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SPATIAL ANALYSIS OF SOCIO-POLITICAL ATTRIBUTES:

THE HALDIMAND-NORFOLK REGION IN SOUTHWESTERN ONTARIO

by

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Submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

Faculty of Graduate Studies

The University of Western Ontario

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ABSTRACT

Scrutiny of Ontario's "Design for Development" readily
reveals several aspects of the Program for which substantive empirical
support and/or sound theoretical underpinning are lacking. One such
aspect which requires further study is the part that local government
can and should play in the development process. Within the context of
the Program's concern for enhanced public participation this means in-
depth understanding of the structural and spatial dimensions of the
polity with particular emphasis on the integration of its governmental
and non-governmental portions. Toward such an end, extensive explor-
ation of related research has uncovered a myriad of concepts and
techniques which when operationalized in empirical research may permit
inductive generalization concerning the partial or total functioning of
the system of the polity.

The empiricism in this dissertation involves regeneration
of attributes from multiple-indicators used in the Local Orientation and
Identification Study, a Phase II input into the Haldimand-Norfolk
Study. By the use of the multidimensional scaling and rotation tech-
niques, two political "commitment" attributes are elicited which when
used to scale the individual participants reveal a correspondence
between attribute scores and (1) level of rural community, (2) distance
from the urban centre of rural communities for the threshold level of
community for each of the attributes, and (3) Haldimand-Norfolk as a

political unit. The conclusions are relevant to the program of "Design for Development" in that they may be used to operationalize principles for restructuring local government which in turn nurture the "development" thrust.

ACKNOWLEDGEMENTS

During both the doctoral course work and the preparation of
this dissertation, I have had the opportunity to learn from and be
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particularly indebted are Dr. E. G. Pleva, Dr. H. Hossé, Dr. M.
Goodchild and Dr. C. Whebell. .

Of course, that motivation requisite to undertaking study at
the graduate level had to be developed over many years during one's
academic career. In my particular case, and I am certain in many
others, an important source of such interest has been a respect for
the contributions of Dr. E. G. Pleva to teaching, geography and plan-
ning. Consequently, I sincerely hope that this dissertation in some
way reflects my gratitude to him.

I also both acknowledge the valuable assistance given to me
at the outset of my research by Mrs. Eva Samery, Economist, formerly
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Lastly, I thank Patricia Samtani for her contribution in
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CHAPTER I

INTRODUCTION

In 1968, in <u>Design for Development: Phase II</u>,[1] the Government of Ontario indicated the need for and defined the basic criteria of a local government reform program. This program was initially identified as the necessary complement to that "regional land use and economic planning" role assumed by the Province in 1966 in Phase I of <u>Design for Development</u>.[2] Subsequently, it--the local government reform program--was seen in <u>Design for Development: Phase III</u> as one vertex of a triangle of inter-related policies (provincial-regional social and economic planning, local government reform, and provincial-municipal fiscal reform).[3]

Since the 1968 statement, ten regional municipalities, one district municipality and one restructured county have been created, each one initially tailored to specific conditions and subsequently altered by amendment in adjustment not only to the evolving Phase I, II and III thrusts, but also to the increasing sophistication of local government administration.

It is suggested in this dissertation, however, that sufficient change has not taken place in integrating or structuring what is termed here the "non-governmental portion of the polity"[4] into the decision-making process at the local level.[5] This is not to suggest that a number of researchers have not grappled with the problem of

public participation. As a matter of fact, attitudes, involvement and participation at the local level have been analyzed from a variety of perspectives. The range of such perspectives can be illustrated in terms of a continuum: at one extreme are studies dealing with the psychological motivation of the individual;[6] at the other extreme are those postulating a necessary balance of power between community and government;[7] in between is a multitude of studies dealing with such aspects as ideological affinity of citizen and environment,[8] the contextual effect of community on political behaviour,[9] and the core-periphery power struggle.[10]

The exciting deduction that can be made from a perusal of these studies is that it might be possible to integrate through space some of these perspectives and thereby to provide a framework for the "non-governmental portion of the polity" which could be important in reforming local government and therefore in furthering the thrust of "Design for Development".

It is to this challenge that the dissertation responds. The response is in three parts. Part I explains in detail the object of the dissertation and in so doing identifies the take-off source, The Local Orientation and Identification Study.[11] Part II describes the mechanics of the dissertation, data scaling and generation of attributes, scoring participants, constructing a theoretical framework and testing the framework. Part III not only examines the framework in terms of other research and on this basis elicits principles which are made operational by using the attributes and the framework, but it also summarizes the complete study.

REFERENCES

[1] Ontario, Legislature of Ontario, <u>Design for Development: Phase II</u>; Statement by The Honourable John Robarts, Prime Minister of Ontario, November 28, 1968; Statement by The Honourable W. Darcy McKeough, Minister of Municipal Affairs, December 2, 1968.

[2] <u>Ibid</u>. Statement by The Honourable John Robarts, Prime Minister of Ontario, p. 3. Ontario, Legislature of Ontario, <u>Design for Development</u>; Statement by The Prime Minister of the Province of Ontario on Regional Development Policy, Tuesday, April 5, 1966, p. 2.

[3] Ontario, Legislature of Ontario, <u>Design for Development: Phase III</u>; Statement by The Honourable William G. Davis, Premier of Ontario to the Legislature, Friday, June 16, 1972, p. 1.

[4] This is a phrase which is used often in the latter part of the dissertation. The term "non-governmental" is taken from A. Maass' essay on "Areal Division of Powers" from <u>Area and Power</u>, ed. A. Maass (Glencoe, Illinois: The Free Press, 1959). In Maass' essay it refers to that latent power in the total political community which is distinct from the political power made manifest in the officials and bodies of officials. "Polity" is defined here in the Parsonian sense, as the goal organizing system of society. See Talcot Parsons, <u>Economy and Society</u> (Glencoe: Free Press, 1956), pp. 76-48. The combination of these two terms provides a concept which not only includes the various nuances in the political activities of the citizenry, but also puts them into that functional context which best indicates their relevance to society from the point of view of this dissertation.

[5] Such a suggestion is not elicited from study of Ontario's situation alone, but is also deducible from analyses of local government changes elsewhere. As indicated by Ostrom, "little attention has been given to improving the capacity of citizens to articulate their demands." See E. Ostram, "Metropolitan Reform: Propositions Derived from Two Traditions," <u>Social Science Quarterly</u>, Vol. 53 (3), 1972, pp. 474-493. According to Bish and Warren, the at-large elections and the failure of the system to develop an infrastructure for public action have greatly reduced the ability of residents to communicate their preferences to public officials, R. L. Bish and R. Warren, "Scale and Monopoly Problems in Urban Government Services," <u>Urban Affairs Quarterly</u>, Vol. 8 (1), 1972, p. 106.

[6] Many of these studies will be referred to in the course of this dissertation. Examples of the more important ones include the following: Jeanne N. Knutson, <u>The Human Basis of the Polity</u> (Chicago: Aldine, Atherton Inc., 1970); Robert A. Dahl, <u>Modern Political Analysis</u> (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1963), pp. 79-85; and A. Campbell, G. Gurin and W. E. Miller, <u>The Voter Decides</u> (Evanston, Illinois: Row, Peterson and Co., 1954).

[7] Arthur Maass, "Areal Division of Powers," in *Area and Power*, ed. A. Maass (Glencoe, Illinois: The Free Press, 1959); Paul Ylvisaker, "Some Criteria for a 'Proper' Areal Division of Powers," *Area and Power*, *Ibid.*, p. 33.

[8] Ulf Himmelstrand, "Depoliticization and Political Involvement," *Mass Politics*, eds. E. Allandt and S. Rokkan (New York: Free Press, 1970), pp. 64-94.

[9] There are many contextual studies covering various levels. Examples of such studies are as follows: Robert D. Putnam, "Political Attitudes and the Local Community," *American Political Science Review*, 60, 1966, pp. 640-654; Erwin K. Scheuch, "Social Context and Individual Behaviour," *Quantitative Ecological Analysis in the Social Sciences*, eds. M. Dogan and S. Rokkan (Cambridge, Mass.: The MIT Press, 1969), pp. 133-155; Kevin Cox, "The Spatial Structuring of Information Flow and Partisan Attitudes," *Ibid.*, pp. 215-232; D. R. Segal and S. H. Wildstrom, "Community Effects on Political Attitudes: Partisanship and Efficacy," *The Sociological Quarterly*, 11, 1970, pp. 67-85; R. J. Johnston, "Local Effects in Voting at a Local Election," *Annals of the Association of American Geographers*, Vol. 64 (3), September 1964, pp. 418-429.

[10] John Friedmann, *A General Theory of Polarized Development*, Revised Edition, School of Architecture and Urban Planning, University of California at Los Angeles, 1969.

[11] E. Berger, Ltd., and D. Jackson and Assoc. Ltd., *Local Orientation and Identification Study* (LOIS) (Toronto: Department of Municipal Affairs, 1972). For a brief description of LOIS, see Appendix A.

PART I

BACKGROUND FOR AND EXPLANATION
OF THE DISSERTATION TOPIC

The validity of the objectives contained in "Design
for Development" and the abundance of research pertinent
to restructuring local government are contrasted with the
limitations of the <u>Local Orientation and Identification
Study</u> (<u>LOIS</u>). Perusal of research and a review of the
mechanics of <u>LOIS</u> suggest that further investigation of
the political measures in it is necessary.

CHAPTER II

DESIGN FOR DEVELOPMENT AND
POLITICAL PARTICIPATION

On April the fifth, 1966, the Provincial Government signalled in a white paper its intention to become formally involved in the comprehensive planning and development of Ontario. Since the appearance of this paper entitled <u>Design for Development: Statement by the Prime Minister on Regional Development Policy</u>, changes in all facets of Provincial and local government have taken place. Viz,

- that acknowledgement by the Province in the above statement of its responsibilities in development, environment and physical planning[1] has been mapped into regional development policies, proposals and possibilities through models of growth centres, resource use and open space,[2]

- the recognition given in this white paper to the part that the public purse must play in implementing policies relative to the above[3] has grown into a complex system of fiscal arrangements with the municipalities and the concomitant budgeting technique changes,[4]

- both those adjuncts initially made to the governmental structure in the name of regional development[5] and the structure of the Provincial system itself have evolved into a totally new edifice, the full effect and complete character of which has yet to be discovered,[6]

- notwithstanding (1) the Government's hesitation in the
first "Design for Development" statement to include changes in local
government, and (2) the Government's reliance on the importance of
Regional Development Councils for the former economic regions,[7]
the emphasis given to the importance of coordinating the regional
activities of government departments and agencies[8] has provided suffi-
cient thrust to carry Ontario into regional government,[9] new economic
regions,[10] and the portent of a stronger relationship between the
two.[11]

Such changes as those above are not to be considered as either
unique or radical. Policies and programs in regional development are
widespread throughout most countries of the Western World and Ontario
has taken advantage of this in structuring its own plan.[12] In these
same countries, as in the case of Ontario, local government reform has
complemented in administrative terms the application of the central-
town concept of regional development.[13] This complementarity too is
understandable for the changes in service expectations of the public,
population growth and urbanization and the concern with acceptable
resource use have throughout the past prompted changes in legislation
for local government.[14] In other words, the white paper, its two
sequels and the related changes are readily explainable when put into
their global and historical contexts.

Notwithstanding this fact, the rapidity with which the changes
are taking place today and the magnitude of such changes demand further
research upon which to assess and to further the objectives of the
"Program". One such area of research is that of participation of the

public in the decision-making process at the local government level, for the enhancement of such is essential if "development" is defined broadly as the "unfolding of the creative possibilities inherent in society."[15]

This is not to suggest that such a concern has been omitted from "Design for Development." In contrast, it is intended to further both the importance attached to public participation by the "Program" and the research, practices and an experiment already attempted. This importance is reflected in Design for Development: Phase II in the Prime Minister's inclusion of "community participation" within the list of criteria for Regional Governments.[16] It is also underlined in the Committee on Government Productivity Reports (C.O.G.P. Reports), the associated acts as well as in the background work preparatory to these. To illustrate this importance in the case of the background material to the "Design for Development", reference need but be made first to the "accessibility" emphasis in the report of The Ontario Committee on Taxation,[17] and second, to the underlying concern with the effect of special purpose bodies on local government in the Report to the Select Committee on the Municipal Act and Related Acts.[18]

Relative to the C.O.G.P. Reports, the rationalization of the total provincial machine is to be understood partially in terms of an attempt to enhance public involvement. In Report Number Seven, policies for government and citizen communication are recommended which recognize communication as an active supportive function of government.[19] In Report Number Three, one of the Policy Minister's roles is identified as improving linkages between government and citizens.[20]

Of equal interest in regards to public involvement are four working papers prepared for the C.O.G.P. Committee. Those portents inherent in the present system as identified by Szablowski,[21] the societal changes in basic concerns described by Starrs and Stewart,[22] the potentialities of a linking system of processes introduced by Thayer,[23] and the recommendations of C.O.G.P. staff members,[24] all serve to cast light on the urgency of the situation and on aspects which need to be considered in restructuring at the local level, whether it be regional or county in nature.

To date, the restructuring at the local level has wrestled primarily with the concern for an equitable and effective revenue structure to lend support to the service objective. Accessibility, as defined in The Ontario Committee on Taxation report,[25] has received much less attention possibly because of a tendency to interpret "community" initially in a political sense and public participation as action of individuals within a "community" with a balanced diversity of interests.[26] One experiment has, however, been undertaken to empirically identify communities in a socio-political sense and thereby to provide information such that the governmental institution may be "instrumental of community values."[27] The experiment referred to is the Local Orientation and Identification Study (LOIS).

The value of such a study as a component of the total policy "Design for Development" was one of the four motivating forces giving rise to this dissertation topic. Two other forces were the robust data of LOIS and the support that other research gave to such an undertaking. The foremost force, however, was that notwithstanding

the above, <u>LOIS</u> fell far short of providing either insight into the
"community" aspect of the study area (Haldimand-Norfolk) or furthering
the understanding of the local government process in general.

REFERENCES

[1] Ontario, _Design for Development_, 1966, Chapter I.

[2] There are a number of documents on this topic. Perhaps the basic one is that of _The Initiation of a Regional Planning Program_ by R. S. Thoman, printed by Allister Typesetting and Graphics, Toronto, 1971. Other more specific documents include the following: Ontario, Legislature of Ontario, _Design for Development: The Toronto-Centred Region_, May, 1970; Ontario, Legislature of Ontario, _Design for Development: A Status Report on the Toronto-Centred Region_, 1971; Ontario, Legislature of Ontario, _A Strategy for Southwestern Ontario_, March 17, 1970; Ontario, COLUC Task Force, _Central Ontario Lakeshore Urban Complex Report_, a "green" paper prepared by the Provincial Government for discussion purposes, 1974. The Legislation associated with the above includes The Ontario Planning and Development Act, 1973; The Niagara Escarpment Planning and Development Act, 1973; and the Parkway Belt Planning and Development Act, 1973.

[3] Ontario, _Design for Development_, 1966, p. 6.

[4] As in No. 2 above, there is a host of references of concern. Included in these are the following: The Ontario Budgets since 1969; The _Regional Municipal Grants Act_ of 1970 and as amended in succeeding years to 1974; _The Ontario Property Tax Stabilization Program_ produced in 1974 by the Honourable John White, Treasurer of Ontario; _The Property Tax Stabilization Act_ of 1973 and as amended in 1974; _The Municipal Unconditional Grants Act_ of 1970 and as superseded by _The Municipal Unconditional Grants Act_ of 1974; and _The Ontario Unconditional Grants Act_ of 1975 which supersedes all of the abovementioned acts.

[5] Ontario, _Design for Development_, 1966, Chapter III.

[6] The background material to these changes being affected and possible changes to the future are found in the _Committee on Government Productivity Reports_, produced by the Committee on Government Productivity for the Executive Council, Province of Ontario, 1971. Included in the relevant acts in this case are _An Act to provide for the Reorganization of the Government of Ontario_, S.O. 1972, and the related Acts to establish the various ministries.

[7] Ontario, _Design for Development_, 1966, pp. 18-21.

[8] _Ibid._, Chapter II.

[9] Ontario, _Design for Development_, 1968.

[10] Ontario, _Design for Development_, Statement of the Treasurer, 1972, pp. 6-7.

[11] Ibid., p. 6.

[12] For an appreciation of both the global extent of the thrust of regional development and of the influence that other countries have had on Ontario's "Program", reference should be made to the Bibliography in Richard S. Thoman, Design for Development, the Initiation of a Regional Planning Program (Toronto: Allister Typesetting and Graphics, 1971). Two additional--and in the opinion of this author important--references which were available to the architects of the recommended plan were Report of the Working Party on Regional Development Growth Centres, Economic Development Committee, E.F.T.A., 1968, and the Role of Growth Centres in Regional Economic Development, prepared by the Department of Economics, Iowa State University of Science and Technology, Ames, Iowa, 1967.

[13] For a description of these changes in local government, see the following: The Hague, International Union of Local Authorities, Regional Planning and Regional Government in Europe; Report of a Symposium held in Prague in 1969, Czechoslovakia, E. Kalk, ed., (1971); Gavin McCrone, Regional Policy in Britain (London: George Allen and Unwin, 1969).

[14] Spencer Hope, Design for Development, Phase Two: Its Origin and Ramifications, unpublished paper submitted in 1971 as partial completion of course work requirements in Political Science 521, University of Western Ontario.

[15] John Friedmann, p. 8. It is necessary to note that "development" was not defined in such general or basic terms as this in "Design for Development". Rather, the objectives of such a "development" policy were expounded. However, it is felt that implicit in the objectives, or more appropriately, basic to the objectives is such a definition. This definition, in turn, influences both the thrust and technique of the dissertation. For further support of such an assumption, see Brian G. Berry, "The Geography of the United States in the Year 2000," I.B.G. Transactions, 1970, p. 40.

[16] Ontario, Design for Development, 1968, pp. 8-9.

[17] Ontario, Legislature of Ontario, The Ontario Committee on Taxation, Vol. II, 1966, pp. 502-509.

[18] Ontario, Legislature of Ontario, Report of the Select Committee on the Municipal Act and Related Acts, 1965, Vol. 3.

[19] Ontario, Committee on Government Productivity, Report Number Seven, pp. 12, 15, and 26.

[20] Ibid., Report Number Three, p. 16.

[21] Ontario, Legislature of Ontario, The Public Bureaucracy and the Possibility of Citizen Involvement in the Government of Ontario, a

report prepared by George J. Szablowski, Department of Political Science, York University, 1971.

[22]Ontario, Legislature of Ontario, <u>Gone Today and Here Tomorrow</u>, a report prepared by C. Starrs and G. Stewart, 1971.

[23]Ontario, Legislature of Ontario, <u>Participation and Liberal Democratic Government</u>, a report prepared by Frederick C. Thayer, Graduate School of Public and International Affairs, University of Pittsburgh, 1972.

[24]Ontario, Legislature of Ontario, <u>Citizen Involvement</u>, a report prepared by members of the Committee on Government Productivity, 1972.

[25]Ontario, <u>The Ontario Committee on Taxation</u>, Vol. 11, p. 503.

[26]This state of affairs may be said to be attributed to our acceptance of a fundamental social-harmony theory as the political counterpart to the classical theory of economics. See Norton E. Long, "Aristotle and the Study of Local Government," <u>Social Research</u>, Vol. 24 (Fall, 1957), pp. 287-310.

[27]Maass, p. 9.

CHAPTER III

THE LOCAL ORIENTATION AND IDENTIFICATION STUDY

Background

As was indicated above, the Provincial Government's concern with public participation has extended beyond the original statements and studies to an experiment designed to grasp "community" in terms of political attitudes and behaviour.

This experiment (and the subsequent report, The Local Orientation and Identification Study) constituted part of Phase II of the Haldimand-Norfolk Study.[1] As a component of the Study, it was to further the process of regionalization through applying certain of the Design for Development: Phase II guideline criteria for the establishment of regional municipalities. The criteria involved are: (1) a sense of community identity, (2) public participation in determining the form of the new municipal unit, (3) support of the urban-centred principle, and (4) local circumstances to determine whether the new municipal unit should be one-tiered or two-tiered.[2]

In addition, though not made explicit, the inclusion of LOIS in the Haldimand-Norfolk Study seems to have been an expression of the tendency in A Strategy for Southwestern Ontario Development to emphasize both the growth peculiarities of small areas and the variation in types and sizes of growth centres.[3]

The abovementioned relationships between LOIS and Provincial policy may be seen in the objectives of LOIS. They are: (1) "to determine the orientation of the present population of the Haldimand-Norfolk Study area in terms of community of interest, local identification and the use of services"; and (2) "to determine the extent and strength of their identification with their counties, municipalities or other localities."[4] This relationship is reflected further in a Haldimand-Norfolk Project Newsletter where it states that local service areas and the localities with which people identified themselves were to be determined so that if municipal boundaries needed to be changed this could be done as far as possible in accordance with these "natural" communities of interest.[5]

Data Collection and Format

To meet the abovementioned objectives, information of three types was collected on tape and questionnaire through interviews. The three types were demographic information, information relating to political and social attitudes and political behaviour purported to be the effect of such attitudes, and information relative to the economic and social orientation of the populace to centres in the study area.[6]

In collecting this information, a strategy was mapped out and initiated in December, 1970. Instrument design and pretesting took place during the winter months in ten in-depth interviews and ten group interviews totalling approximately one hundred persons. The ten individual interviews were carried out with selected persons of political and social leadership status to ensure that all relevant concerns

were included in the interviews. In the ten group interviews one-half.
of the participants were municipal councillors from the two counties
and the remainder were citizens chosen by one of the two coordinators
(one for each county) to reflect as closely as possible a cross-section
of opinion leaders. In so doing, it proved difficult to find low
socio-economic status and elderly persons who would attend the groups.

The success of these interviews prompted the consultants to
seek and obtain permission from the Haldimand-Norfolk Study to carry
out a major survey over a period of three months. To acquire the
necessary data for this, 1,503 individuals were canvassed through
group meetings, the groups being selected to approximate as closely as
possible the stratified random sampling technique and therefore to
remedy the bias in the ten group interviews.[7]

From the taped conversations inferences were made with respect
to the interviewees' attitudes toward regionalism, the provincial and
local political systems and other political aspects which spontaneously
arose. The results of this portion of the study are described in the
"Summary of Major Findings" in Volume 1.[8] No fault can be found or at
least no specific criticism of this portion of the work can be made for
it seems reasonable that the overall impression which a trained group
facilitator derives from a discussion could be useful in tapping the
consensus of opinion and from this, assumptions about the possible group
behaviour could reasonably be entertained.[9]

From the questionnaire, two types of information were gleaned:
(1) the orientation of respondents toward various urban centres with
respect to shopping, newspaper received, visiting and working, and

(2) "descriptive" statistics for twenty-seven attitudinal and behavioural items analyzed both independently and for twenty-one of these as components of attributes called "political participation," "political efficacy," "localism-cosmopolitanism," "general change" and "boundary change."[10] The attributes, their definitions, member items, form of the questions and scaling procedures as indicated in LOIS are shown in Tables 1, 2, 3, 4 and 5.

As will be noted later, the first three attributes had been generated before by various researchers but selected apparently for this study from the Michigan Scales,[11] and the last two attributes were constructed for the LOIS study itself.[12] A detailed analysis of the attributes appears in the following chapter where it, in concert with a review of other research, provides the third motivating force for the dissertation thrust.

Data Processing

The results of the first type of information--the orientation of respondents toward various urban centres with respect to shopping, newspaper received, visiting and working--are fully described in LOIS and though there has been some criticism of this aspect it is not of concern in this dissertation. In contrast, it is the processing and results of the attitudinal and behavioural data which is of major concern here. The results of such processing purport to show the following: (1) differences between the Michigan and Haldimand-Norfolk studies; (2) the variation within and between treatment groups such as counties and adjacent areas, municipalities, and the urban-rural

TABLE 1

Local-Cosmopolitan Scale

"This instrument attempts to identify an individual as a 'local' or a 'cosmopolitan' according to the scale of social environment in which he sees himself."

Questions

The most rewarding organizations a person can belong to are local clubs and associations, rather than large, nation-wide organizations.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

Despite all the newspaper and TV coverage, national and international happenings rarely seem as interesting as events that occur right in the local community where one lives.

No doubt many newcomers to the community are capable people; but when it comes to choosing a person for a responsible position in the community, I prefer a man whose family is well-established in the community.

Big cities may have their place, but the local community is the back-bone of Ontario.

I have greater respect for a man who is well-established in his community than a man who is widely known in his field but who has no local roots.

Scoring

As is indicated above, these items are scored in Likert-type format, each having a dimension of appraisal with sequential integers assigned as scale weights to each category within an item. Agreement with each item is interpreted as a localistic response and scores on the scale range from 30 (most localistic) to 5 (least localistic).

SOURCE: Berger and Jackson, Vol. 2, pp. 66-67 and 198-199.
Robinson, Rusk and Head, p. 379.

TABLE 2

Political Participation Scale

"This scale was designed as a 'crude but servicable' index of the political activity in the national electorate."

Questions

In talking to people about elections, we find that a lot of people weren't able to vote in the last federal election in 1968 because they were sick or they just didn't have the time. How about you, did you vote last time?

Did you give any money, or anything, to help the campaign for one of the parties or candidates?

Did you go to any political meetings, rallies, dinners or things like that?

Did you do any other work for one of the parties or candidates?

Did you talk to any people to try to show them why they should vote for one of the parties or candidates?

Scoring

Each of these five questions contained a yes-no response, yes being registered as 1 and no as 2. For purposes of scoring, however, three choices of possible responses were identified: voting and any other mode of participation constituted inclusion in the high class; voting but no other participation indicated medium class; and not voting resulted in a low class designation.

SOURCE: Berger and Jackson, Vol. 2, pp. 69 and 199-200.
Robinson, Rusk and Head, p. 433.

TABLE 3

Political Efficacy Scale

"Sense of political efficacy is defined as 'the feeling that political and social change is possible, and that the individual citizen can play a part in bringing about this change'."

Questions

I don't think public officials care very much about what people like me think.

1	2	3	4
Agree Strongly	Agree Slightly	Disagree Slightly	Disagree Strongly

The way people vote is the main thing that decides the way things are run in this country.

Voting is the only way people like me can have any say about how the government runs things.

People like me don't have any say about what the government does.

Sometimes politics and government seem so complicated that a person like me can't really understand what's going on.

Scoring

. As indicated above, these items are scored in Likert-type format, each having a dimension of appraisal with sequential integers assigned as scale weights to each category within an item. "Disagree" responses to items 1, 3, 4 and 5 and an "agree" response to item 2 were coded as "efficacious."

SOURCE: Berger and Jackson, Vol. 2, pp. 74 and 200-201.
         Robinson, Rusk and Head, p. 459.

TABLE 4

General Change Scale

This scale measures the desire for or willingness to accept changes in local government organization and collaboration among municipalities.

Questions

Effective planning for the future of your community requires collaboration with adjacent communities and municipalities.

3	2	1	0
Agree Strongly	Agree Slightly	Disagree Slightly	Disagree Strongly

Collaboration with other municipalities is a good way for everyone to attain fair shares in the future growth of the area.

3	2	1	0
Agree Strongly	Agree Slightly	Disagree Slightly	Disagree Strongly

To meet changing circumstances in the area, the system of county and local government needs:

a)	little or no change	1
b)	moderate change	2
c)	substantial change	3

Scoring

The scale was designed for the study and no standard scores exist for comparison. Scores range from 1, strongly against change, to 9, strongly for change; 5 is taken as being a neutral response.

The score is a total of the numbers attributed to each answer on the three questions.

SOURCE: Berger and Jackson, Vol. 2, pp. 58 and 201.

TABLE 5

Boundary Change Scale

This scale was designed to measure attitudes to specific changes in existing boundaries in the area.

Questions

Joining many small boroughs and townships into an area-wide government is a good way to meet the costs of future development.

3	2	1	0
Agree Strongly	Agree Slightly	Disagree Slightly	Disagree Strongly

Do you think your interests and those of your community would be best served by (choose one):

(a) the existing county and township boundaries as they are now.   1

(b) the re-organization of towns, villages and townships so that each county would be organized into four or five larger municipalities.   2

(c) the re-organization of county as well as local boundaries in all the Norfolk/Haldimand area.   3

How important to you are the existing county boundaries?

Very important   0

Slightly important   1

Not very important   2

Not important at all   3

Scoring

This scale is scored the same way as the general change scale, from 1 to 9, and can be compared to it.

This scale is scored by totalling the numbers assigned to each answer and eliminating any subject not answering all of the three questions.

SOURCE: Berger and Jackson, Vol. 2, pp. 61 and 200-201.

division; and (3) relationships between item pairs, attribute pairs, items and attributes, and items or attributes and motivating measures such as education, age and vocation. Inherent in this study particularly in its present form, however, are aspects which limit the value of the Study for policy purposes.

Implicit in number one above is the assumption of comparability of results and a priori of validity of technique.[13] For example, it is assumed that the various attitudinal and behavioural items and measures used in the "Michigan Study" are appropriate in themselves and are directly applicable to Haldimand-Norfolk in general and to the subject of impending regionalization in particular. This comparability and validity are assumed in spite of the absence of or limited information on the validity and reliability of each test,[14] and the limitations of the Likert computational algorithm by which each of the three "imported" measures was generated.[15]

Relative to number two above, with the exception of a brief and not too sophisticated description of the two counties, no attempt is made to justify the treatment groups used either theoretically by specifying the intervening processes or statistically by involving the simple chi-square procedure to test for the significance of the differences between the frequency distributions of the treatment groups.

Lastly, critical to numbers two and three above is the omission of both any theoretical network and associated techniques to tie the analyses of the items, attributes and motivating elements together, and any "inferential" procedure to evaluate the assumptions made.[16] The consequences of such include: (1) the disjointed description of the

attitudinal and behavioural characteristics of the Study area,[17] and (2) the impossibility of eliciting any usable policy for development purposes from the questionnaire responses.[18]

To test the validity of these criticisms, three aspects of the Study were examined using the items from the five attributes plus two additional items which were judged to be relevant--items pertaining to value and control of local government (see Table 7 for the items and their identification symbols). First, the comparability of the "Political Efficacy" scale was subjected to examination by testing the purported scalability of 500 randomly selected respondents according to Guttman.[19] As Table 6 reveals, in contrast with the Michigan scales, it is not adequately scalable.

TABLE 6

Guttman Scale Scores

Number of Respondents = 500

Number of Variables
(the political efficacy items) = 5

Coefficient of Reproducibility = .44080

Second, factor analysis was used both to assess the five attribute grouping on the basis of "structural" similarities[20] and to produce a first approximation to a regrouping which could overcome some of the limitations described above. In so doing, twenty-three of the original twenty-seven Opinion variables were used. Of the four that were excluded, one was omitted because of both a low correlation with other variables and a low loading when included in the TORSCA analysis

to be considered later. The other three variables dealt with ranking municipal association, county preference and redrawing actual boundaries and were therefore considered to be too specific for inclusion in this study. The twenty-three items chosen for study in this dissertation are shown on Table 7. With respect to the first of the two approaches--using the principal component solution with the varimax rotation technique--it was found that six factors were required to approximate as closely as possible the original grouping (see Table 8). As can be seen, Factors 1 and 2 coincide with the original "Political Participation" and "Localism-Cosmopolitanism" attributes, respectively. The "General Change" and "Boundary Change" scales are noticeably different, being mixed and associated with the two additional items. The "Political Efficacy" attribute is divided into two factors, Factors 4 and 6.

With respect to the second approach, using the principal-factor solution with an iteration procedure for improving the initial R^2 estimates of communality, five factors were generated. However, as shown in Table 9, after rotation by the varimax technique, the "Political Efficacy," "Boundary Change" and "General Change" attributes are seen to overlap and/or be of composition somewhat different than initially postulated. In addition, as is shown on Table 10, no appreciable change in loadings was achieved by using the direct oblimin criterion for simplifying the pattern matrix. This aspect then, in concert with the first made suspect the three original measures and the two constructed for LOIS. In addition, it is necessary to note that even in this analysis, because of the linearity assumptions of the factor analysis model, the maximum synthesis of the data and the detection of basic dimensions may not have been attained.

TABLE 7

Items From <u>LOIS</u>

(1) The most rewarding organizations a person can belong to are local clubs and associations, rather than large, nation-wide organizations.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

(2) Despite all the newspaper and TV coverage, national and international happenings rarely seem as interesting as events that occur right in the local community where one lives.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

(3) No doubt many newcomers to the community are capable people; but when it comes to choosing a person for a responsible position in the community, I prefer a man whose family is well-established in the community.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

(4) Big cities may have their place, but the local community is the back-bone of Ontario.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

(5) I have greater respect for a man who is well-established in his community than a man who is widely known in his field but who has no local roots.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

TABLE 7 (Cont'd)

(6) In talking to people about elections, we find that a lot of people weren't able to vote in the last federal election in 1968 because they were sick or they just didn't have the time. How about you, did you vote last time?

Yes   No

(7) Did you give any money, or anything, to help the campaign for one of the parties or candidates?

Yes   No

(8) Did you go to any political meetings, rallies, dinners, or things like that?

Yes   No

(9) Did you do any other work for one of the parties or candidates?

Yes   No

(10) Did you talk to any people to try to show them why they should vote for one of the parties or candidates?

Yes   No

(11) I don't think public officials care very much about what people like me think.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(12) The way people vote is the main thing that decides the way things are run in this country.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

TABLE 7 (Cont'd)

(13) Voting is the only way people like me can have any say about how the government runs things.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(14) People like me don't have any say about what the government does.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(15) Sometimes politics and government seem so complicated that a person like me can't really understand what is going on.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(16) Effective planning for the future of your community requires collaboration with adjacent communities and municipalities.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(17) Joining many small boroughs and townships into an area-wide government is a good way to meet the costs of future development.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(18) Collaboration with other municipalities is a good way for everyone to attain fair shares in the future growth of the area.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

TABLE 7 (Cont'd)

(19) On the whole, municipal government has lost most of its usefulness.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(20) Municipal government should be given more control over local affairs.

Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree

(21) How important to you are the existing county boundaries?

Very important
Slightly important
Not very important
Not important at all

(22) Do you think your interests and those of your community would be best served by: (choose one)

The existing county and township boundaries as they are now.

The re-organization of towns, villages and townships so that each county would be organized into four or five larger municipalities.

The re-organization of county as well as local boundaries in all the Norfolk/Haldimand area.

(23) To meet changing circumstances in the area, the system of county and local government needs: (choose one)

Little or no change
Moderate change
Substantial change

TABLE 8

Principal Components Solution.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1	.01111	.68508	.00497	.20296	.05270	.14731
2	.03927	.71173	-.01100	-.04946	-.06753	.01487
3	.01944	.66491	.10078	-.11055	-.06994	-.15912
4	.01276	.71291	.16018	.01778	.03218	.01123
5	.01867	.61481	.14515	.00457	.01978	.02866
6	.47193	-.10341	.03005	-.06288	.13915	.23579
7	.82383	.03358	.06973	.00805	-.00263	-.01322
8	.81663	.02787	.00180	-.04203	-.01620	-.00739
9	.85744	.05614	.03470	.06946	-.00464	-.00060
10	.76059	.07832	.00286	-.01520	-.00664	.02689
11	.02091	.05889	-.05064	.75771	.09043	.05884
12	.10700	.08923	.18363	.05324	.15901	.77331
13	.05296	-.03748	.12868	.30374	.18872	.68899
14	-.01006	.02127	.03924	.81026	.09105	.06615
15	-.07191	-.11391	.20323	.57961	.21004	.21267
16	.09526	.08981	.71172	-.03877	-.10024	.01706
17	-.01864	.16060	.76703	.09995	-.11150	.16225
18	.04617	.11811	.78635	.01662	-.00795	.14831
19	-.02494	.11537	.49768	.41944	.18113	-.02849
20	.12590	-.09743	.29086	.19825	.58952	-.20550
21	.07398	-.06725	-.13571	.18673	.53950	.16580
22	-.05417	.06551	-.09936	.09112	.72127	.09660
23	-.00986	.02349	-.05175	.02487	.74616	.21271

TABLE 9

Principal Factor Solution

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	.01328	.58711	.06064	.11604	.16078
2	.03446	.50907	.02298	-.05351	-.04219
3	.01448	.58812	.07190	-.13250	-.08853
4	.01366	.63808	.14976	.02441	.02009
5	.02163	.50121	.14078	.01613	.01410
6	.37744	-.07194	.05123	.16899	-.01321
7	.77163	.03781	.06373	.00081	.00413
8	.75644	.03077	.00681	-.00678	-.04662
9	.83541	.05859	.03207	.00551	.06585
10	.67122	.07812	.01737	.01772	-.02015
11	.00457	.04793	.00059	.18674	.56445
12	.12087	.07576	.27551	.39123	.10243
13	.06590	-.02959	.22505	.42313	.28143
14	-.01850	.02166	.05606	.18381	.71104
15	-.05971	-.09057	.20411	.30098	.46753
16	.09141	.11670	.55924	-.08105	.00833
17	-.00665	.18736	.73714	-.02941	.11136
18	.05086	.13140	.72330	.04352	.04206
19	-.02039	.12481	.37377	.16433	.33298
20	.09558	-.05467	.12443	.32556	.19059
21	.06192	-.06835	-.09752	.43993	.17352
22	-.04165	.04143	-.10919	.55898	.11067
23	-.00139	.01201	-.05039	.65226	.05495

TABLE 10

Oblique Factor Pattern Matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	.10035	-.00414	-.59408	.02736	-.15462
2	-.01457	-.02871	-.61968	.04702	.03469
3	-.08712	-.09685	-.57826	-.01573	.07739
4	.04787	.00367	-.62898	-.07794	-.00351
5	.03351	-.00637	-.49469	-.08469	.00107
6	.15482	-.36729	.08294	-.04419	.04821
7	-.05784	-.77707	-.01684	-.01668	-.01616
8	-.04632	-.75373	-.01789	.03520	.03329
9	-.07618	-.84583	-.04163	.03093	-.09091
10	-.02021	-.67592	-.06469	.02766	.01155
11	.01422	-.02185	-.04656	.07542	-.60201
12	.37722	-.08651	-.04689	-.26567	-.00287
13	.35136	-.03701	.05430	-.20600	-.20366
14	-.06188	-.06405	-.01037	.03135	-.76552
15	.11213	.06881	.11743	-.17353	-.44005
16	-.10957	-.05511	-.04163	-.56825	.03942
17	-.08401	.05488	-.07158	-.74292	-.04258
18	.01307	.00385	-.03613	-.73900	.04870
19	.08218	.04268	-.07542	-.33960	-.29755
20	.27566	-.07647	.06884	-.11165	-.13416
21	.41480	-.05425	.04987	.11529	-.11781
22	.57858	.06530	-.06952	.12544	-.01992
23	.69382	.03412	-.03506	.06457	.06838

The third aspect of the Study examined to test the validity of
the criticisms made was the selection of counties as treatment groups.
Using in a fixed effects variance model these mean values from <u>LOIS</u> for
four of the attributes,[21] it was found that the county divisions for
"Political Efficacy" and "Localism" were not statistically valid but
that the divisions for "General Change" and "Boundary Change" were, con-
sequently, though there is in this case some support for the county
division in two of the attributes, there is still the possibility espec-
ially in the case of "Political Efficacy" and "Localism" that other
variables underly the postulated difference (see Tables 11, 12, 13, 14).

The Value of LOIS

As suggested at the beginning of the chapter, the most impor-
tant aspect of <u>LOIS</u> is that it constituted Ontario's first attempt at
and the initial thrust into an empirical investigation of various
attitudinal and behavioural aspects pertinent to including the public
in a model of the polity at the local level which is usable in unfolding
the creative possibilities inherent in society. As such, it laid the
groundwork for the furtherance of such a study; the data itself being
sufficiently robust to encourage further analysis, and the concepts on
one hand having substantial empirical background but on the other hand
evidently in need of further examination.

Therefore, in furthering such a study, the first step to be
taken is that of examining in greater detail not only the theoretical
and empirical bases of the attitudinal concepts used in <u>LOIS</u>, but also
other studies related to public involvement in government at the local
level.

TABLE 11

Analysis of Variance Between Mean Scores on
Political Efficacy for Haldimand and Norfolk

Treatment Group	1	2
Sample Size	12	14
Mean	1.8333	1.7214
Standard Deviation	.3393	.3766

	Sum of Squares	DF	Mean Square	F Ratio
Between Groups	.0809	1	.0809	.6244*
Within Groups	3.1102	24	.1296	
Total	3.1912	25		

*Not significant at the 90% probability level.

TABLE 12

Analysis of Variance Between Mean Scores on
Localism-cosmopolitanism for Haldimand and Norfolk

Treatment Group	1	2
Sample Size	12	14
Mean	7.0917	7.3857
Standard Deviation	.6388	.5736

	Sum of Squares	DF	Mean Square	F Ratio
Between Groups	.5587	1	.5587	1.5296*
Within Groups	8.7663	24	.3653	
Total	9.3250	25		

*Not significant at the 90% probability level.

TABLE 13

Analysis of Variance Between Mean Scores on
General Change for Haldimand and Norfolk

Treatment Group	1	2
Sample Size	12	14
Mean	6.3167	5.2857
Standard Deviation	.5474	.6175

	Sum of Squares	DF	Mean Square	F Ratio
Between Groups	6.8677	1	6.8677	19.9696*
Within Groups	8.2538	24	.3439	
Total	15.1215	25		

*Significant at the 99% probability level.

TABLE 14

Analysis of Variance Between Mean Scores on
Boundary Change for Haldimand and Norfolk

Treatment Group	1	2
Sample Size	12	14
Mean	4.5750	3.5357
Standard Deviation	.6649	.7880

	Sum of Squares	DF	Mean Square	F Ratio
Between Groups	6.9792	1	6.9792	12.9498*
Within Groups	12.9346	24	.5389	
Total	19.9138	25		

*Significant at the 99% probability level.

REFERENCES

[1] The Haldimand-Norfolk Study was initiated in 1969 to analyze land use and prepare governmental recommendations for the anticipated fourfold increase in population by the end of the present century resulting from industrial development in the Nanticoke Area. The first phase of the Study was concerned with planning the future physical development of the two counties. (See the following: Ontario, Department of Municipal Affairs, Towards a Land Use Plan for Haldimand-Norfolk, March, 1970; Ontario, Ministry of Treasury, Economics and Intergovernmental Affairs, Threshold of Change 1 - Land and Development, May, 1971). The purpose of the second phase was to examine the present system of local government and to recommend the necessary changes. (The basic reports of Phase II are as follows: Ontario, Department of Municipal Affairs, Restructuring Local Government--A Background Paper, prepared by the Haldimand-Norfolk Study, March, 1971; Idem., Towards a New System of Local Government, prepared by the Haldimand-Norfolk Study, January, 1972; Ontario, Ministry of Treasury, Economics and Intergovernmental Affairs, Threshold of Change 2 - Local Government, prepared by the Haldimand-Norfolk Study, September, 1972).

[2] Ontario, Design for Development: Phase II, Statement by The Honourable Darcy McKeough, pp. 1-5.

[3] Ontario, A Strategy for Southwestern Ontario, pp. 13-18.

[4] Ontario, Haldimand-Norfolk Study, "Call for Proposals," 1970, and Local Orientation and Identification Study, p. 1.

[5] Newsletter No. 5, Haldimand-Norfolk Study, November, 1970, p. 2.

[6] Berger and Jackson, Vol. 2, p. 1.

[7] Examination of the need for an adjustment was made for a slight bias in the data toward the better educated and the under-representation of the lower educational attainment level. It was found that the data is remarkably insensitive to an adjustment. (See Berger and Jackson, Vol. 2, pp. 9, 10 and 11.) It is this robustness of the data which augers well for valuable results from a further reworking of the data.

[8] Ibid., Vol. 1, p. 2.

[9] The rationale for such a conclusion is thus: an assessment of opinion is conceptuable if the expression of opinions is couched with an overriding issue to which the respondents can relate, and reasonable postulates about behaviour are conceivable if the attribute is measured at a level of generality equivalent to the expected behaviour.

[10] Berger and Jackson, Vol. 2, pp. 198-203.

[11] John P. Robinson, J. G. Rusk and Kendra B. Head, <u>Measure of Political Attitudes</u>, Institute for Social Research, University of Michigan, 1968.

[12] Berger and Jackson, Vol. 2, pp. 58, 61.

[13] To assume "comparability" means that results in different areas have the same meaning. "Validity" refers to the extent to which the test actually measures the trait it was designed to measure. See W. Hays, <u>Quantification in Psychology</u>, University of Michigan (Belmont, California: Brooks/Cole Publishing Co., 1969), p. 67.

[14] Robinson, Rusk and Head, pp. 397, 433 and 459.

[15] Of principle concern here is the fact that the unidimensional concept inherent in the measurement of each variable separately and independently both disallows any underlying structure of the data to reveal itself and concomitantly, can terminate the item analyses just short of the discovery of interesting multi-dimensional subleties. See David Napier, "Nonmetric Multidimensional Techniques for Summated Ratings," <u>A Review of Multidimensional Scaling: Theory and Applications in the Behavioural Sciences</u>, edited by R. N. Shepard, A. K. Romney and S. B. Nerlove (New York: Seminar Press, 1972). Also see R. Likert, "A Technique for measurement of attitudes," <u>Archives of Psychology</u>, 1932, No. 140.

[16] The omission of the growth-centre concept as the basis of a theoretical network is difficult to understand particularly because of the importance of this concept to "Design for Development."

[17] This incoherence is probably responsible for at least one confusing and possibly misleading statement. "In Norfolk, however, political participation is higher in the urban areas, but efficacy is lower." See Berger and Jackson, Vol. 1, p. 54 and Vol. 2, pp. 103-104.

[18] With the exception of relating the local resistance to regional government to the necessity for gradual implementation so that the strength it needs to operate successfully is nurtured, the recommendations made in <u>Threshold of Change 2</u>--the second phase report of the Haldimand-Norfolk Study--probably could have been written without <u>LOIS</u>. Concomitantly, with the exception of reference to (1) the existence of perhaps the inordinately strong local ties, and (2) of the "purported" differences between the two counties, the structure proposed by the Haldimand-Norfolk Study could have easily been done without <u>LOIS</u> (see <u>Threshold of Change 2</u>, pp. 18 and 24).

[19] Robinson, Rusk and Head, p. 459. To be scalable according to Guttman means that the scale is unidimensional (component items all measuring movement toward or away from the same single underlying object) and cumulative (component items can be ordered by degree of difficulty, and respondents who reply positively to a different item will always respond positively to a less difficult item and vice versa). The statistics which may be used in evaluating the scalability of the items

include the coefficient of reproducibility. This statistic "is a measure of the extent to which a respondent's scale score is a prediction of his response pattern." "A general guideline to the interpretation of this measure is that a coefficient of reproducibility higher than .9 is considered to indicate a valid scale." [See N. Nie, D. Bent and C. Hull, Statistical Package for the Social Sciences (Toronto: McGraw-Hill Book Co., 1970), p. 201.]

[20] Factor analysis is essentially a data reduction technique and as such delineates those subsets of a set of variables which vary more with each other than with any others included in the analysis. These subsets, or factors, represent each variable as a linear combination of several underlying factors. The number and nature of the factors depends on whether they are to be "defined" or "deferred," the former being derived by the principal component procedure and the latter by the principal factor procedure. In either case, however, the resulting factor solution is indeterminant in the sense that any non-singular rotation of that matrix is also admissible. Consequently, the requirement is made that the matrix (factor structure) presents as simple a description of the regularities in the data as possible. Various techniques may be used to do this; in the case above, the varimax and direct oblimin are used. The first essentially assumes orthogonality among the factors whereby the second does not. (For a more detailed description of the varimax procedure, see page 55 of this dissertation.) The computer program used in this calculation was from the Statistical Package for Social Sciences, 1970, Chapter 17. For a comprehensive description of factor analysis, see Harry H. Harmon, Modern Factor Analysis, Second Edition Revised (Chicago: University of Chicago Press, 1967).

[21] In the Fixed Effects Model of variance, each observation is expressed as a sum of an overall mean u and a differential "effect" α_i which is "fixed" in the sense that the subpopulation or group with mean $u_i = u + \alpha_i$ is fixed by the experimenter. In contrast, in the random effects model the groups are randomly selected from an infinite population of possible subpopulations.

CHAPTER IV

DETAILED EXAMINATION OF CONCEPTS IN LOIS

As indicated in Chapter III, LOIS uses thirty-two items and five measures to gauge the attitude and behaviour trends in the study area. Three of the five measures were obtained from earlier studies carried out in the United States. Two of these three--"Political participation" and "Political efficacy"--were first developed in a study to determine for the 1952 presidential election why people did or did not participate.[1]

"Political participation" was measured by the use of the five items already identified on Table 2 in the previous chapter. These items were designed to sort people into three categories: those who voted and also participated in the campaign, those who voted but took no other active part, and those who did not vote. As far as can be established, no statistical attempt to establish homogeneity or reliability in the measure was made nor was any direct data on validity reported. The motivational influences on "Political participation" were considered to be "Party identification," "Issue orientation" and "Candidate orientation."

In an addendum to this study, two other variables were hypothesized to be related to "Political participation" in such a way as to indicate broader and more enduring ties. One of these variables was

"Political efficacy."[2] It was defined as "the feeling that an individual's political action does have, or can have, an impact upon the political process." To measure this, those five items identified in Table 3 were combined to produce a Guttman scale with an overall coefficient of reproducibility of 92.3.[3] Cross-classification of this attribute with "Political participation" indicated a strong and consistent positive association even with eight demographic variables used as controls. As stated in The Voter Decides,

> It is reasonable to conclude that citizens who feel that
> public officials are responsive and responsible to the
> electorate, who think that individual political activity is
> worthwhile and capable of influencing public policy, and who
> see that the private citizen's channels of access to govern-
> mental decision-makers are not confined to the ballot box,
> are much more likely to be politically active than those
> citizens who feel largely overwhelmed by the political process.
> It is also possible to state that this relationship is not
> merely a function of education or any other likely demographic
> factor.[4]

Since the abovementioned study, additional insights into the meanings and relationships of both measures have been postulated and in some cases discovered. For example, "Political efficacy"

- has been considered to be a key indicator of that diffuse support for the political system which is basic to the persistence of a democratic regime.[5]

- has been shown to be positively related to social-economic-status (S.E.S.),[6] personal trust and political fortunes.[7]

- is for working class people significantly influenced by community social status.[8]

- has been shown to be closely associated with mental health, and to have an inverse relationship with Maslow's need hierarchy.[9]

- has been considered by Dahl to be one of a series of factors which explain the existence of the "apolitical stratum."[10]

- has been shown several times to be related to political participation.[11]

As can be seen from the above, the relationships cover the varying scales of human aggregation, from the individual to the community group and then to society in general.

This same situation characterizes the discoveries made for "Political participation." For example, "Political participation"

- has been shown to be positively related to S.E.S.[12] (social-economic-status).

- has been related to Maslow's need hierarchy. Those individuals operating near the base of the need hierarchy (physiological or safety needs) are most likely to be non-participating while persons motivated by unfulfilled relational needs are likely to be as participating as self-actualizing individuals because of the compensation to be won through interpersonal relationships.[13]

- has been seen to be significantly related to both anomia and lack of faith in people.[14]

In addition, in the general sense of the term, "Political participation" has been considered by Doornbas to be one of two concepts (the other being penetration) which subsume the other four criteria for "political development" identified by the Committee on Comparative Politics.[15] These two "criteria," to use the Committee on Comparative Politics' term, are what Doornbas considers to be the two basic "dimensions" in political development.[16] It has also been noted

by Himmelstrand and others that "cross-pressures and counter pressures defined in terms of the content of the political allegiance of an individual and of relevant parts of his environment, do not seem to be related to political involvement"--that subjective emotional state recognized as political efficacy--"the way they are to electoral participation."[17]

The third measure obtained from previous studies is "Localism-cosmopolitanism." This concept as a theoretical and classificatory device can be traced back to Tonnies through Zimmerman's translation. Various other researchers have either supplemented or complemented this basic work.[18] As an empirical device, however, its origin is found in an investigation of the degree of internalization of the "principal pattern of social relationships" for 275 residents in Huntington Village, Long Island, New York.[19] To discern this pattern, the bi-polar dimension--localism-cosmopolitanism--was constructed by using ten 2-point Likert-type items. The degree of internalization was deemed to be reflected in the sum of the participant's item scores. The researcher, William Dobriner, found both that "cosmopolitanism" was a significant characteristic of the newcomer suburbanites and "localism" was concentrated among the oldtimer-villagers; and that variables such as religion and education may intervene to effect changes in the relationships.[20]

Refinement of the empirical approach and expansion of the theoretical basis of the concept were undertaken by Thomas Dye in the early 1960's.[21] Using three of the Dobriner items and two additional items in a typical Likert-type scale, 445 randomly selected residents

in 16 suburban municipalities were rated.[22] Dye's results indicated

that not only was "localism" for both individual and municipality

inversely related to status (defined in terms of percentages of popu-

lation which were white collared and college educated), but also that

with community status held constant "localism" was negatively related

to public support for mass transit operations, municipal jointure (but

not with the central city), and positively related to discriminatory

zoning. In addition, community leaders were seen to possess signifi-

cantly higher localistic mean scores than their constituents.

Of importance equal to this statistical improvement was the

suggestion by Dye that in addition to the "internalization of dominant

modes of social relations" aspect, the attitudinal scores may be

influenced by or derived from reality testing. For example, the

attitude held by the individual may serve more basic personality needs

such as "identification" and as a social adjustment mechanism.[23]

As can be seen from this examination of the concepts in LOIS

which were taken from the "Michigan Study," in contrast with what is

indicated, given both that the measures are comparable and reliable,

and that an appropriate integrating device could be established,

information might have been acquired from LOIS which could have been

of greater assistance in the restructuring process.

As indicated in the previous chapter, the other two measures

used in LOIS are entitled "General change" and "Boundary change." The

component items for each are listed in Tables 4 and 5. The first of

the two measures includes the concepts of "collaboration," "planning"

and "fair share." The "Boundary change" measure includes municipal

juncture in general, and boundary change in particular. Although there is no indication that the measures and the specific items themselves were selected even in the Likert fashion, the fact that each measure contains only three items, the similarity between these measures and those used by Dye to test the behavioural implications of localism, and the relevance of the general and boundary change aspects to regionalism all suggest that they, the measures, could prove valuable in shedding light on the political process at the local level.

In conclusion then, in addition to the need for such a study as LOIS, there are other meritorious aspects of the "study" itself such as the use of concepts which have substantial theoretical and empirical bases, the care taken in data collection, and the robustness of the data. These provoke entertainment of the possibility of eliminating the weaknesses in LOIS and of building on its strengths. In so doing, three questions must be asked:

(1) Can LOIS's items be scaled to provide greater insight into the interdependencies of various aspects of the polity and thereby to enhance the validity and reliability of the concepts used?

(2) Is there a theoretical framework which serves to relate the individual and group levels of attitude and behaviour and therefore to provide that integration which LOIS lacked?

(3) Given that such postulates exist, how might they be tested both descriptively and inferentially?

Consequently, these questions will be dealt with in the succeeding three chapters.

REFERENCES

[1] A. Campbell, G. Gurin, and W. Miller, The Voter Decides (Evanston, Illinois: Row, Peterson and Company, 1954).

[2] Ibid., p. 187.

[3] In the original study described in The Voter Decides and in the study of the 1960 election, the second item, "the way people vote is the main thing that decides how things are run in this country" was deleted because its error range was 10.8 per cent. See The Voter Decides, p. 189.

[4] Ibid., p. 194. See also the literature summarized in Lester W. Milbrath, Political Participation (Chicago: Rand McNally and Co., 1965), pp. 48-89.

[5] D. Easton, and J. Dennis, "The Child's Acquisition of Regime Norms: Political Efficacy," The American Political Science Review, Vol. 61, 1967, p. 25; D. Easton, A System, Analysis of Political Life (New York: John Wiley and Sons, 1965), pp. 267-340. Diffuse support is defined as "the generalized trust and confidence that members invest in the various objects of the system as ends in themselves." See D. Easton and J. Dennis, Children in the Political System (New York: McGraw-Hill, 1969), p. 63.

[6] Knutson, p. 239.

[7] Harrel R. Rogers, Jr., "Toward Explanation of the Political Efficacy and Political Cynicism of Black Adolescents: An Exploratory Study," American Journal of Political Science, Vol. 28 (2), May 1974, pp. 279-281.

[8] D. R. Segal and S. H. Wildstrom, "Community Effects on Political Attitudes: Partisanship and Efficacy," The Sociological Quarterly, Vol. 11, 1970, pp. 67-86.

[9] Knutson, pp. 169, 187, 195-196, 204, 214, 219, 232-233, and 253.

[10] Dahl, pp. 79-84.

[11] Angus Campbell, Philip E. Converse, Warren E. Miller, and Donald E. Stokes, The American Voter (New York: John Wiley and Sons Inc., 1960), p. 105; and Robert R. Alfold and Harry M. Scoble, "Sources of Local Political Involvement," American Political Science Review, Vol. 62, December, 1968, pp. 1192-1206.

[12] Knutson, p. 239.

[13] *Ibid.*, pp. 190, 197, 206, and 216.

[14] *Ibid.*, p. 244.

[15] Lucien W. Pye, *Aspects of Political Development* (Boston: Princeton University Press, 1966).

[16] Martin R. Doornbas, "Political Development: The Search for Criteria," *Development and Change*, Vol. 1 (1), 1969, pp. 93-114.

[17] Ulf Himmelstrand, "Depoliticization and Political Involvement," from *Mass Politics*, eds. Eric Allandt and Stein Rokkan (New York: The Free Press, 1970), p. 80.

[18] William Dobriner, "Local and Cosmopolitan as Contemporary Suburban Character Types," *The Suburban Community*, ed. William Dobriner (New York: G. P. Putnam and Sons, 1958), pp. 134-135.

[19] *Ibid.*

[20] *Ibid.*, p. 141.

[21] Thomas R. Dye, "The Local-Cosmopolitan Dimension and the Study of Urban Politics," *Social Forces*, Vol. 41 (3), 1966, pp. 239-246.

[22] This is the scale used in *LOIS*.

[23] Dye, p. 240.

PART II

BUILDING ON <u>LOIS</u>

The <u>LOIS</u> items are found to be useful not only
in generating improved attributes but also in sup-
porting a framework elicited from other research.

CHAPTER V

SCALING LOIS's ITEMS

The response to the first of the three questions, "Can LOIS's items be scaled to provide greater insight into the interdependencies of various aspects of the polity and thereby enhance the validity and reliability of the concepts used?", involves three steps: the selection of a scaling technique,[1] the generation of the scaled items, and an assessment of the derived dimensions as political attributes which then may be used as measures for the participants.

Selection of a Scaling Technique

As indicated in Chapter II, to be appropriate the scaling technique should meet certain conditions. It should take the body of data as a whole and allow the underlying structure to reveal itself both in dimensionality and in rank or interval order of the individual items with respect to the given attribute and in so doing allow for a possible synthesis of what have heretofore been considered independent attributes without chancing the loss of information relative to structural relationships. To retain for as long as possible that open-ended quality basic to the discovery of subtle associations, the initial assumptions relative to the data and to the scaling technique must be as limited but as general as possible. Lastly, the mechanics of the

technique should be such as to establish the true dimensionality with a high degree of confidence.

The technique used to scale the LOIS data--the "TORSCA" model for non-metric multidimensional scaling developed by Young--meets the above conditions.[2] Not only does it contain in searching for latent spatial structure, those advantages characteristic of the non-metric approach,[3] but also the various elements of the model result in the delineation of interpretable axes more from the properties of the data than from the nature of the mathematical procedures used.[4] These elements are: (1) the proximity data used as input, (2) the fact that the data are monotonically related to distances among "n" points in some underlying coordinate space, and (3) the iterative procedure of adjusting the coordinates for the points to achieve an increasingly closer approximation to the described monotonic relation. In addition, within the context of the 'family' of techniques characterized by the above, TORSCA has proven to be particularly reliable and flexible; reliable in terms of coping with local minimum problems and flexible in terms of coping with variation in dimensionality.[5] In summary, using data which has at most rank order properties to derive a "proximity" matrix and using an iterative technique, a point configuration in metric space is constructed such that the constraints in the "proximity" matrix are satisfied. In the case of the LOIS items, each would be assigned a location in a space of a prescribed dimension such that the distances between the pairs of item points would be in the same rank order as the measures of similarity between items.

The conceptual model underlying the whole multidimensional technique and the algorithmic rationale basic to the iterative techniques have been described in various other studies.[6] Consequently, no description of the first will be provided, but passing reference will be made to the latter--that is to the algorithmic rationale. This reference will include mention of the two algorithms used by Young and three procedures by which the measure of the degree of fit is obtained between the order of the entries in the data matrix and the distance between the points in the geometric representation of these original entries.

Young's program involves two completely separate algorithms. The first uses a semi-metric factor analytic method to prepare an initial configuration for a given dimensionality. This method includes: (1) the conversion of the elements of a proximity matrix to scalar products by a procedure indicated by Torgerson,[7] (2) the factorization by the principal component method of the matrix of scalar products to obtain the projections of the objects (stimulae) on the given number of axes of the space, (3) a new set of distances computed by using the standard distance model,[8] (4) reproduction of the proximity matrix for the given dimension, (5) calculation of the monotonic transformation of the distances which best fit the original similarities, and (6) use of the monotonically transformed distances (disparities) as the basis for a second factor analysis. Then the process is repeated. After each cycle of the iterative process an index of fit is computed. When the index stops increasing, iteration stops and the initial configuration for the non-metric algorithm is prepared.[9]

The second algorithm is then applied to the points in the initial configuration. In general terms, this is a non-metric algorithm which iteratively decreases the discrepancy between first the distances between points in the initial configuration and the monotonically transformed distances (disparities), and second between subsequent "improved" configurations and disparities. The degree of discrepancy or the degree of fit is quantified in the computer program itself through the use of the "squariance ratio."[10] As a further check on the resultant dimensionality, reference is made to both Kruskal's "stress"[11] and a procedure called "M Space."[12]

The "squariance ratio" measure is derived from a linear regression of the "improved" distances against the disparities. This measure is computed from the formula

$$I = \frac{1}{2} + \frac{1}{2} \frac{\sum_i \sum_j d_{ij} \; e_{ij}}{\sqrt{(\sum_i \sum_j d_{ij}^2)(\sum_i \sum_j e_{ij}^2)}}$$

where d_{ij} is the derived distance

and e_{ij} is the disparity.

Young states that, "Experience with various sets of real data, and with artificial data containing random error suggests that values in excess of .999 are needed for a satisfactory solution."

Kruskal's stress index gives that distortion of the rank order of similarities which is necessary to establish the locations in the dimensional space. This index is basically the normalized residual variance derived from a monotone regression of distance and dissimilarity and is computed from the following formula.

$$S = \left[\sum_{i<j} \frac{(d_{ij} - \hat{d}_{ij})^2}{\sum_{i<j} d_{ij}^2} \right]^{\frac{1}{2}}$$

where d_{ij} is the computed distance values

and $\hat{d}_{ij}$ is the disparity.

The resulting index ranges between 0, when no distortion is needed to a theoretical maximum of 1 and, according to Kruskal, stress can be assessed in terms of goodness of fit between variable similarity and the derived configuration as follows.

TABLE 15

Stress Evaluations

S	Goodness of Fit
20%	Poor
10%	Fair
5%	Good
2½%	Excellent
0%	Perfect

The "M Space" technique for assessing dimensionality has been perfected by Spence and Graef. It is essentially a descriptive aid to the determination of the underlying dimensionality of an empirically obtained matrix of proximities. "Their technique is based on the results of an extensive Monte Carlo experiment and is essentially an attempt to find the set of Monte Carlo data, for some given dimensionality, which best fits the obtained stress values."[13]

Having determined the appropriate number of dimensions and the associated configuration the question remains as to whether the spatial pattern of points lends itself to axial interpretation. To ascertain this, the configuration matrix may be rotated by using one or more techniques. In this study, two techniques are used. First, the configuration matrix is rotated using Kaiser's modified varimax criterion for "simple structure." This is an orthogonal rotation which selects those loadings such that the following function is maximized.

$$V = n \sum_{p=1}^{m} \sum_{j=1}^{n} \left(\frac{b_{jp}}{h_j} \right)^{4} - \sum_{p=1}^{m} \left(\frac{\sum_{j=1}^{n} b_{jp}^2}{h_j^2} \right)^{2}$$

where b_{jp} is the final factor matrix

and h_j the communalities.

This function is essentially the sum of the simplicities of the individual factors, simplicity being defined as the normalized variance of the squared factor loadings.[14]

As stated by Cattell and Foster, the decision as to whether simple structure has been maximally approached in a given study does not rest on the fact that an analytic machine method was used. In recognition of this, they perfected a visual rotation system geared to an electronic computer which allows the detection of that position which produces the highest "hyperplane count." It is this resultant computer program--Rotoplot--which constitutes the second technique used to establish an axial interpretation of the configuration generated by TORSCA.[15]

In summary then, the scaling techniques used to improve the concepts used in LOIS is that of "TORSCA" supplemented by Kaiser's modified varimax procedure (included in the TORSCA program), "M" Space as an additional aid for assessing dimensionality, and Rotoplot, a computer program to further rotate the axes derived from the varimax procedure.

Generating the Scaled Items

As suggested above, there are basically two steps in generating the scaled items: the use of "TORSCA" to create the initial configuration, and the use of rotational procedures to give an axial interpretation of the configuration.

The input for the "TORSCA" program consists of the similarities matrix for those twenty-three attitudinal and behavioural items identified in Table 7. This matrix, adjusted to eliminate negative values by adding one to the correlation coefficients is shown in Table 16. Following this, in Table 17, is the associated Disparities Matrix. In testing for the proper dimensionality of the space, the dimensions from one to five were examined. As may be seen in Table 18 and on Figure 1, the dimensionality suggested by Kruskal's Stress could be three if use is made of the Shepard Diagram.[16] On the other hand, if Young's criterion of .999 is accepted for the "squariance ratio" test, then the dimensionality is four. Reference to the "M Space" criterion as shown on Tables 19 and 20 suggests the dimensionality of three. Consequently, the three dimensional initial configuration "A" of Table 21 is accepted for further analysis using the two rotational techniques.

TABLE 16

ORIGINAL SIMILARITIES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

CONTINUED MATRIX

	18	19	20	21	22	23

THE FIGURES INDICATE DEPARTURES FROM THE TRIANGULAR INEQUALITY IN THE MATRIX ABOVE.

TABLE 17

DEPARTMENTS

CONTINUED MATRIX

The University of Western Ontario

TABLE 18

Dimensionality Determination
(Acceptable dimension underlined)

"Fit" Measure ＼ Dimension	1	2	3	4	5
Stress	.347	.136	.079	.052	.037
Squariance	.9689	.9953	.9985	.9993	.9996
Minimum Fit (M Space)	69.7	20.4	16.9	29.9	
Error Level (M Space)	46	24	15	13	

TABLE 19

"M" Space Error Interpretation

Percentage	Interpretation
0 - 10	Extremely low error
10 - 30	Low error
30 - 70	Moderate error
70 - 90	High error
90 - 100	Possibly excessive error

SOURCE: According to I. Spence, Psychometrika, 1972, Vol. 37, pp. 461-486.

FIGURE 1

Stress Trend

selected "t"

Stress (%)
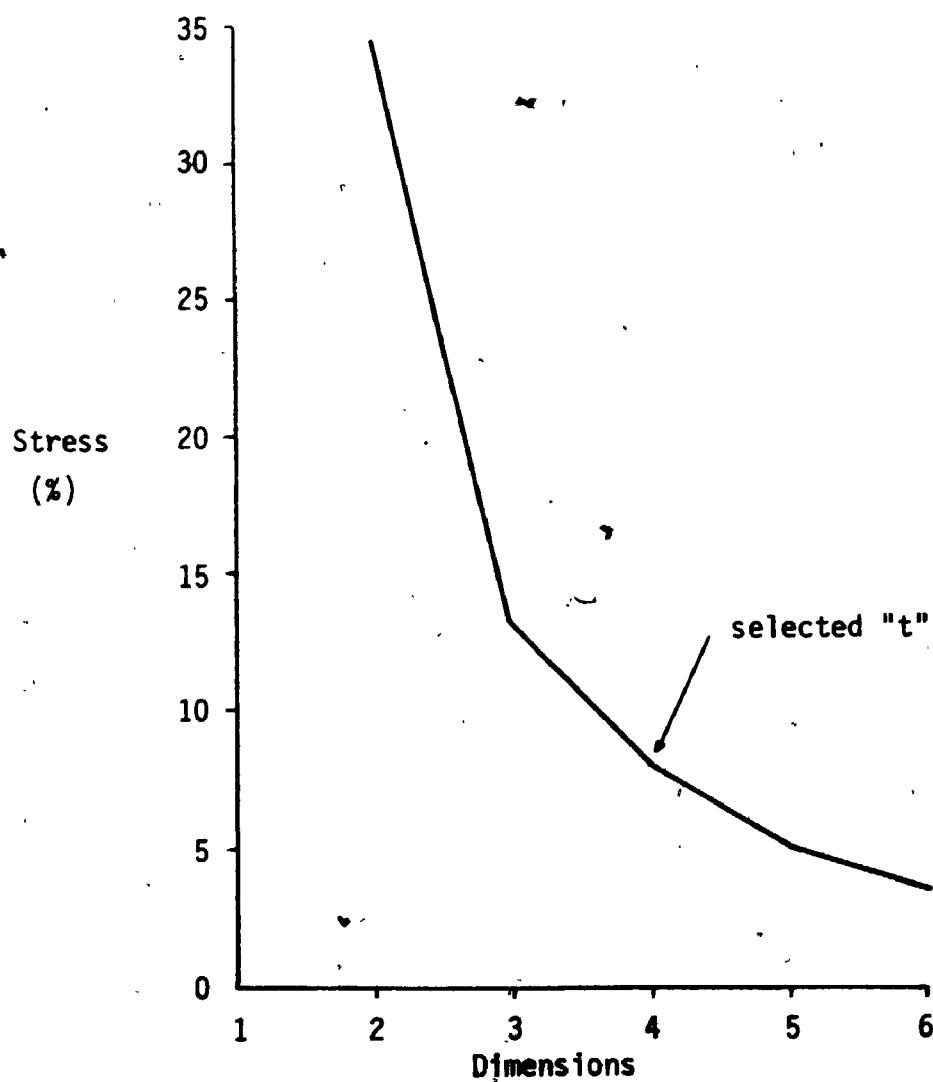
Dimensions

SOURCE: According to Kruskal. See Golledge and Rushton, Multi-dimensional Scaling: Review and Geographical Applications, pp. 11-12.

TABLE 20

M-Space

Number of Points is 23.

Minimum fit for dimensionality 1 is 69.7
This was obtained at error level 46%

	Recovered Dimensionality				
	1	2	3	4	5
Obtained Stress	.347	.136	.079	.052	.037
Fitted Stress	.252	.188	.148	.118	.097

Minimum fit for dimensionality 2 is 20.4
This was obtained at error level 24%

	Recovered Dimensionality				
	1	2	3	4	5
Obtained Stress	.347	.136	.079	.052	.037
Fitted Stress	.335	.111	.091	.074	.063

Minimum fit for dimensionality 3 is 16.9.
This was obtained at error level 15%

	Recovered Dimensionality				
	1	2	3	4	5
Obtained Stress	.347	.136	.079	.052	.037
Fitted Stress	.364	.161	.058	.049	.042

Minimum fit for dimensionality 4 is 29.9
This was obtained at error level 13%

	Recovered Dimensionality				
	1	2	3	4	5
Obtained Stress	.347	.136	.079	.052	.037
Fitted Stress	.391	.184	.092	.047	.041

TABLE 21

TORSCA Output

	Configuration "A"				Varimax Rotated Configuration "B"		
	1	2	3		1	2	3
1	.245	-.290	-.290	1	.448	-.166	-.010
2	.536	-.184	-.386	2	.681	.050	.053
3	.678	-.194	-.238	3	.693	.100	.252
4	.441	-.282	-.224	4	.543	-.078	.151
5	.482	-.319	-.141	5	.533	-.094	.249
6	-.060	.620	.041	6	-.265	.541	-.164
7	.233	.559	.109	7	-.079	.606	.072
8	.251	.636	-.003	8	-.021	.683	-.025
9	.192	.540	.054	9	-.068	.571	.011
10	.248	.580	-.032	10	.013	.630	-.035
11	-.423	-.349	-.130	11	-.109	-.493	-.252
12	-.156	.017	.209	12	-.247	-.047	-.069
13	-.392	-.087	.214	13	.386	-.239	-.034
14	-.418	-.363	.032	14	-.203	-.503	-.119
15	-.493	-.281	.147	15	-.354	-.457	-.093
16	.400	-.119	.426	16	.055	.058	.591
17	.236	-.335	.354	17	.052	-.206	.498
18	.218	-.209	.359	18	-.004	-.099	.459
19	-.074	-.383	.221	19	-.070	-.378	.230
20	-.478	.198	.199	20	-.527	-.015	-.169
21	-.606	.211	-.205	21	-.370	-.057	-.561
22	-.525	-.023	-.409	22	-.110	-.239	-.612
23	-.536	.056	-.309	23	-.206	-.170	-.562

The results of the varimax rotation are contained in configuration "B" on Table 21 and, as can be seen on Table 22, after several changes in oblique rotatation using "Rotoplot" to achieve the highest hyperplane count, the varimax loadings are affected nominally. Therefore, the configuration "B" is chosen as that configuration which best reveals an axial interpretation of the points in space the distances between which closely reproduce the order of the entries in the similarities matrix.

Analysis of the relations among the three dimensions indicate that dimensions one and three are correlated but two is orthogonal to one and three. This is revealed on the "TORSCA" plots (see Figures 2, 3 and 4), and through a Pearson Correlation test of the relationships (see Table 23).

Examination of each dimension in the configuration reveals a bipolar attribute. This is suggested on Figures 2, 3 and 4, and is clearly illustrated on Figures 5, 6 and 7. It is to be noted, however, that whether these attributes are of value depends on the meanings that the positioned items give to the dimension as a whole.

Assessing the Dimensions

The assessment of the dimensions includes examination of (1) the items in each grouping, (2) the relationships between the groups on each dimension, and (3) the relationships between the dimensions both by reference to the meanings of the items, groups and dimensions themselves and by reference to other research which may provide further insight into the use of these attributes with respect to understanding the operation of the polity.

TABLE 22

Rotogramme Configuration

	1	3	4
1	.476	-.116	-.105
2	.710	.050	-.088
3	.516	-.094	.150
4	.685	.100	.120
5	.546	-.078	.045
6	-.249	.541	-.117
7	-.097	.606	.093
8	-.017	.683	-.022
9	-.074	.571	.026
10	.020	.630	-.040
11	-.067	-.493	-.243
12	-.274	-.047	.125
13	-.402	-.239	.046
14	-.192	-.503	-.083
15	-.357	-.457	-.023
16	-.054	.058	.611
17	-.040	-.206	.514
18	-.092	-.099	.485
19	-.118	-.378	.257
20	-.525	-.015	-.067
21	-.285	-.057	-.513
22	..000	-.239	-.622
23	-.111	-.170	-.549

Rotogramme	Torsca Rotate		
	Hyperplane		Count
	.05	.10	.15
Factor 1	4	9	11
Factor 2	3	9	10
Factor 3	6	11	15
Total	13	29	36
Percent	18.84	42.03	52.17

FIGURE 2

Dimension 1 (X Axis) vs. Dimension 2 (Y Axis)
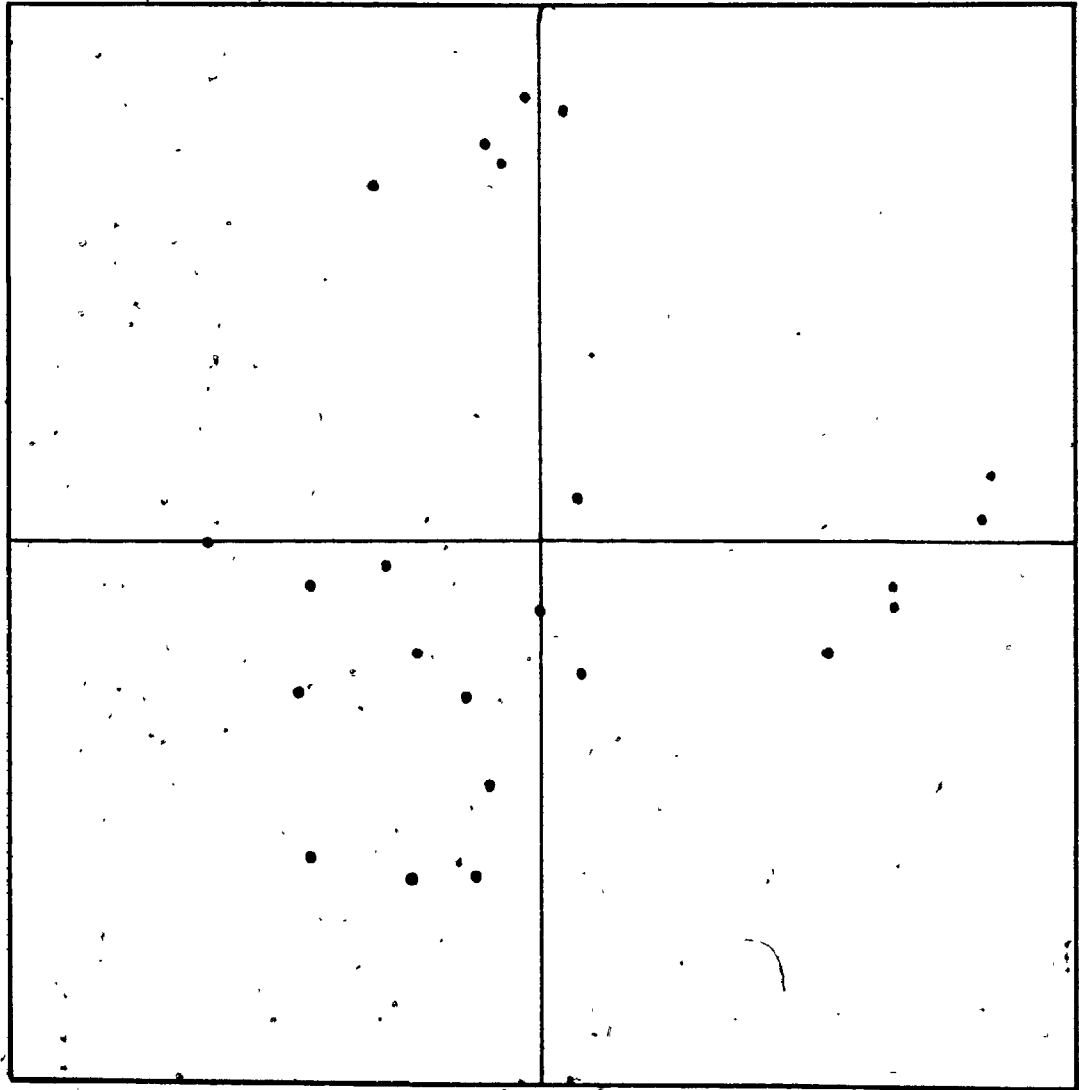
FIGURE 3

Dimension 1 (X Axis) vs. Dimension 3 (Y Axis)
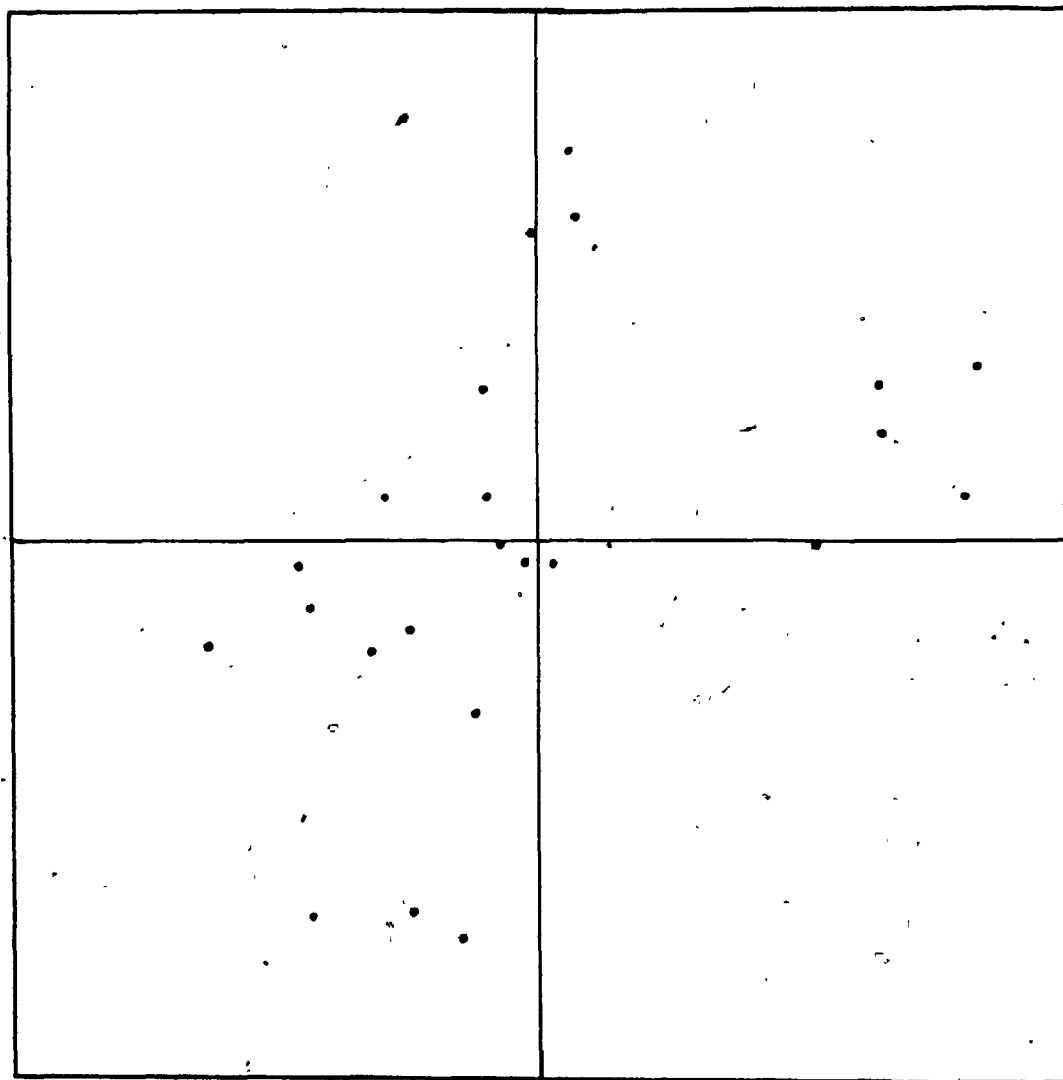
FIGURE 4

Dimension 2 (X Axis) vs. Dimension 3 (Y Axis)
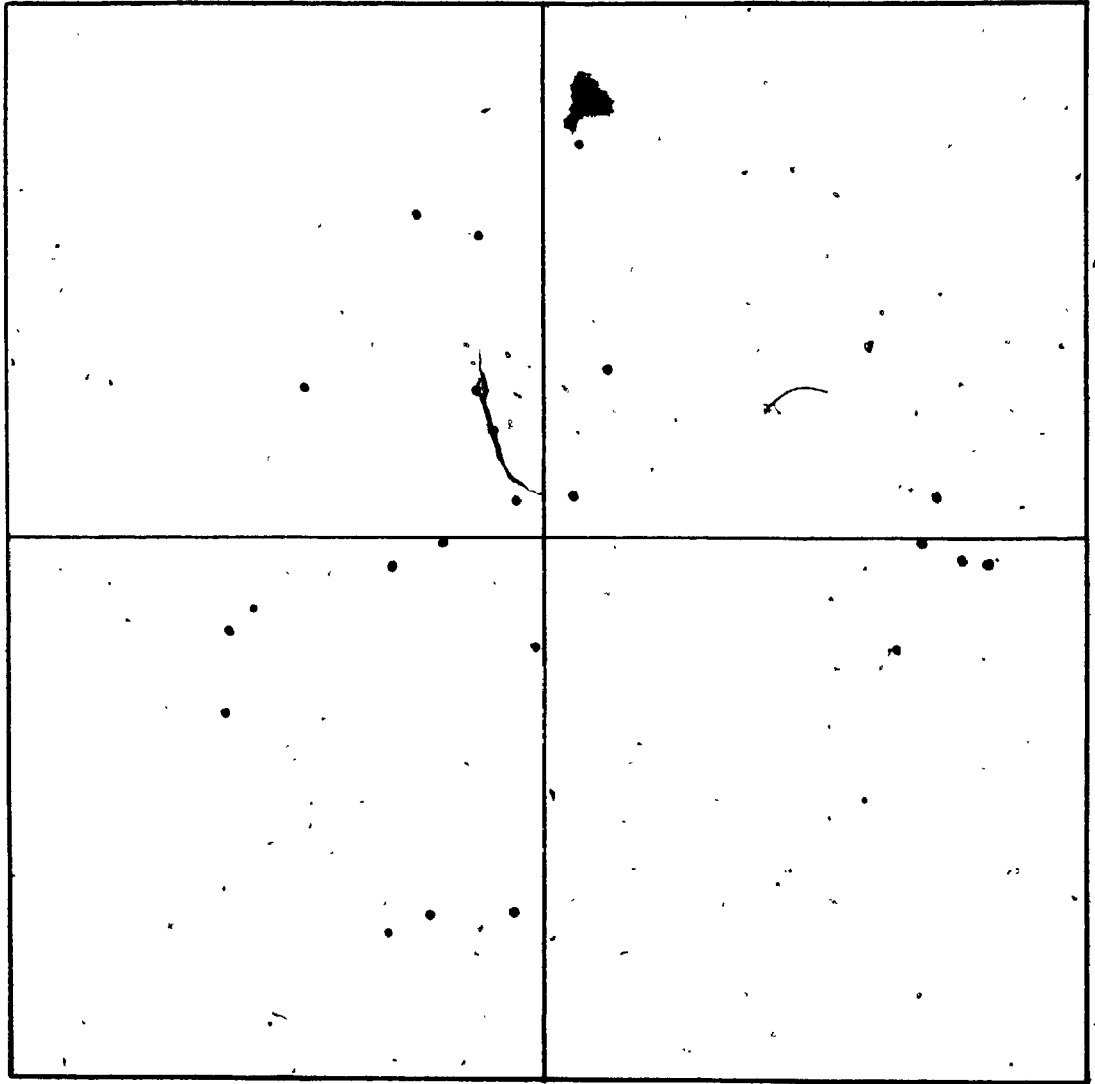
TABLE 23

Pearson Correlations of Torsca Dimensions

	CL	EA	CS
CL		.0823	.4394
EA	.0823		.0882
CS	.4394	.0882	

CL: Cosmopolitanism-localism

EA: Efficacy-apathy

CS: Change-status quo

fig. 5

DIMENSION NUMBER 1: EXPANDED LOCALISM
ATTRIBUTE: COSMOPOLITANISM-LOCALISM

POSITIVE

3 local person for responsible position.
2 local events more interesting
4 respect for man established in community
local community is the backbone
5 local clubs are most rewarding
1

NEGATIVE

politics not complicated
15 existing county boundaries not important
21 voting is not the only way to influence
13
20 municipal government to acquire less control

POLES

ITEMS

ITEM NUMBERS

SCALE
VALUES   -1.00 -.90 -.80 -.70 -.60 -.50 -.40 -.30 -.20 -.10 0.00 +.10 +.20 +.30 +.40 +.50 +.60 +.70 +.80 +.90 +1.00

fig.6

DIMENSION NUMBER 2 : ELECTIONING
ATTRIBUTE: EFFICACY-APATHY

POSITIVE

- no attendance at political activities   8
- no involvement in persuasion to vote   10
- I made no contribution to party or candidate
- I did not work for party or candidate   7
- I did not vote   6

NEGATIVE

- municipal government is still useful   9
- politics is not complicated   19
- public officials care
- people like me do have influence   11   14

POLES

ITEMS

ITEM NUMBERS

SCALE VALUES   -1.00   -.90   -.80   -.70   -.60   -.50   -.40   -.30   -.20   -.10   0.00   +.10   +.20   +.30   +.40   +.50   +.60   +.70   +.80   +.90   +1.00
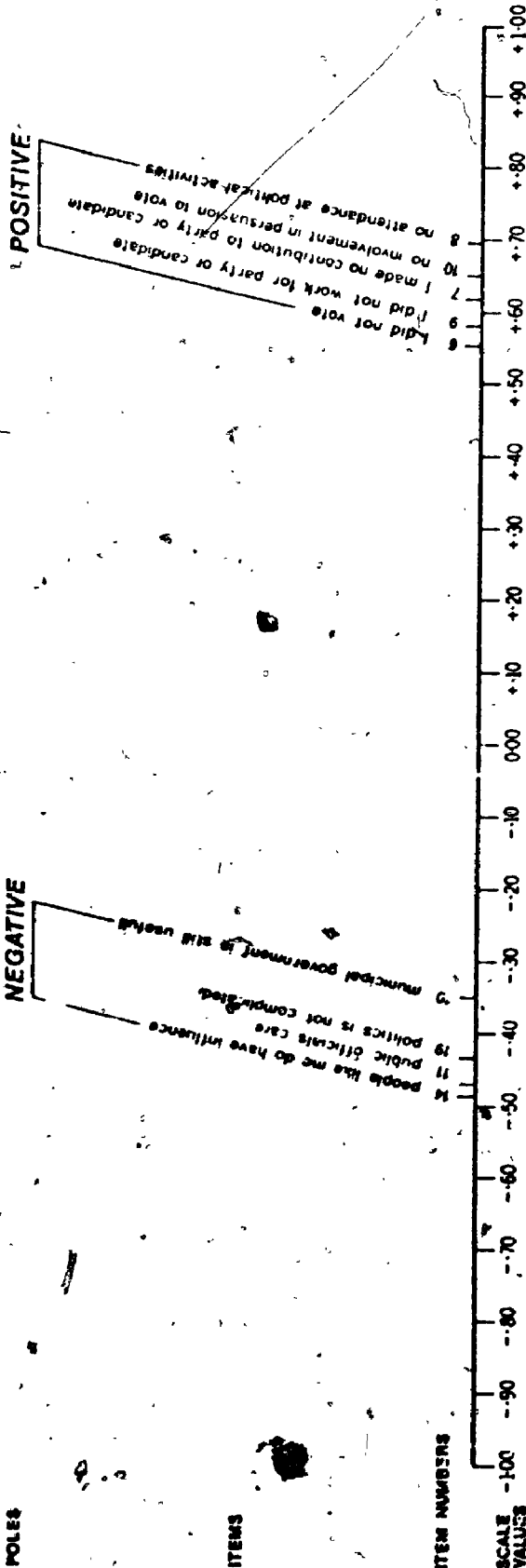
fig 7

DIMENSION NUMBER 8: ISSUE
ATTRIBUTE: CHANGE-STATUS QUO

POSITIVE

planning does not require collaboration

function not necessary

collaboration not necessary for law change

NEGATIVE

existing county boundaries not important

system needs change

community needs reorganization of boundaries

POLES

ITEMS

ITEM NUMBERS

SCALE VALUES   -1.00 -.90 -.80 -.70 -.60 -.50 -.40 -.30 -.20 -.10 0.00 +.10 +.20 +.30 +.40 +.50 +.60 +.70 +.80 +.90 +1.00
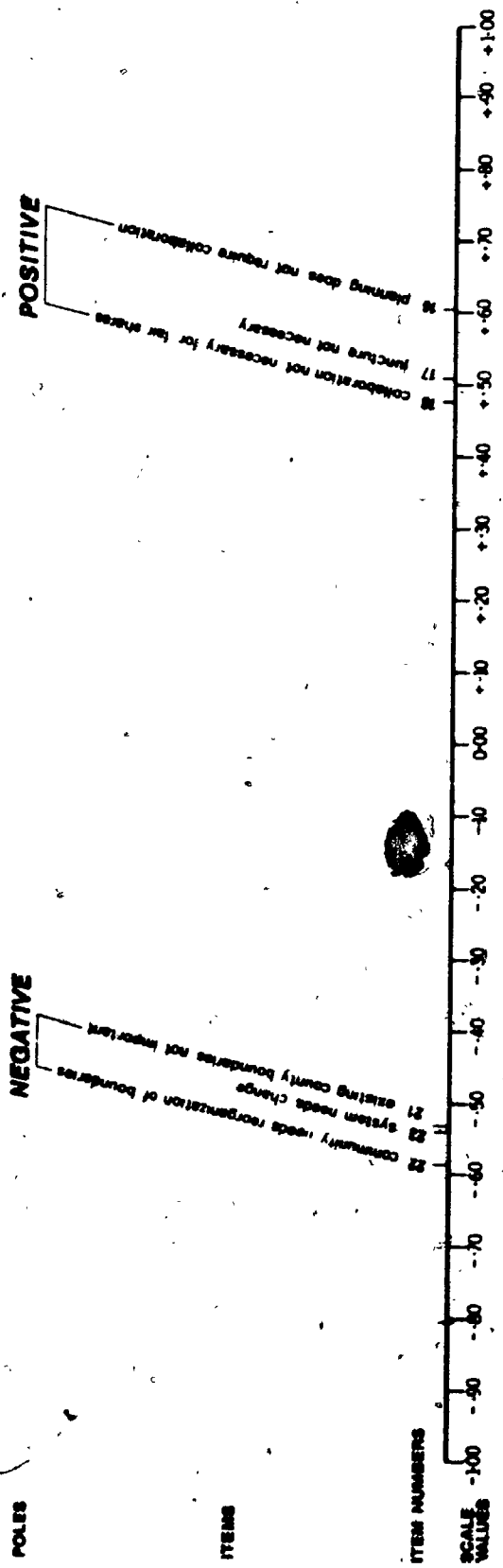
To assist in determining whether the dimensions are of any value from an attribute point of view, the items have been positioned on the scaled lines shown on Figures 5, 6 and 7. The positioning not only allows easy identification of the poles, but it also gives a good indication of the whole attribute trend. (It is necessary to note that the length of the statement for each item has been shortened on the figures.)

Examination of the positive pole on Figure 5 shows those five items from Dye's Localism-cosmopolitanism attribute; the items referring to localism with respect to the importance of local persons, events, community and clubs. The negative pole consists of four items from three of the attributes used in LOIS. A first attempt at generalizing these four items suggests that they reflect (1) positive attitude toward the polity, (2) individual involvement, and (3) flexibility in administration.[17]

When the two poles are considered together, the attribute associated with the dimension becomes clearer: movement up the scale is seen to reflect increasing group involvement (in the sense of contextual effect) at the local level with emphasis on institutional control both administratively and spatially; movement down the scale reflects individual involvement and efficacy without the local emphasis and therefore possibly at a regional level particularly since the issue around which LOIS rotated was regionalism. What seems to be possible, at least at this level of examination, is that Dimension I provides an expansion of Dye's "Localism" attribute to include an increasingly distinct political aspect of cosmospolitanism consistent with an

increase in the size of the community.[18] Consequently, Dimension I is
called the Expanded Localism Dimension and within this context the
attribute is, as before, entitled Cosmopolitanism-localism.

As indicated above, Dimension III was shown above to be related
to Dimension I. Examination of the items, groups of items and their
relationships serve to reinforce this statistical correlation and to
give credence to an attribute associated with Dimension III. The three
items of the positive pole and the three items of the negative pole may
be interpreted as attitudinal implications with respect to specific
issues of the social traits reflected in the attribute of Dimension I.
The three items of the positive pole refer to the same kinds of issues
which Dye had shown to be related to localism.[19] Two of the items of
the negative pole refer to the two issues boundary and system change.
The third item which refers to the unimportance of county boundaries
was also in the negative pole of the "Cosmopolitanism-localism" attri-
bute. Movement up the scale is seen to reflect a negative reaction to
change in system or boundary and an increased tendency to perpetuate the
existing system even to the point of overlooking the intermunicipal
cooperation basic to both proper planning and the resultant development.
This antipathy toward change and cooperation is reversed with movement
down the scale.

Since specific issues mark this dimension, it is entitled the
Issue Dimension and within this context, the attribute is called
Change-status quo. In this case, as in the case of Dimension I, other
research supports the concept of such an attribute--in this case Change-
status quo--and provokes postulation of other relationships. For

example, given (1) the possible relationship cited before between community size and "Localism-cosmopolitanism," (2) the relationship suggested between the "Change-status quo" attribute and the "Cosmopolitanism-localism" attribute, (3) the core-periphery concept of political development by Friedmann,[20] and (4) application to Haldimand-Norfolk of Eugene Pusic's model of society evolving from that which is "power" driven to that which is driven and integrated by "planning,"[21] then one might postulate a continuum of "power-planning" associated with a hierarchy of communities and measured by reference to the <u>Change-status quo</u> attribute.[22] In addition, if the communities are considered to be urban centred, then application of the concept of contagious diffusion suggests that this same continuum could be associated with distance from these urban centres.[23]

As illustrated in Figure 6, Dimension II is also bipolar. The positive pole consists of those same items used initially by the Survey Research Centre in Michigan to measure "Political participation."[24] The group of items in the negative pole is somewhat more complex. Generally, the emphasis as indicated by items 11, 14 and 15 is on what might best be called "efficacy," these three items being members of the original "efficacy" attribute. In addition to this, item 19 deals with what might be termed "legitimacy" of municipal government. When viewed together, the concepts "legitimacy" and "efficacy" reflect not only a belief in the system but a belief associated with personal involvement.[26] Tied to this attitudinal aspect are, in the case of "legitimacy", Doornbas' suggestion that "legitimacy" is particularly dependent on the performance of government in its various policy spheres[26] and in

the case of "efficacy", Dahl's inclusion of "efficacy" as a motivation for participation.[27] What is apparent then is that contained in this one dimension are legitimacy and performance of government, efficacy and its participation connotations and actual participation or in this case, lack of it. Movement up the scale suggests lack of legitimacy, inefficacious involvement and the resultant apathy. Movement down the scale suggests increased participation, involvement and legitimacy of local government.

The synthesis of these heretofore independently organized measures into one dimension has further meaning when consideration is given to the dynamics of modernization and social change. For example, movement down the scale could be interpreted as a greater possibility of adapting to change by absorption of the conflicting elements in a spatial system in such a way as to nurture "development."[28]

Since the Dimension II includes, in contrast with Dimension III, actual participation, the Dimension is labelled the Electioning Dimension. Within this context, the attribute is called Efficacy-apathy, efficacy including here the item referring to legitimacy.

In conclusion, it appears that the answer to the first of the three questions, "Can LOIS's items be scaled to provide greater insight into the interdependencies of various aspects of the polity and thereby enhance the validity and reliability of the concepts used?" is affirmative. The TORSCA procedure for scaling has resulted in the synthesis of the original concepts into bipolar attributes which not only make sense when analysis of the component items is made, but also blend with other research to provoke possible theories for relating the individual-

group and group-group levels of attitude and behaviour.

One of the bipolar attributes, Cosmopolitanism-localism, has been shown to be related causally to another, Change-status quo. Consequently, the two attributes Change-status quo and Efficacy-apathy have been chosen as "political" attributes relevant to the operation of the polity.

Of special interest is the fact that these two attributes are not related. It would not be unreasonable to assume that the Issues dimension would relate to the Electioning dimension, particularly because a strong relationship between issue involvement and political participation has been recognized by several researchers.[29] Such a situation does not, however, reduce the importance of the two attributes for even though they are not statistically related it is readily apparent by reference, at least, to the previous research describing the significance of the component items and attributes that the higher the level of both, the better off the polity will be.[30]

Consequently, these two attributes are considered to reflect what might generally be termed Commitment to the polity, and as such are important from a "development" point of view.

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[1] For a concise definition of the concept of scaling, see R. G. Golledge, and Gerard Rushton, _Multidimensional Scaling: Review and Geographical Applications_; Commission on College Geography Technical Paper No. 10, Association of American Geographers, 1972, p. 1. To relate the multi-dimensional scaling technique to the other techniques mentioned before such as Likert and Guttman, reference should be made to W. S. Torgerson, _Theory and Methods of Scaling_ (New York: J. Wiley, 1958), pp. 45-59.

[2] F. W. Young, _A Fortran IV Program for Nonmetric Multidimensional Scaling_, Report No. 56 (Chapel Hill, N.C.: The L. L. Thurstone Psychometric Laboratory, 1968).

[3] J. C. Lingoes and L. Guttman, "Nonmetric Factor Analysis: A Rank Reducing Alternative to Linear Factor Analysis," _Multivariate Behavioural Research_, 1, 1967, pp. 485-505.

[4] This is in contrast with factor analysis with its "profile" data and the associated distortion of nonlinear relationships.

[5] Ian Spence, Multidimensional Scaling: An Empirical and Theoretical Investigation (unpublished dissertation, Department of Psychology, University of Toronto, 1970), p. 63.

[6] _Ibid._, p. 5. Spence presents the conceptual model and underlines its relevance to the profitable application of the nonmetric scaling technique.

[7] Torgerson, pp. 255-258.

[8] _Ibid._, p. 252; Golledge and Rushton, p. 2.

[9] It is necessary to note that the orientation of the axes for this configuration depends on both the configuration of points and the particular factor method used. Since the method used here is that of principal components, then dimensions are ordered such that the first dimension is that linear combination of coefficients which makes the sum of the contributions of that factor to the total communality a maximum. Each succeeding factor contributes a maximum to the residual variance.

[10] Young, pp. 9-11.

[11] Golledge and Rushton, pp. 11-12.

[12] Ian Spence and Ted Graef, "How to use M-Space, a program for the determination of the underlying dimensionality of an empirically obtained matrix of proximities," _Research Bulletin_ #257, Department of Psychology, The University of Western Ontario, February 1973.

[13] _Ibid._, p. 1.

[14] For a detailed description of the underlying rationale and mathematics of this procedure, see Harman, p. 306. A concise and more readily understood explanation of this rotation process is found in I. Adelman and C. Morris, _Society, Politics and Economic Development: A Quantitative Approach_ (Baltimore, Maryland: John Hopkins Press, 1967), p. 148.

[15] R. B. Cattell and M. J. Foster, "The Rotoplot Program for Multiple, Single-Plane, Visually-Guided Rotation," _Behavioural Science_, Vol. 8 (2), 1963, pp. 156-165.

[16] As stated on Page 14 in Golledge and Rushton, "Undertake the analysis in several dimensions and plot the relation between stress and dimensionality. Generally some noticeable 'elbow' will occur in the curve and this should indicate the appropriate number of dimensions."

[17] It is to be noted that generally items are not included in the identification of attributes with readings less than ±.45; however, in this case, because of the large separation between Item 15 and Item 6 and because of the trend revealed by the position of the items, the items with scores less than -.35 are included.

[18] As suggested by Scheuch, small communities act as social units and in such communities participation in politics is not behaviour functionally different from other behaviour. _A priori_, as communities increase in size, political behaviour as a method of confirming group belongingness should become more distinct. See Scheuch, pp. 150-153.

[19] Dye, p. 244.

[20] Friedmann, _A General Theory of Polarized Development_. Friedmann meshes the Dahrendorf model of social change with his own interpretation of the growth centre model. See Ralph Dahrendorf, _Class Conflict in Industrial Society_ (Stanford: Stanford University Press, 1959), and John Friedmann, _Regional Economic Policy, A Case Study of Venezuela_ (Cambridge: The MIT Press, 1966).

[21] Eugene Pusic, "Power, Planning, Development," _Development and Change_, Vol. 1, 1969, pp. 21-34.

[22] One might suggest that what has been done is that Friedmann's "General Theory of Polarized Development" has been carried one step farther in two directions: first, the authority-dependency relationship between core and periphery has been modified by including the "planning" perspective suggested by Pusic; second, the change-status quo attribute has been suggested as a tool for the measurement of the postulated "power-planning" attribute.

[23] Peter Gould, _Spatial Diffusion_, Commission on College Geography, Resource Paper No. 4, Association of American Geographers, 1969, p. 5.

[24] Campbell, Gurin and Miller, pp. 30-31.

[25] The term "involvement" has come to suggest something other than "participation." Involvement suggests feeling a part of the system with the possibility of direct participation, hence the use of the term "involvement" in association with the term "efficacy." In contrast, "political participation" relates exclusively to overt behaviour.

[26] Doornbas, p. 109.

[27] Dahl, p. 81.

[28] Friedman, pp. 8 and 16. It is to be noted that such a concept is also consistent with the proposed relationship between efficacy and that diffuse support for the political system which is basic to the persistence of a democratic regime (see supra, p. 43).

[29] Dahl suggests such a relationship in his criteria for political man; see Dahl, pp. 79-84.

[30] Himmelstrand, however, does suggest in differentiating between "pragmatic" and "expressive" ideological styles support for the existence of the two separate dimensions. For a more detailed account of this, see Chapter VIII in this dissertation.

CHAPTER VI

THEORETICAL FRAMEWORK FOR THE ANALYSIS

The response to that question, "Is there a theoretical frame-
work which serves to relate the individual and group levels of
attitude and behaviour and therefore provide that integration
which LOIS lacked?" is, in part, suggested both in those possible
relationships underlying the attributes generated through "TORSCA"
and in the fact that LOIS was a component of the "Design for
Development" program. With respect to the former, it will be recalled
that reference was made to Friedmann's General Theory of Development
and to the possibility of a relationship between attitude/behaviour
on one hand and urban size and distance from urban centre on the
other. With respect to the latter--LOIS as a component of "Design
for Development"--it will be recalled that the various aspects of
this "Program" are being mapped into policies, proposals and possi-
bilities through the model of "growth centres". Basic to this model
of "growth centres," Friedmann's theory and to the attitudinal/behaviour
and size/distance relationships are three broad inter-related fields
of theory; central place theory, space economy theory and diffusion
of information theory. Consequently, it is through identification of
the common elements and the strengths and weaknesses of the three
theory fields independently and together, that some progress may be

made in eliciting postulates, constructing a text and formulating
hypotheses for a theoretical framework.

Perhaps the salient element common to all three theory fields
is the emphasis on the existence or creation of a spatial pattern of
activity either in the sense of settlement in general or specific
economic, social or political activities in particular. Such a pattern
is reflected for Central Place Theory not only in the hierarchical
models for long-run equilibrium devised by Christaller[1] and Losch[2]
but also in the antecedent and/or supplementary research of Von
Thunen,[3] Weber,[4] Fetter,[5] Hotelling,[6] Hyson and Hyson,[7] and Smithies.[8]
In the realm of space economy theory, whether in the case of Isard's
wide ranging theory[9] or in the empirical studies of Beckmann,[10] Berry
and Garrison[11] and others, principles and/or models are proposed
which give rise to spatial structures of hierarchically patterned
settlement. Similarly, in the case of diffusion theory, several
researches have shown how diffusion may be interpreted in terms of
hierarchical and wave or contagion processes.[12] Further to this,
Berry and Brown have illustrated its value as a conceptual base for
the growth centre concept.[13]

In spite of this unanimity with respect to the inclusion of
space and the concept of an hierarchy of centres, agreement on the
specific nature of the pattern does not exist. This is in general
attributable to the complexity of the problem and in particular to
the various perspectives and methods used to identify the pattern.
To illustrate this, one might place the resultant patterns of the
various studies on a continuum with the hexagonal geometries of

Christaller,and Losch at one end and the random patterns empirically detected by King through nearest neighbour analyses at the other.[14] Such a variety of patterns and techniques suggests that the theoretical framework to be used in the spatial analysis of those attributes generated by TORSCA should allow for the unfolding of any pattern and limit the degree to which the initial assumptions may affect the outcome.

In addition to the above, there is another aspect of the three fields which merits consideration--that of the heavy and nearly exclusive emphasis on urban and economic facets and concomitantly on the flow of and resistance to information, down the hierarchy. The nature of (1) the area studied by LOIS--Haldimand and Norfolk and adjacent lands--and (2) the traits to be examined, demand at least equal concern with the rural and socio-political facets and the concept of a positive information thrust from the rural to urban, and possibly even up the urban hierarchy within the rural areas. That such is possible within the context of the abovementioned theories is suggested by the concepts "urban-rural continuum" and "rural community."

As indicated in Rural Sociology, geographic, social and cultural environments "come together in the socialization process and account for the unique characteristics of a given individual or group." Consequently, it is not irrational to consider "that rural-urban differences occur in relative degrees in a range extending between the two polar extremes of rural and urban."[15] If, as according to Rogers, "group" is considered to be the "community,"[16] and the "community" is composed of a "centre" with the surrounding "field," then a continuum of "communities"

is possible. Communities on the rural side of the "urban-rural" fringe might best be called "rural-communities," and conversely communities on the urban side might best be called urban communities.[17] If as suggested before, the centres may be arranged hierarchically, then levels of "rural community" may be deduced.

As additional justification of the notion "rural community," reference could be made not only to studies which indicate definite stages in the community decision-making process in "rural communities,"[19] but also to Scheuch's suggestion that small communities act as social units and in such communities participation in politics is not behaviour functionally different from other behaviour.[20]

All of the above, in conjunction with the findings which reveal an hierarchy of spatial structures and the associated diffusion of information suggest not only that it appears possible to link the rural and socio-political facets with the urban and economic facets of the three bodies of theory and to substantiate the concept "rural community" in social and political terms, but also that with the abovementioned notion of "community" the urban centre of a "rural community" at a low level may be considered to be that point at which the accumulated ideas crystallize at the highest possible level for the community itself,

From the above, certain conclusions may be derived which could be significant for the formulation of a theoretical framework. These conclusions are as follows:

(1) The spatial element could be that vehicle which links the individual group and group-group levels of behaviour and attitude.

(2) Urban places may be arranged hierarchically with the

sphere of influence for such places being positively related to the size of the urban place.

(3) The varied, complex and in many cases yet to be clearly defined pattern of location of settlement associated with the three fields of theory suggest that any theoretical framework used should, as much as possible, allow for the unfolding of that spatial pattern which is characteristic of the area being studied.

(4) The rural and social aspects of settlement can probably be fused with the traditionally urban oriented models by the use of concepts such as "rural community" and "urban-rural continuum."

(5) "Rural community" can be visualized as a social system.

(6) Information can be shown to diffuse hierarchically down and contagiously out but considering the possibility of a rural perspective, it may also concentrate in toward the centre and even flow up through the centres in a rural area, thereby reflecting the space integration aspect.

With these conclusions and the attributes generated through the use of TORSCA, a theoretical framework may be devised with its primitive/ basic concepts, hypotheses and text.

The basic concepts to be used in the hypotheses consist of the two attributes Efficacy-apathy and Change-status quo and the terms "rural community" and level of "rural community." The two attributes are defined as in Chapter V, not only in terms of the constituent items and groups but also in terms of the implicit associations made in examining the theoretical possibilities inherent in and associated with the attributes. "Rural community" and level of "rural community" are to be defined in operational terms and will be described as part of the text below.

Those hypotheses to be tested are as follows:

    I. Participants' scores with respect to the <u>Efficacy-apathy</u> and <u>Change-status quo</u> attributes will vary with level of "rural community."

    II. Participants' scores with respect to the <u>Efficacy-apathy</u> and <u>Change-status quo</u> attributes will vary with distance from the urban centre for each "rural community."

    III. Haldimand-Norfolk is a unit with respect to these two attributes.[21]

The procedure to be used in testing these hypotheses may be described in two parts: the text which gives substance to the abstract and the statistical techniques which assess the patterns by reference to criteria such as correlation and chance.

The text is conditioned to a great degree by the conclusions derived above. For example, as will be seen, it reflects the need both to begin from basic principles and simple construction, and also to keep the process as open-ended as possible. There are five steps involved in preparing the information for the testing techniques. These steps and the output are described below.

(1) Each point in space within the study area is connected to a series of ranked urban centres each of which is successively distant from that point. The centres are shown on Table 24. The points used are the centroids for each of the 3.25-mile square quadrats into which the study area was divided. As can be seen on Figure 8, these quadrats cover not only the Haldimand-Norfolk area but also areas adjacent to the boundary.

TABLE 24

Centres of Rural Communities

Urban Centre	Approximate Urban Population
Hamilton	310,000
London	275,000
St. Catharines	110,000
Brantford	65,000
Welland	44,500
Woodstock	26,200
St. Thomas	25,500
Port Colborne	21,500
Grimsby	15,800
Simcoe	10,500
Ingersoll	7,800
Tillsonburg	6,700
Dunnville	5,400
Delhi	3,800
Port Dover	3,500
Caledonia	3,100
Waterford	2,500
Hagersville	2,300
Norwich	1,800
Cayuga	1,070
Jarvis	920
Port Rowan	860
Port Burwell	700
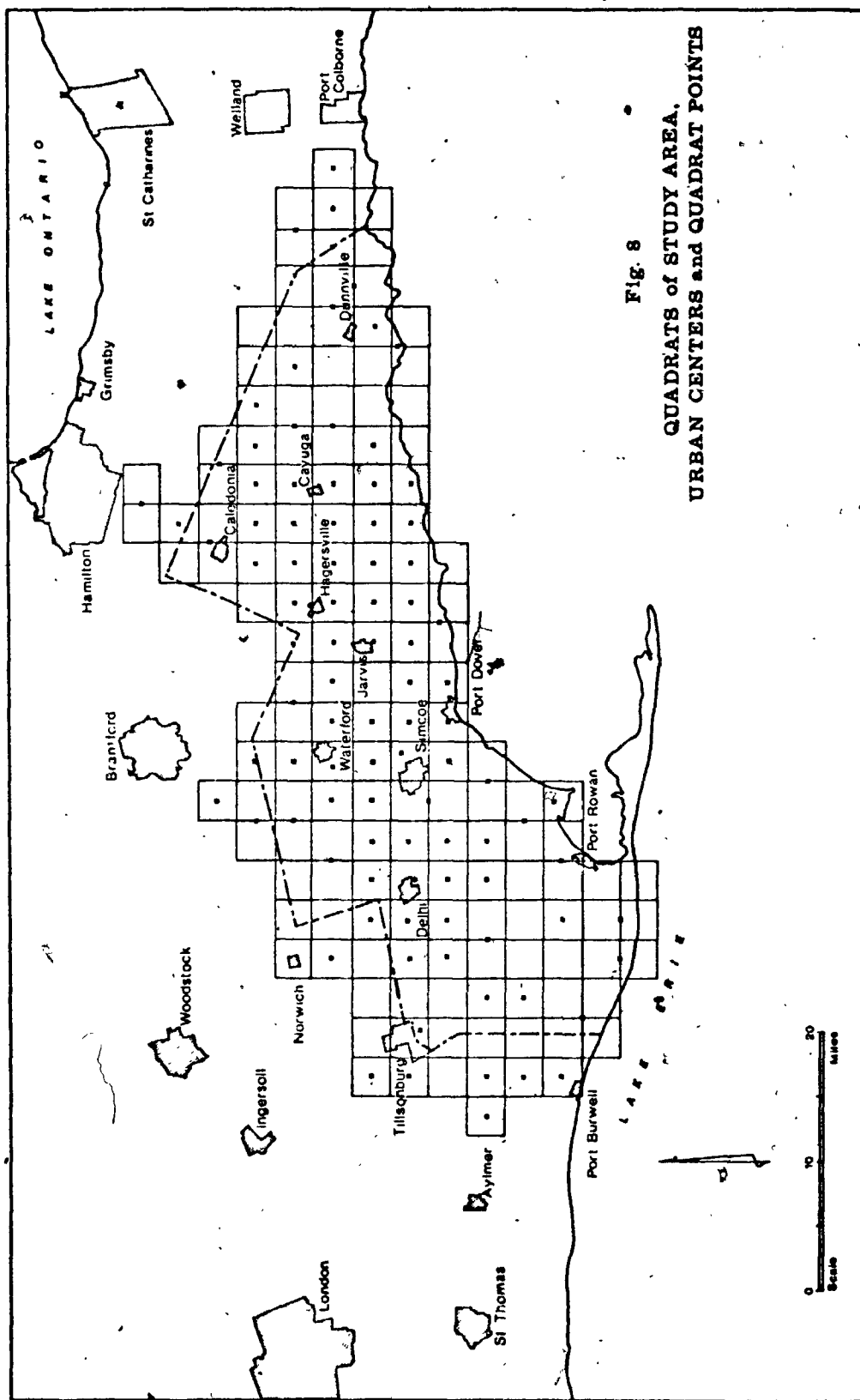
Fig. 8

QUADRATS of STUDY AREA,
URBAN CENTERS and QUADRAT POINTS

(2) These centroids are then aggregated by reference to the urban centre to which they are linked, thereby creating areas associated with each of the ranked centres. Such areas are called "rural communities." Figure 9 shows how the twenty-three "rural communities" or portions thereof were identified.

(3) The "rural community" areas are then aggregated to provide levels of "rural community" consistent with the notion that the sphere of influence of urban centres is positively related to the size of the urban centre. The aggregation procedure used minimizes the differences among the sizes of the urban centres within each level and maximizes the portion of the study area covered by each level of "rural community." This is not a sophisticated process but simply involves first grouping the centres and then making the necessary adjustments to meet the criterion of maximizing the area covered. Table 25 indicates the first grouping, again in terms of the urban centres of the rural communities. Figure 10 shows the division of the study area into the five levels.

TABLE 25

Rural Community Levels

Level	Average Population Size (to the nearest 1,000)	Centres of Rural Communities
A	310,000	Hamilton
B	125,000	London, St. Catharines, Brantford, Welland
C	20,000	Woodstock, St. Thomas, Port Colborne, Grimsby, Simcoe
D	4,000	Ingersoll, Tillsonburg, Dunnville, Delhi, Port Dover, Caledonia, Waterford
E	1,000	Hagersville, Norwich, Cayuga, Jarvis, Port Rowan, Port Burwell

Fig. 9

RURAL COMMUNITY SHEDS
and
URBAN CENTERS

Fig. 10

COMMUNITY LEVELS
and
THEIR URBAN CENTERS
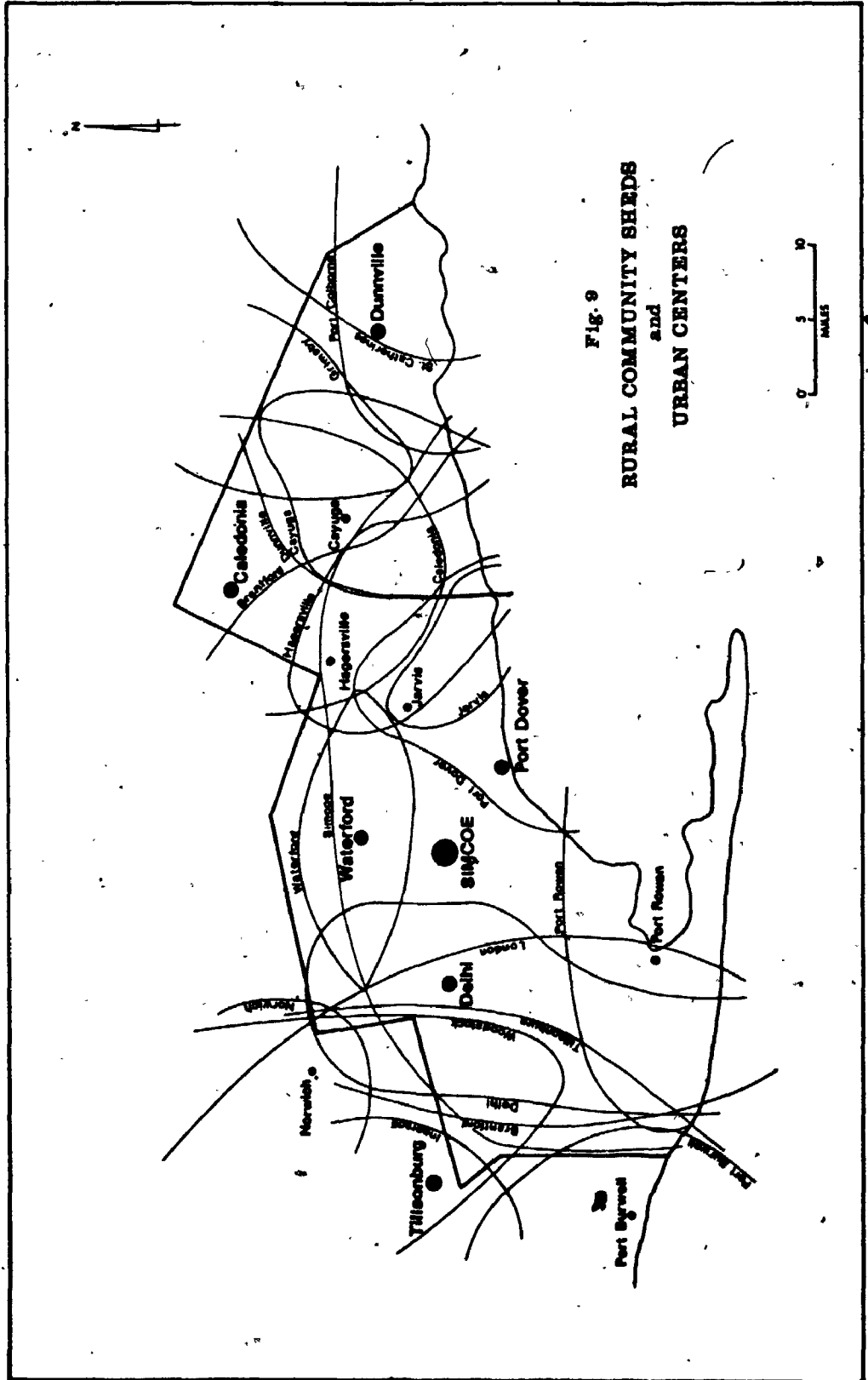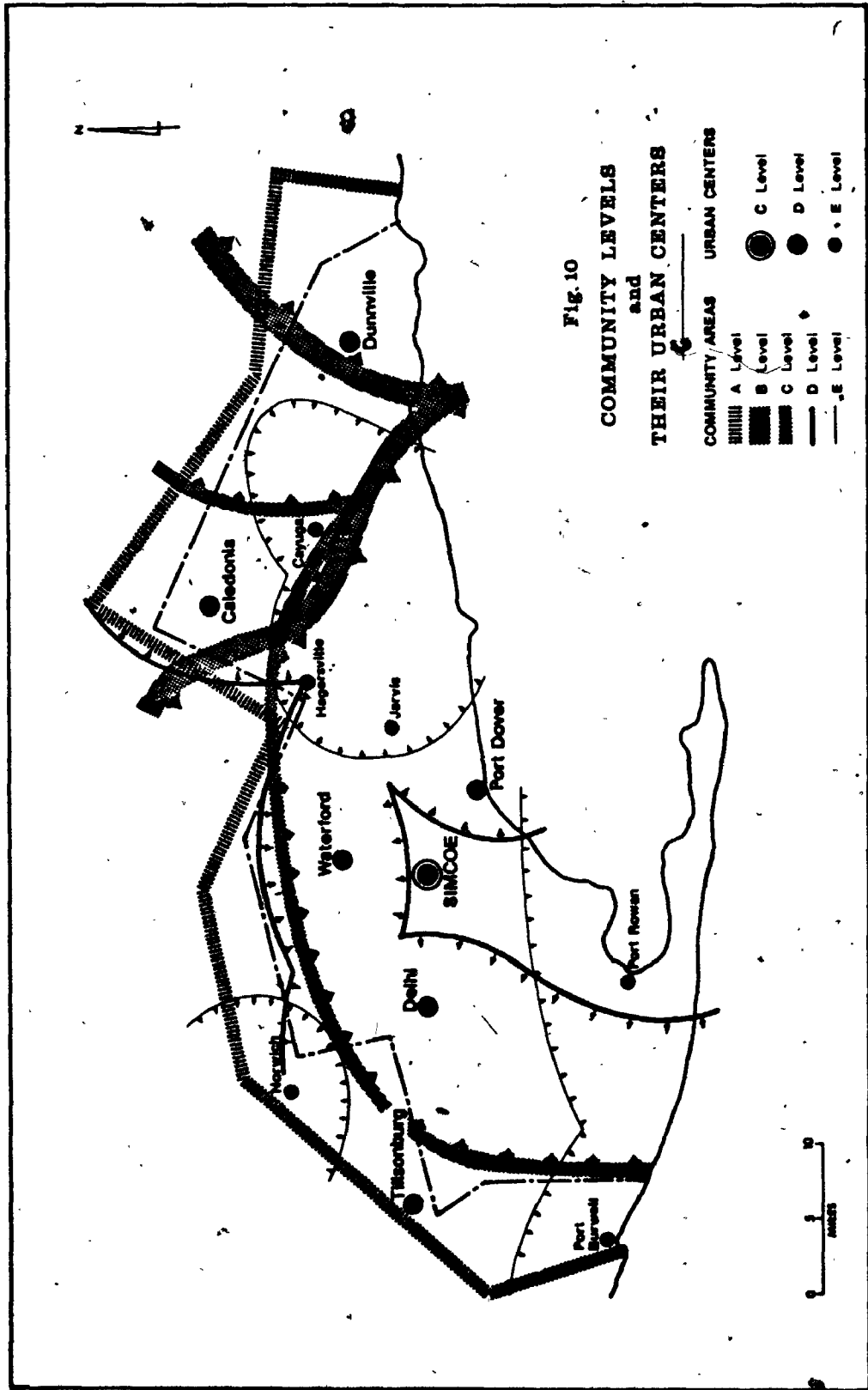
(4) Each centre and centroid is given a value with respect to the attributes <u>Efficacy-apathy</u>, <u>Change-status quo</u> and <u>Cosmopolitanism-localism</u>. To do so, the rotated configuration generated by <u>TORSCA</u> is used to weight and group the standardized scores of the twenty-three variables for all of the 1,503 respondents. Then the respondents' scores for each of the three dimensions are grouped by quadrat and centre and mean values are derived. In those cases where there were fewer than five respondents per quadrat, quadrats were grouped to reduce the chance variation in means. This involved joining quadrats until an increase in standard error occurred. The result was the grouping of ten quadrats to give a total of 107 data points for centres and quadrats (see Figure 8).[21]

(5) Straight line distances are calculated between the centroid of each quadrat and each of the urban centres to which it is linked through the "rural communities." (These distances and the quadrat means for each of the three attributes are available on request to the author.)

With this information, it is then possible to test the three hypotheses. Hypothesis I is to be tested by subjecting the treatment means of the levels of "rural community" to trend analysis. Hypothesis II is to be tested in two ways. First, an investigation of the general pattern of scores is made by use of three dimensional polynomial surfaces. If there are other variables which appear to be influencing the pattern of responses then they may, at this point, be included in an amended or additional hypothesis. Second, each "rural community" level is subjected to step-wise linear regression analysis to extract, if possible, those levels for which there is a significant relationship

between distance from the urban centres and either or both attributes. Hypothesis III is tested by using in the trend and regression analyses first all of the quadrats, and second, only those within the Haldimand-Norfolk boundary.

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[16] Community is defined here as a social group in which the system of relationships is relatively self-sustaining and inclusive in the sense that it possesses most of the important institutions. From a functionalist point of view, this means that integration, adaptation, goal attainment, and tension management will be solved internally. See William M. Dobriner, Social Structures and Systems (Pacific Palisades, California: Good year Publishing Co., 1969), p. 166.

[17] This is a simplification of Roger's approach. See Rogers, pp. 136-137.

[18] Bertrand, p. 77.

[19] Rogers, pp. 136, 145-149.

[20] Scheuch, p. 153.

[21] As will be noted, though the Localism-cosmopolitanism attribute is not included in the hypotheses, it will be included in the mapping procedures, principally to investigate its relationship with the Change-status quo attribute.

[22] Each of the populations of the two political attributes (as is illustrated on Tables 25 and 26) was analyzed by reference to (1) the differences between mean and medium, (2) the standard error of the means, (3) the standard deviations, (4) the associated percentages of elements within one standard deviation, and (5) the kurtosis. All indicated that each population distribution closely approximated that of a normal distribution. Though this may to some degree be influenced through the operation of the Central Limit Theorem, because of the variation in sample sizes and the representative nature of the original data, it is considered that the distributions tend to reflect the actual conditions.

CHAPTER VII

TESTING THE FRAMEWORK

Introduction

As indicated in the previous chapter, three techniques are
used in testing the hypotheses. All of these techniques are similar
in that they involve inter-relating two or more variables by curve-
fitting procedures including the method of least squares. However,
they differ mostly in terms of method of generation of the coefficients
of the relating equations and the inclusion of various degrees of these
representative equations.

Regression Analysis

This technique is concerned with the interrelationship between
one variable called the dependent variable and one or more variables
called the independent variables. The relationship postulated is that
of a linear combination of the independent variables and it takes the
form of the following equation with its attendant assumptions.[1]

$$ y = \beta_0 + \beta_1 x_1 + \cdots + \beta_p x_p + e $$

> where β_0 is the constant or intercept, β_p are the
> coefficients, x_p are the variables and e is the
> error term.

Estimates of the parameters $\beta_1 \ldots \beta_p$ are obtained by the method of least squares and can be tested for significance by use of the standard error, t and F statistics. The overall acceptability of the "fit" can be appraised by reference to an analysis of variance, coefficients of correlation and standard error of estimate.[2]

As in the case of this dissertation, the problem of choosing independent variables which will provide the best prediction possible with the fewest independent variables may arise. To resolve this, a variation of multiple regression can be used called stepwise multiple regression. This technique recursively constructs a predictive equation by including at each step that variable which accounts for most of the unexplained variation in the dependent variable, the number of variables to be included in the analyses being determined either previously or on the basis of a minimum level of contribution to the "unexplained" variance.

By the use of the Gauss method of solving the normal equations, that variance to be "explained" is defined as and therefore that variable to be selected is identified by the product of both the normalized regression coefficient squared and a measure of the "independence" of the variable. This independence is in terms of the degree to which the variable is not a linear combination of the variables already in the equation.[3]

The source of the computer program used in this dissertation is the Statistical Package for the Social Sciences, (SPSS), 1970, pp. 180-190.

Trend Analysis

Through this technique it is possible to determine whether the treatment means of an ordered variable or variables are functionally related to the order itself. In so doing, an assumption is made that the differences between the orders are uniform. Though it, like regression analysis, is concerned with curve fitting, its procedure is different. Rather than generating the coefficients, they are chosen from that expansion of a function $y = f(x)$ by a Taylor series which best describes the relationships in the data. In other words, the experiment is set up to answer questions about the form or trend of the relation between the means of the ordered variable or variables and the order itself--in particular, the degree of regression equation sufficient to permit prediction.

As in the case of regression in general, variance analysis is used. However, in this case, the trial sums for each subject are multiplied by the appropriate orthogonal polynomial coefficients. These are, in turn, summed. This sum (Di) is then used to calculate the Regression sum of squares according to the following formula.

$$A_i = \frac{D_i^2}{\sum n_i a_i^2}$$

where $\quad D_i = a_{1i} \sum x_1 + a_{2i} \sum x_2 + \cdots + a_{ki} \sum x_k$

x = the scores of the subjects

n = the number of observations

and a_i = the polynomial coefficient.

The linear, quadratic, etc. components of the trend are tested by reference to Snedecor's F statistic with A as the numerator and the

mean square for the within groups source of variation as the denominator.[4]

To carry out this task of calculating the trends for the means of the various levels of rural communities, the SPSS (1970) program on file in the Faculty of Social Sciences was used.

Trend Surface Analysis

Trend surface analysis is closely related to both techniques described above. It is essentially a technique to map on a two dimensional surface, the variation over space of a third variable. In equation form, the model used is

$$Z_{ij} = r(U_i, V_j) + e_{ij}$$

where Z_{ij} is the observed value of the dependent value at location (U_i, V_j), $J(U_i, V_j)$ is the trend, and e_{ij} is the residual. The trend is, in turn, defined as a polynomial involving linear, quadratic or higher degree terms and is written as

$$Z_{ij} = t_o + r_{1o} U_i + s_{o1} V_j + s_{2o} U_i^2 + t_{11} U_i V_j + r_{o2} V_j^2 + \cdots + e_{ij}$$

In the special case where the points are equally spaced along the U and V axes, the solution can be derived by use of the standard orthogonal polynomials referred to in Trend Analysis. In the case of irregularly spaced sample points, the least squares procedure for multiple regression as explained in the section on regression analysis is used. Computer derived solutions exist for trend Surface Analyses which will compute and plot surfaces up to even the sixth degree.

Once the parameters have been obtained, the significance of the associated trend can be assessed. The percentage contribution made by each surface to the total sums of squares of the dependent variable can be computed.[5]

To produce the surfaces for this thesis, Trend 6, Version 1 of the Department of Geography Computer Library Routines is used.

Using the Techniques

Introduction

As was indicated in the first part of the chapter, proper use of the various techniques necessitates the recognition of certain assumptions, particularly if any inferences are to be made with respect to the total population.

However, in some cases, the technique may be used merely to summarize properties of the data at hand or the assumptions may because of (1) sampling techniques, (2) intuition, (3) and/or other characteristics of the data, be considered to have been met and are therefore not tested.

Three Dimensional Polynomial Mapping

Trend surface analysis was performed on all three variables for all of the 107 data   observations, the reference contour chosen being the mean of the distribution of each set and the contour interval being one quarter of the standard deviation of each set. The results of the analyses are shown on the following three figures. Accompanying each figure is a table which includes the parameters of each equation, and various error measures.
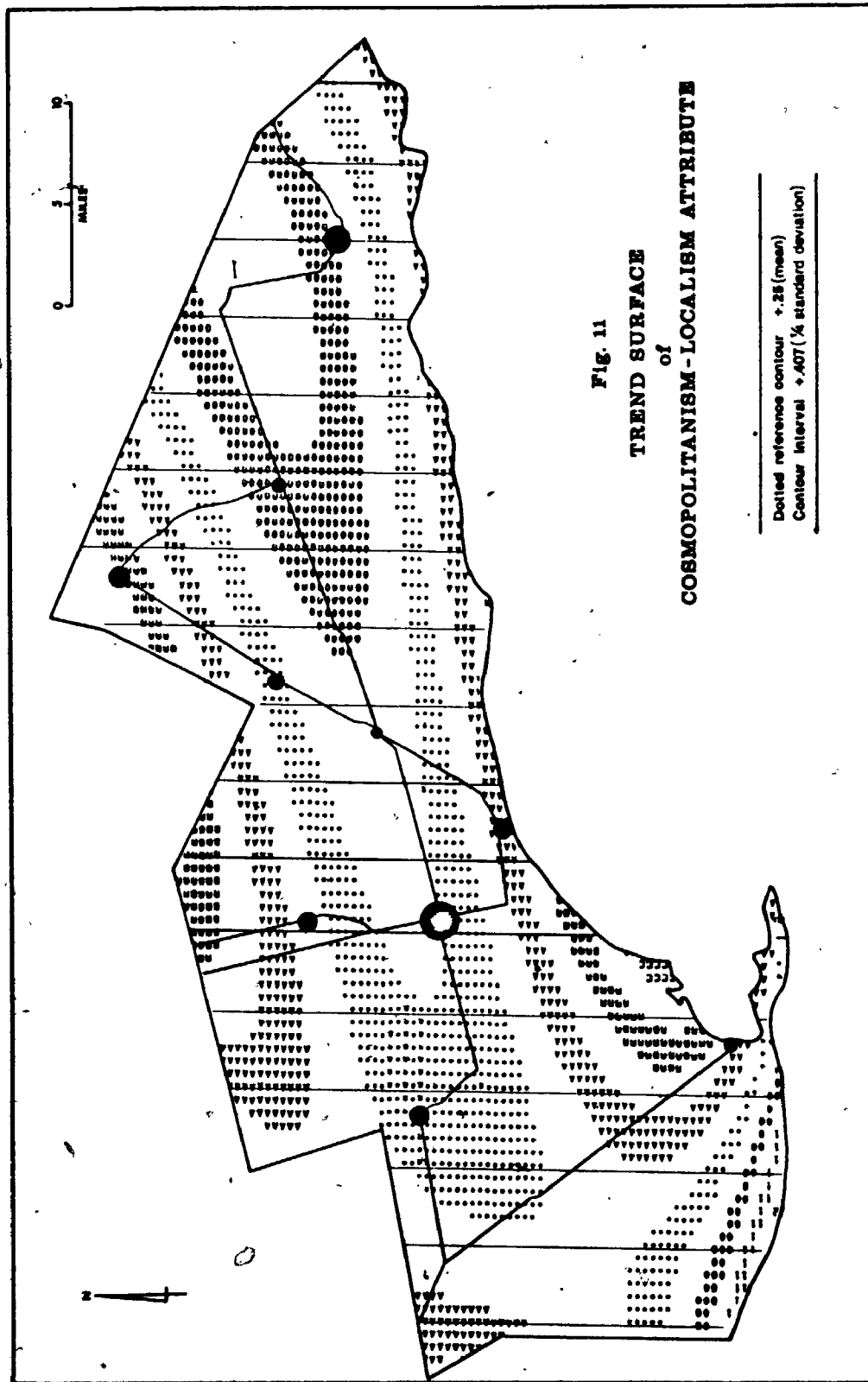
Fig. 11

TREND SURFACE
of
COSMOPOLITANISM-LOCALISM ATTRIBUTE

Dotted reference contour +.25 (mean)
Contour interval +.407 (% standard deviation)

TABLE 26

Variable: Cosmopolitanism-localism

Coefficients of 4th Degree Equation

$$Z = 4.30921 + .00022x + .02300y + -.00001x^2 + .00001xy + .00004y^2$$

Error Measures

Surface	First Degree	Second Degree	Third Degree	Fourth Degree	Fifth Degree	Sixth Degree
Correlation Coefficient (R)	.17	.22	.35	.49	.53	.59
Coefficient of Determination (R^2)	.03	.05	.13	.24	.28	.35
Standard Deviation	1.61	1.59	1.52	1.42	1.38	1.31

Fig. 12
of
TREND SURFACE
of
EFFICACY - APATHY ATTRIBUTE

Dotted reference Contour +.11 (mean)
Contour Interval +.30 (¼ standard deviation)
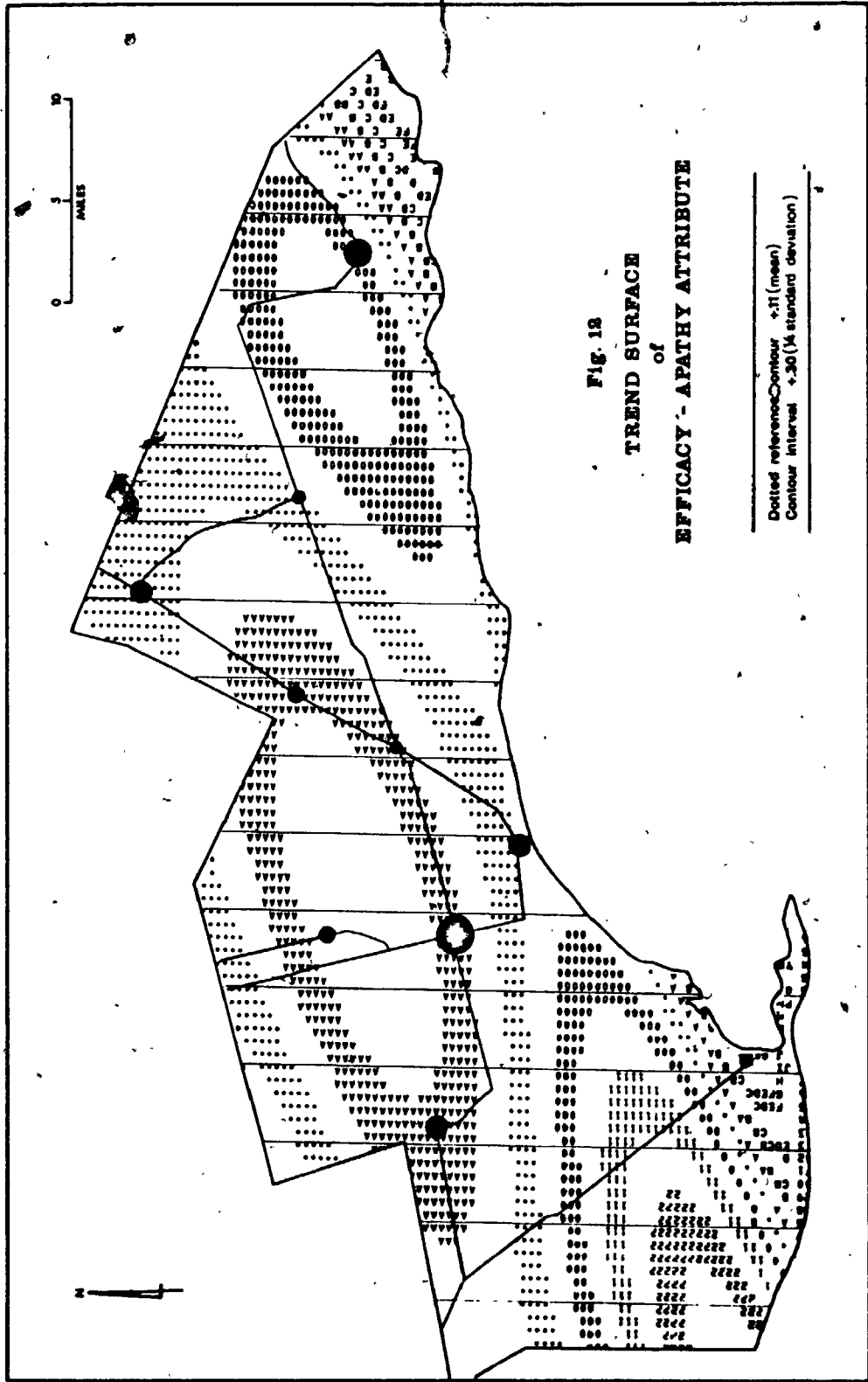
TABLE 27

Variable: Efficacy-apathy

Coefficients of 4th Degree Equation

$$Z = 2.02435 + .00255x + .00105y + -.00001y^2 + .00002xy + -.00003\,^2$$

Error Measures

Surface	First Degree	Second Degree	Third Degree	Fourth Degree	Fifth Degree	Sixth Degree
Correlation Coefficient (R)	.14	.17	.32	.51	.58	.65
Coefficient of Determination (R^2)	.02	.03	.10	.26	.34	.42
Standard Deviation	1.21	1.20	1.15	1.05	.99	.92
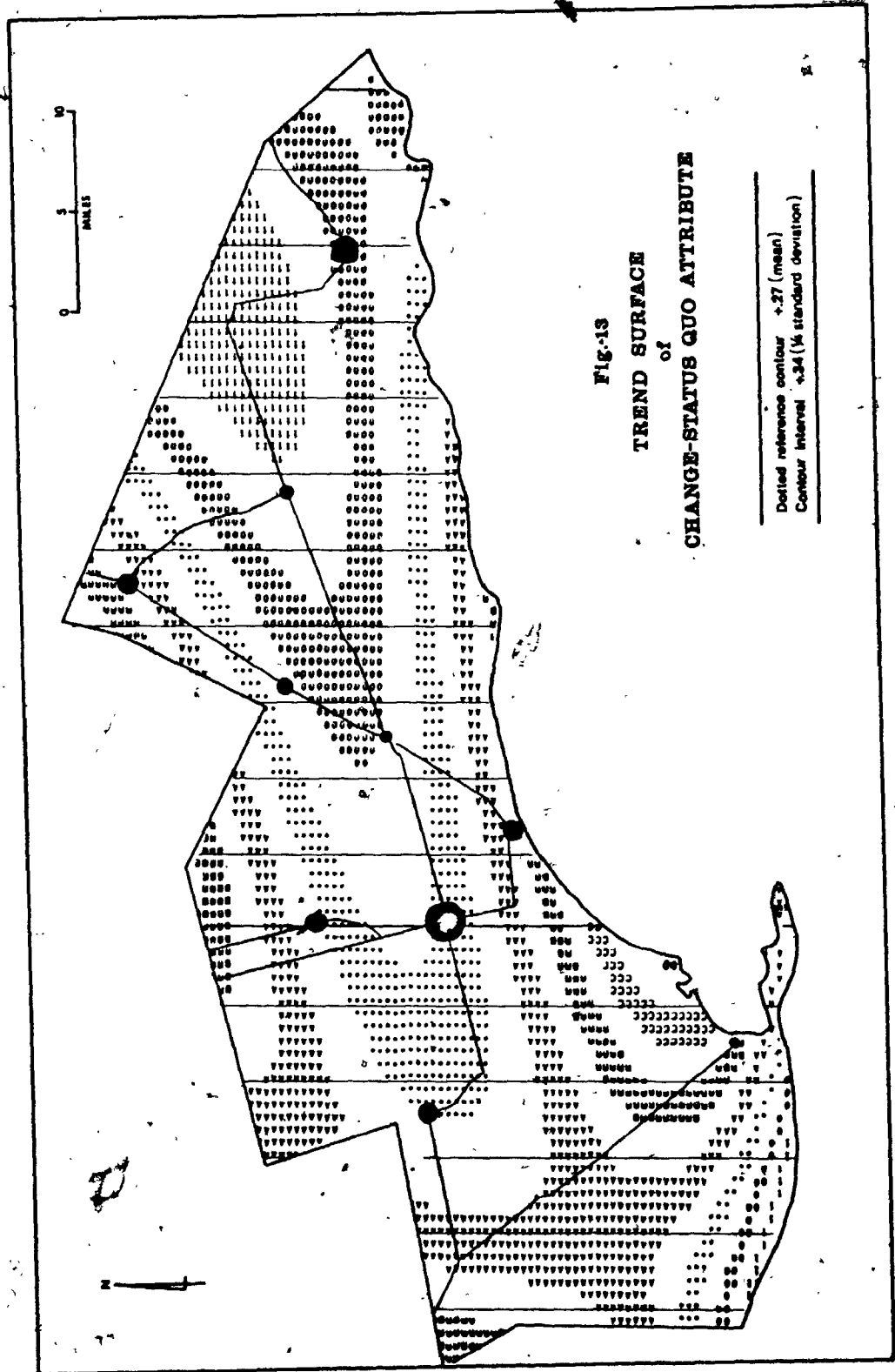
Fig.·13

TREND SURFACE
of
CHANGE-STATUS QUO ATTRIBUTE

Dotted reference contour   +.27 (mean)
Contour interval   +.34 (¼ standard deviation)

TABLE 28

Variable: Change-status quo

Coefficients of 4th Degree Equation

$$Z = 4.22746 + .00028x + -.02468y + -.00001x^2 + .00001xy + .00004y^2$$

Error Measures

Surface	First Degree	Second Degree	Third Degree	Fourth Degree	Fifth Degree	Sixth Degree
Correlation Coefficient (R)	.36	.39	.50	.64	.65	.70
Coefficient of Determination (R^2)	.13	.15	.25	.41	.43	.50
Standard Deviation	1.27	1.25	1.18	1.05	1.03	.97

It is to be noted, as was suggested above, that the coefficients of correlation and determination and the parameters can be accepted as true indicators of the relationship between the dependent variable and the independent variables X and Y since the entire population (that is all of the quadrats) and not sample data was used. In other words, concern is solely with summarizing properties of the data, consequently no assumptions need be considered in validating the use of the three techniques and hence the parametric tests of the significance of the results are not applied.

A few remarks in general may be made with respect to all three trend surface maps. First, as is illustrated on the tables, in all cases the fourth level of surface is that which marks the most significant improvement in error reduction relative to the preceding level of surface and therefore reflects best in general terms the "trend" of the true surface. Second, the error measures do not indicate a very close relationship between the trend surface and the actual means for the quadrats; the status quo-cooperation attribute having the highest multiple correlation coefficient of .64 and multiple coefficient of determination of .41. Third, at this level of analysis, evidence of the relationship between distance from urban centres in Haldimand-Norfolk and any of the three attributes is not readily apparent. Fourth, an east-west trend is at least common to the attributes Cosmopolitanism-localism and Change-status quo and possibly even to Efficacy-apathy.

With respect to the former two attributes, that similarity of trends which you would expect since as suggested before Change-status quo

is partially the effect of the Cosmopolitanism-localism trait is reflected in a ridge with the axis dipping westward along what appears to be Highway #3..

Consequently, this Highway corridor could be another variable influencing the attribute scores for the quadrats. However, such a pattern does not exclude the possible influence of at least Hamilton, Brantford and even Simcoe.

The Efficacy-apathy pattern is somewhat more complex with an east-west depression extending north of Simcoe and two "hills" in the southeast and southwest. As can be seen on Figure 13, it is conceivable that such a surface could reflect distance-attribute relationships both from especially the larger centres and from Highway 3; however, they are not at all clearly-identifiable.

As a result of the use of polynomial mapping then, some support has been given to the distance from urban center-attribute notion; however, more importantly, an additional independent variable and therefore another hypothesis has been added to the analysis. This hypothesis is as follows:

IV. Participants' scores with respect to all three attributes will vary with distance from Highway #3, measured perpendicular to the east-west trend of the Highway.

Trend Analysis of the Means
for Levels of Community

The primary purpose of this analysis is to test for a relation-
ship between the means of the levels of rural communities and the
ranking of the levels. As in the case of trend surface analysis, the
analysis of variance component of the technique is being used to summar-
ize the properties of the data in hand.

In determining this relationship, it is necessary also to
consider variation both in the numbers of levels of "rural community"
and in the area to be studied. With respect to the former, the five
levels initially elicited are combined to determine the best hierarchy
of levels. With respect to the latter--the area to be studied--both
the total 107 points (those inside and adjacent to the Haldimand-
Norfolk area) and the 96 points (those inside the Haldimand-Norfolk
boundary) are investigated.

As is shown on Tables 29, 30, 31, 32 and 33, and Figures 14, 15
and 16, definite conclusions can be made.

(1) By combining the levels A and B the results of the trend
analysis for Efficacy-apathy are improved to the extent that the
linear trend is made significant at the 10% probability level (see
Tables 29b, 30b, 31b and 32b). Also, there seems to be an improvement
in deviations from linearity in the cases of Change-status quo and
Cosmopolitanism-localism when the two levels are combined (see Tables
29c, 30c, 31c and 32c).

(2) In all three cases and more importantly in the cases of
Efficacy-apathy and Change-status quo (the commitment attributes),

TABLE 29

Trend Analysis Characteristics for Five Levels of Rural Community and Both Internal and External Quadrats

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(a) Trend analysis of cosmopolitanism-localism for five community levels (all quadrats included)..					
Between Groups	4	3.8925	.9731	.375	.826
Linear Term	1	3.2023	3.2023	1.242*	.266
Dev. from Linear	3	.6902	.2301	.089	.966
Quad. Term	1	.0014	.0014	.001	.981
Dev. from Quad.	2	.6888	.3444	.133	.876
Cubic Term	1	.1427	.1427	.055	.815
Dev. from Cubic	1	.5461	.5461	.210	.647
Within Groups	417	1082.1252	2.5950		
TOTAL	421	1086.0177			

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(b) Trend analysis of efficacy-apathy for five community levels (all quadrats included).					
Between Groups	4	5.1160	1.2790	.824	.510
Linear Term	1	3.9351	3.9351	2.5550*	.111
Dev. from Linear	3	1.1809	.3936	.254	.859
Quad. Term	1	2.4216	2.4216	1.571	.211
Dev. from Quad.	2	-1.2407	-.6203	-.400	1.000
Cubic Term	1	.5493	.5493	.356	.551
Dev. from Cubic	1	-1.7899	-1.7899	-1.154	1.000
Within Groups	417	646.9326	1.5514		
TOTAL	421	652.0486			

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(c) Trend analysis of change-status quo for five community levels (all quadrats included).					
Between Groups	4	4.6622	1.1655	.647	.630
Linear Term	1	2.5355	2.5355	1.413*	.235
Dev. from Linear	3	2.1266	.7089	.393	.758
Quad. Term	1	.1687	.1687	.094	.760
Dev. from Quad.	2	1.9580	.9790	.543	.581
Cubic Term	1	1.4623	1.4623	.813	.368
Dev. from Cubic	1	.4957	.4957	.275	.600
Within Groups	417	751.6736	1.8026		
TOTAL	421	756.3358			

*Not significant at the 90% probability level.

TABLE 30

Trend Analysis Characteristics for Five Levels of Rural Community and Only Internal Quadrats

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(a) Trend analysis of cosmopolitanism-localism for five community levels (internal quadrats only).					
Between Groups	4	5.4044	1.3511	.490	.743
Linear Term	1	4.6866	4.6866	1.714*	.191
Dev. from Linear	3	.7178	.2393	.087	.967
Quad. Term	1	.0930	.0930	.034	.854
Dev. from Quad.	2	.6249	.3124	.113	.893
Cubic Term	1	.1776	.1776	.065	.799
Dev. from Cubic	1	.4472	.4472	.162	.687
Within Groups	375	1033.0487	2.7548		
TOTAL	379	1038.4531			
(b) Trend of efficacy-apathy for five community levels (internal quadrats only).					
Between Groups	4	4.2216	1.0554	.762	.550
Linear Term	1	3.1993	3.1993	2.324*	.128
Dev. from Linear	3	1.0223	.3408	.246	.864
Quad. Term	1	2.2124	2.2124	1.610	.205
Dev. from Quad.	2	-1.1901	-.5951	-.430	1.000
Cubic Term	1	.3734	.3734	.271	.603
Dev. from Cubic	1	-1.5635	-1.5635	-1.129	1.000
Within Groups	375	519.3349	1.3849		
TOTAL	379	523.5565			
(c) Trend Analysis of change-status quo for five community levels (internal quadrats only).					
Between Groups	4	7.0408	1.7602	.942	.440
Linear Term	1	4.5088	4.5088	2.423*	.120
Dev. from Linear	3	2.5320	.8440	.452	.716
Quad. Term	1	.6300	.6300	.338	.561
Dev. from Quad.	2	1.9020	.9510	.509	.602
Cubic Term	1	1.4903	1.4903	.799	.372
Dev. from Cubic	1	.4117	.4117	.220	.639
Within Groups	375	700.7484	1.8687		
TOTAL	379	707.7893			

*Not significant at the 90% probability level.

TABLE 31

Trend Analysis Characteristics for Four Levels of
Rural Community and Both Internal and External Quadrats

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(a) Trend analysis of cosmopolitan-localism for four community levels (all quadrats included).					
Between Groups	3	3.8923	1.2974	.501	.682
Linear Term	1	2.3500	2.3500	.911*	.340
Dev. from Linear	2	1.5424	.7712	.298	.743
Quad. Term	1	.1489	.1489	.058	.810
Dev. from Quad.	1	1.3935	1.3935	.538	.464
Within Groups	418	1082.1253	2.5888		
TOTAL	421	1086.0177			
(b) Trend analysis of efficacy-apathy for four community levels (all quadrats included).					
Between Groups	3	5.0925	1.6975	1.097	.350
Linear Term	1	4.6618	4.6618	3.024**	.083
Dev. from Linear	2	.4307	.2153	.139	.870
Quad. Term	1	1.9063	1.9063	1.237	.267
Dev. from Quad.	1	-1.4757	-1.4757	-.953	1.000
Within Groups	418	646.9561	1.5477		
TOTAL	421	652.0486			
(c) Trend analysis of change-status quo for four community levels (all quadrats included).					
Between Groups	3	4.1069	1.3690	.761	.517
Linear Term	1	2.2785	2.2785	1.269*	.261
Dev. from Linear	2	1.8284	.9142	.508	.602
Quad. Term	1	.2151	.2151	.120	.730
Dev. from Quad.	1	1.6133	1.6133	.896	.344
Within Groups	418	752.2289	1.7996		
TOTAL	421	756.3358			

*Not significant at the 90% probability level.
**Significant at the 90% probability level.

TABLE 32

Trend Analysis Characteristics for Four Levels of
Rural Community and Only Internal Quadrats

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
(a) Trend analysis of cosmopolitanism-localism for four community levels (internal quadrats only).					
Between Groups	3	5.3930	1.7977	.654	.582
Linear Term	1	3.7487	3.7487	1.369*	.243
Dev. from Linear	2	1.6443	.8221	.299	.742
Quad. Term	1	.0551	.0551	.020	.887
Dev. from Quad.	1	1.5891	1.5891	.578	.447
Within Groups	376	1033.0601	2.7475		
TOTAL	379	1038.4531			
(b) Trend analysis for efficacy-apathy for four community levels (internal quadrats only).					
Between Groups	3	4.1901	1.3967	1.011	.368
Linear Term	1	3.9251	3.9251	2.855**	.092
Dev. from Linear	2	.2650	.1325	.096	.090
Quad. Term	1	1.6826	1.6826	1.225	.269
Dev. from Quad.	1	-1.4176	-1.4176	-1.026	1.000
Within Groups	376	519.3664	1.3813		
TOTAL	379	523.5565			
(c) Trend analysis of change-status quo for four community levels (internal quadrats only).					
Between Groups	3	6.2011	2.0670	1.108	.346
Linear Term	1	4.3158	4.3158	2.319*	.129
Dev. from Linear	2	1.8853	.9426	.505	.604
Quad. Term	1	.0523	.0523	.028	.867
Dev. from Quad.	1	1.8330	1.8330	.982	.322
Within Groups	376	701.5882	1.8659		
TOTAL	379	707.7893			

*Not significant at the 90% probability level.
**Significant at the 90% probability level.

TABLE 33

Trend Analysis Characteristics for Three Levels
of Rural Community and Only Internal Quadrats

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.

(a) Trend analysis of cosmopolitanism-localism for three community levels; Level "E" omitted (internal quadrats only).

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	3.3704	1.6852	.610	.544
Linear Term	1	2.9479	2.9479	1.070*	.302
Dev. from Linear	1	.4224	.4224	.153	.696
Within Groups	337	930.9614	2.7625		
TOTAL	339	934.3318			

(b) Trend analysis of efficacy-apathy for three community levels; Level "E" omitted (internal quadrats only).

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	.1095	.0548	.040	.961
Linear Term	1	.0996	.0996	.072*	.788
Dev. from Linear	1	.0100	.0100	.007	.932
Within Groups	337	466.3951	1.3840		
TOTAL	339	466.5047			

(c) Trend analysis of change-status quo for three community levels; Level "E" omitted (internal quadrats only).

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	4.3008	2.1504	1.140	.321
Linear Term	1	4.2943	4.2943	2.284*	.132
Dev. from Linear	1	.0065	.0065	.003	.953
Within Groups	337	635.5077	1.8858		
TOTAL	339	639.8084			

*Not significant at the 90% probability level.

there is a positive relationship between the attribute mean and the level of "rural community"[7] (see Figures 14, 15 and 16).

(3) Also, in all three cases, the linear trend gives the best fit but it is significant at slightly above the ten per cent level only in the case of the Efficacy-apathy attribute (see Table 31b).

(4) The F statistic of the Cosmopolitanism-localism attribute is very low.

(5) The results obtained when the quadrats are limited to those within the Haldimand-Norfolk boundary are as good as those when all quadrats are used (see Tables 31 and 32).

In conclusion, though the evaluations of the deviations do not indicate a high degree of reliability; the general and consistent linear trends of the means do suggest that participants' scores for the commitment attributes vary with level of rural community--the lower the level of "rural community," the higher the scores. This relationship is best reflected in the case of the Efficacy-apathy attribute.

Regressing Attributes on Distances

The third procedure used in the analysis involves repeated application of the step-wise linear regression model to extract, if possible, those "community" levels for which there is a significant causal relationship between the dependent variables of political commitment and the independent variables, distance from the "community centre" and distance from Highway #3. With the results from the Trend Analysis, it was decided to limit the regression analysis to the four levels of "rural community," with A and B levels combined.

FIGURE 14

Trend of Community Means for Cosmopolitanism-Localism
(Four Levels of Community and Internal Quadrats)
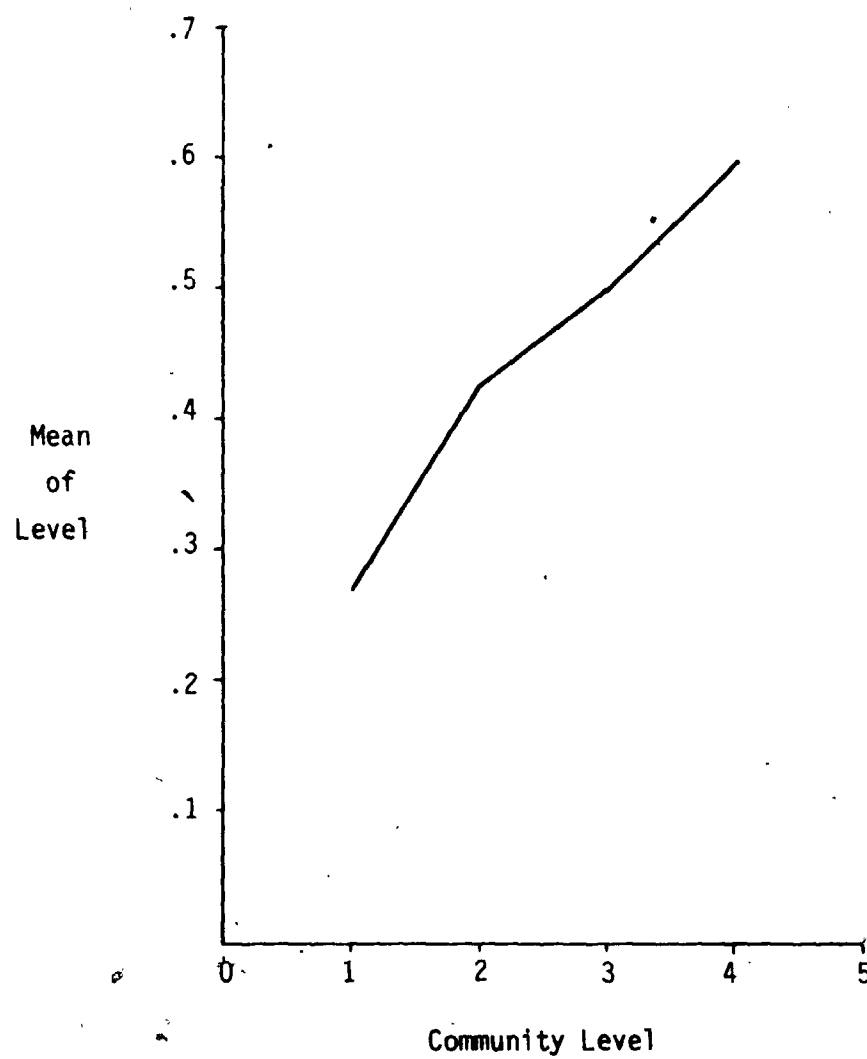
FIGURE 15

Trend of Community Means for Efficacy-Apathy
(Four Levels of Community and Internal Quadrats)
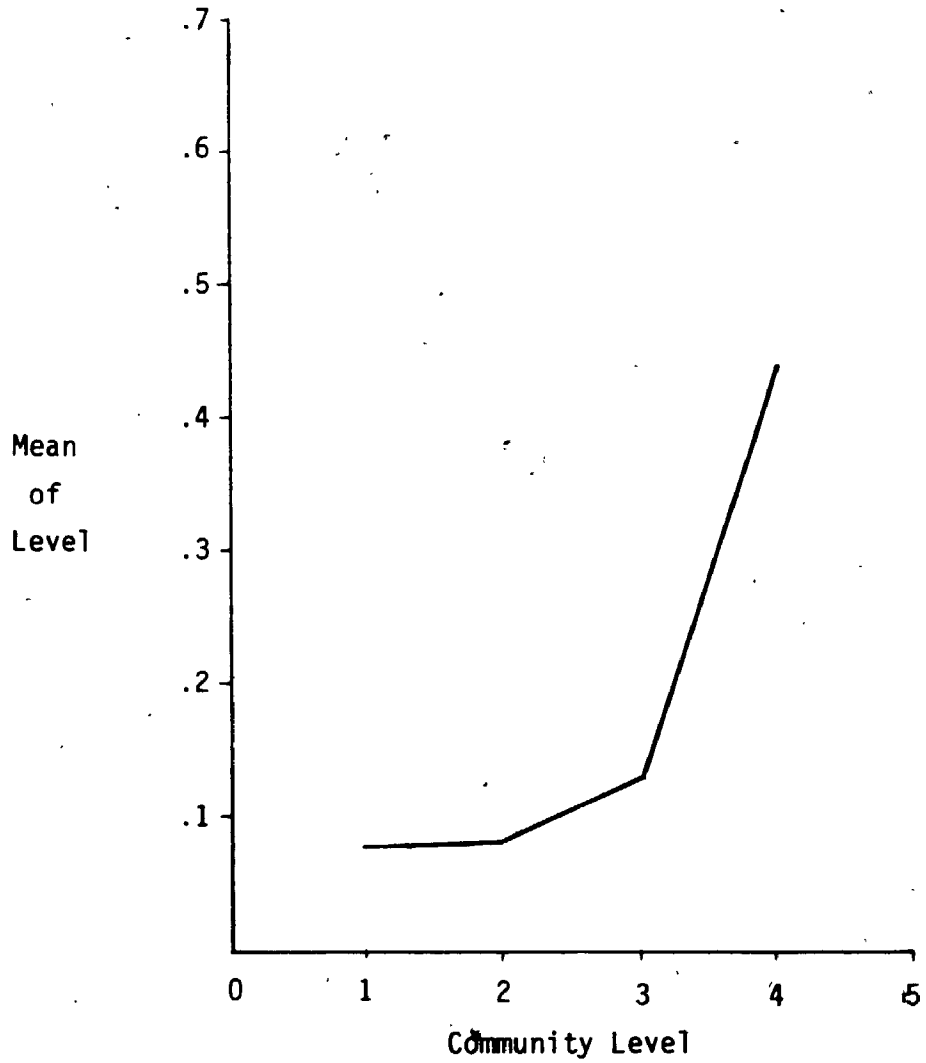
FIGURE 16

Trend of Community Means for Change-Status Quo
(Four Levels of Community and Internal Quadrats)
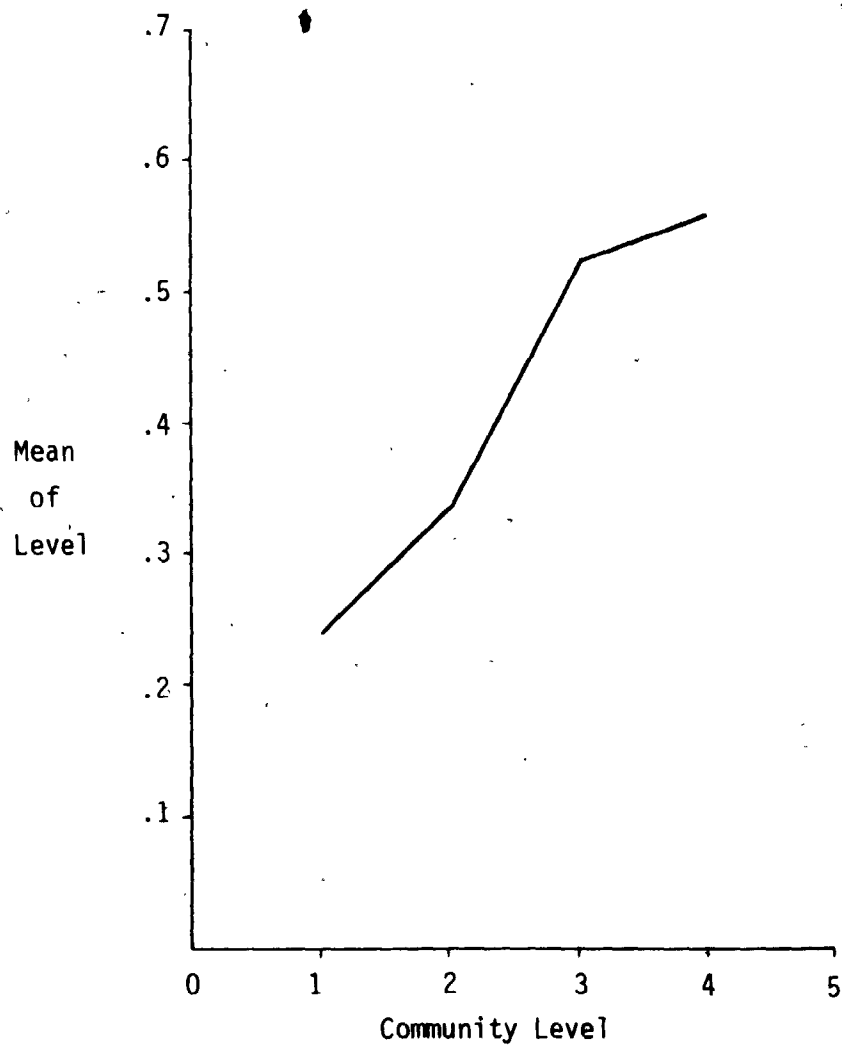
In so doing, however, the distance relationships were analyzed with the external-quadrats included (107 points) and without including them (96 points). In the case of each analysis--that is of the dependent variables with distance--the procedure followed consisted of (1) regressing at the 107 point level the dependent variables on distance from urban centres of all community levels and then selecting those relationships which were significant for further analysis, and (2) selecting for regression at the 96 point level those relationships which are significant and adding to the process the independent variable distance from Highway #3. Inherent in this approach, however, was the problem suggested by the Trend Surface Analysis--that is that the attribute scores tend to relate positively to distance from an east-west axis. Consequently, regression results of the attributes on distance from A and for B level centres have to be assessed carefully and possibly eliminated when the 96 points are used.

As was indicated at the beginning of this chapter, there are assumptions which must be considered if point estimates and statistical inferences are to be made. Consequently, consideration was given to attempting to meet these assumptions in as detailed a manner as possible. In so doing, residual plots were made to test for normality and heteroscadasity. Examination of these plots was carried out only by eye, however such scrutiny suggested that the error terms were close to being normally distributed, and had a constant variance at each potential data point (distance parameter). Autocorrelation was not tested since distance was explicitly included as an independent variable.

The results of the regression analyses are summarized in Tables 34 to 43 and described as follows:

(1) When the Efficacy-apathy attribute is regressed on distance from centres in all four community levels with both internal and external quadrats included only distance from "C" level centres is significant at the 95 per cent probability level. With the other levels removed, the regression of this attribute on distance from the "C" level centres alone (in this case, Simcoe) results in an explanation of 11 per cent of the total variation at the 99 per cent probability level. As can be seen on Table 36, the R square is increased to 15 per cent at a sifnificance level of 99 per cent when 96 points are used.

In general then, with increase in distance from Simcoe there is a lack of legitimacy, inefficacious involvement and the resultant apathy. As suggested in Chapter V, this could be interpreted as a decrease in the possibility of adapting to change by absorption of the conflicting elements in a spatial system in such a way as to nurture "development."

(2) When the Change-status quo attribute is regressed on distance from centres in all four community levels with both internal and external quadrats included, no significant relationship is detected, however, the A and B levels show the most promise. Consequently, these two levels are subjected to further analysis with the 107 points included. The result is an accumulated explanation of variation of 9 per cent at the 95 per cent level of probability. As indicated above, because of the east-west axis for both attributes as shown on the Trend Surface maps, the levels investigated for the 96

TABLE 34

Regression of Efficacy-apathy on Distance from Centres
in the Four Community Levels (All Quadrats Included)

Level	B	Multiple R (Accumu- lative)	R^2 (Accumu- lative)	F Level (Accumu- lative)	Significance Level
C	.03005	.33160	.10996	4.44757	> 95%
E	.08656	.37198	.13837	2.81026	> 90%
D	.04122	.38751	.15016	2.00256	< 90%

Constant   -1.04666

A: F level or Tolerance level insufficient for
     further computation.

TABLE 35

Regression of Efficacy-apathy on Distance from Centres
in the "C" Level Community   (All Quadrats Included)

Level	B	Multiple R (Accumu- lative)	R^2 (Accumu- lative)	F Level (Accumu- lative)	Significance Level
C	.05881	.33163	.10996	10.37758	99%

Constant   -.71956

TABLE 36

Regression of Efficacy-apathy on Distance from Centres
in the "C" Level Community (Internal Quadrats)

Level	B	Multiple R (Accumulative	R^2 (Accumulative	F Level (Accumulative	Significance Level
C	.07191	.38670	.14594	10.54983	99%
Constant	-.73870				

TABLE 37

Regression of Change-status quo on Distance from Centres
in the Four Community Levels (All Quadrats Included)

Level	B	Multiple R (Accumulative)	R^2 (Accumulative	F Level (Accumulative	Significance Level
A*	-.04172	.19326	.03735	1.39668	< 90%
D	.05930	.30317	.09191	1.77124	< 90%
C	.01557	.31151	.09904	1.21797	< 90%
E	.02816	.31470	.09904	.90686	< 90%
Constant	.65059				

*Level includes the former A and B levels.

TABLE 38

Regression of Change-status quo on Distance from Centres
in "A" and "D" Level Communities (All Quadrats Included)

Level	B	Multiple R (Accumulative	R^2 (Accumulative	F Level (Accumulative	Significance Level
A	-.03972	.19326	.03735	3.53049	>90%
D	.07985	.30317	.09191	4.55463	>97.5%
Constant	.79500				

TABLE 39

Regression of Change-status quo on Distance from Centres
in "D" Level Community and From Highway #3
(Internal Quadrats)

Level	B	Multiple R (Accumulative	R^2 (Accumulative	F Level (Accumulative	Significance Level
D	.11200	.25429	.06467	5.73826	97.5%
Distance from Highway #3	-.09496	.37093	.13759	6.54126	99.0%
Constant	-.03452				

TABLE 40

Regression of Cosmopolitanism-localism on Distance from Centres in the Four Community Levels (All Quadrats Included)

Level	B	Multiple R (Accumu- lative	R^2 (Accumu- lative	F Level (Accumu- lative	Significance Level
D	.06717	.22774	.05187	1.96935	< .90%
E	.10459	.27245	.07423	1.40313	< 90%
A	-.01590	.28400	.08066	.99430	< 90%
C	.01065	.28589	.08173	.73429	< 90%
Constant	-.46978				

TABLE 41

Regression of Cosmopolitanism-localism on Distance from Centres in "D" and "E" Level Communities (All Quadrats Included)

Level	B	Multiple R (Accumu- lative	R^2 (Accumu- lative	F Level (Accumu- lative	Significance Level
D	.08830	.22774	.05187	2.07875	< 90%
E	.10862	.27245	.07423	1.48331	< 90%
Constant	-.78610				

TABLE 42

Regression of Cosmopolitanism-localism on Distance from Centres
in the "D" Level Community (All Quadrats Included)

Level	B	Multiple R (Accumulative	R^2 (Accumulative	F Level (Accumulative	Significance Level
D	.08830	.22774	.05187	4.07808	95%
Constant	-.42429				

TABLE 43

Regression of Cosmopolitanism-localism on Distance from Centres
in the "D" Level Community and from Highway #3
(Internal Quadrats)

Level	B	Multiple R (Accumulative	R^2 (Accumulative	F Level (Accumulative	Significance Level
D	.11298	.29230	.08544	7.75391	99%
Highway #3	-.09809	.37289	.13905	6.62180	99%
Constant	-.29013				

quadrats are limited to C, D and E. As can be seen on Table 39, this
attribute is best explained by reference to distance from "D" level
centres and distance from Highway #3. Thirteen decimal eight per cent
of the total variance is explained by distance from Delhi, Waterdown,
Port Dover, Caledonia and Dunnville and from Highway #3 (6.5 per cent
from the urban centres and 7.3 per cent from Highway #3). With increase
in distance from the centres there occurs a negative reaction to change
in the system and/or boundaries and a tendency to desire to perpetuate
the existing system to the point of overlooking intermunicipal cooper-
ation basic to both proper planning and the resulting development.
This relationship is reversed with respect to distance from Highway #3.

(3) As is to be expected, the Cosmopolitanism-localism
attribute is also best "explained" by reference to the "D" level "rural
communities" (see Table 43). Fourteen per cent of the variance is
"explained" by distance from the "community" centres and from the
Highway (8.5 per cent from the centres and 5.4 per cent from the
Highway). With increased distance from the urban centres there is an
increase in group involvement at the local level with emphasis on insti-
tutional control.

In summary, at acceptable levels, according to "Snedecor's
Variance Ratio Test," important results are derived from the regression
analyses. Distance from centres of level "D" rural communities
(average population of 4,000) and distance from Highway #3, both
limited to those quadrats within the Haldimand-Norfolk boundary,
explain approximately 14 per cent of the total variance for the

Change-status quo attribute.   Distance from centres of level "C"
rural communities (average population of 20,000) measured solely by
reference to quadrats within the Haldimand-Norfolk boundary explains
11 per cent of the total variance for the Efficacy-apathy attribute.
The fact that the exclusion of the quadrats outside of the Haldimand-
Norfolk boundary increases the sum of squares of the residuals appreci-
ably, suggests that Haldimand-Norfolk is a unit with respect to these
measures of commitment. This conclusion is in direct contrast with the
statement in Threshold of Change - 2: ". . . at the moment Haldimand
and Norfolk do not constitute in any sense a homogeneous or 'natural'
unit clearly set off from its surroundings."[8]

It is also necessary to note that the "D" level centres in
the case of Change-status quo and "C" level centres in the case of
Efficacy-apathy suggest the existence of threshold levels in the hier-
archy of central places with the wave-like diffusion spreading from or
toward each central place.

Conclusion

In previous chapters through multidimensional scaling, the
original twenty-three items were fused into three attributes, two of
which were considered to represent "commitment" to the polity.

In this chapter the relevance of these two attributes to the
thrust of this dissertation is enhanced by hypotheses testing. In such
testing a spatial structure is elicited and various "system" qualities
defined for the attributes. To wit: Norfolk-Haldimand as a spatial
entity is seen to exert a contextual effect with respect to commitment;

the hierarchy of "rural communities" relates linearly to commitment; and within this hierarchy of "rural communities" with their urban centres, there appears to be a different threshold for each "commitment" attribute, thereby suggesting differences in the flow of information, diffusion for the Efficacy-apathy attribute occurring hierarchically above the "C" level "rural community" but tied to the urban centres within the "C" level community and diffusion for the Change-status quo attribute occurring hierarchically above the "D" level but tied to the urban centres within the "D" level communities. In summary, with reference to the two commitment attributes, Haldimand-Norfolk not only appears to be what might be termed a polarized space with its hierarchy of rural communities but also each individual within the area seems to have as a "reference" point for the Efficacy-apathy attribute the "C" level urban centre and as a "reference" point for the Change-status quo attribute a "D" level urban centre.

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[1] For a description of the basic theory of the general linear model and the associated assumptions, see A. A. Afifi and S. P. Azen, <u>Statistical Analysis, A Computer Oriented Approach</u> (New York: Academic Press, 1972), pp. 144-153. For a detailed account of the assumptions and tests for these assumptions, see Edward J. Kane, <u>Economic Statistics and Econometrics</u> (New York: Harper and Row, 1968), pp. 355-381.

[2] Kane, pp. 264-267.

[3] For a complete description of step-wise regression, see Afifi and Azen, pp. 128-135.

[4] Allen L. Edwards, <u>Experimental Design in Psychological Research</u> (New York: Holt, Rinehart and Winston, 1968), pp. 148-152 and 234-235.

[5] Leslie J. King, <u>Statistical Analysis in Geography</u> (Englewood Cliffs: Prentice-Hall, 1969), pp. 152-153.

[6] For a description of the uses of variance analysis and the relevance of assumption proof, see Churchill Eisenhart, "The Assumptions Underlying the Analysis of Variance," <u>Biometrics</u>, Vol. 3 (1), March 1947, pp. 1-37.

[7] The general trend in an increase in <u>Change-status quo</u> scores with decrease in community size could relate to the characteristic of community described in <u>Rural Sociology</u>, "Formerly, the solidarity of the community was maintained by traditions, sentiment, prejudice, public opinion and gossip. More and more, the community must maintain the loyalty of its members by means of the services it renders. The cohesive element has shifted from a mechanistic type of solidarity to an organic type," see Bertrand, p. 77. In other words, perhaps the degree of this change is related to the size of the community.

[8] Ontario, <u>Threshold of Change - 2</u>, pp. 15-16.

PART III

RELEVANCE OF THE CONCLUSIONS

AND SUMMARY

The relevance of the conclusions of Part II is to
be understood by reference first to other research and
second by indicating how the conclusions might be used
in furthering the thrust of "Design for Development."
Comparison of four studies of differing perspectives
with the above conclusions reveals complementarity and
even prompts consideration of further research.

CHAPTER VIII

RELATIONSHIP OF CONCLUSIONS TO OTHER RESEARCH AND
THEIR RELEVANCE TO "DESIGN FOR DEVELOPMENT"

As indicated in the previous chapters, two attributes have been generated which are considered to reflect commitment to the polity. By scoring participants on these attributes and by mapping the scores Haldimand-Norfolk has been shown to be a polarized space with its hierarchy of "rural communities" and thresholds of diffusion/concentration for each of the two attributes.

Examination of the relationships between the conclusions in the previous chapter and work of researchers already referred to who grappled with the involvement and/or participation problem at a fairly comprehensive level suggests that the former--the conclusions--may not only serve to extend and detail the latter but also support some of the postulations made in Chapter V relative to the interpretation and value of the dimensions generated by the use of TORSCA. In so doing, these conclusions contribute toward furthering an understanding of the polity. The authors referred to in this quest are John Friedmann, U. Himmelstrand, Arthur Maass, and Robert Dahl. These researchers analyzed the polity from different vantage points; Friedmann from the operation in space of the conflict model of social change,[1] Himmelstrand from the effect of differing ideological traits on the populace and political bodies,[2] Maass from the structural

relationships between the governmental and non-governmental portions of the polity,[3] and Dahl from the motivation for political participation of the public.[4]

There are, in the case of Friedmann's A General Theory of Polarized Development, three points to be considered. Perhaps the most interesting aspect to appear in considering the Change-status quo attribute and its spatial associations is the degree of support which seems to exist for the suggestion made in Chapter V of a continuum of "power-planning" not only in terms of an hierarchy of communities with the specific "D" level urban-centre periphery component, but also in terms of the dynamics of such a system within the context of Friedmann's core-periphery model. In other words, the Change-status quo attribute indicates through the medium of the hierarchy of rural communities and urban centre periphery relationship the degree to which the public is supportive of planning as the main method of optimally integrating the complex functional networks and manifold diverging interests of society. Second, the two "commitment" attributes and the structural and spatial patterns associated with each may be seen to supplement or complement Friedmann's authority-dependency relationships as the integrative device for core and periphery in a spatial system. If this is the case, then the present structural and system relationships constitute but one phase in the dynamics of polarized development. Third, in his paper, Friedmann registers the necessity for structural compatibility of innovation and medium if the transformation which is basic to development is to occur.[5] In this respect, the structure and system identified by

reference to the two "commitment" attributes may be considered to be the basis upon which the necessary political system might then be built, thereby augmenting the possibility of invention and innovation.

Equally interesting, more complex but more speculative is the relationship between the results of this research and that of Himmelstrand's in "Depoliticization and Political Involvement." The fact that Himmelstrand in this political differentiates between "pragmatic" and "expressive" ideological styles seems to support the separation of commitment into the two attributes Change-status quo and Efficacy-apathy. Also, the notion of "expressive" ideologists and "pragmatically oriented" people as being associated with "intensive" and "extensive" participation respectively relates to the notion that concern with maintaining the status quo and independence of action varies indirectly with size of community, for "intensive" participation as defined by Himmelstrand seems to be more closely linked with small communities.[7] The complete juncture of the results of the two studies--that of this dissertation and Himmelstrand's--however, is complicated by the fact that Himmelstrand's ideological scale is uni-dimensional. In contrast, the two attributes Change-status quo and Efficacy-apathy are from two statistically unrelated dimensions. This and the above prompts the possibility that more than one dimension is involved in Himmelstrand's work and that mapping of his respondent's scores could have produced two different structural patterns as in the case of the "commitment" attributes.

In the case of Maass's work of integrating the polity, the "commitment" attributes may be seen as socio-political indicators and

the spatial representation of such traits as a structure to which the governmental division of powers may be related in devising an hierarchical system to.reflect the various levels of basic community values.

In contrast with the above three researchers, Dahl concentrates on the non-governmental portion of the polity. In so doing he lists those aspects which influence the participation of an individual in political affairs. The two commitment attributes and their spatial patterns serve to suggest that the motivating aspects which Dahl has identified vary with the level of rural community and have different threshold levels with respect to wave diffusion/concentration. Those items in Dahl's list which relate to issue understanding and involvement are at least in the Haldimand-Norfolk situation associated with the "D" level community as the threshold; those items in Dahl's list which relate to efficacy and legitimacy of the system are, at least, in the Haldimand-Norfolk situation associated with the "C" level community as the threshold.

By making reference to these four studies of differing perspectives some indication of the potential relevance of the findings in this dissertation to furthering the understanding of the polity has been provided.

The concern of this dissertation, however, is much broader. It is to attempt to further the development thrust of "Design for Development" by extracting from a re-examination of LOIS data information for an improved restructuring program. Consequently, it remains to explain how the findings may be made operational. The procedure

to be used involves ferreting from the previous studies in this and previous chapters characteristics of the local polity from which principles may be elicited which are, in turn, operationalized by reference to the findings.

Three such characteristics are readily identifiable. First, all studies reveal that the polity is extremely complex and multi-faceted. Second, directly and indirectly, they not only indicate the inter-relatedness of the parts of the polity, but also suggest that the nature of the relationships is dependent upon the stage of development reached by the polity. Third, a necessary harmony between the public and the governmental system proper is articulated (in Friedmann's terms this is expressed as compatibility of innovation and medium, in Maass' terms it takes the form of an acceptable non-governmental/governmental ratio of power, and in Himmelstrand's terms it involves a correspondence between the ideological styles).

From these characteristics definite principles can be derived which may be relevant to restructuring and therefore to operationalizing the results of the theoretical and empirical analysis in this dissertation. These principles are as follows:

(1) Restructuring should be consistent with the receptivity of the polity.

(2) Restructuring should allow for that necessary interplay between the governmental and non-governmental portions of the polity not only to maintain balance within the system but also to promote the "development" of the total system.

(3) To allow for such interplay the structure and system of

the non-governmental portion of the polity must be clearly defined.

By reference not only to both the description and justification for the "commitment" attributes, but also to the results of the analysis of the patterns of the "commitment" attributes in Haldimand-Norfolk, the abovementioned principles may be operationalized as follows:

(1) Given that the hierarchy of levels of "rural community" reflect a continuum of "commitment" to the polity with respect to "electioning" and "issue" dimensions, and given that the Haldimand-Norfolk is a unit with respect to the two dimensions, a possibility exists of restructuring to fit the receptivity of the populace.

(2) Given that the set of urban centres for each of the "C" and "D" levels of "rural community" has a measurable function of integrating space in terms of a distance-attribute relationship, opportunities for delineating grass-root "containment" areas and innovative centres for the issue and electioning aspects exists.[8] Translated into structural terms, this means the identification of "Issue" communities for either ward or area municipality purposes and the delineation of the "Electioning" community with Simcoe as its centre for either the single tier or upper tier municipality[9] (see Figure 17 for the community boundaries).

(3) Given both that relationships between the governmental and non-governmental portions of the polity may be understood in terms of the two "commitment" attributes and that though not statistically related they identify two aspects essential to the operation of the polity, then the possible roles of the "Electioning" and "Issue"

Fig. 17

COMMUNITY BOUNDARIES

LAKE ONTARIO

LAKE ERIE

DUNNVILLE

CALEDONIA

WATERFORD

PORT DOVER

SIMCOE

DELHI

TILLSONBURG

Scale

Miles
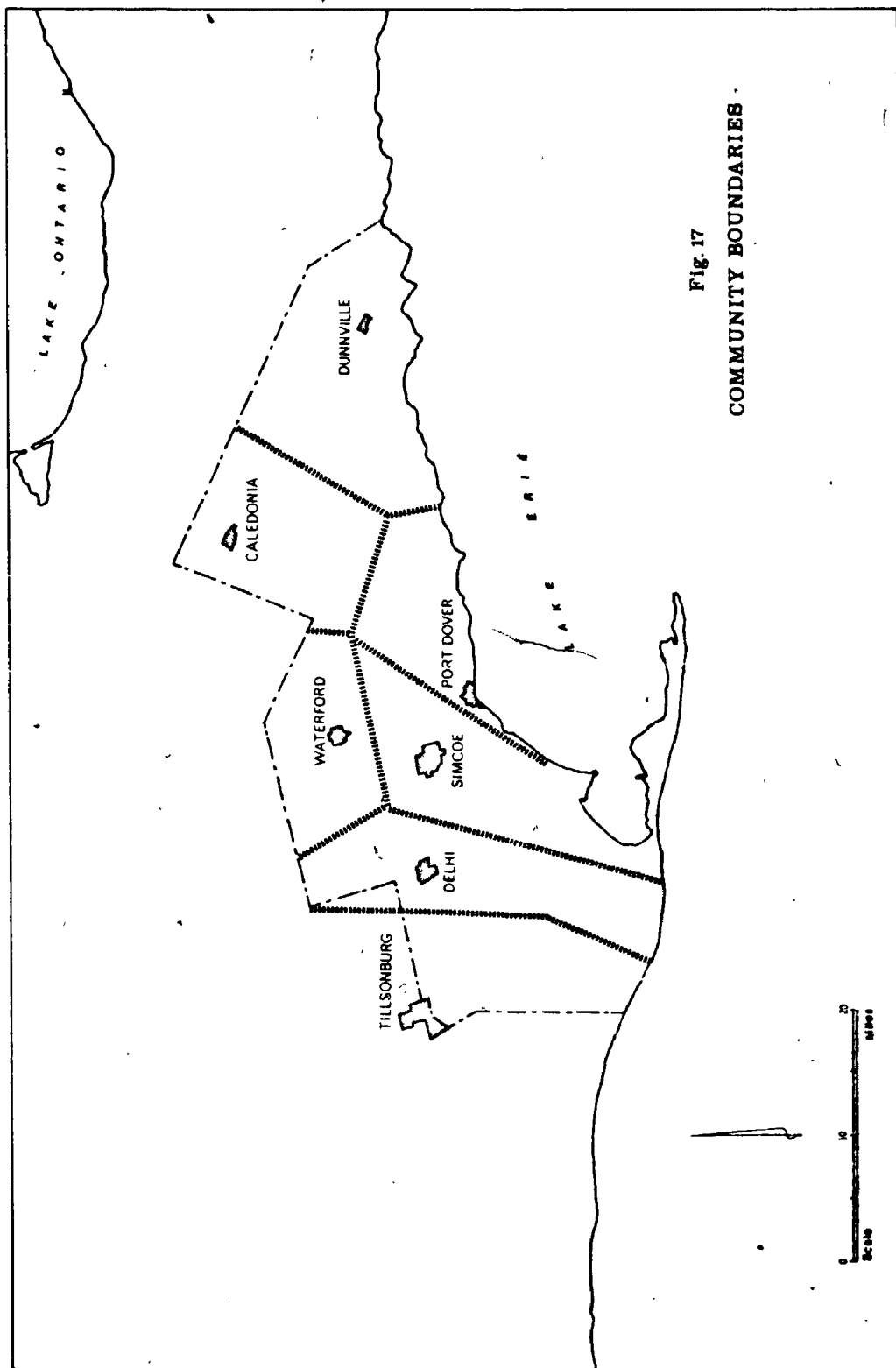
communities and their centres becomes apparent. The "Issue" communities could both prompt the necessarily "local" contestation of decision-tasks for the "Electioning" community thereby providing that diversity of opinion requisite to the formulation of proper "development" policies for the area as a whole, and act in concert with the "Electioning" level to nurture political participation. The "Electioning" level community (in this case the Simcoe centred community) could create the "development" context within which the issue policy differences may be resolved because of its status as a personal identification vehicle for the polity--the goal forming system of society.

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[1] Friedmann, pp. 4, 24-31.

[2] Himmelstrand, "Depoliticization and Political Involvement."

[3] Maass, "Division of Powers: An Areal Analysis."

[4] Dahl, pp. 77-85.

[5] Friedmann, p. 10.

[6] Himmelstrand, pp. 72-74. A "pragmatic" ideological style is that in which "the intended and recognized consequences of using the given ideology consist in action geared to approaching goals specified by this ideology." Such a style may be considered to be "issue" oriented. The "expressive" ideological style is used to indicate "the legitimacy of the party or to express symbolically the identity and unity of the party, the loyalties to the party, and so forth." Such a style is more "identity" oriented and fits in more with the concept of the Electioning dimension.

[7] Ibid., pp. 89-90. "Intensive" participation is defined as that which involves membership in "one association, or a few similar ones," and in which activities are restricted "to a small set of partisan symbol acts." Extensive participation is characterized by "a low degree of membership crystallization, since memberships are distributed among several different kinds of associations and organizations rather than crystallized around one particular type."

[8] Self-containment in problem-solving refers to the allocation of decisions to decision-makers in such a way that the problem can be solved with minimal inter-member message transmission. See Guido B. Cohen, The Task-Tuned Organization of Groups (Amsterdam: Swets and Zeitlinger, 1969), p. 50.

[9] It is interesting to note that the long run model which was recommended by the Haldimand-Norfolk Group was that of unitary local governments centred on Dunnville, Caledonia, the Simcoe-Jarvis-Port Dover-Cayuga and Hagersville centres, and Tillsonburg. See Towards a New System of Local Government, p. 24 and Threshold of Change - 2 Local Government, p. 23.

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CHAPTER IX

SUMMARY

The basic thrust of this dissertation is trifold; an exploration of the possibility of eliciting from the Local Orientation and Identification Study attitudinal dimensions which contribute toward an understanding of the relationships between the citizenry and the political system at the local level; an investigation of various spatial peculiarities of these relationships as reflected in a "rural community" hierarchy; and an analysis of the relevance of the results of both of these to a program of local government reform in particular and therefore to "Design of Development" in general.

Examination not only of the concepts used in the Local Orientation and Identification Study but also of the quality of the basic data suggests that further scrutiny of this approach to public participation in the local government reform progress could be beneficial.

In so doing the LOIS data is reworked to generate a three dimensional configuration from twenty-three multiple indicators through the use of the Torsca multi-dimensional scaling model and Kaiser's "normal" varimax technique of obtaining a parsimonious and invariant solution. Examination of these dimensions with respect to both the position of the items on the dimension and related research suggests

that they might best be described as follows:

I   Expanded localism dimension

II   Electioning dimension

III Issue dimension

Each dimension is then used to give respondents a value with respect to a bi-polar attribute reflected by the dimension. In the case of Dimension I the attribute is interpreted as "Cosmopolitanism-localism;" in the case of Dimension II it is "Efficacy-apathy;" and in the case of Dimension III it is "Change-status quo."

Correlation analysis and other research suggest that Dimension I is more of a social aspect and is causally related to the effect "Issue." Consequently, the major concern in the rest of the study is with the two political attributes as defined by Dimensions II and III. From the nature of the attributes, it is concluded that they may be considered to indicate "commitment" to the polity.

In investigating the spatial peculiarities of the respondents with respect to these attributes, hypotheses are tested which postulate causal relationships between the dependent variables (the respondents' scores on the two attributes) and the independent variables (hierarchical level of "rural community" and distance from both the urban focus of the "rural community" and the major transportation linkage). The dependent variables are given spatial expression by obtaining for each of the 107 points into which the study area is divided, a mean attribute value for the respondents involved. In so doing the rotated configuration generated by Torsca is used to weight the standardized scores of the original twenty-three variables for all of the 1,503

respondents. The respondents' scores for each of the three dimensions are then grouped by quadrat and mean values are derived.

The first of the three independent variables, "level of rural community" is deduced in two steps. First, the centroid of each quadrat is linked with both successively larger and distant urban centres. Second, the quadrats which are linked to each of the same urban centres are grouped to form ranked "rural communities." Levels of "rural community" are then elicited by grouping and ranked communities to maximize the percentage of the study area covered for each level, and to minimize the differences between the sizes of the centres within the levels of the hierarchy.

The second independent variable, distance from the urban focus, is the straight-line distance from the quadrat centre. The third independent variable, distance from the major transportation route, is that perpendicular distance from the centre of the quadrat to Highway #3.

To test the abovementioned hypotheses three procedures are followed, each with output which allows for greater specificity in interpretation than the latter. First, three dimensional polynomial surfaces are constructed by using a trend surface computer program. Second, the treatment means of four ranked levels of "rural community" (levels A and B being combined to give the best "fit") are subjected to trend analysis. Third, each "rural community" level is subjected to step-wise linear regression analysis to extract, if possible, those levels for which there is a significant relationship between distance from the urban focus and either or both of the attributes.

The three forms of testing suggest varying degrees of support for the hypotheses and thereby reveal with respect to the last two procedures in particular spatial patterns of "commitment." Each of the polynomial surfaces reveals a pattern at the fourth degree level which could conceivably be explained by distance from urban foci and/or Highway #3. That combined improbability of deriving by chance the positive and monotonic relationship between treatment means and variable scores lends much credence to the concept of "commitment" continua for the hierarchical levels of "rural communities." Lastly, at acceptable levels according to "Snedecor's Variance Ratio Test" important results are derived from the regression analyses; distance from centres for "rural communities" of level "D" within the boundaries of the Haldimand-Norfolk area, and distance from Highway #3 explain fourteen percent of the total variance for both the "Change-status quo" and "Cosmopolitanism-localism" attributes; distance from centres for "rural communities" of level "C" within the Haldimand-Norfolk boundaries explains eleven per cent of the total variance for the "Efficacy-apathy" attribute. In addition, note is made of the fact that exclusion of the quadrats outside of the Haldimand-Norfolk boundaries increased the sum of squares of the residuals appreciably, thereby suggesting that Haldimand-Norfolk is a unit with respect to these measures of "commitment."

The importance of such conclusions is understood in terms of making operative principles which are considered to be important in the re-organization of local government. Such principles are elicited from an analysis of four studies each of which is comprehensive in scope but different in perspective.

The selected principles deal with three different aspects of the citizenry or non-governmental portion of the polity; the adaptability of the public, the formalization of the structure of the non-governmental portion of the polity, and the dynamics of the non-governmental interface.

The framework devised and the conclusions reached as described above provide an opportunity to make the principles operative, that is to restructure to fit the level of receptivity of the public to change, to delineate grass-root containment areas with innovative centres, to nurture development, and to relate the levels of community to the functioning of the local polity as a whole by reference to the two types of "commitment."

APPENDIX A

THE LOCAL ORIENTATION AND IDENTIFICATION STUDY (LOIS)

In 1969 the Haldimand-Norfolk Study was initiated by the
Provincial Government of Ontario. This study was undertaken to prepare
for the anticipated fourfold increase in population which the Counties
of Haldimand and Norfolk could experience principally because of the
plans of the Steel Company of Canada to locate a major steel-producing
complex on the boundary of the two Counties. The Haldimand-Norfolk Study
went through two phases. Phase I was concerned with recommendations for
planning the future physical development of the area. Phase II was
concerned with recommendations for updating the local government such
that it might move effectively and efficiently respond to the needs of
the area.

A number of component studies was carried out and reports were
published for each of the two phases.

The Local Orientation and Identification Study (LOIS) was input
into Phase II. This Study was to make operational those guideline
criteria for regional government cited in Design for Development:
Phase II. In so doing an attempt was made to identify the presence or
absence of areas of community identity; community defined here in terms
of social, economic and political affinities.

This identification involved the collection of information by
questionnaire and tape. After completing the necessary instrument
design and pretesting, 1,503 individuals were interviewed through group
meetings to approximate as closely as possible a stratified random
sample. From the taped conversations inferences were made with respect

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to attitudes towards regionalism, the Provincial and local governments.
From the questionnaire the orientation of respondents toward various
urban centers and "descriptive" statistics for twenty-seven attitudinal
and behavioural items and five attributes were obtained. The five
attributes consisted of twenty-one of the twenty-seven items.

Three of these attributes had been generated previously in the
United States. Two of these--"Political Participation" and "Political
Efficacy"--were first developed in a study to determine for the 1952
Presidential Election why people did or did not participate. The third
attribute--"Localism-Cosmopolitanism"--in its present empirical form
dates back to the work of Thomas Dye in the early 1960's.

The two remaining attributes--"General Change" and "Boundary
Change"--were constructed for LOIS.

With respect to the attitudinal and behavioural aspect, the
Report itself purports to show by "descriptive" statistics and frequency
distributions (1) the variation within and between treatment groups such
as counties and adjacent areas, municipalities, and the urban-rural
division, and (2) the relationships between item pairs, attribute pairs,
items and attributes, and items or attributes and motivating measures
such as education, age and vocation.

The results are summarized and they essentially suggest the
following:

(1) local government is important and definitely preferable
to regional government;

(2) change in boundaries is not acceptable to the majority;

APPENDIX A (Cont'd)

(3) there is general agreement on the need for collaboration between municipalities and on the acceptability of moderate or substantial change in the existing system of county and local government;

(4) there is a tendency for Norfolk respondents to be more receptive to general change and inter-municipal collaboration, and less opposed to boundary change;

(5) in Haldimand there is a tendency for a clearer definition of opinions, for a smaller attitudinal difference between urban and rural people and for a higher summary score in localism.

However, as is suggested in this dissertation, the conclusions of LOIS need to be considered within the context of the process conducted and in so doing aspects come to light which indicate the possible value of further research with the LOIS data. It is to this challenge that the dissertation responds.

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