine Publiching Company, 1967.

Mosteller, Frederick and Daniel P. Moynihan. On Equality of Educational Opportunity. New York: Vintage Books (Random House), 1972.

Nelles, H. V. The Politics of Development. Toronto: MacMillan of Canada, Ltd., 1974.

Ontario Confederation of University Faculty Associations. Brief to the Ontario Council on University Affairs. Toronto: OCUFA, March 1979.

Ontario Council on University Affairs. The Ontario System: A Statement of Issues. Toronto: OCUA, September 1978.

Ontario Department of Treasury and Economics, Regional Development Branch. Design for Development: Northeastern Ontario Region, Phase I: Analysis. Toronto: January 1971.

Ontario Ministry of College and Universities. Ontario U.S.I.S./Markiv Standard of Tabulations. Toronto: Institution Resources Branch, M.C.U., 1976.

_____. Statistical Summary, 1975-76. Toronto: Data Systems Section, M.C.U.

_____. Design for Development: Northwestern Ontario 1975, Working Paper 1 - Statistics. Toronto: April 1975.

Ontario Ministry of Treasury, Economics and Intergovernmental Affairs (TEIGA), Design for Development: Northeastern Ontario Regional Strategy. Toronto: Regional Planning Branch, TEIGA, March, 1976(a).

_____. Design for Development: Statistical Appendix to the Northeastern Ontario Regional Strategy. Toronto: March 1976(b)

_____. Design for Development: Ontario's Future: Trends and Options. Toronto: March 1976(c)

Persell, Carolyn Hodges. Education and Inequality. New York: Free Press, 1977.

Pratt, E. J. Towards the Last Spike. In Milton Wilson, (Ed.), Poets Between the Wars. Toronto: McClelland and Stewart, Ltd., 1977.

Prescott, J. R. V. The Geography of Frontiers and Boundaries. London: Hutchinson University Library, 1965.

Rivlin, Alice M. Systematic Thinking for Social Action. Washington, D.C.: The Brookings Institution, 1971.

Rogers, Everett M. Communication and Development: The Passing of the Dominant Paradigm. Communication Research, 1976, Vol. 3, 213-240.

Rudolph, Frederick. The American College and University: A History. New York: Vintage Books (Random House), 1962.

Sarre, Philip. Social Geography and Planning. In Social Geography, Bletchley, Bucks: The Open University Press, 1972.

Scott, F. R. Laurentian Shield. In Milton Wilson, (Ed.), Poets Between the Wars. Toronto: McClelland & Stewart, Ltd., 1977.

Silberman, Charles E. Crisis in the Classroom. In John Martin Rich, Innovations in Education: Reformers and Their Critics. Boston: Allyn and Bacon, Inc., 1975.

Smith, D. M. Towards a Geography of Social Well-Being. In Richard Peet, (Ed.), Geographical Perspectives on American Poverty. Worcester, Mass.: Antipode Monographs in Social Geography, No. 1, 1972.

_____. In Introduction to Welfare Geography. Johannesburg: University of Witwatersrand, Department of Geography and Environmental Studies, Occasional Paper, No. 11, 1973.

_____. Who Gets What Where and How: A Welfare Focus for Human Geography. Geography, 1974, Vol. 59, 289-297.

Statistics Canada. Census of Canada, 1971. Agriculture, and Population Volumes.

Trow, Martin. Problems in the Transition from Elite to Mass Higher Education. Berkeley: Carnegie Commission for Higher Education, 1973.

Turner, Frederick Jackson. The Significance of the Frontier in American History. Reprinted from Annual Report of the American Historical Association for the Year 1893. Indianapolis: Bobbs-Merrill Reprint Series in History, H-214.

University of Guelph (Ontario), Rural Development Outreach Project. Report to the University Senate (Second Annual), 1977-1978.

University of South Dakota, Consortium Agreement with Northern State College (Criminal Justice Program) One of four such agreements.

Urwick, Lyndall F. Notes on the Theory of Organization. New York: American Management Association, 1952.

Watson, J. Wreford. Canada: Problems and Prospects. Toronto: Longmans Canada, Ltd., 1968.

Wolfe, Roy I. Economic Development. In John Warkentin, (Ed.), Canada: A Geographical Interpretation. Toronto, Methuen, 1968.

Woodside, Willson. The University Question. Toronto: Ryerson Press, 1958.

Zaltman, Gerald, David Florio and Linda Sikorski. Dynamic Educational Change. New York: Free Press, 1977.

Zelinsky, Wilbur. The Cultural Geography of the United States. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973.

FURTHER READING

Adams, D., (Ed.), Educational Planning. Syracuse: Center for Development Education, Syracuse University, 1964.

Burn, Barbara B, et al. Higher Education in Nine Countries. New York: McGraw-Hill, 1971.

Carnegie Commission for Higher Education. Colleges of the Forgotten Americans. E. Alden Dunham. New York: McGraw-Hill, 1969.

_____. New Students and New Places. New York: McGraw-Hill, 1971.

_____. The Campus and the City. New York: McGraw-Hill, 1972.

_____. Where Colleges Are and Who Attends. C. Arnold Anderson, Mary Jean Bowman, Vincent Tinto. New York: McGraw-Hill, 1972.

Dadson, D. F. On Higher Education. Toronto: University of Toronto Press.

Economic Council of Canada. Canadian Higher Education in the Seventies. Sylvia Ostry, (Ed.), Toronto, 1972.

Eide, Kjell, Organization of Educational Planning. In Adams, D., John Friedman and William Alonso. Regional Policy: Readings in Theory and Applications. Cambridge: M.I.T. Press, 1975.

Gardner, John W. Excellence. New York: Harper & Row, 1961 (Perennial Library No. 223)

_____. Self-Renewal. New York: Harper & Row, 1963 (Perennial Library No. 224).

Gass, James R. Work, Education and the Quality of Life. Canadian Welfare, 1974, Vol. 50, 11-13.

Harris, Robin S. Quiet Evolution: A Study of the Ontario Educational System. Toronto: University of Toronto Press.

Henderson, Algo D. Higher Education as a Field of Study. In Dadson, D. F.

Holmstrom, Engin I. Higher Education and Social Mobility. In Dyckman W. Vermilye, (Ed.), Individualizing the System. San Francisco: Jossey-Bass, Inc., 1976.

Kintzer, F. C. Norway's Regional Colleges. Higher Education, 1974, Vol. 3, 303-314.

Mitchener, R. D. Why Not a University Centre for the Study of Higher Education. Bulletin, Ottawa: Canadian Association of University Teachers, 1964, Vol. XII, 36-38.

Nicholson, N. L. The Religious Factor in the Location of Ontario Universities. Ontario Geographer, 1972, Vol. 1, 37-49.

Peet, Richard, (Ed.), Geographical Perspectives on American Poverty. Antipode Monographs in Social Geography, No. 1, Worcester, Mass., 1972.

Ross, Murray G. The University: The Anatomy of Academe. New York: McGraw-Hill, 1976.

Schofer, J. P. Determining Optimal College Locations. Higher Education, 1975, Vol. 4, 227-232.

Schramm, Wilbur, et al. The New Media: Memo to Educational Planners. UNESCO, International Institute for Educational Planning, 1967.

Torsten, Husen. Higher Education's Adaptation to Changing Social Forces. In Barbara B. Burn, (Ed.), Higher Education and the Current Crises, International Council for Educational Development, 1975.

_____. Problems of Securing Equal Access to Higher Education: The Dilemma Between Equality and Excellence. Higher Education, 1976, Vol. 5, 407-422.