THE RELATIONSHIP BETWEEN SCHOOL SIZE AND SCHOOL ORGANIZATIONAL CLIMATE IN THE VANCOUVER, B.C., CANADA, SCHOOL DISTRICT, 39

by

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Application after application of the Organizational Climate Description Questionnaire (OCDQ) has revealed that the majority of urban core school climates seemed to be "closed" rather than "open". Efforts on the part of school administrators to alter the "closed", "unhealthy" organizational climates in their systems to more "open", "healthy" climates are premature because so little is actually known about how to change a climate. Since "closed" climate conditions seem to be almost synonymous with "large" school size, the purpose of this study has been to contribute some small measure of knowledge as to how to change a school climate by determining the relationship between organizational climate measured by the eight OCDQ subtests—Disengagement, Hindrance, Esprit, Intimacy, Aloofness, Production Emphasis, Thrust, Consideration—and four objective organizational size characteristics—School Area, Staff Members, Enrolment, and Human Density.

The impact of these size variables is examined based on data obtained through a field study involving 20 schools and 116 teachers in the Vancouver, British Columbia school system. The data were subjected to factor analytic techniques. The results subsequently suggested that a five-factor pattern of climate dimensions—Principal as Leader, Teacher "qua" Teacher Group Perception, Non-Classroom Teacher Satisfaction, Working Conditions, Hindrance V—was as suitable as an eight-factor pattern. Consequently, the study design was expanded to accommodate the unanticipated results.

In terms of its purpose, the study's findings can be briefly summarized as follows: 1) Reduction of Enrolment may prove useful in
providing conditions related to the type of leadership behaviour—as described by the Principal as Leader dimension of school organizational climate—normally associated with a more "open", "healthy" climate. 2) Reduction of Staff Members may influence the Principal as Leader dimension of school organizational climate in much the same manner just described for Enrolment. Further investigation of this relationship could well reveal that the reduction of Staff Members, would increase Esprit for the remainder. A smaller staff with higher Esprit will tend more toward the "open", "healthy" climate; 3) There is a hint in the findings that the association between Density and Principal as Leader and Area's association with both Teacher "qua" Teacher Group Perception and Hindrance (V) is strong enough to justify further research; 4) There is little indication that manipulation of any of the four size variables will influence either the Non-Classroom Teacher Satisfaction or the Working Conditions dimension of a school's organizational climate.

Three basic implications are drawn from the findings and related empirical evidence provided by the literature: 1) Smaller schools are imperative if the principal's leadership is not to be smothered by too many pupils and teachers, 2) School size in terms of its Area and its Density, i.e., the number of square feet available to its occupants, may not have as much impact on the climate dimensions as a reduction in Enrolment and Staff Members, but nevertheless, sufficient evidence does exist to imply that altering Area and Density might prove useful in providing conditions similar to those which are normally associated with an "open" climate, 3) Even though considerably more research is required with respect to gaining much more
knowledge concerning the relationship between school size and school climate, the difficulties encountered by this study and several others reported in it, imply that the OCDQ itself should be subjected to further refinement before continuing to subject it to such extensive use.
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INTRODUCTION

Research Area of Interest

The notion of planned change and innovation has become quite apparent in educational organizations in the last decade or so and subsequently both have been attempted at an ever increasing rate. There is little indication of a reversal of this trend; indeed, if anything, increasing public pressure is likely to escalate it even further. Change, when considered as part of a growth strategy as Brown suggests, is a characteristic of organizations. Clearly related to this characteristic is the atmosphere, or personality, or organizational climate— as it has come to be known— which exists in an organization.

According to Lawler, Hall & Oldham, a considerable amount of the recent organizational behavior literature has been concerned with the topic of organizational climate. Although many of the studies of organizational climate have used somewhat different definitions and a variety of measures (of climate), a review of the literature reveals at least the following: (a) research on organizational climate has focused on a wide range of variables and conceptualizations of the linkage between individual, structure-process, climate, and outcome variables; (b) most studies seem to agree that organizational climate can be viewed as an employee's subjective impressions or perception of certain features of the organization (e.g., see


the list provided by Litwin & Stringer\(^3\); (c) climate has been shown to be related to behavior; (d) climate has been variously considered as an independent, intervening, or dependent variable, depending on the taste continuum of the researcher and the set of relationships examined; (e) a somewhat concerted effort has emerged to provide definitions that are more operational than those of earlier studies; (f) continued effort to develop a priori as well as empirical taxonomies of climate in both industrial settings\(^4\) and in other types of organizations\(^5\); (g) more

\(^3\) G.T. Litwin and R.A. Stringer Jr., *Motivation and Organizational Climate* (Boston: Division of Research, Harvard Business School, 1968).


attempts to provide a rigorous validation of instruments⁶, and (h) a concern with tapping more comprehensive sets of the many different aspects of organizational climate⁷. These considerations are also apparent from several recent reviews of the organizational climate literature, which provide further elaboration on the state of the art regarding the concept of organizational climate⁸.

In pragmatic terms, one issue of interest to administrators and managers concerns (a) whether the climate exists in a state that is receptive or amenable to the introduction of organizational change efforts, and, (b) identifying relevant factors amenable to manipulation in order to provide an impact on the existing climate. Too frequently, while realizing that the organizational climate "is the first and most important concern in initiating and sustaining change," they have incorrectly assumed that their organizations were "open" or ready for change and the consequences have ranged from chaotic to disastrous.⁹ Efforts on the part of administrators to change the "closed" organizational climate of those schools in their systems which are trouble spots to more "open" climates while commendable,

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are nonetheless premature, since "the blunt truth is that we do not yet know
very much about how to change a climate. More research is needed before
any of us can risk a headlong plunge into action programs in this area."\(^{10}\)

**Statement of Purpose**

In suggesting areas urgently requiring further research, Halpin
implies that one physical aspect contributing to the high proportion of
"closed", "unhealthy" organizational climates might be the sheer size of
some schools in today's systems or, more particularly, size as described
by the number of students and staff in relation to available space.\(^{11}\)

Accordingly, the specific research area of this thesis concerns the
relationship between organizational climate (dependent variable) and several
objective organizational characteristics—School Area, Staff Members,
Enrolment, Human Density—(independent variables). The impact of the
independent variables is examined based on data obtained through a field
study involving 20 schools and 116 teachers of the Vancouver, B.C. school
system. In light of the data available and a review of relevant literature,
attention is also paid to the appropriateness of describing the climate of
an organization as "open" or "closed" rather than in terms of data profiles
reflecting dimensions of organizational climate.

**Plan of this Thesis**

Chapter II considers theoretical and empirical concepts relevant to
the research area of interest. This includes a review of the literature,
an outline of the design and development of the Organizational Climate
Description Questionnaire, and the presentation of an operational conceptual

\(^{10}\) A.W. Halpin, "Change and Organizational Climate", *The Journal of

\(^{11}\) Ibid., p. 1-3.
framework. The chapter concludes with a statement of four hypotheses.

In Chapter III, detailed consideration is given to the study design and methodology. Based on the methods of analysis employed it is suggested that a five-factor pattern of climate dimensions may be as appropriate as the eight-factor solution suggested in some other studies. Consequently, four additional hypotheses are formulated.

The study's findings are presented in Chapter IV. Subsequently, Chapter V provides a discussion of the findings with respect to related findings available in the literature. Finally, Chapter VI gives consideration to a number of implications drawn from the two preceding chapters.
II THE PROBLEM

Part of the administrator's problem of "guessing" whether his or her organization is ready for planned change or innovation may have been eliminated as a result of Halpin and Croft's attempt to develop a method of measuring the organizational climate of schools. Unfortunately though, subsequent use of this instrument known as the Organizational Climate Description Questionnaire (OCDQ), has indicated that the vast majority of urban core school climates are "closed", not "open". For example, in summarizing several studies which have utilized the OCDQ, Halpin writes that,

one finding stands out . . . . The data from schools located in urban core areas show that a preponderant number of these schools are marked by "closed" climates.

Moreover, in discussing the OCDQ's development and their use of adjectives such as "healthy" and "unhealthy" to describe the "open" and "closed" organizational climate respectively, Halpin and Croft point out such labeling is done

with no intent to either praise or damn the climate of a particular school. Obviously we believe that a closed climate is undesirable, that it is crippling for both the faculty and students. Yet we prefer to view a closed climate as unhealthy or sick—not as evil.

12 A.W. Halpin and D.B. Croft, The Organizational Climate of Schools (Chicago: Midwest Administration Center, The University of Chicago, 1963).

13 Halpin, "Change and Organizational Climate", p. 8.

14 A. W. Halpin, Theory and Research in Administration (New York: The MacMillan Company, 1966), p. 137. (Chapter 4 of this reference is an abridged version of the original monograph referenced in footnote 12).
Bearing the evident preponderance of "closed" climates and their undesirable, "unhealthy" connotation in mind, does it not logically follow that when an application of the OCDQ to a school does reveal a "closed", "crippling" climate, then every effort should be exerted to change that condition prior to attempting any other type of change? Why risk almost certain failure of a planned change or innovation scheduled for a school that is "sick"? Would it not be prudent to determine those apparent causes underlying the undesirable climate and subsequently take such steps as may be necessary to change it from its "closed", "unhealthy" state into an "open", "healthy" one?

Should the research of the present study indicate that a significant relationship does indeed appear to exist between certain specific aspects of school size and school climate the potential ramifications with respect to the problem of changing a climate are obvious. For example, any action program which is designed to replace an "unhealthy" climate with an "open", "healthy" one could ill afford to ignore the size variables of the school involved. Furthermore, if the relationship is significant, then altering some of the variables related to school size in such a way as is likely to engender conditions more conducive to an "open", "healthy" climate might prove to be of considerable value in the subsequent successful implementation of planned change or innovation in the school.

Importance of the School Size-Climate Relationship

A review of the literature pertaining to the OCDQ and the effects of an organization's size in terms of the problem addressed by this study will lead to at least two substantive reasons why it is important to begin to systematically study the size-climate relationship.
The first, and perhaps the most obvious reason has already been touched upon: that is, the evident preponderance of "closed" climates in schools. Indeed, one central theme emerges from the OCDQ literature concerned with school size and organizational climate—a large school is generally synonymous with a "closed" climate. Irrespective of what size variable, or variables, are employed to define "large", the findings are almost invariably the same—large schools equal "closed climate conditions".

For example, during the course of an investigation of the relationship between the psychological distance of school principals and selected dimensions of organizational climate, Watkins has noted that thirteen of thirty-six schools were "closed". He was so perturbed by the preponderance of "closed" climates in his study that he subsequently questioned the validity of the OCDQ for use in secondary schools; for support he cites an investigation designed by Morris to classify 146 Alberta, Canada, elementary and secondary schools on the basis of their organizational climates. In both studies—Watkins' and Morris'—there does appear to be a greater tendency for secondary schools to be characterized by "closed" climates than is the case for elementary schools. It is on this basis that Watkins apparently chooses to ignore validity studies conducted by Andrews.

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15 J.F. Watkins, "The OCDQ—An Application and Some Implications", Educational Administration Quarterly, IV, No.2 (Spring, 1968), pp.47-60, for a description of the actual study and discussion of the findings refer to pages 93-94 of this text.


and instead concludes that the OCDQ is not a valid instrument for measuring the organizational climate of "large" secondary schools. Why this conclusion is reached rather than one which considers that it is probably more difficult for the larger secondary schools to obtain an "open" climate rating simply because of the actual nature of the problems they must confront as a result of increased size is not clear. The findings from both studies, his own and Morris', would seem to support this latter conclusion as much as the former.

Carver and Sergiovanni consider Andrews' validity studies, but note that an investigation which they conducted in thirty-six Illinois secondary schools found twenty-six "closed" climates. Owing to the similarity between their findings and the results obtained by both Watkins and Morris they decided to compare the distribution of climate types between Halpin and Croft's elementary schools, Andrews' secondary schools (average of twenty-five teachers), and Watkins' (average of fifty-two teachers) with those schools in their own sample (average of ninety-three teachers); like Watkins, they conclude that the OCDQ is not a valid instrument for use in large secondary schools.

They propose three alternative suggestions for their findings:

1. The OCDQ does not validly measure climate in "large" secondary schools,
2. "large" secondary schools by nature have Closed Climates; or,
3. gross sampling error.

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18 Watkins, "Application and Implications", p. 56.
20 Ibid., p. 79. "Large" is defined as a school whose mean teacher size is greater than twenty-five to thirty.
21 Ibid.
and then proceed, for some unexplained reason, to reject alternatives two and three". . . . out of hand". 22

The mysterious rejection of two potentially valid postulates "out of hand" in favour of an equally untested third alternative is further complicated by noting that a majority of the teachers in eighteen out of the twenty six "closed" climates under consideration by Carver and Sergiovanni clearly perceived their assigned school climate as "closed". 23 Coupling Andrews' statistically based conclusion that the OCDQ is a valid test instrument in secondary schools with the preponderance of closed elementary school climates previously noted by Halpin (cited on page 6) it might be more logical—though admittedly equally as unobjective—to conclude that large secondary schools have, by virtue of their size, "closed" climates.

Further evidence of the "closed" climate in large secondary schools is available. A study by Hartley and Hoy used the OCDQ responses of almost 3000 teachers and administrators in forty-five New Jersey high schools in an effort to determine the relationship between the "openness" of school climate and alienation of high school students. 24 They encountered some difficulty in analysing the data in "... that extremely "open" secondary schools were not found in the sample.... Indeed, it appears extremely difficult to find larger high schools with a clearly "open" climate". 25 However, they were

22 Ibid.
23 Ibid., p. 80.
25 Ibid., p. 23.
relatively unconcerned in that their results were consistent with those of Kolesar who had previously found that large "punishment-centered" or "closed", bureaucratic high schools seemed to lead to a greater degree of alienation than was the case in high schools with a "representative", or "open" organizational structure.26

From the foregoing it is indeed apparent that the relationship between "large" schools and "closed" climate conditions described by the OCDQ literature is in general accord: "large" schools are generally synonymous with "closed" climates. Certainly they are conducive to "closed" climate conditions. Unfortunately, the prognosis for implementing planned change or innovativative methods in "large" schools with "closed","unhealthy" climates is not good. This being the case, the preponderance of this kind of climate does dramatize as well as lend some impetus to the importance of studying the size-climate relationship with a view of isolating those physical size variables, if any, which may contribute to "sickness".

A second reason which tends to stress the importance of the need to study the size-climate relationship may be extracted from published material pertinent to the environmental design of schools. As a matter of fact, there does seem to be a substantial degree of agreement among environmental psychologists that a school's "built-environment", i.e., its physical features and layout, inclusive of its size, probably has a profound influence not only upon the teaching and learning processes, but also upon
social interaction as well.  

Getzels, for example, has stressed this point strongly in his comments on the evolution of the conception of the learning process, from a) one which sees the learner as an empty organism who learns through a series of rewards and punishments at the command of the teacher, to b) an active organism solving problems to satisfy individual needs, to c) a social organism who learns through interactions with others, and finally, on to d) a stimulus-seeker learning because, intrinsically, he has to do so.  

He traces the changes in arrangements and usage of school space corresponding to each epoch of the evolutionary process and notes that, as an expression of human nature, it is the physical, or "built-environment" which irresistibly works to tell "...us who we are and what we must do".  

In order to emphasize this contention that, "Our habits impel our habitations and the habitations impel our lives", he cites Winston Churchill's observation, "We shape our buildings and afterwards our buildings shape us." If in actual fact Getzels is correct, and the "built-environment" does indeed exercise such a profound effect upon the teaching and learning processes, then it most certainly does underscore the need

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29 Ibid., p. 536.

30 Ibid.
to study what some of the effects may be.\textsuperscript{31}

Coupling the notion that schools—obstensibly at least—are built to facilitate both of these processes, with the reality that the management of school space is usually thought to come under the principal's purview, one of the more obvious relationships for research is the effect of the school's group size—teachers, learners and principal—on the school's organizational climate. Getzels\textsuperscript{31}' argument is quite convincing. It is not particularly difficult to visualize how school "crowding" or "density" could easily "shape" a school's climate conditions.

In a similar vein, yet another reason to consider the school size-climate relationship as far as implementing planned change is concerned, stems from the recognition that education is a dynamic and changing process; thus, it is unrealistic to expect it to occur, or to be "shaped" in static, immutable places. Green\textsuperscript{32} has defined as "... the appropriate disposition and use of space to meet current educational organization and processes", is absolutely essential if teachers, principals and students are not to be "... thwarted by mismatches between the place and the instructional processes".\textsuperscript{32} It is unlikely that the kind of environmental management Green envisions could be judged successful unless some research developed criteria with respect to the effects of

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\textsuperscript{31} In a sense, Thomas David has taken the opposite point of view: he seriously questions whether or not the existing conception of the physical environment's role in education has kept pace with changing notions about learning. He is careful to note, however, that the "manner in which the "built-environment" is structured will likely influence social or interpersonal variables". See Thomas David, "On Learning in Trees and Classrooms", \textit{School Review}, LXXXII (August, 1974), p. 523.

school size upon school inhabitants has been obtained for use as a standard.

In addressing the problem of the development and design of effective environments, i.e., "polar paradigms" for observing what kind of behavior can be elicited from exceptional children as a direct result of their physical setting, Spivack evidently wholeheartedly agrees with Green's thesis:

Without much extra effort we may become alert for indications that the environment is or is not supporting the behavioral or other needs of the population with whom we work. Remaining alert to these interactions is a basic skill that is an essential part of the professional tools and training of anyone in a care-giving or educational role.... Professional life in these domains should include a continuing dialogue about the environment, the architecture and the fittings, the furniture, lighting, and acoustics—a dialogue about the whole setting.33

Spivack even goes so far as to state that those individuals responsible for environmental management are unable to perform adequately, i.e., avoid mismatches between the place and behavioral process, because "it is a vital missing element in the training and practice of administrators who direct institutions concerned with education...."34 In fact, though, like Green's lack of judgemental criteria, Spivack's "missing element" will likely remain "missing" until practical field research is able to fill some of the gaps with respect to what influence the physical space actually may have upon organizational behavior.

34 Ibid.
Proshansky emphasizes the need for comprehensive theoretical reasoning with regard to research related to the "built-environment". One of the areas he suggests for research, which conceivably could lead to the development of appropriate descriptive concepts, is the "... need to establish those physical dimensions which actually foster, shape, and underlie the complex human activities which go on in complex settings."

The task Proshansky is suggesting is not a simple one. The influence which the physical dimensions may have upon different individuals is likely to fluctuate substantially. Fitt has noted, for example, that an individual's use of space may vary considerably depending upon his or her particular lifestyle. Some people quite naturally seem to require a considerable degree of "spaciousness" to feel comfortable while others will characteristically function better in smaller, more "cramped" areas: most people probably vary between the two extremes. Whether the people in question are in a school to teach, to learn or to administer the teaching-learning processes, is not as material to her argument as is the notion that—"spacious" or "cramped" lifestyles notwithstanding—the type of social interaction which will take place in the environment can not help but be effected.

36 Ibid., p. 552.
38 Ibid., p. 620. Fitt also decries the fact that little research has been done on the interaction between individual style and environmental structure.
Perhaps the lack of comprehensive theory and descriptive concepts related to the "built-environment" may be attributed to the apparent fact that, according to Propst, "... little attention has been paid to the physical environment because of overfamiliarity with its overt characteristics... and the tendency of physical arrangements to static formality."\(^{39}\) Propst firmly believes that in spite of the evidence that school environments have become "design stereotypes", they "... still compel behavior and influence social interaction..."\(^{40}\) In support of his contention that this lack of attention requires rectification, he cites Farson's rather compelling reason for studying environments as a potential change agent for people themselves:

I spent my life as a psychologist, trying to figure out ways in which I could change people or enable them to change....I found that you can't really change people....as individuals or as groups you have to understand whole organizations. So I became interested in organizations. Finally, I got interested in environments, because no matter what scale you work on, you can't reform people, you can only create new forms. But people do change. They change almost entirely according to the situation in which they find themselves. It is not trimming people need--it's liberating and environments can be very liberating... Let's go into the institutions and organizations and see if we can't arrange the kind of social architecture that would...enable people to become what they want to be in everyday situations.\(^{41}\)

In a very narrow sense, Farson's reason for studying environments is also the crux for this study: if the physical school space—the "built-

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40 \textit{Ibid.}, p. 613.

environment"—can be altered in any way which will cause or enable people to change in a manner more likely to engender an "open" climate all concerned might reasonably be expected to benefit. In a substantially broader sense, though, Farson's reason for studying environments really transcends merely changing organizational climate. According to Propst,

It is, in fact, a new level of agreement permitting the individual to implement a broader spectrum of changes at his discretion. In a curious way, it is agreement that managers may also manipulate the work environmental to meet the dynamic needs of contemporary organizations.42

In any case the apparent profound influence of the physical environment upon the teaching and learning processes, and upon the social interactions, when coupled with the importance of adequately managing school space in order to meet the needs of all concerned, certainly does seem to stress the importance of studying the physical size-climate relationship in schools. However, until considerably more concrete knowledge concerning this relationship becomes available it is unlikely that Farson's thesis can be modestly tested in its narrowest sense, let alone in its considerably broader scope as envisioned by Propst.

Review of Relevant Concepts and Related Literature

Terms such as "planned change" or "innovation" or manipulating "variables" to improve school health are, of course, predicated on the assumption that any particular organizational occurrence takes place within a system of highly interdependent forces. Examination and analysis of the various effects each force may have upon the remainder will require an adequate definition of organizational climate, a relatively clear-cut

42 Ibid., p. 612.
notion or theoretic perspective of the school as a social system and an operational concept of the organizational climate of a school.

Definition of Organizational Climate

Halpin and Croft quite frankly admit that there are numerous factors which conceivably could define a school's climate:

- the socioeconomic status of the school's patrons;
- the biographical and personality characteristics of the principal and the teachers;
- the "quality" of the students;
- the attitudes of the parents toward the school;
- the school's physical plant;
- the teacher's salary schedule;
- the educational and administrative policies of the school district;
- the location of the school; ...the social interactions that occur between the teachers and the principal.  

In fact, they list these eight factors as the very minimum which would have to be taken into account in order to obtain a global assessment of organizational climate. They recognized that all of these facets could not be handled simultaneously and yet wishing to start somewhere, Halpin and Croft selected the "social component"—the social interactions that occur between the teachers and the principal—as a departure point. Some justification for selecting this particular component to define organizational climate to begin with does exist if there is any validity to Halpin and Croft's suggestion that the social interaction between school group membership is determined to some degree by the "external" factors just listed; therefore their effect is at least indirectly tapped by the OCDQ.

Theoretical Perspective of the School as a Social System

A theoretic model germane to the research area of interest of this thesis has been formulated by Jacob Getzels; his model attempts to map a pattern of relationships within the school as a social system while indicating...
organizational effectiveness in terms of goal achievement. He postulates two dimensions: the "idiographic" and the "nomothetic". The former comprises those individuals, inclusive of personality and needs dispositions, within the school organization while the latter is an institutional dimension which consists basically of roles and the expectations which the organization holds for those individuals who occupy these roles. These original dimensions have been underlined in Figure 1, page 20.

Since organizational behavior is seldom, if ever, solely idiographic or nomothetic, most goal oriented behavior may be described as a result of interactions between the dimensions on three levels: institution with individual, role with personality, and role expectations with needs-dispositions. Obviously, conditions contributing to psychological tension and conflict will arise when institutional demands are contrary to individual demands and needs. However, if the dimensions are integrated, or congruent, a state of zero tension exists, i.e., a state of satisfaction presumably exists, and organizational goals may be achieved.

Other interactions from without occur which affect the organizational behavior of the school as a social system. Getzels and Thelen added two dimensions to the original model to account for the influence of environmental variables. The first of these additional dimensions is anthropological


45 Getzels and Thelen, "The Classrooms as A Unique Social System", pp. 53-80.
Anthropological
Dimension

Nomothetic
Dimension

The School as a General Social Dimension

Idiographic Dimension

Biological Dimension

FIGURE 1. THE SCHOOL AS A SOCIAL SYSTEM*

a The model specifically describes the class, but it generally applies to the school as well.

b Getzels original two dimensional model has been underlined.

and, as shown in Figure 1 consists of the cultural ethos, mores and values of the larger social system, i.e., environment, in which the school is embedded. Interaction between this anthropological dimension and the institutional dimension will determine the organizational behavior. The second dimension is biological and, as shown in Figure 1 consists of the organism, its constitution and its potentialities. Interaction between the biological dimension and idiographic dimension will determine the individual behavior.

Finally, another general dimension was ultimately added in order to relate the interactions between the original nomothetic and idiographic dimension. As shown in Figure 1, this third additional dimension consists of the group, which is a result of interaction between the institution and the individual; the climate which is a result of the interaction between role and personality; and the intentions of the role incumbents which is a result of the interaction between role expectations and needs-dispositions of the individuals comprising the group.

Ultimately it is the interaction between the anthropological and nomothetic dimensions which provide the rationale for the organization's goal directed behavior, while the interaction between the biological and idiographic dimensions provide the individual with a means of identification with the organization and its goals. Belongingness acts as a blanket force drawing the dimensions together toward achievement of suitable goal directed behavior.

Can Getzel's and Thelan's social system model illustrated in Figure 1, page 20, provide an adequate, theoretic explanation of the apparent preponderance of "closed" climates which seemingly does pervade "large" schools? It is simple enough to visualize the size of the group on the
general dimension as a function of the Institution on the nomothetic axis and the number of Individuals on the idiographic axis. But why is the climate usually "closed" if the size of the group is "large"? What is happening within the social interaction between the nomothetic principal's Role and the idiographic teachers' Personality when the group is "large"? The social system model evidently can account for organizational climate—"open" or "closed"—but it apparently will not adequately account for the accordant relationship between "closed" climate and "large" schools.

Indik has proposed a psycho-sociological paradigm which would seem to be capable of accounting for the fairly consistent relationship between "closed" climates and "large" schools. His suggestion, illustrated in Figure 2 is that an increase in organizational or group size generates a need for an increase in the coordinative and supervisory function owing to the need to facilitate the functions related to the group member's tasks.

Size — — — — — — — — — — — Supervisory — — — — — — — — — — — Bureaucratization
Coordination

Impersonal — — — — — — — — — — — Attraction to
Control the Organization

Absence — — — — — — — — — — — Turnover
(Attitudinal)

Turnover
(Behavioral)

Figure 2 Paradigm — Effect of Structure on Function and Influence of Function on Structure*


This increased need for coordination and supervision in turn leads to Bureaucratization, which, in its turn, will tend to the use of Impersonal Controls; Impersonal Controls are likely to be less effective than affective interpersonal controls in attracting members to the organization (especially those individuals who seem to need primarily affectual—not impersonal—controls); the less attractive the members find the organization the more likely they are to fail to actively participate which may be indicated by leaving the organization both temporarily (absence) and permanently (turnover); consequently, the larger the organization the greater the individual absence and individual turnover is likely to be.

Indik's psycho-sociological paradigm conceivably could complement Getzels' and Thelan's social system model in that the latter cannot adequately account, or explain theoretically, the concept that organizational climate on the general axis of Figure 1 may not be a direct result of the interaction between the Roles and Personalities of the Principal and Teachers. It may, however, be an indirect result of at least two mediating variables, that is, an organizational, or nomothetic process, e.g., control, and a psychological, or idiographic process, e.g., participation rate, both of which, in turn, are a result of the size of the group.

In support of his paradigm with respect to educational organizations, Indik cites a study which has indicated that as school district size increases—elementary districts, high school districts, or unified districts—the percentage of members in the coordinative and supervisory component also tends to increase; but the increase in the latter is at a greater rate in

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order to facilitate those functions related to the organizational members tasks. 48

Furthermore, Carver and Sergiovanni intuitively seem to recognize this increase in the administrative component at the secondary school level when they conclude that to be effective the OCDQ measurement of climate in large secondary schools would likely require a shift in the point of reference from the school as a unit to a sub unit such as department chairmen who may be "... more within the cognitive and effective limitations of interpersonal interaction for respondents." 49

Operational Concept of School Organizational Climate

Stemming as it does from social systems theory, Getzels and Thelen's model can be adopted as representative of a theoretical framework from which an operational concept of the organizational climate of a school can be derived. Indeed, Lonsdale, who treats the terms task-achievement dimension and need-achievement dimension synonymously with the nomothetic and idiographic dimension respectively, has been cited as follows:

Organizational climate might be defined as the global assessment of the interaction between the task-achievement dimension and the need-satisfaction dimension within the organization, or in other words, of the extent of the task-needs integration. 50


49 Sergiovanni and Carver, "Notes on the OCDQ", p. 81.

Conceptually, then, the general dimension of the model which relates the interaction between the nomothetic and idiographic dimension does describe the organizational climate in terms of the interaction that occurs between organizational or group members who are acting within their prescribed roles while satisfying their particular needs. Operationally, this concept of organizational climate may be placed in terms of school organizational climate by referring to the state, or condition, which ordinarily results from the various social interactions normally taking place between the teachers and principal as they attempt to fulfill their prescribed roles while satisfying their individual needs.  

Development of the OCDQ

Having defined organizational climate as the social interactions that occur between teachers and the principal, Halpin and Croft began to concentrate on the central question of determining what new dimensions might be constituted to deal with this particular concept. Subsequently, an examination of available literature on leadership and group behavior led to a variety of classifications related to the attributes of either the leader, or the group, or both. Halpin and Croft have identified the following three schemata, which they feel effectively reduces the various taxonomies to a manageable form: 1) the locus or source from which interactions stemmed, 2) the "effectiveness", or vice verse, of the group or organization, and 3) the relationship between an individual's own social group needs as opposed to the social control imposed upon the individual.

51 An illustration of this concept in operation has been provided by Guba and is cited on page 81 in conjunction with the discussion of the principal's leadership.
as a price of being a group member.  

The first of these three themes—group interactions—may be categorized as those determined primarily by the leader's behavior, or those attributable to characteristics of the group "qua" group and individual "qua" individual. Other interactions might also stem from, or be determined by procedures, i.e., actions of an executive hierarchically superior to the group leader.  

The second theme—group, or organizational "effectiveness"—may be classified into four "ideal types" which deal with the "Effective", the "Social-needs-oriented", the "Task-oriented" and the "Ineffective" organization. An effective group is defined as one which ".... must provide satisfaction to group members in two major respects.... a sense of task accomplishment, and.... social satisfaction...."  

The Third scheme—social needs "versus" social control—deals with the balance which must be maintained between an individual's social need satisfaction and the organizational requirement to submit to such group discipline as required for membership, e.g., the "nine 'til five" routine.  

Halpin and Croft deliberately built the OCDQ around a collection of 1000 items which would representatively reflect all the categories posited by the three schemes described. Correlation, content and cluster-analysis

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52 Halpin and Croft, Organizational Climate of Schools, p. 16.  
53 Ibid.  
54 Ibid., pp. 16-17. "Ideal types" refers to pure, theoretical types, not necessarily to an exemplary "ideal".  
55 Ibid.  
56 Ibid., p. 8.
procedures were systematically applied to these items until 600 remained.

Four similar OCDQ (150 item) versions were designed and tested through Form I, Form II, and Form III using the responses from 1151 individuals representing 71 elementary schools until 80 items remained. Each respondent was asked to rank on the following four point scale, the extent to which each item statement characterized his or her school:

1. Rarely occurs,
2. Sometimes occurs,
3. Often occurs, and
4. Very frequently occurs.

Correlation, content and cluster analysis procedures were again applied. Sixteen items were eliminated and the 64 items remaining constitute the OCDQ—Form IV. Each of the items was assigned to one of eight subtests, with each subtest presumably measuring a dimension of organizational climate.

The first four of these subtests (described in Table I, page 28) pertain primarily to the behavior of the teachers and are designed to assess the climate dimensions defined in Table IA, page 30.

The remaining four subtests, described in Table II, page 29, pertain primarily to the behavior of the principal. Table IIA, page 31 provides definitions of the corresponding climate dimensions.

By using these definitions and descriptions the conceptual relationship between group interactions and group or organizational effectiveness, as well as social needs and social control, may be illustrated in Figure 3, see page 32.

Factor analytic techniques applied to the 64 x 64 item intercorrelation matrix did tend to justify the manner in which the items had been assigned to the subtests on the basis of content and cluster analysis. See Data Analysis Procedures, pages 47-49 for further more detailed discussion of this aspect of the OCDQ development.
<table>
<thead>
<tr>
<th>TABLE I</th>
</tr>
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**ITEMS THAT COMPOSE FOUR SUBTESTS: TEACHERS' BEHAVIOR**

I - DISENGAGEMENT

1. The mannerisms of teachers at this school are annoying. (II)
2. There is a minority group of teachers who always oppose the majority. (II)
3. Teachers exert group pressure on nonconforming staff members. (II)
4. Teachers seek special favours from the principal. (II)
5. Teachers interrupt other staff members who are talking in staff meetings. (II)
6. Teachers ask nonsensical questions in staff meetings. (II)
7. Teachers ramble when they talk in staff meetings. (II)
8. Teachers at this school stay by themselves during their "free" school time. (II)
9. Teachers talk about leaving the school system. (II)
10. Teachers socialize together in small select groups. (II)

II - HINDRANCE

11. Routine duties interfere with the job of teaching. (V)
12. Teachers have too many committee requirements. (V)
13. Student progress reports require too much work. (V)
14. Administrative paper work is burdensome at this school. (V)
15. Sufficient time is given to prepare administrative reports. (V)
16. Instructions for the operation of teaching aids are available. (I)

III - ESPIRIT

17. The morale of the teachers is high. (I)
18. The teachers accomplish their work with great vim, vigor and pleasure. (I)
19. Teachers at this school show much school spirit. (I)
20. Custodial service is available when needed. (I)
21. Most of the teachers here accept the faults of their colleagues. (I)
22. School supplies are readily available for use in classwork. (I)
23. There is considerable laughter when teachers gather informally. (III)
24. In staff meetings, there is the feeling of "let's get things accomplished". (I)
25. Extra books are available for classroom use. (I)
26. Teachers spend time after school with students who have individual problems. (I)

IV - INTIMACY

27. Teachers' closest friends are other staff members at this school. (III)
28. Teachers invite other staff members to visit them at home. (III)
29. Teachers know the family background of other staff members. (III)
30. Teachers talk about their personal life to other staff members. (III)
31. Teachers have fun socializing together during "free" school time. (III)
32. Teachers work together preparing administrative reports. (III)
33. Teachers prepare administrative reports by themselves. (III)

* These items are the key (i.e., tracer) items in each dimension.

**Adapted from A.W. Halpin and D.B. Croft, The Organizational Climate of Schools, (Chicago: Midwest Administration Center, The University of Chicago, 1963), p. 30.

Roman numerals in parenthesis define the items that compose five subtests for the Vancouver data. See Table V, pp. 54-55.
TABLE II

ITEMS THAT COMPOSE FOUR SUBTESTS: PRINCIPAL'S BEHAVIOR**

V - ALOOFNESS

*34. Staff meetings are organized according to a strict agenda. (IV)
35. Staff meetings are mainly principal-report meetings. (IV)
36. The principal runs the staff meetings like a business conference. (IV)
37. Teachers leave the grounds during the school day. (II)
38. Teachers eat lunch by themselves in their own classrooms. (III)
39. The rules set by the principal are often questioned. (II)
40. Teachers are contacted by the principal each day. (I)
41. School secretarial service is available for teachers' use. (I)
42. Teachers are informed of the results of a principal's inspection. (I)

VI - PRODUCTION EMPHASIS

*43. The principal makes all class scheduling decisions. (IV)
44. The principal schedules the work for the teachers. (IV)
45. The principal checks the subject matter ability of teachers. (IV)
46. The principal corrects teachers' mistakes. (IV)
47. The principal ensures that teachers work to their full capacity. (I)
48. Extra duty for teachers is posted conspicuously. (IV)
49. The principal talks a great deal. (II)

VII - THRUST

*50. The principal goes out of his way to help teachers. (I)
51. The principal sets an example by working hard himself. (I)
52. The principal uses constructive criticism. (I)
53. The principal is well prepared when he speaks at school functions. (I)
54. The principal explains his reasons for criticism to teachers. (I)
55. The principal looks out for the personal welfare of teachers. (I)
56. The principal is in the building before teachers arrive. (I)
57. The principal tells teachers of new ideas he has run across. (I)
58. The principal is easy to understand. (I)

VIII - CONSIDERATION

*59. The principal helps teachers solve personal problems. (I)
60. The principal does personal favors for teachers. (I)
61. The principal stays after school to help teachers finish their work. (I)
62. The principal helps staff members settle minor differences. (I)
63. Teachers help select which courses will be taught. (I)
64. The principal tries to get better salaries for teachers. (I)

* These items are the key (i.e., tracer) items in each dimension.

**Adapted from A.W. Halpin and D.B. Croft, The Organizational Climate of Schools, (Chicago: Midwest Administration Center, The University of Chicago, 1963), p. 31.

Roman numerals in parenthesis define the items that compose five subtests for the Vancouver data. See Table V, pp. 54-55.
1. **Disengagement** refers to the teacher's tendency to be "not with it". This dimension describes a group which is "going through the motions", a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of anomie as first described by Durkheim. In short, this subtest focusses upon the teacher's behavior in a task-oriented situation.

2. **Hindrance** refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary busy-work. The teachers perceive that the principal is hindering rather than facilitating their work.

3. **Esprit** refers to "morale". The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

4. **Intimacy** refers to the teacher's enjoyment of friendly social relations with each other. This dimension described a social-needs satisfaction which is not necessarily associated with task-accomplishment.

* Adapted from A.W. Halpin and D.B. Croft, *The Organizational Climate of Schools*, (Chicago: Midwest Administration Center, The University of Chicago, 1963), p. 29.
TABLE IIA
THE FOUR DIMENSIONS OF ORGANIZATIONAL CLIMATE
RELATING TO PRINCIPAL'S BEHAVIOR*

1. **Aloofness** refers to behavior by the principal which is characterized as formal and impersonal. He "goes by the book" and prefers to be guided by rules and policies rather than to deal with the teachers in an informal face-to-face situation. His behavior, in brief, is universalistic rather than particularistic; nomothetic rather than idiosyncratic. To maintain this style, he keeps himself—at least "emotionally"—at a distance from his staff.

2. **Production Emphasis** refers to behavior by the principal which is characterized by close supervision of the staff. He is highly directive, and plays the role of a "straw boss". His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

3. **Thrust** refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization". "Thrust" behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkly task-oriented, is nonetheless viewed favourably by the teachers.

4. **Consideration** refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly", to try to do a little something for them in human terms.

* Adapted from A.W. Halpin and D.B. Croft, The Organizational Climate of Schools (Chicago: Midwest Administration Center, The University of Chicago, 1963), p. 32.
The dimensions contained in quadrants I, Thrust and Consideration, and IV, Esprit and Intimacy, are primarily associated with satisfaction of social needs, while the dimensions contained in quadrants II, Production Emphasis and Aloofness, and III, Disengagement and Hindrance, are generally associated with social control. Quadrants I and II of Figure 3 are basic to the behavior exhibited by group leaders, while quadrants III and IV are normally treated as group behavior.

From a theoretical point of view, quadrant I in Figure 3 may be said to define an "ideal-effective" situation in that both a feeling of task accomplishment and a satisfaction of social needs exists. Quadrant III describes an "ideal-ineffective" situation because the group is neither experiencing a sense of task accomplishment nor adequate satisfaction of social needs.

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* Abstracted from A.W. Halpin and D.B. Croft, The Organizational Climate of Schools, (Chicago: Midwest Administration Center, The University of Chicago, 1963), p. 27.

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58 Halpin and Croft, Organizational Climate of Schools, p. 27
Quadrant II is highly "task-oriented", but lacks a balance with social need satisfaction, whereas precisely the opposite situation is indicated in quadrant IV. Neither the "task oriented" nor the "social-needs oriented" situation should necessarily be considered a "good" model for an organization to follow. However, both are likely to be considered more desirable than Quadrant III in that each situation does provide at least a portion of task accomplishment or social needs satisfaction respectively.

Climate Profiles

Since the major purpose of Halpin and Croft's work was to describe the organizational climate, i.e., "personality" of schools—at least as it is perceived by their respective staffs—a climate profile was obtained for each of the 71 schools based on scores from the eight subtests. Factor analysis of these profiles extracted three factors with six major patterns of loadings. An average profile was computed for those schools within the set which were distinguished by a high loading on only one of the three profile factors. Then, on the basis of this analysis, six climates were conceptualized along what was construed as a continuum ranging from the "open" climate at one end to the "closed" climate at the other. An abbreviated description of Halpin and Croft's six organizational climates is presented in Table III, page 34.

59 Ibid.
60 Ibid.
61 The climate profile obtained for each of the 20 Vancouver schools based on these scores may be found in Appendix E.
TABLE III
THE SIX ORGANIZATIONAL CLIMATES*

1. The Open Climate describes an energetic, lively organization which is moving toward its goals, and which provides satisfaction for the group members' social needs. Leadership acts emerge easily and appropriately from both the group and the leader. The members are preoccupied disproportionately with neither task nor social-needs satisfaction; satisfaction on both counts seems to be obtained easily and almost effortlessly. The main characteristic of this climate is the "authenticity" of the behavior that occurs among all the members.

2. The Autonomous Climate is described as one in which leadership acts emerge primarily from the group. The leader exerts little control over the group members; high Esprit results primarily from social-needs satisfaction. Satisfaction from task achievement is also present, but to a lesser degree.

3. The Controlled Climate is characterized best as impersonal and highly task-oriented. The group's behavior is directed primarily toward task accomplishment, while relatively little attention is given to behavior-oriented or social-needs satisfaction. Esprit is fairly high, but it reflects achievement at some expense to social-needs satisfaction. This climate lacks openness, or "authenticity" of behavior, because the group is disproportionately preoccupied with task achievement.

4. The Familiar Climate is highly personal, but undercontrolled. The members of this organization satisfy their social needs and pay relatively little attention to social control in respect to task accomplishment. Accordingly, Esprit is not extremely high simply because the group members secure little satisfaction from task achievement. Hence, much of the behavior within this climate can be construed as "inauthentic".

5. The Paternal Climate is characterized best as one in which the principal constrains the emergence of leadership acts from the group and attempts to initiate most of these acts himself. The leadership skills within the group are not used to supplement the principal's own ability to initiate leadership acts. Accordingly, some leadership acts are not even attempted. In short, little satisfaction is obtained in respect to either achievement or social needs; hence, Esprit among the members is low.

6. The Closed Climate is characterized by a high degree of apathy on the part of all members of the organization. The organization is not "moving"; Esprit is low because the group members secure neither social-needs satisfaction nor the satisfaction that comes from task achievement. The members' behavior can be construed as "inauthentic"; indeed, the organization seems to be stagnant.

Figure 4, page 36, denotes and compares the basic characteristics of the most "open" with the most "closed" organizational climates found by Halpin and Croft.

**The "Open" Climate.** Clearly, in the "open" climate as it is depicted in Figure 4, Disengagement and Hindrance are both relatively low in that the organization's members apparently are able to work reasonably well together with a minimum of squabbling and griping. Meanwhile, the leader's policies and related procedures do not particularly seem to hinder or burden them with numerous meetings and routine reports. Esprit is high, but the group members, while friendly, evidently feel little need for a great deal of intimacy. As a rule, they are likely to be pleased with their organization as well as their job within it, and as a result they probably are sufficiently motivated to work out problems and difficulties in order to keep the organization "going".

The leader is neither impersonal nor aloof in either manner or rules and procedures. It would seem that he does not necessarily need to emphasize production owing to the relatively subtle direction and control provided by his policies and regulations. Indeed, Figure 4 would indicate that Production Emphasis is low; thus, while maintaining complete control, the organization's leader is apparently able to permit the emergence of certain acts of leadership on the part of appropriate group members. Furthermore, he normally seems to set an excellent example through his own hard work, i.e., high Thrust, and thereby places himself in a position to legitimately criticize certain actions as necessary or show relatively high degree of Consideration in assisting group members as required.

**The "Closed" Climate.** Whereas the leader in the "open" climate may be labelled "effective", i.e., he directs his organization and his group
(a) Standard scores with a mean of 50 and a standard deviation of 10.

FIGURE 4.

COMPARISON OF AN OPEN AND A CLOSED ORGANIZATIONAL CLIMATE ON THE EIGHT SUBTESTS OF THE ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE (FORM IV)

Source: Halpin and Croft, The Organizational Climate of Schools, (Chicago: Midwest Administration Center, The University of Chicago, 1963), p.3
members' activities while taking some interest in their individual welfare as well, the opposite is generally the case in the "closed" climate. The leader is "ineffective". He neither successfully directs nor does he seem to take any particular interest in the group members personal welfare. As a result, the membership seems to be unable to work well together, Figure 4 indicates that they are Disengaged. Consequently any sense of task achievement is probably obtained through attendance at numerous meetings and completion of a seemingly endless variety of routine reports. Unfortunately even this sense of achievement is likely to be dulled as a result of the leader's policies and procedures which may best be described as the locus or source of a high degree of Hindrance. Lacking both task and social need satisfaction, Esprit is low. Nevertheless the group members are reasonably friendly with one another as depicted by the average to slightly above average degree of Intimacy in Figure 4.

The leader in a "closed" climate is likely to be impersonal in both manner and procedures. A fairly high degree of inflexibility is probably noticeable in the Aloof methods with which he attempts to control and direct the organization. As a result, Production Emphasis, while relatively high, is somewhat meaningless in that the personal example, or Thrust, evidenced by the leader is poor. In fact, what he says and what he actually does are likely to be two different things. On one hand, he seems to expect diligence, hard work and the emergence of initiative or leadership acts from his people, while on the other hand, he seems incapable of providing the freedom for any such performance to occur. Furthermore, he usually fails to provide adequate leadership for the group and therefore places himself in a position whereby criticism is resented. Perhaps the resentment may be attributed to his evident lack of concern for the group members' social
needs. There is little motivation to work out problems. The organization becomes almost stagnant. In fact both Consideration and Thrust are likely so low in the "closed" climate that the leader is probably not perceived as "legitimate". To the contrary, he is more likely to be regarded as a "phoney" by the group.

Use of Climate Continuum "versus" Use of Climate Subtests

The OCDQ has been subject to some relatively severe criticism as to the desirability of extending the data results so far as to develop an "open-closed" climate continuum rather than simply rely upon the subtest scores obtained as an adequate indicator of organizational climate.

Generally speaking, only one argument favouring the continuum concept--other than Halpin and Croft's, of course--seems to have been put forward. Brown has attempted to replicate the original OCDQ analysis using 81 schools in the Saint Paul-Minneapolis area. He found that the intercorrelation pattern among the subtest scores was generally similar to the one originally obtained. However, Brown's profile analysis of the data ultimately seemed somewhat more suitable for a four factor solution; thus leading him to conclude that eight organizational climates, not six, could be defined.

Which is correct? Brown answers that "since identical procedures were used in the two cases it is impossible to say that one set of climates

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63 Ibid.

64 Ibid.
is correct and the other is not." Liberally speaking, he agrees that even though it may be possible to identify a continuum divisible into either six or eight discrete climates, conservatively speaking, he believes its use would best be left for developing research hypotheses.

In yet another case, an argument against the development and subsequent use of any climate continuum whatsoever has been formulated by Andrews, who, in an effort to validate the OCDQ as a test instrument through a sample of 165 Alberta schools, untimately concludes that ".... the OCDQ possesses good construct validity", and ".... the eight subtest scores are a good measure of the concepts they purport to measure", but the overall climate does not predict anything that is not better predicted by the subtest.

A plausible explanation accounting at least in part for the controversy surrounding the use of climate continuum 'versus' subtest results may have been provided by Hodgkinson's use of the OCDQ in his study of organizational influence on value systems using a sample of 40 schools in the Greater Vancouver Metropolitan area. While analysing his data, Hodgkinson began to have some serious reservations regarding some of the statistical techniques employed by Halpin and Croft to initially develop the climate continuum. In brief, the school profiles were formed by standardizing the raw scores normatively (across the 71 schools sampled) and

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65  Ibid.
66  Ibid.
69  Ibid., p. 51.
ipsatively (across each of the subtest scores for each school). Accordingly, Halpin and Croft state, "The standardized scores now told us two things .... a score above 50 on a particular subtest indicated, first, that the given school scored above the mean of the sample on that subtest, and second that the score on that subtest was above the mean of the school's other subtest scores ...." The idea, according to Halpin and Croft, is to avoid confounding the interschool variance and the intraschool variance. However, Hodgkinson argues .... "that this is the very confusion which is confounded. Not only in this process of double standardization will the second normalization destroy the first, but the effect of the first (normative) standardization is to remove the capability of ipsative comparison." Finally, Hodgkinson argues, what is the point of either a single or double normalization in the first place? There is no need for either of them since the original raw scores will suffice for factor analytic purposes.

Like both Brown and Andrews, Hodgkinson's criticisms are directed toward the climate continuum, not toward the climate subtests themselves.

In response to the discrepancy between six or eight discrete climates which a continuum may be said to obtain, Halpin has noted that, as Brown's study suggests, the climates are not only not sacrosanct, but also ".... that the continuum of the six climates that Croft and I conceptualized

70. Ibid.
71. Ibid., Hodgkinson is citing from Halpin and Croft, Organizational Climate of Schools.
72. Ibid., p. 52.
73. Ibid.
74. Ibid.
is not so clear-cut as we had thought originally." At the same time he agrees that he would not care to quibble with Andrews' expressed desire to deal with OCDQ data at the subtest level rather than with the six postulated climates.

As yet, neither Halpin nor Croft appear to have made any effort to respond to the criticisms Hodgkinson has brought forward regarding the statistical techniques employed to develop the climate continuum.

In any event, the findings of the three studies just cited are germane to this investigation in that they cast considerable doubt on the statistical validity of developing and describing an organization's "health" by a climate continuum. In fact, doing so apparently would refine the results considerably further than the data would seem to warrant. Consequently, in spite of the obvious advantage of dealing simply with a single "open" or "closed" climate as illustrated in Figure 4, this investigation must necessarily limit the use of its data to the subtests and their relationship, if any, with school size.

Hypotheses - The Relationship Between School Size and Organizational Climate

With respect to appropriate measures of school size, there is general agreement in the literature that objective indicators are obtained by assessing size in terms of: number of Staff Members; School Area expressed in square feet; Enrolment; and Human Density, expressed in terms of the amount of available square feet for students, teachers and administrators.

75 Halpin, "Change and Organizational Climates", p. 8
76 Ibid.
In order to examine the relationship between school organizational climate (as assessed by the OCDQ subtests) and the four school size variables, the following null hypotheses were formulated:

**Null Hypothesis 1:** School size in terms of School Area expressed in square feet is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

**Null Hypothesis 2:** School size in terms of the number of Staff Members employed therein is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

**Null Hypothesis 3:** School size in terms of Enrolment is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

**Null Hypothesis 4:** School size in terms of Human Density, is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

**Level of Significance:** These hypotheses will be tested at a 0.05 level of significance.
III DESIGN AND METHODOLOGY

The OCDQ Form IV which was used to obtain data for this study, is, for all intents and purposes, identical to the instrument originally developed and published by Halpin and Croft in 1963. For a brief description of minor word alterations which have been made to place a few of the items developed in the United States in a Canadian context, the reader is referred to Appendix B. The purpose, design and development of the instrument has been discussed and described in some detail within the conceptual framework presented in the preceding chapter.

Definition of Variables

In addition to the general definitions pertaining to the description of teacher behavior (Table I, page 28, and Table I-A, page 30), principal behavior (Table II, page 29, and Table IIA, page 31), and the six climates (Table III, page 34), there are other variables that need to be defined in light of the hypotheses stated in Chapter II. Namely, these are school area, staff members, enrolment and human density. The following operational definitions were used to provide indicators for these four variables of school size:

School Area: The aggregate total area of a school (inclusive of wood portables, where applicable) is defined as the school area. It refers to outside measurement as expressed in terms of square feet and coincides with the total area per school indicated in the contractual agreement between the Vancouver Board of School Trustees and the Canadian Union of Public Employees representing District 39 janitors.

Staff Members. The total number of full time teachers employed in each school has been obtained from the 1970-71 "Directory of Teaching Staff
by Schools" produced by the Vancouver Board of School Trustees. In addition, each school's principal has also been included as an element within the school's staff member set. All other school personnel have been excluded.

**Enrolment.** Enrolment is defined as the number of elementary school students registered in kindergarten through grade seven with the Vancouver Board of School Trustees, District 39, Department of Research and Special Services, as of September 30, 1970. Special classes have been excluded.

**Human Density.** The amount of school area expressed in square feet which is available to each individual student, full time teacher and principal is defined as density, or more particularly, as human density. It may be obtained simply by dividing the total School Area by the sum of the Enrolment and Staff Members. Obviously, the larger the numeric value so obtained the more "expansive", i.e., more square feet per individual, the human density. Conversely, a small numeric value expresses "compact" or "crowded" conditions, i.e., relatively few square feet per individual.

**School District Sampling Procedures**

Twenty-four of the seventy elementary schools in the Vancouver School District have one or more annexes which are associated with them. Even though the annex is under the jurisdiction of the school's principal much of the "over-seeing" is apparently delegated to the vice-principal or, in some instances, a leading teacher. Consequently, entire schools having one or more annexes were eliminated from consideration in this investigation in order to avoid the possibility of "dual leadership" contaminating the organizational climate of either the school or the annex.
The forty-six remaining schools are geographically distributed in a relatively even fashion, ranging from a minimum of four to a maximum of nine, across eight zones in the Vancouver District. They average just under six schools per zone. Twenty-one of forty-six schools were selected at random for consideration in this study. Two or three schools—depending upon the zone's size—were then randomly selected from each zone. The objective of the sampling procedures was to obtain a relatively composite, cross sectional picture of the Vancouver School District without having to survey every school.

**Participating Teacher Sampling Procedures**

A letter, which outlined the study's purpose and requested the principal's authorization to include his school in it, was directed to each of the sample schools. (Refer to Appendix A). A copy of the OCDQ was included in the letter so every principal would be alerted to the fact that to some extent his teachers would be "rating his leadership", i.e. at least rating it as they perceived it. (Refer to Appendix B).

Where authorization was granted, as it subsequently was in 20 of the 21 schools randomly selected from the 46 under consideration, each principal was contacted personally. He was given a package containing a list of his entire full time teaching staff in order of random selection and sufficient Questionnaires for approximately one-third of that staff. He was asked to query each staff member in the sequence listed with respect to his or her willingness to participate in the study. Those individuals responding affirmatively were given a copy of the OCDQ along with a pre-stamped return mail envelope. In this manner it was hoped that a high degree of cooperation might be obtained without severely reducing the desired school sample size. Indeed, 120 out of 128 questionnaires were returned. One hundred and sixteen
of them were usable: four were eliminated because the respondents failed to indicate their particular school's name in the place provided for that purpose.

Study limitations

In addition to a "parsimony-imposed" limitation related to selecting a manageable number of school size variables, this study also has certain basic methodological limitations inherent within it. Namely, the development of the instrument, the nature of the data, sample information reliability, and uniqueness.

Development of the Instrument. The first of these four limitations is related to the development of the instrument itself. The dimensions of organizational climate have been identified by devising taxonomies. Unfortunately, a taxonomy does not readily lend itself to proof, or for that matter, verification. Halpin and Croft do not feel that this is a serious matter. They contend that even though it is difficult, if not wholly irrelevant, to question a taxonomy's validity its heuristic value outweighs this limitation.77

Nature of the data. The second limitations is a direct result of the fact that the data supplied by group members describe the leader's behavior as each individual perceived it. Obviously, this may or may not necessarily describe how he actually does behave. This limitation is not serious as long as the assumption is correct that how the leader is perceived to behave may have much more influence on the group member's behavior than how the leader actually does behave.

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77 Halpin and Croft, Organizational Climate of Schools, p. 9
Sample Information Reliability. Information based on a sample obviously represents only a part, or parcel, of the general population under consideration. As a result such information does not necessarily provide precise data pertaining to the actual characteristics of the population in question. Nevertheless, certain generalizations regarding the population may be extrapolated from information obtained by random sampling techniques. The degree of confidence that such extrapolations reliably represent the actual statistical characteristics of the population in question may be arithmetically calculated.

Tables indicating the degree of confidence in the reliability of the sample results obtained for each of the five subtests from each school included in this investigation have been calculated and are included in Appendix C. Generally speaking, the sample information does seem to reveal a relatively high degree of reliability in the sense that the sample results pertaining to the climate subtest of each school seem to adequately approximate the same score which might have been obtained if every teacher in each school had been included in the survey.

Uniqueness. Although the information obtained by sampling may be generalized to apply to a school, the sample results pertinent to any particular school are unique to that school. Subtest scores are limited to the schools in question and as such should neither be generalized to any other schools nor thought of as indicative of norms in the Vancouver School District.

Data Analysis Procedures

In Halpin and Croft's analysis of the original data (n=1151), the procedure involved a principal component factor analysis of the 64 x 64 item
intercorrelation matrix, from which eighteen factors with eigenvalues above 1.00 were extracted. An eigenvalue represents the sum of the squared factor loadings for each factor when the communalities of the variables are 1.00: it indicates a factor's importance because it describes the amount of variance accounted for by the factor. A factor loading will indicate the extent to which each factor or dimension participates in the climate concept as illustrated in Figure 3.

Halpin and Croft then departed from the "orthodox rules" for factor analysis and generated a varimax rotational solution for the first eight of the eighteen factors which had been extracted from the item intercorrelation matrix. The basis for this departure stemmed from the premise that by successfully choosing the eight dimensions which would account "best" for the variance in the sixty-four items, then those items within each subtest would yield a high loading on one factor and load near zero on the other seven. Furthermore, they felt that if each item loading was high on the same factor as other items in the same subtest, then it would be safe to conclude that each item could be presumed to be measuring the same general type of social interaction as were the others within the set.

In the original study this indeed is the case as may be seen in Appendix D. After forcing an eight-factor varimax rotation structure, Halpin and Croft found the factor pattern to indicate that most of the items in the eight subtests loaded heavier on the same factor, and that each item within each subtest loaded high on the same factor as do the other items from the same subtest: therefore, each subtest would seem to be relatively independent. Moreover, its score may be construed as representing a factor.

78 Halpin and Croft, Organizational Climate of Schools, page 33.
From an examination of Appendix D, it is apparent that factors 2, 5, 7, and 3 represent Disengagement, Hindrance, Esprit, and Intimacy, respectively. Factors 8, 4, 1, and 6, represent Aloofness, Production Emphasis, Thrust and Consideration, respectively.

**Replication of Original Procedures.** The data obtained from the twenty Vancouver Schools (n=116) was analyzed by generating a principal-component factor analysis of the 64 x 64 item intercorrelation matrix. Fourteen factors with eigenvalues above 1.00 were extracted from this matrix. Then, following Halpin and Croft's procedures, a varimax rotational structure was subsequently generated for the first eight of the eighteen factors. These procedures yielded the factor pattern shown in Table IV, pages 52-53.

Although the original study does, in fact, yield a relatively pure loading for each item in the appropriate subtest corresponding to a particular factor, no such clean-cut array emerged for the factor pattern in this study. As a matter of fact, even the most casual comparison of the factor pattern shown in Appendix D with that of the present study (Table IV), reveals more discrepancies than similarities between the two sets of data. For example, three of the four subtests which describe teacher's behavior---Hindrance, Esprit and Intimacy---fail to show more than one item loading at 0.50. Moreover, in Table IV, Item 3 in the Disengagement subtest, i.e., Teachers exert group pressure on non-conforming staff members, is the only item which loads significantly on the factor. Obviously the subtests which generally load as expected on the four dimensions, presumably measuring teacher's behavior in the original study do not load in any such similar manner in a sample of 20 Vancouver elementary schools.
Furthermore, a similar conclusion may be drawn regarding the four subtests pertaining to the Principal's Behavior. The loadings in Table IV for the Production Emphasis and Consideration subtests, for example, are unimpressive in the Vancouver schools sampled. Aloofness has only one item showing any strength and Thrust, even with three items showing some degree of association, does not load very heavily on the remaining five subtest items.

Since the factor pattern obtained by following the original procedures with the Vancouver data differs so radically from Halpin and Croft's eight dimensions, it is not illogical to conclude that the eight sets of item groups which they had chosen from their large sample simply do not "fit" when the smaller Vancouver sample data is substituted. As a matter of fact, in the words of Halpin and Croft:

> If we had obtained a factor pattern in which most of the items in a given subtest had failed to load on the same factor, then we would have been forced to conclude that we had not chosen the "best" eight sets of item groups.79

What choice would constitute the "best" set or sets of item groups for the Vancouver data? What dimensions would account "best" for the variance in the sixty-four items? Which items within each subtest would describe a dimension yielding a relatively high loading on one factor while loading near zero on other factors? Since the answers to these questions evidently do not lie in a replication of the original procedures with the Vancouver data another factor pattern must be considered.

**Five Factor Pattern.** Accordingly, in addition to following Halpin and Croft's methodology, i.e., forcing eight factors, the Vancouver data were simply subjected to standard factor analytic procedures. (The resultant

five factors are shown in Table V, pages 54-55. The characteristics of the
group and the leader merge to a considerable extent, but with the exception
of those items pertaining to Aloofness, which spread across three of the
five factors, the five dimensions basically contain the merged subtests as
a whole. Thrust and Consideration, for example, load entirely on Factor I.
Esprit also loads on Factor I for all intents and purposes. Factor II
contains all the items pertinent to Disengagement plus the item related to
the principal talking too much. Factor III, is, for all intents and
purposes, simply Halpin and Croft's Intimacy Subtest with the addition of
a) an Esprit item related to the amount of Teachers' laughter at informal
gatherings, and b) the Aloofness item related to teachers eating lunch alone.
Factor IV contains most of the items related to the Production Emphasis sub-
test plus those Aloofness items which could be considered to relate to
working conditions. Factor V is, for all intents and purposes, the original
Hindrance subtest, with a negative loading value on all items except Item
14, i.e. Administrative paper work is burdensome; apparently administrative
reports do take up too much of the teacher's time.

Naming the Five-Factors. A plausible explanation for the merged
five-dimensional OCDQ result as opposed to the original eight dimensional
structure may have been provided by Kenny and Rentz, who have categorically

80 Item 23, i.e., There is considerable laughter when teachers gather
informally, is the only item from the Esprit subtest which fails to load on
Factor I but it does seem more appropriate for Factor III which apparently
has more in common with situations encountered outside the classroom.

81 It is interesting to note that this is the only item related to principal's behavior which loads on what is obviously a "teacher group" factor; that is all other items are generally related to how the teacher perceives the teacher group. It is conceivable that under certain circumstances the principal is considered as a group member rather than group leader.
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Cumulative proportion of total variance
|       | 0.17 | 0.23 | 0.28 | 0.31 | 0.34 | 0.37 | 0.39 | 0.41 |

These values were computed from the original unrotated factors.
### Table V

**Rotated Item Factor Matrix for 64 Items of the OCDQ, Form IV**

5 Factor Pattern

**Vancouver Sample (n=116)**

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<th>IV</th>
<th>V</th>
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*Teaches "Qual" Teacher Group Perception*
TABLE V (Continued)

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Non-Classroom Teacher Satisfaction

| 48.                | 19 | -07| 08  | -21| -01| 09   |
| 35.                | -23| 12 | -06 | -30| -07| 17   |
| 34.                | 09 | 04 | -06 | -36| -15| 17   |
| 36.                | 18 | -02| -10 | -37| -08| 19   |
| 44.                | -05| 06 | 00  | -38| -08| 15   |
| 43.                | -05| 16 | -06 | *-40| -03| 19   |
| 45.                | 36 | 10 | 01  | *-41| 05 | 31   |
| 46.                | 18 | 13 | 06  | *-42| -08| 23   |

Working Conditions

| 15.                | 27 | -03| 08  | -02| 37 | 22   |
| 12.                | -05| 12 | 05  | -12| *-46| 25   |
| 13.                | -01| 12 | -05| -09| *-51| 28   |
| 14.                | 01 | 09 | 00  | -10| *-54| 31   |
| 11.                | -10| 15 | 01  | -08| *-60| 40   |

Hindrance

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$^a$ These values were computed from the original unrotated factors.

OCDQ subtest items are shown in Table I and Table II, pp. 28-29.
TABLE VI
FOUR FACTOR VARIMAX ROTATIONAL SOLUTION FOR 64 ITEMS OF THE OCDQ, FORM IV, KENNY AND RENTZ SAMPLE (n=2047)

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<th>Non-Classroom Teacher Satisfaction</th>
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Adapted from Kenny and Rentz, "Organizational Climate in Urban Areas", p.66.
stated that the instrument's originators deliberately excluded urban core schools from the sample used in constructing and testing the OCDQ. Consequently, they contend that one should not necessarily expect to find the same dimensions if urban core schools are included in a sample for use with the instrument.

In order to provide empirical evidence, Kenny and Rentz, collected OCDQ responses from a sample of 2,047 teachers representing one hundred and twelve schools located throughout urban and suburban areas of the United States. (Urban and Suburban were defined as those areas with one million or more population). Their data seemed much more suitable for a four-factor solution, and, although it is not customary to rename the factors initially developed by others' research, Halpin has given Kenny and Rentz explicit authorization to rename their four factors. As shown in Table VI, page 56, they chose to labels the factors "Principal as Authority", "Teacher 'qua' Teacher Group Perception", "Non-Classroom Teacher Satisfaction" and "Working Conditions", respectively.

A comparison of Kenny and Rentz's results (Table VI) with the present study's results (Table V) will reveal a rather strange paradox. On the one hand there are three basic differences between the factor patterns obtained for each investigation, while on the other hand, with the exception

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83 Ibid.
84 Ibid., p. 67.
85 Ibid.
of a minor change to the factor labeled "Principal as Authority", the results are similar enough to warrant applying the factor names selected by Kenny and Rentz to four of the five factors obtained in this study.

The first and most obvious difference between Table VI and Table V is, of course, the number of factors involved. Most of those items comprising the original Hindrance subtest, while spread across all four of Kenny and Rentz's factors, remain almost intact in the 5-factor solution. (Item 16, i.e., Instructions for the operation of teaching aids are available, loads positively on Factor I in both samples). The loadings, however, indicate a negative relationship; thus for the Vancouver teachers at least, the factor should be scored positively to indicate Hindrance in the sense originally intended. At any rate, there would appear to be little need to rename the subtest for purposes of this study.

The second difference in the four and five factor solution is the loading of the Esprit items between the Kenny and Rentz urban/suburban sample and the Vancouver sample. In the former sample, Table IV will show that the Esprit items are spread across all four factors. This implies that Esprit's relevance and influence was not particularly strong for the urban sample. In the latter sample, Table V will show that virtually all Esprit items except Item 23, i.e., There is considerable laughter when teachers gather informally, clearly load on Factor I. Therefore it would seem that, in the Vancouver sample, Esprit is tied, or at least somehow directly influenced by the leadership of the "authority figure". Consequently, custom notwithstanding, for this study Factor I might be more descriptively labeled "Principal as Leader", rather than "Principal as Authority".

The third basic difference revealed through comparison of Table VI and Table V stems from the factor referred to as "Working Conditions". It
loads negatively in the Vancouver sample whereas in Kenny and Rentz's investigation the factor loads positively. In any event, irrespective of direction, the term "Working Conditions" adequately names the factor obtained from both samples, but it is apparent that the perceived relationship between each of the two samples is diametrically opposed one to the other.

There is no need to change the names which Kenny and Rentz have selected for Factors II and III. A comparison of the basic items which comprise Teacher "qua" Teacher Group Perception and Non-Classroom Teacher Satisfaction in Table VI with the items in Table V will show that the descriptive names appear to adequately describe the dimensions for both sample groups.

Five Factor Pattern in Terms of the Conceptual Framework

The five-factor pattern obtained from the data in this study does seem to indicate that, in general, the OCDQ items are measuring some degree of interaction between the principal's behavior as leader and the teacher's behavior as a group. Figure 5, page 60, attempts to illustrate the merged relationship between group interactions, group or organizational effectiveness, and social needs "versus" social control for the five dimensions of the OCDQ determined by this study's data.

In terms of the first of the three schemes in the conceptual framework--group interactions--it would seem as though the Esprit of the Vancouver teachers may be tied so directly to the principal's leadership behavior, i.e., as expressed through Thrust and Consideration, that, as a group, they do not seem to perceive a clear cut distinction between their own morale or spirit and their leader's behavior. What he "does" seems to strongly influence what "occurs" among the group members. This relationship is
Dimensions associated primarily with social needs satisfaction

Dimensions associated primarily with aspects of social control

<table>
<thead>
<tr>
<th>GROUP</th>
<th>LEADER</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>I'</td>
</tr>
<tr>
<td>Non-Classroom Teacher (Esprit, Thrust, Consideration)</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>II</td>
</tr>
<tr>
<td>Teacher &quot;qua&quot; Working Conditions</td>
<td></td>
</tr>
<tr>
<td>Teacher Group Perception Hindrance (V)</td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE 5**

**FIVE DIMENSIONS OF THE OCDQ: FORM IV**

(64 items)
pictured by the spread of the items associated with these dimensions across quadrants I and IV in figure 5 rather than remain distinctly separated between the two quadrants as the concept was originally mapped in Figure 3 on page 32.

In terms of the third of the three schemes which form the conceptual framework, quadrants I and IV remain primarily associated with the satisfaction of social needs and quadrants II and III remain generally associated with social control with the obvious exception of one dimension. Aloofness items not only spread across social needs and social control, but they also transcend the basic characteristics of the behavior exhibited by group leaders—quadrants I and II—and Group "qua" Group—quadrants III and IV. Indeed, owing to this spread, Aloofness seems to lose much of its value as a concept within the five-dimensional framework. It fails to clearly delineate any of the three schemata involved.

In terms of the second scheme—organizational or group effectiveness—the lack of an Aloofness dimension coupled with the merger of the items related to Esprit, Thrust, and Consideration under a single dimension tends to tarnish, though not destroy the four theoretical ideals related to the organizational or group effectiveness theme. Otherwise, from a "five-dimensional-point-of-view", the relationship between group interaction, effectiveness and social needs "versus" social control still seems to remain basically in accordance with the conceptual framework illustrated in Figure 3, page 32.

Five Factor Climate Profiles

Owing to the controversy surrounding the use of the subtest scores rather than a climate continuum (which has been previously outlined), Figure
6, page 63, contains only the extreme and mean scores obtained from the five subtests. The dotted profiles "a" and "b" depict "closed" and "open" climates respectively, while the solid line, profile "c", reflects the sample norm in that it represents the mean score calculated for each subtest. All three profiles illustrated in Figure 6 have been obtained simply by connecting the extreme and the mean scores obtained from the data: none of them represent an average "open" and "closed" profile of those schools within the sample which were distinguished by a high loading on only one of three factors extracted from an analysis of standardized scores obtained from the five subtests as is the case with respect to those profiles shown in Figure 4, page 36.

The "Open Climate". Even though the method originally employed to develop a climate continuum has not been applied to the Vancouver data, it is interesting to note that the "b" range scores—when interconnected as shown in Figure 6—could be considered the counterpart of the "Open Climate" in Figure 4. Teacher "qua" Teacher Group Perception, Hindrance and Working Conditions scores in Figure 6 are relatively low. Similarly the original corresponding subtests, Disengagement, Hindrance and Production Emphasis are also relatively low in the "Open Climate" depicted in Figure 4. Non-Classroom Teacher Satisfaction in Figure 6 and the corresponding Intimacy subtest scores in Figure 4 are both somewhat below average. Finally, in both cases the Principal as Leader score in Figure 6—represented by the Esprit, Thrust and Consideration scores in Figure 4—is relatively high.

The "Closed Climate". The same basic reasoning just applied to the "b" range scores would seem to apply equally well to the relationship between

86 The climate profile obtained for each of the 20 Vancouver schools based on its individual subtest scores may be found in Appendix E.
FIGURE 6
FIVE FACTOR CLIMATE PROFILES FOR FIVE SUBTESTS OBTAINED FROM THE ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE (FORM IV)

Scores are based on 1. Rarely occurs, 2. Sometimes occurs, 3. Often occurs, and 4. Very frequently occurs.
the "a" range scores in Figure 6 and the "Closed Climate" in Figure 4. In Figure 6 the Teacher "qua" Teacher Group Perception and Hindrance (V) scores which correspond to Disengagement and Hindrance in Figure 4 are relatively high, while both Non-Classroom Teacher Satisfaction and its Figure 4 counterpart—Intimacy—score somewhat above average. Finally, Working Conditions and Principal as Leader in Figure 6 show scores which are in accord with the Production Emphasis, Esprit, Thrust and Consideration scores denoting the "Closed Climate" pictured in Figure 4.

In essence, then, the same rationale used to verbalize the "open" and "closed" climate conditions as described by the climate continuum would seem to apply to the Vancouver data even though the suspect statistical methods originally employed have not been utilized to develop the "b" ("Open Climate") and "a" ("Closed Climate") profiles depicted in Figure 4.

Additional Null Hypotheses - Based on Five-Factor Pattern

Owing to the fact that the OCDQ factor structure obtained for the Vancouver school sample data differs decidedly from the expected factor structure initially identified by the instrument's originators, it should be beneficial to expand the study design in order to accommodate the unanticipated results. In addition to testing the statistical validity of the four null hypotheses previously formulated it should prove interesting to formulate and test a similar set of null hypotheses related to the five factor results obtained from this study. Specifically, in order to examine the relationship between School Area, Staff Members, Enrolment, Human Density and school organizational climate as indicated by five subtests obtained from the Vancouver data, four additional null hypotheses may be formulated:
Null Hypothesis 5. School size in terms of School Area expressed in square feet is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Null Hypothesis 6. School size in terms of the number of Staff Members employed therein is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Null Hypothesis 7. School size in terms of Enrolment is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Null Hypothesis 8. School size in terms of Human Density is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Level of Significance. These hypotheses will be tested at a 0.05 level of significance.
IV FINDINGS

A mean score for each subtest—eight generated from Halpin and Croft's data and five generated by this study—has been calculated for each school. This mean was obtained in two steps. First, a mean item score was calculated by finding the sum of the school's respondent's scores for each subtest item and dividing it by the number of responses. The second step consisted of finding the sum of these mean item scores and dividing it by the number of items representing each subtest. The result is a mean score for the school for the particular OCDQ subtest under consideration.

Pearson correlation coefficients were computed to determine the association or relation, if any, between school size (independent variables) and the OCDQ subtest mean scores (dependent variables). To determine the significance of a correlation coefficient under the null hypothesis in question, a Student's "t" value was calculated and compared to Fisher and Yates' Table of Critical Values of 't'.

Null Hypothesis 1

School Size (expressed in terms of school area as measured in square feet) is not significantly correlated with any of the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

Accept Null Hypothesis 1. The findings reported in Table VII, page 74 do not indicate any statistically significant correlation between school

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87 See Appendix F for further, more specific information and a definition of the Pearson correlation coefficient.

88 \( t = r \sqrt{\frac{n-2}{1-r^2}} \) where the value defined by the formula is distributed as Student's "t" with degrees of freedom or \( df = n-2 \) and \( n \geq 10 \).
area and the eight organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between this particular size variable and Disengagement, Hindrance, Intimacy, Aloofness, Thrust and Consideration probably occurred as a result of chance.

**Association between Area, Esprit and Production Emphasis.** Table VII does indicate that a weak association between School Area, Esprit and Production Emphasis does exist at the 0.10 and 0.20 level of significance respectively. Consequently, even though the 0.393 and 0.311 correlations are very weak it is feasible that the association is not a result of pure chance.

**Null Hypothesis 2**

School size in terms of the number of Staff Members employed therein is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

**Accept Null Hypothesis 2.** The findings reported in Table VII do not indicate any statistically significant correlation between Staff Members and the eight organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between Staff Members and Disengagement, Hindrance, Intimacy, Aloofness and Production Emphasis probably occurred as a result of chance.

**Association between Staff Members, Esprit, Thrust and Consideration.** Table VII does indicate that a rather weak association may exist between the number of Staff Members employed in a school and the dimensions of Esprit, Thrust and Consideration. Esprit and Thrust are significant at the 0.20 level while Consideration attains significance at the 0.10 level. Consequently, even though the correlations are not strong it is feasible that the associations might not have occurred by accident.
Null Hypothesis 3

School size in terms of Enrolment is not significantly correlated with the eight organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire.

Accept Null Hypothesis 3. The findings reported in Table VII do not indicate any statistically significant correlation between Enrolment and six of the eight organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between Disengagement, Hindrance, Esprit, Intimacy, Aloofness or Production Emphasis probably occurred as a result of chance.

Association between Enrolment and Consideration. From a conservative point of view the -0.417 correlation between Enrolment and Consideration shown in Table VII is not significant at the 0.05 level. It will obtain a critical "t" value of 1.944 where, for a two tailed test and eighteen degrees of freedom, the critical value must be equal to or greater than 2.101 to be considered at the 0.05 level. Consequently the null hypothesis will be accepted for the Consideration subtest even though, from a liberal point of view, the 0.10 level of significance shown in Table VII does not adequately indicate that the relationship may not necessarily result from chance.

Reject Null Hypothesis 3 for Thrust. The correlation for Thrust at -0.460 indicated in Table VII is significant at the 0.05 level. The Null hypothesis for this subtest should be rejected since it is improbable that a relationship this strong would be obtained by accident.

Null Hypothesis 4

School size in terms of Human Density is not significantly correlated with the eight organizational climate subtest scores as measured by
the Organizational Climate Description Questionnaire.

Accept Null Hypothesis 4. The findings recorded in Table VII do not indicate any statistically significant correlation between Human Density and the eight organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between this particular size variable and Hindrance, Intimacy, Aloofness and Production Emphasis probably occurred as a result of chance.

Association between Human Density, Disengagement, Esprit, Thrust and Consideration. Table VII does indicate that a rather weak association may exist between Human Density and the dimensions of Disengagement, Esprit, Thrust and Consideration. Disengagement, Thrust and Consideration are significant at the 0.20 level while Esprit attains significance at the 0.10 level. Consequently, even though the correlations are not strong it is feasible that the associations—especially Esprit—might not have occurred by accident.

Null Hypothesis 5

School size in terms of School Area expressed in square feet is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Accept Null Hypothesis 5. The findings in Table VII do not indicate any statistically significant correlation between School Area and the five organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between this particular size variable and Principal as Leader, Non-Classroom Teacher Satisfaction and Working Conditions probably occurred as a result of chance.
Association between Area, Teacher "qua" Teacher Group Perception and Hindrance (V). Table VII does indicate that a weak association between School Area, Teacher "qua" Teacher Group Perception and Hindrance (V) exists at the 0.20 level of significance. Consequently, it is feasible that the association is not entirely accidental.

Null Hypothesis 6

School size in terms of the number of Staff Members employed therein is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver Schools.

Accept Null Hypothesis 6. The findings recorded in Table VII indicate that the correlations between Staff Members and the dimensions of Teacher "qua" Teacher Group Perception, Non-Classroom Teacher Satisfaction, Working Conditions and Hindrance (V) are too small to be statistically significant at the 0.05 level. The relationships indicated are probably a result of chance.

Association between Staff Members and Principal as Leader. From a conservative point of view the -0.435 correlation between Staff Members and Principal as Leader shown in Table VII is not significant at the 0.05 level. It will obtain a critical "t" value of 2.051 whereas, for a two tailed test and eighteen degrees of freedom, the critical value must be equal to or greater than 2.101 to be considered significant at the 0.05 level. Consequently, the null hypothesis will be accepted for the Principal as Leader subtest even though, from a liberal point of view, the 0.10 level of significance shown in Table VII does not adequately indicate that the relationship does not necessarily result from chance.
Null Hypothesis 7

School size as measured by Enrolment is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Accept Null Hypothesis 7. The findings shown in Table VII indicate no significant correlations between Enrolment and the dimensions of Teacher "qua" Teacher Group Perception, Non-Classroom Teacher Satisfaction, Working Conditions, and Hindrance (V), respectively. The relations probably differ from zero (except Working Conditions which is zero for all intents and purposes) only by chance.

Reject Null Hypothesis 7 with respect to Principal as Leader. The correlation between Enrolment and Principal as Leader shown in Table VII as -0.462 is significant at the 0.05 level. The null hypothesis may be rejected since it is highly unlikely that a correlation this strong would have been obtained merely by chance.

Null Hypothesis 8

School size as measured by Human Density is not significantly correlated with the five organizational climate subtest scores as measured by the Organizational Climate Description Questionnaire data obtained from a random sample of Vancouver schools.

Accept Null Hypothesis 8. The findings reported in Table VII do not indicate any statistically significant correlation between Human Density and the five organizational climate subtest scores at the 0.05 level. Any relationship differing from zero between this particular size variable and the five subtests probably occurred by accident.
Association between Human Density and Principal as Leader. Table VII does indicate a rather weak association may exist between Human Density and Principal as Leader. Since the 0.335 correlation is significant at the 0.20 level, it is feasible that the relationship might not result from pure chance.

Summary of the Findings

With the exception of the subtest measuring Thrust for Null Hypothesis 3 and the subtest Principal as Leader for Null Hypothesis 7, none of the null hypotheses formulated for this study may be rejected at the 0.05 level of significance.

However, in several instances enough association between the independent size variables and the dependent subtests has been obtained at the 0.10 and 0.20 levels to indicate that at least some degree of relationship may exist which conceivably could warrant further consideration. In fact, the correlation between Staff Members and Principal as Leader and the correlation between Enrolment and Consideration, while technically significant only at the 0.10 level, are nearly strong enough to justify rejection of their respective null hypotheses at the 0.05 level of significance.

Other relationships between the independent size variables and the dependent climate variables at the 0.10 level of significance are: 1) Area and Esprit, 2) Staff Members and Consideration, 3) Human Density and Esprit.

Further associations between the independent size variables and the dependent subtest variables at the 0.20 level of significance are: 1) Area with Production Emphasis, Teacher "qua" Teacher Group Perception, and Hindrance (V), 2) Staff Members with Esprit, and Thrust, and 3) Human Density with Disengagement, Thrust, Consideration, and Principal as Leader.
Finally, for this study, there would appear to be little, if any, relationship between the size variables and Hindrance, Intimacy, or the Aloofness subtest. Moreover, the same may be said for their inter-related five dimensional counterparts, Non-Classroom Teacher Satisfaction and Working Conditions.
<table>
<thead>
<tr>
<th>Correlation (r)</th>
<th>School Area</th>
<th>Staff Members</th>
<th>Enrolment</th>
<th>Human Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Disengagement</td>
<td>.267</td>
<td>.224</td>
<td>.083</td>
<td>.311(0.20)</td>
</tr>
<tr>
<td>2. Hindrance</td>
<td>.106</td>
<td>.064</td>
<td>.127</td>
<td>-.211</td>
</tr>
<tr>
<td>3. Esprit</td>
<td>-.393(0.10)</td>
<td>-.302(0.20)</td>
<td>-.125</td>
<td>-.384(0.10)</td>
</tr>
<tr>
<td>4. Intimacy</td>
<td>.069</td>
<td>-.095</td>
<td>-.090</td>
<td>.003</td>
</tr>
<tr>
<td>5. Aloofness</td>
<td>.054</td>
<td>.029</td>
<td>-.016</td>
<td>-.097</td>
</tr>
<tr>
<td>6. Production Emphasis</td>
<td>-.311(0.20)</td>
<td>-.104</td>
<td>-.143</td>
<td>-.161</td>
</tr>
<tr>
<td>7. Thrust</td>
<td>-.209</td>
<td>-.373(0.20)</td>
<td>-.460(0.05)*</td>
<td>.366(0.20)</td>
</tr>
<tr>
<td>8. Consideration</td>
<td>-.164</td>
<td>-.381(0.10)</td>
<td>-.417(0.10)</td>
<td>.376(0.20)</td>
</tr>
<tr>
<td>I Principal as Leader</td>
<td>-.240</td>
<td>-.435(0.10)</td>
<td>-.462(0.05)*</td>
<td>.339(0.20)</td>
</tr>
<tr>
<td>II Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>.344(0.20)</td>
<td>.090</td>
<td>-.120</td>
<td>-.054</td>
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<tr>
<td>III Non-Classroom Teacher Satisfaction</td>
<td>-.058</td>
<td>-.037</td>
<td>.087</td>
<td>.221</td>
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<tr>
<td>IV Working Conditions</td>
<td>-.210</td>
<td>-.029</td>
<td>.001</td>
<td>.268</td>
</tr>
<tr>
<td>V Hindrance (V)</td>
<td>.345(0.20)</td>
<td>.237</td>
<td>.255</td>
<td>.093</td>
</tr>
</tbody>
</table>

*Two-tailed test, t=2.101 required for p < 0.05; 18 df.
Level of significance obtained is indicated in parentheses, ( ).

The correlations between Human Density and the Vancouver subtests are based on 19 schools. See Appendix F.
V. DISCUSSION OF FINDINGS AND RELATED LITERATURE

This chapter provides a discussion of the findings and draws on relevant parts of the literature in order to provide an empirical base from which a number of implications may be drawn.

If the findings of this study are any indication, it would appear, speaking in the strictest statistical sense, that school size in terms of School Area, Staff Members or Human Density does not have much influence on either the eight or the five dimensions which purportedly represent the organizational climate of a school. Evidently, a school can tolerate considerable fluctuation in its size as represented by these three variables without experiencing any significant effects one way or another on its climate.

Enrolment and Principal as Leader

Enrolment, however, is another matter. According to the findings, it does appear as though a school's Enrolment is very likely to significantly influence its climate—at least to the degree that the climate is dependent upon the dimension described by the Principal as Leader. As illustrated in Figure 5, page 60, this dimension consists primarily of those OCDQ items which originally were expected to measure Thrust, Consideration and Esprit. Moreover, Table VII suggests that it is the Thrust, and to a slightly lesser extent, the Consideration items, which have led to the degree of statistical significance permitting this conclusion. The negative direction of the relationship would indicate that large Enrolment will tend to result in a description of the principal as less effective in terms of both his own personal example, or Thrust, and the degree of Consideration he exhibits toward his staff. Low Thrust and low Consideration tend toward "closed" climate conditions owing to unfulfilled social needs.
Staff Members and Principal as Leader

From a liberal point of view, the findings could be loosely interpreted to suggest that a school might not be capable of tolerating too much fluctuation in the number of Staff Members it employs without experiencing some effect on its organizational climate. Apparently this variable has some effect on the group's perception of the principal's behavior—the Principal as Leader dimension—and its influence on school climate is similar to that just described for Enrolment. In this case, reference to Table VII and the earlier discussion regarding the strong statistical association between Staff Members and Principal as Leader it would appear that the Consideration items and to a lesser extent the Thrust and Esprit items have led to a critical value which is close enough to the "t" value required (in the strictest conservative statistical sense) to justify this liberal conclusion.

Enrolment and Staff Member Effects

There is one noteworthy contrast between the "closed" climate tendency which would appear to result from large Enrolment and the "closed" climate tendency which evidently stems from too many Staff Members. The findings reported in Table VII indicate that, in terms of the Esprit items, teachers seem to be much more tolerant of "too-many-pupils" than they are of "too-many-colleagues". In the former situation the Esprit subtest scores attain no degree of statistical significance whatsoever whereas in the latter circumstances, a 0.20 level has been obtained. However, having previously concluded that five dimensions—rather than the original eight—are probably a better measure of organizational climate for the Vancouver sample, the relationship itself is far too tenuous to justify even the most remote attempt to infer, "ceteris paribus", that among schools with equal
Enrolment, those with fewer Staff Members and larger classes are more likely to have a more "open" climate than those with many Staff Members and smaller classes. Nevertheless, the contrast, no matter how tenuous at this point, could be strong enough to conclude that additional investigation would be justified.

Irrespective of which variable may exert the stronger influence, there is little doubt that the negative direction of the relationship does suggest that a large teaching staff will have a different perception of the principal's behavior than will a small teaching staff. Under these circumstances, though, he is perceived as less considerate and his own personal example—Thrust—is probably not quite as motivationally effective as it would be with a smaller staff. The net result of low scores on Consideration and Thrust items is a low Principal as Leader dimension with unfulfilled social needs and a tendency toward a "closed", "unhealthy" climate.

Furthermore, the negative relationship between both Enrolment and Staff Members with Principal as Leader found in this study appear to be consistent with those results reported in the literature. Large schools—especially where "large" is defined by the number of Staff Members—may in fact be "closed" or "unhealthy" by virtue of their size.

What is causing the negative relationship? If, as Indik suggests, organizational and psychological mediating variables are involved, then organizational climate as a concept may prove to be considerably more complex—especially in large organizations—than its present mapping and measurement would seem to indicate. Whether or not this is the case, it would seem safe to suggest that future research utilizing Getzels and Thelands model would be well advised to couple it with a prototype of
Indik's paradigm as illustrated in Figure 7 below:

![Figure 7. Prototype of Paradigm Illustrated in Figure 2 of page 22.](image)


This would permit consideration of coordination, control and communication as organizational mediating processes which may ultimately reduce an individual's attraction toward the organization and result in reduced participation. Moreover, it should be feasible to determine if large school size in terms of both Enrollment and Staff Members is significantly related to member participation, and, if so, does the reduction occur primarily in those schools which exhibit a "closed" climate? Such research might shed some light on potential causes of the negative relationship between school size and the Principal's perceived behavior in terms of Thrust and Consideration, i.e., Principal as Leader in the Vancouver sample data.

89 Indik has, in fact, tested the hypothesis that organizational size influences member participation indirectly through certain organizational processes in ninety-six comparable organizations. He found a significant negative relationship. See Bernard P. Indik "Organizational Size and Member Participation: Some Empirical Tests of Alternative Explanations", *Human Relations*, XVII, pp. 339-350.
The theory of "undermanning" which has been proposed by Barker also might be somewhat tenuously tied, or related to Indik's paradigm. Basically, Barker has postulated that the intensity of manning available per behavior setting, i.e., an ecobehavioral unit which may be characterized by regularly occurring behavior patterns at a specifiable time and place within the physical environment, influences the setting occupant's overt behavior and subjective experiences. A succinct summary of the theory has been provided by Wicker as follows:

Occupants of undermanned settings, relative to occupants of overmanned settings were postulated to work harder and spend more time in setting relevant activities; to engage in a wider variety of tasks; to occupy positions of greater responsibility; to more actively recruit others to help maintain the activity, even if the others are only marginally qualified; to achieve a lower quality performance; to have more feelings of responsibility, involvement, success, failure and insecurity; and to view themselves and other setting occupants more in terms of task related characteristics than in terms of purely social characteristics.

Although the theory has been tested almost exclusively with respect to organizational clientele, e.g., students and church members rather than administrative and staff members, it is feasible that it could be applied specifically in conjunction with the principal-teacher group as well.


Indeed, bearing Indik's paradigm and the findings of this investigation in mind, it would seem to be a particularly fruitful area for further research. For example, it is feasible that simply permitting "undermanning" to occur by deliberately avoiding an increase in the coordinative and supervisory component with increased Enrolment will almost automatically result in an increase in behavior settings. If so, this could, in turn, lead to increased membership participation with much the same desired effect which might be anticipated from a reduction of Staff Members and Enrolment.

Climate's Influence on Leadership. Normatively speaking, a central theme outlining the value of the principal's leadership which "ought" to stem from a review of the OCDQ related literature does not materialize. Getzels and Thelan's model does not seem to address the question regarding the direction of influence between the nomothetic and idiographic dimensions, that is, the directional influence of the interaction between the principal as leader and the teachers as group. It does depict the need to attempt to strive toward maintenance of a "zero-state-of-tension" in order to function effectively. Ironically, most of the reported research findings seem to indicate that the end result of this process is a teacher group and environmental influence upon the principal as leader which is considerably stronger than vice versa.

The influence may be analysed in terms of the theoretic background of the school as a social system as well as what Halpin has described as the "dilema of definition" in that the term "leadership" and the concept it represents, has incorporated within it a descriptive and an evaluative component: "... one refers to a role and the behavior of a person in this role, and the other is an evaluation of the individual's performance in the
role." The school, analysed as a social system has an organizational climate which has been defined as the interaction between organizational members who encounter one another in performing their individual roles as these roles are directed toward fulfillment or attainment of the school goals.

This definition of organizational climate, though, does not describe the behavior of the principal. What is the principal's task? What governs his role and directs his behavior within it? Guba operationalizes the task "... as that of mediating between two sets of behavior-eliciting forces, that is, the nomothetic and the idiographic" in a manner which is likely to "... produce behavior which is at once organizationally useful as well as individually satisfying." Wiggins clarifies "individually satisfying" behavior as "that which results as the principal .... attempts to cope with an environment made up of expectations for his behavior (roles) in ways consistent with his own individual patterns of needs (personality). Furthermore, "In the process of actualizing his personality through the expectations of his role, the principal exchanges his behavior for rewards. ...." But, owing to the reciprocal nature of the interactive variables comprising organizational climate, "... as the principal contributes his

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92 Halpin, Theory and Research in Administration. p. 82.
94 Ibid.
96 Ibid.
behavior to the organization for rewards, he is at the same time influenced by it."

Between the influence of his own need for internal approval of the school staff and his motivation to seek approval from the external environment—the larger school district and the internal environment or school clientele—it must be a rare principal who does not occasionally feel that he has been caught between the proverbial "rock and a hard place". On the one hand he frequently must mediate between the two socializing forces, while on the other hand, his own behavior is being influenced quite intensely by both internal and external forces in the social system. Eventually, it has been suggested, the complex socialization process will result in a gradual domination of the principal's personality by the school's expectations. More succinctly stated: "The principal can expect to find that his behavior is largely subject to the control of the school climate."

The relationship expressed as a function of time may be illustrated as in Figure 8, page 83, which may assist in accounting, at least in part, for the apparent inability of the teachers in the Vancouver sample to separate their own Esprit from their principal's leadership behavior. It is feasible that the Vancouver principal's length of incumbancy was such that their personalities may have been dominated by their school's expectations in general and the teacher's expectations in particular.

Conversely, would the spread of Esprit items across all four of Kenny and Rentz's factors indicate that most of the principals were "new" and

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97 Ibid.
99 Ibid.
Newly Assigned Principal  Principal with longer incumbancy

Principal Personality

School Expectations

Time

Figure 8#: The Relationship Between School Expectation and Principal Personality in Observed Behavior.


had not yet succumbed to group norm pressure? If this was the case, the principals were perceived as "authority figures" rather than accepted as members of their respective groups. Research to determine what relationship, if any, exists between the principal's incumbancy and the Esprit sub-test might shed some light on the matter.

In any event it would ultimately seem that the school's expectations, as expressed by the teacher group, coupled with the expectations of the school district and the school clientele, probably influence the principal as leader as much, or perhaps even more, than he can influence the school by his own style of leadership behavior.

Leadership's Influence on Climate. Wiggins reports a study of the behavioral characteristics of principals (as related to school climate)

100 The desegregation of United States Schools was just getting well underway at the time Kenny and Rentz commenced their study. The upheaval no doubt did disrupt the social interaction between principal and teacher and several recent staff and leadership changes probably had occurred.
conducted in thirty-five southern California schools using the OCDQ to measure type of climate, and the Fundamental Interpersonal Relationship Orientation-Behavior (FIRO-B), Orientation Inventory and Survey of Interpersonal Values (SIV) to assess leader behavior characteristics. While the findings did not support the general hypothesis that a significant relationship exists between the principal's behavioral characteristics and the climate of his school, they did lend overwhelming support to the ancillary hypothesis that replacing the principal would (1) not affect the stability of the school's existing organizational climate and (2) the principal's behavior becomes more significantly related to the school climate as the length of his incumbancy increased.

During the course of speculating why the findings did not support the construct that the "principal contributes to and is influenced by the school within which he is engaged" as suggested by Getzels and Theland's model, Wiggins assumes that the school must be a subsystem to which the principal contributes by way of his behavioral characteristics, whereas the inputs having some influence on these characteristics and contributing to his rewards stem from the school district as the system.

Wiggins wonders, then, to what extent the school as a subsystem might be influenced by the organizational climate of the system—the district—itsel? Part of the answer may have been provided by Hughes in

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102 Ibid., pp. 104-105.

103 Ibid., p. 105.
his study into the process of innovation as it relates to certain characteristics in the central offices of twenty "most innovative" and twenty "least innovative" school districts. He used a slightly modified version of the OCDQ in a sample of the central offices of those Ohio districts which the Bureau of Educational Research of Ohio State University had ranked by the extent of innovation in terms of the number of differing innovative practices ongoing at the time (1966), to test four hypotheses relating the highly innovative school districts with a more "open" climate than that of the non-innovative districts. Generally speaking the results reported suggest that the school districts' central office organizational climate is, in fact, pervasive, systemwide.

Speculating that an organization will attract and retain mainly those individuals who are likely to evidence characteristics congruent with the existing climate, Hughes asks:

How long .... would a self-respecting elementary principal interested in the new and untried remain in a district in which the central office inhibited his or her faculty's attempts to adapt new ideas to the local scene? For that matter, how much change would such an individual have of obtaining a building leadership position in a district committed to the "tried and true"?

He answers, "These people would move on or would not come in the first place."


105 Ibid., pp. 18-19.

106 Ibid., p. 25.

107 Ibid. This conclusion is, of course, consistent with Indik's paradigm with regard to school size.
Other direct support for Wiggins' suggestion that the principal's interaction with the district as a system affects his input into the school as a subsystem has been provided by a sub-study connected with Andrews' OCDQ validity study. 108 Schmidt used a sample of sixty schools stratified by climate from Andrews' original sample of 165 Alberta schools to relate the eight OCDQ subtest scores to the twelve subtest scores of the Leadership Behavior Description Questionnaire and found significant relationships as expected with the exception of the negative relation between Superior Orientation and Hindrance. 109 One conclusion is subsequently drawn "... that when the Principal has influence with his superiors, he is able to minimize the impact of administrative routine originating in the school office. 110

Some indirect support for Hughes' suggestion that individuals are attracted to climates which evidence characteristics congruent with their own may be found in the organizational behavior literature. Davis, for example, conducted a study in five Washington, D.C., government organizations which ranged in size from 180 to 6000 members in an effort to determine why some executives will normally follow rules while others seem to normally deviate from following rules. 111 He found, as expected, that some organiza-

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109 Ibid., p. 327. Superior Orientation is defined on p. 3 of the Manual for the Leader Behavior Description Questionnaire—Form XII, Columbus, Ohio; Ohio State University, Bureau of Business Research, 1963, by R.M. Stogdill, as "The Leader maintains cordial relations with superior; has influence with them; is striving for higher status".
110 Ibid.
111 J.W. Davis, Jr., "Rules Hierarchy and Organizational Climate", Personnel Administration, XXXI, No. 10 (May-June, 1968), pp. 50-55.
tions are rule-bound and hierarchical whereas, at the opposite extreme others are freewheeling; he ultimately concludes that "an individual will join an organization he finds congenial ...." or if he does not fit in "... he may leave at the first opportunity." The implication is obvious: if organizational climate is self-perpetuating, then this, in turn, suggests that a leader may face considerable difficulty if he tries to change his organization from a rule-oriented climate to a goal-oriented climate.

How does the organization attract members with characteristics congruent with its climate? Schneider proposes that what occurs within an organization is probably transmitted to individuals outside the organization simply by the way existing organization members describe it.

To test his hypothesis that a positive relationship will exist between individual perceptions of future work climate and the reality of the situation, a six-dimensional Agency Climate Questionnaire previously developed by factor analytic technique for other similar research was used to collect data from two different life insurance companies comprising two hundred twenty-eight agencies between them. The results indicate that

112 Ibid., p. 55. Again, this too is consistent with Indik's theory regarding organization size.

113 Ibid.


individuals do tend to join organizations in which they might be expected to fit and their expectations of the climate are significantly related to the existing agent perceptions at the 0.10 level.  

Do teachers recognize or perceive their organizational climate as accurately as insurance agents? The results of a study conducted by Heller in ten Pennsylvania elementary schools using the OCDQ responses from two hundred twenty-nine staff members to determine the relationship of both formal and informal organizations and teacher perceptions of existing and desired school climates would suggest that they do: he found that "... as a general rule, few radical variations existed between the perceptions of the total membership of the formal organizations with the existing organizational climate and those of the members of the informal groups in any given school." Whether or not the perception of the climate is communicated outside the school is unknown, but the matter could, of course, be subjected to empirical study.

Two organizational consultants, Feitler and Blumberg, report a relatively recent effort directed toward changing the organizational climate, or character, of a school from one best described as bordering on chaos to one more in accord with one of Likert's models. Even though their study did not utilize the OCDQ, the results are reported here partially because of their conclusion, but more important, because of their assumption

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116 Ibid., p. 214.
that the newly appointed principal could not change the school character with or without district support. In effect, then, the effort to change the school's chaotic character was directed toward the teachers, i.e., as a group, while leadership was, in an experimental sense, to be held constant. To determine whether or not the change effort had been at all successful, the Likert Profile of a School (Form for Teachers) was administered to teachers who had served from the time of the new principal's arrival until the conclusion of the change effort. The results did indicate significant differences between the perceived descriptions of the school "before" and "after" treatment and four of the five characteristic processes included in the study.

However, as would be expected from the conclusion reached by both Davis and Hughes, the change was not achieved painlessly, nor was it without conflict. Fietler and Blumberg report: "In the process of change, teachers left and were asked to leave." Thus, the findings indicate that both the replacements and the remainder presumably exhibited behavior characteristics more in keeping, or congruent with the newly evolving school climate. Perhaps even more important—although the principal's behavior did not alter

119 Ibid., p. 209.
120 Ibid., p. 212. The Form for Teachers was adapted by Jane G. Likert and Rensis Likert from a similar form found in The Human Organizations: Its Management and Value, (New York, McGraw Hill Book Co., 1961), by Rensis Likert. The fifth Characteristic was not found significantly related to the "before" and "after" profiles was, of course, leadership characteristics, but this was expected since the principal's behavior was not changed.
121 Ibid., p. 214.
appreciably during the seventeen month transitional period—the remainder of the school's teachers perceived a behavior change: the principal was now seen not as a threat, but rather as supportive and friendly.\textsuperscript{122} This being the case, Fietler and Blumberg conclude that "...the changes measured occurred in the organization itself and in the interpersonal interactive patterns of individuals in the school."\textsuperscript{123} At the risk of expressing the obvious, this is simply a statement of the definition of organizational climate; therefore, in effect, it would appear that the school climate was indeed changed, but the principal as leader had little to do with it.

**Leadership's Function.** Viewing the findings just outlined within the theoretic framework of the school as a social system, it does appear that the principal is an interdependent force in a school, and, as such, generalizations concerning his behavioral influence should be analysed in terms of other forces within the school, possibly the larger district, and perhaps even the community in which both the school and its district are imbedded. This does not necessarily suggest that because the influence of the group is evidently stronger than that exercised by the leader, the principal's leadership is "ineffective" or "inadequate". Indeed, quite to the contrary, it is intended to suggest that his leadership may be the key to achieving or maintaining the delicate balance—the state of zero tension—between the nomothetic and idiographic dimensions which is vital to satisfaction and subsequently the achievement of organizational goals.

Gallaher indirectly touches this point of view when he cites Spindler to support his contention that the principal is not the one to assign to

\begin{itemize}
\item \textsuperscript{122} *Ibid.*, p. 213.
\item \textsuperscript{123} *Ibid.*
\end{itemize}
advocate functions such as planned change or innovation:

His job is in large part that of maintaining a working equilibrium of at best antagonistically cooperative forces. This is one of the reasons why school administrators are rarely outspoken protagonists of a consistent and vigorously profiled point of view. Given the nature of our culture and social system, and the close connection between the public and the schools he cannot alienate significant segments of that public and stay in business.124

Because the principal functions in a social system wherein he is apparently influenced as much or possibly even more by that system than he can influence the school by his own administrative efforts, Wiggins has written:

This notion necessitates a re-examination of much of the tradition of so-called administrative leadership—which presumes that the power, authority and influence of school principals provide the major source of thrust and significance to the educational enterprise.125

But what direction, or route, should that re-examination take? How can the school principal provide leadership which will be significant to the educational enterprise? Or more specifically, at the organizational climate level, how can the interaction between principal and teacher group best tend to be balanced toward the zero state of tension necessary to attain the school goals?

It would almost seem as though Halpin anticipated questions such as these in his outline of some possible advantages which may arise from


thinking in terms of leader behavior expressed as Initiating Structure and Consideration as opposed to situationally oriented leadership expressed basically in terms of effectiveness.

With respect to the latter he argues:

To say that leader behavior is determined exclusively by situational factors is to deny to the leader freedom of choice and determination. This violates common sense and experience. Even now, within research circles, a gradual but growing counter-reaction is taking shape—a drawing away from the extreme situational position.126

With respect to the former, Halpin believes that a shift away from the emphasis of leadership effectiveness, to an analysis of the behavior of the leader may permit the attainment of two major methodological advantages:

In the first place, we can deal directly with observable phenomena and need make no "a priori" assumptions about the identity or structure of whatever capacities (leadership characteristics) may or may not undergird these phenomena. Secondly, this formulation keeps at the forefront of our thinking the importance of differentiating between the description of how leaders behave and the evaluation of the effectiveness of their behavior in respect to specified performance criteria.127

The "situational-position" research to which Halpin refers revolves, generally speaking, around the contingency theory approach to effective leadership. It has, ... "as its major theoretical presupposition that the appropriate type of leadership depends on the environmental situation:

126  Halpin, Theory and Research in Administration, p. 84.
127  Ibid., p. 86.
involved," and a model which assumes "... that the leaders contribution to group performance depends on both the style of leadership (task oriented versus person oriented) and the favorableness of the situation for the leader." Although there does not yet appear to be a "growing counterreaction" to the situational oriented research, if Korman's relatively recent examination of possible reasons underlying several replication failures are any indication, the contingency approach is, indeed, having its fair share of problems.

Some support for Halpin's argument that the valuation of the effectiveness of leader behavior with respect to some specific performance criteria does not necessarily provide a proper direction to re-examine leadership in the school may be found in the OCDQ literature. Watkins has conducted a study in the context of the public school environment, which, in a sense, attempted to replicate earlier contingency theory developmental work. He reports that he searched the school oriented organizational behavior literature to find an acceptable criteria of effectiveness suitable for use

128 A.K. Korman, "On the Development of Contingency Theories of Leadership: Some Methodological Considerations and a Possible Alternative", Journal of Applied Psychology, LVIII, No. 3, p. 384. Specifically Korman defines the contingency theory of leadership as any theory which follows the functional form: "x" = a dimension of leader behavior, "y" = a criterion by which the leader's effectiveness may be determined, and "z" = some situational variable, that the correlation between "x" and "y" is predicted to assume a different functional form at different levels of "z".


in an attempt to replicate Fiedler's concept of psychological distance in the school organization. On the basis of Halpin and Croft's suggestion that "authenticity" in organizational behavior was expressed by the "open" climate and therefore the OCDQ might provide a better criterion for measuring school effectiveness than some of the criteria presently used, Watkins selected the two concepts of Thrust, as a measure of the principal's authenticity, and Esprit as a measure of group authenticity, to hypothesize that (1) Schools which tend to have more "open" climate characteristics will have principals who tend to maintain high psychological distance; a positive relationship exists between (2) Esprit, (3) Thrust, and psychological distance. The hypotheses were tested in forty-eight southern United States schools using principals and 1,188 staff members: the latter responded only to the OCDQ while the former completed both the OCDQ and the Assumed Similarity of Opposite Scales (ASO). The hypotheses were not supported, to the contrary, a negative relationship was found for each case.

Watkins failure to replicate Fiedler's research conclusions in the public school environment led him to review several studies which cautiously, but probably quite correctly indicate that the teacher is a professional in a hierarchical or bureaucratic organization. He cites, for support, research by Gross and Herriot which suggests a need for increased emphasis on a

132 Ibid., p. 12.
134 Ibid., p. 13. The ASO was the forerunner of the Least Preferred Co-Worker (LPC) which is used by Fiedler to operationalize the Leadership Style Dimension in his contingency theory model.
135 Ibid., p. 12.
professional peer relationship between principal and staff,\textsuperscript{136} notes that Getzels' model would have professionally trained people such as teachers more idiosyncratically inclined than industrial workers,\textsuperscript{137} and quotes Campbell's view that the "... educational administrator .... is working with professionals who feel, often rightly, that they know more about teaching and learning than he does."\textsuperscript{138} He ultimately concludes that his findings "... have indicated that the principal-staff relationships .... are possibly different from the hierarchical relationships normally found in task oriented groups such as the ones studied earlier by Fiedler.\textsuperscript{139}

If Halpin's argument with respect to the advantages of thinking in terms of leader behavior rather than situationally oriented leadership is valid—and the study just outlined would seem to suggest that this may well be the case for non-profit oriented organizations such as schools—then it would appear as though the thorough re-examination of the power-authority and influence of the school principal suggested by Wiggins should be directed toward the observation and description of his behavior in terms of Consideration and Initiating structure rather than attempt an evaluation of it in terms of some specific performance criteria. Effectiveness can be evaluated

\begin{itemize}
\item[\textsuperscript{139}] Ibid.
\end{itemize}
in Barnard's terms of facilitating cooperative group action that is both "effective" and "efficient", i.e., in as much as the successful leader contributes to both major group objectives of "goal achievement" and "group maintenance."140

Furthermore, although the scope of the principal's behavioral influence evidently does extend to the school district and may extend as far as the community, research is required to determine the difference, if any, between "administrative", "advocative" and "leadership" behavior. Can a principal maintain a working equilibrium between antagonistically cooperative forces and yet provide leadership into the "untried and true" at the same time? Is there a difference between administrative behavior designed to facilitate and ensure smooth school operation—even avoiding confrontation at any cost—in order to assist group maintenance of the existing organizational climate, and leadership behavior deliberately designed to upset zero tension in order to move the school toward an advocated planned change or innovation? Answers to questions such as these might tend to broaden the scope of leadership's function to some considerable degree.

**Human Density and Principal as Leader**

In addition to the statistically significant relationship between Enrolment and Principal as Leader, and the more liberal interpretation which suggests a potential significant relationship between Staff Members and Principal as Leader, there is a hint in the findings that the association between Density and Principal as Leader might have some slight influence...
on a school's organizational climate as well. Moreover, the positive relationship would indicate that the more expansive the Density, i.e., less "crowded-conditions", the more likely the school climate will tend to be "open". The low 0.20 level of significance obviously will not justify a conclusion to that effect, but nonetheless it may infer that further exploratory research would prove to be worthwhile.

Failure to find a strong statistically significant relationship between Human Density and the organizational climate dimensions in this investigation may stem from "... the semantic confusion generated by the interchangeability of terms such as "crowding", "overpopulation", and "density". Schmitt defines "density" as "population per net area" and differentiates it from "overcrowding" which he defines as "persons per room": he concludes that the former is the more significant of the two variables.

The semantic confusion may be a result of psychological phenomenon that "crowding" would seem to be "... only indirectly related to mere numbers or densities of people" in that certain individuals conceivably react differently to their immediate social environment. For example, a person may, on the one hand, "feel crowded" among a few people, while, on the other hand, not notice any particular "crowded feeling" among many. Some evidence of this type of conceptual crowding—the hallucinatory presence of


others—has been documented in "lone individual situations", where the experimental subject, though completely isolated, reports a "crowded feeling" as a result of either sensory deprivation or sensory overload.144

Findings such as these led Desor to seek support for his theory "... that subject's judgments of crowding are controlled by overall level of social stimulation".145 Subsequently, seventy individual subjects were asked to place as many human figures as possible in scaled down rooms without creating crowded conditions.146 Specifically, he presented his subjects with partitioned and unpartitioned spaces, two door and six door rooms, or rectangular and square rooms in order to test the hypothesis that the first of each pair of rooms presented would indicate less crowding simply by having more figures placed in them than would be the case in their counterparts.147 The findings are in accord with the hypothesis and thus lend some support to the theory.

This suggests that one way of avoiding the semantic confusion surrounding terms such as "crowding", "overpopulation" and "density", would be to conduct future research related to size and climate utilizing Desor's definition of "crowding". Considering the findings of the present study, such research might best be designed to determine whether or not the relatively weak statistical association between Density, Disengagement, Esprit, Thrust and Consideration (shown in Table VII) for the eight subtests, or Principal as Leader in the five dimensional structure, may actually obtain a consider-

144 Lawrence, "Science and Sentiment", p. 716.
146 Ibid.
147 Ibid.
ably stronger degree of statistical significance without the suspected contaminating semantic confusion.

**Human Density and Disengagement**

Some support for the statistically weak association between Density and Disengagement found in this study exists in the literature. Seidman has investigated the relationship between physical openness and climate openness using the OCDQ responses of 1763 teachers representing 98 schools across the United States and found 68 "closed" climates which appear to be attributed primarily to teacher Disengagement. Open space schools have been identified with close cooperative team teaching, but, according to Siedman, if teachers do not work well together as a team, squabbling and bickering may lead to Disengagement. To what extent such Disengagement may be attributed to a sense of "crowding", i.e., too much social stimulation, is a question which would lend itself to controlled testing.

In fact, further study of the relationship between organizational climate and "crowding" in schools—especially open space schools—should prove fruitful. More particularly, the lack of partitions in schools which may be described as physically open, would seem to present an open invitation to "crowding" in itself. If Desor's definition, his theory, and his findings are any indication, there should be a more intense level of social stimulation in a physically open school. As a result, this type of school would be expected to exhibit more of a sense of "crowding" than would likely be found

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149 Ibid.
in a comparable school with traditional design. Whether this is the case or not is subject to empirical testing. In any case, what effect a sense of "crowding" would have, if any, on Disengagement and Esprit, Thrust and Consideration, i.e., Principal as Leader is not known, but it does not seem likely that the conditions would be conducive to an "open" climate in either an open-space or traditional type of school.

Area, Teacher "qua" Teacher Group Perception and Hindrance (V)

The same low 0.20 level of significance obtained for the association between Area and two of the five dimensions--Teacher "qua" Teacher Group Perception and Hindrance (V) would justify a cautious inference that additional investigation may be warranted. The positive direction of the relationship suggests that in terms of School Area, larger schools are more likely to exhibit "closed climates" than are smaller schools.

Non-Classroom Teacher Satisfaction and Working Conditions

Finally, the lack of statistical significance for the association between any of the size variables and Non-Classroom Teacher Satisfaction or Working Conditions will infer that these dimensions of organizational climate are not likely to be effected to any appreciable extent by manipulation of School Area, Staff Members, Enrolment or Human Density.
Prior to discussing any implications which may be drawn from the findings, it might be prudent to briefly review the problem addressed, how the problem emerged, its importance and finally the purpose of the study in view of the problem.

The Problem and How It Emerged

The problem, when narrowed down to its simplest terms, stems from the fact that very little is known about how to change organizational climate. The seriousness of the problem began to emerge when application after application of the OCDQ revealed that the preponderance of school climates seemed to be "closed", and as such, are best described as "unhealthy" or "crippled". General efforts to "cure" or change the "closed" climate conditions to a more "healthy", "open" state have been premature and hence generally unsuccessful.

Importance of the Problem

The lack of knowledge regarding how to change organizational climate might not matter if it were not for the notion that "sick" or "crippled" climates are undesirable. The importance of the problem is further underscored if education's continuing need to implement planned change and innovation is considered; the probability of successfully implementing a change or innovative method in a school with a "closed", "unhealthy" climate is not high. Moreover, coupling this aspect of the problem with the influence which the "built-environment" probably has on the teaching-learning process, it is evident that the ability to change a school's climate matters a great deal. It is indeed important--perhaps even crucial--to learn
considerably more than is presently known about how to change organizational climate.

Purpose of the Study In View of the Problem

It is feasible that, in addition to effecting the teaching-learning process, the school's "built-environment" probably does exercise some influence on social interactions, i.e., organizational climate, as well. It has been suggested on one hand, that the "built-environment" can be altered or manipulated in such a way as to provide a positive impact on all school occupants. On the other hand, the literature strongly supports Halpin's suggestion that the preponderance of "closed" climates is probably a result of sheer school size as described by the number of students and staff in relation to available space. Between them, the two suggestions seem to provide a rationale for studying the relationship between school size and school climate in order to provide some knowledge as to what impact the manipulation of certain size variables might reasonably be expected to have on climate conditions. Accordingly, the purpose of this study has been to determine whether or not four selected independent variables representing school size are related to the dependent variables represented by the OCDQ subtests which purportedly measure the dimensions of school organizational climate.

Implications

Speaking specifically of the findings obtained from the Vancouver sample data, Halpin's suspicion concerning the association between "closed", "unhealthy" school climates and sheer school size in terms of too many students and staff in relation to the space available to them does receive some support from this study. From a more general point of view, the findings of this particular investigation, when coupled with the findings
of other studies reviewed in it, provide a reasonably secure empirical base from which at least three implications concerning the school size-climate relationship may be drawn.

From a pragmatic point of view several aspects of these implications are probably easier to put into practice than are others. In terms of dollars and cents the cost of some of the implications' aspects may actually preclude serious consideration of them. In any case—cost notwithstanding—school boards establish school district policy and if these boards wish to do whatever they can to encourage "open" organizational climates in their districts while functioning within the framework of their particular constraints, there are several potential policies which could be based on the implications stemming from this study.

Implications: Smaller Schools

The first of these implications concerns school size in terms of Enrolment and Staff Members; the findings clearly favour small schools. An "open" climate is characterized by a strong Principal as Leader scores, whereas the principal's leadership—to the degree it is measured by Consideration and Thrust—diminishes as either enrolment or teacher group size increases.

Practicality. Even though this particular implication does obtain relatively strong statistical support from the Vancouver sample data, from a pragmatic standpoint any policy or action designed to alter either size variable in such a way as to accomodate or facilitate conditions which may be more conducive to the emergence of the type of Principal as Leader behavior associated with an "open", "healthy" climate may prove to be a formidable matter. In the first instance the reduction in Enrolment
suggested by the findings can best be accomplished through the provision of additional schools. This particular implication, then, is expensive to say the least, but other alternatives do not appear to be readily available. (The apparent decline in births is, of course, helpful but there is no guarantee that the trend will continue). Any effort, for example, to channel certain pupils on the fringes of a large school's boundary into other nearby schools—assuming that the distance is not too great and the alternative schools are not overcrowded themselves—would likely only spread the "closed" climate problem—not ameliorate it. In the second instance, the teachers' perception of the principal's diminishing leadership behavior as group size increases probably does match reality—after all there must be some limit as to how much one individual can do. Any reduction in teaching staff designed to alleviate this situation may be accomplished painlessly enough simply by not replacing teachers who resign or retire. The practical difficulty likely to be encountered, then, does not relate so much to the reduction in teaching staff in order to reduce school size as it does to the fact that strict maintenance of the existing pupil-teacher ratio while attempting to reduce a school's size would be extremely difficult if not impossible to accomplish. ("Emotions" invariably seem to surface whenever any alteration of the pupil-teacher ratio is considered). However, there is an "unemotional" hint in the findings that, if anything, the pupil-teacher ratio can be increased without harm. Low Esprit is more likely to be associated with "too-many-colleagues" than will be the case with "too-many-pupils".)

Potential Policy. It has already been noted that the expense of providing additional schools is likely to preclude serious consideration of reducing existing school enrolment in a district. Planning, however, is
another matter: "bigger" does not seem to be "better" as far as school climate is concerned. Owing to the limited funds available for expansion, it is highly unlikely that any board would really want to be responsible for the planning and construction of a "mausoleum" rather than a school where the principal is not inundated by too many pupils. He is paid to provide leadership so it would seem reasonable to attempt to provide conditions where he may be perceived as doing so by those he is expected to lead. School boards would probably do well to formulate a "small enrolment" policy with regard to the planning, design and construction of new schools in their district. How a Board of Trustees chooses to define "small enrolment" would undoubtedly vary from district to district, but in view of the evident preponderance of existing "closed" climates it is reasonably safe to conclude that in most cases "small" could safely be defined as a figure somewhat less than the district's current norm. "Smaller" schools in terms of Enrolment should result in a "smaller" teaching staff. The result of a policy favouring the planning, design, and construction of smaller schools in terms of Enrolment and Staff Members will not alleviate any existing climate problems, but it may prove useful in avoiding the development of future difficulties which are associated with "closed" climate conditions.

The relative ease of reducing school size as measured in terms of Staff Members has already been discussed: the impracticality of maintaining a strict adherence to a "pre-reduction" pupil-teacher ratio is reasonably clear and easily understood. What may not be so clear, though, is the importance of the principal's leadership when considered in view of its relationship with the teachers' Esprit. Can a Board of School Trustees afford, in terms of dollars and cents, to ignore the importance of this
leadership, and its evident relationship with the size of the teaching
group? Considering that the Staff Members salaries probably constitute
the largest single expenditure in any school district, it is not easy to
understand why a school board would permit or perhaps even maintain certain
policies which encourage a group to become so large that the principal's
leadership efforts—if they do not actually become more ineffectual—are
perceived to be less effectual. Is a teacher whose Esprit is low able to
teach as effectually as would be the case otherwise? Perhaps a school
board would be well advised to consider these issues in the light of such
information as may be available and determine whether or not their District
can afford to maintain the type of conditions, i.e., "large" schools as
measured by Staff Members, normally associated with a "closed","unhealthy"
climate. If the answer is negative then a policy which reduces school size
by reducing the teaching staff even though the pupil-teacher ratio must
increase slightly should be seriously considered.

Implication: Influence of the Built-Environment

A second implication stemming from the findings of this study is
concerned with the potential impact which the "built"-environment"may have
upon school inhabitants. The lack of any strong statistical association
between School Area and Human Density with any of the OCDQ subtests would
seem to indicate that the influence of the "built-environment", at least
in terms of Area and Density, may not exercise quite as much influence as
was initially thought could be the case. This does not suggest however,
that the "built-environment", while fostering and shaping human activities
does not affect social interaction as well as influence the teaching and
learning processes. As an exploratory study it is conceivable that the level
of significance could have been set as low as 0.10 (or possibly even 0.20 in some instances) without seriously affecting the viability of the results. Therefore, no matter how tenuous the association may be, it is important to note the fact indicated in Table VII that some relationship may exist between Area and Density and organizational climate. This relationship not only emphasizes the notion that the "built-environment" might influence its inhabitants to some extent but it also does tend to lend some support to Green and Spivak's argument presented on pages 13 and 14 that the "built-environment" probably can be managed in such a way as to influence the inhabitants' interactions to one degree or another.

Furthermore, there is another "side-of-the-coin" to consider with regard to the failure to find a strong statistically significant association between Area and Density and the dimensions of organizational climate. In terms of the study's purpose, the fact that there evidently is little or no relation between these two aspects of the "built-environment" and organizational climate measured by Non-Classroom Teacher Satisfaction and Working Conditions, is a valid contribution to the knowledge sought with respect to how to change organizational climate. In short, manipulation of these particular independent variables is not likely to influence their association or have much impact on the dependent variables—Non-Classroom Teacher Satisfaction and Working Conditions—one way or another.

The lack of a strong relationship notwithstanding, the fact that the association between Area and Density, as elements of the "built-environment", is not nearly as strong as the association between Principal as Leader and Enrolment, and Principal as Leader and Staff Members does suggest that a school's inhabitants are probably influenced much more
by their school size measured in terms of Staff Members and Enrolment, i.e.,
the human element, than they are by their "built-environment" expressed in
terms of Area and Density. In short, while Farsen's thesis is probably
basically valid, it is likely that sound leadership—sound in terms of Thrust
and Consideration—will probably have a much more profound influence upon
the dimensions of organizational climate and hence on "liberating" people
than will their physical surroundings.

Practicality. From a practical standpoint, the findings tend to
indicate that when planning new schools or considering substantial alter­
ations to existing schools, a Board of School Trustees might do well to
investigate the relationship between school size as defined by School Area
and Human Density, and certain dimensions of organizational climate with a
view toward avoiding conditions associated with a "closed" climate.
Specifically, in the case of School Area answers should be sought as to why
both the teachers' Esprit and the principal's Production Emphasis seem to
decrease while Teacher "qua" Teacher Group Perception and Hindrance increase
as School Area is increased. In the Human Density case, additional inform­
ation should be sought as to why the behaviour purportedly measured by the
Principal as Leader subtest will apparently increase as Human Density, (i.e.,
square footage available to the school's inhabitants increases). The
answers provided by such an investigation conceivably could initially
effect school planning and school alterations in such a way that school
climate itself would ultimately be effected.

Potential Policy. In spite of the fact that the statistical
relationships between physical school size and organizational climate are
not overwhelming those which have been found to exist consistently in the
direction initially predicted by Halpin. That is, as Area increases, or
Density becomes more compact, the dimensions which are expected to measure organizational climate tend toward those conditions associated with "closed" climate conditions. It might not be unreasonable, under these circumstances for a Board of School Trustees to maintain a policy which tends to limit the School Area to some extent while still providing for a reasonably expansive degree of Density for its occupants.

Implication: Efficacy of the OCDQ

Several suggestions for further research have been made throughout this report. For example, in terms of the purpose and problem addressed by this study, it would be useful to have some indication with respect to: a) the degree of correlation between both Enrolment and Staff Members with group member participation and "closed" climate conditions, b) the relation between school climate and the degree of undermanning involved, c) whether or not the teachers' perception of a school's climate is communicated to prospective teachers outside the school, d) whether observation of leader behavior as opposed to evaluation of leadership effectiveness should be pursued in research related to non-profit organizations, e) whether or not any particular difference may be observed to exist between "administrative", "advocative" and "leadership" behavior, f) the correlation between Density and Principal as Leader utilizing Desor's definitions of "crowding" and g) whether or not "physically" open schools "vis-a-vis" more traditionally designed schools may be associated with behavior described as Disengagement or Teacher "qua" Teacher Group Perception. However, the problems encountered in this study, and several others reviewed in it, tend to cast some doubt on the efficiency of the OCDQ as a research instrument. Indeed, whether or not the OCDQ should be utilized with the research suggested by the findings of this investigation is questionable.
With the possible exception of some exploratory work conducted by Watkins there is little evidence of any effort to subject the instrument to an extensive degree of refinement.\textsuperscript{150} In this particular case those items which measure the concept of Executive Professional Leadership (EPL) identified by Gross and Herriot as:

\begin{quote}
\ldots the efforts of an executive (the principal) of a professionally staffed organization (the school) to conform to a definition of his role that stresses his obligation to improve the quality of staff performance.\textsuperscript{151}
\end{quote}

have been combined with the OCDQ items which measure Thrust and Esprit. He called the resulting thirty-seven item instrument the Principal Behavior Questionnaire and used it to obtain data from seven Alabama schools with expectations of obtaining positive correlations between Esprit, Thrust and EPL.\textsuperscript{152} In fact, the correlations, which range from 0.60 to 0.93 with a composite figure of 0.88, are so strong that Watkins concludes:

\begin{quote}
Authenticity of principal behavior as discussed by Halpin and Croft and Executive, Professional Leadership as defined and measured by Gross and Herriot are most certainly in the "same church if not in the same pew".\textsuperscript{153}
\end{quote}

Moreover, he suggests that the findings show considerable promise for research if the results of the two research endeavours are merged.\textsuperscript{154}

\textsuperscript{151} Gross and Herriott, \textit{Staff Leadership in Public Schools}, p. 22.
\textsuperscript{152} Watkins, "Gross and Herriott--Halpin and Croft", p. 27.
\textsuperscript{153} Ibid., p. 30.
\textsuperscript{154} Ibid.
Such a merger would be little more than an example of what the OCDQ originators had hoped would occur when they noted in the initial monograph that their work and the criticism of others would ultimately result in a larger, more effective OCDQ form. Indeed, the instrument itself has been somewhat injudiciously used—this particular Vancouver study being no exception—in the sense that it remains in its original form over a decade after its development. Merging the two research endeavours is at least an initial step in refining the OCDQ, but some of the dimensions, notably those pertaining to Aloofness, for example, apparently contain too few items to adequately tap the domain in question. If the OCDQ is not soon subject to considerable refinement, it is suggested that much more caution be exercised in its application than has evidently been the case to date.

Summary of the Study

The thesis basic to the study is that if any correlation does exist between school size and school climate, knowing the nature of the relationship might make a useful contribution to the knowledge as to how to change a school's organizational climate. Data was obtained from teachers in the Vancouver school system to test the association between four selected independent variables as indicators of school size and eight dependent variables—the OCDQ subtests—as indicators of school climate. Halpin and Croft's original procedures were applied to the data, but the results ultimately indicated that a five factor pattern would be as suitable as the eight dimensions initially generated. The five subtests generated were subsequently included in the study.

Significant Findings. Although there does appear to be some statistical correlation between the four size variables tested—Area, Staff
Members, Enrolment and Human Density—and one or more of the climate sub-tests other than Intimacy and Aloofness or Non-Classroom Teacher Satisfaction and Working Conditions, the statistically significant findings, conservatively speaking, indicate that the smaller school in terms of Enrolment, and liberally speaking, in terms of Staff Members will more likely exhibit the type of Principal as Leader behavior associated with "open" climate conditions than will be the case for a larger school.

Owing to the apparent permanence of change and innovation in schools, the investigation reported here may derive its prime importance, if any, not so much from the support it tends to lend to Halpin's suspicion that one aspect contributing to "closed", "unhealthy" organizational climates is sheer school size in terms of too many students and staff for the available space, but rather from the effect the number of students and staff seem to have on the school's leadership. Moreover, these findings will take on even more importance if they are coupled with the speculation that, owing to the very nature of the type of leadership which seemingly is required from the school principal, he or she may not necessarily be the one to assign the function of advocating planned change or innovation irrespective of school size or climate.

**Implications.** Three basic implications have been drawn from the findings and related empirical evidence provided by a review of the literature. First, smaller schools are imperative if the principal's leadership is not to be smothered by too many pupils and teachers. Second, manipulation of the "built-environment" size variables may not have as much impact on the dependent climate variables as would a reduction in Enrolment and Staff Members, but nevertheless there is sufficient evidence to
imply that altering School Area and Human Density might prove useful in providing conditions similar to those which are normally associated with an "open" climate. Third, even though considerably more research is required with respect to gaining much more knowledge concerning the relationship between school size and school climate, the difficulties encountered by this study and several others reported in it imply that the OCDQ itself should be subjected to further refinement before continuing to subject it to such extensive use.

**Contribution to Knowledge.** In terms of its purpose, the study's findings can be briefly summarized as follows:

1) Reduction of Enrolment may prove useful in providing conditions related to the type of leadership behavior—as described by the Principal as Leader dimension of school organizational climate—normally associated with a more "open", "healthy" climate conducive to the introduction of planned change and innovative efforts; 2) Reduction of Staff Members may influence the Principal as Leader dimension of school organizational climate in much the same manner just described for Enrolment. Further investigation of this relationship could well reveal that the reduction of Staff Members, would increase Esprit for the remainder. A smaller staff with higher Esprit will tend more toward the "open", "healthy" climate; 3) There is a hint in the findings that the association between Density and Principal as Leader and Area's association with both Teacher "qua" Teacher Group Perception and Hindrance (V) is strong enough to justify further research; 4) There is little indication that manipulation of any of the four size variables will influence either the Non-Classroom Teacher Satisfaction or the Working Conditions dimension of a school's organizational climate.


Campbell, R.F., "What Peculiarities in Educational Administration Make it a Special Case?". Administrative Theory in Education. Edited by Andrew W. Halpin. Chicago: Midwest Administration Center, University of Chicago, 1958.


Davis, J.W., Jr., "Rules Hierarchy and Organizational Climate". Personnel Administration, XXXI, No. 1, (May-June, 1968), 50-55.


Hughes, L.W., "Organizational Climate—Another Dimension to the Process of Innovation". *Educational Administration Quarterly*, IV, No.3 (Fall, 1968), 17-28.


Morris, D.V., "Organizational Climate of Alberta Schools". Canadian School Administration Bulletin, III (June 1964), 54-55.


Schneider, B., and Bartlett, C.J., "Individual Differences and Organizational Climate: Research Plan and Scale Development". Personnel Psychology, XXI (1968), 323-333.


APPENDIX A

Letter Requesting Principal's Permission for Individual School Inclusion in the Study
May 31, 1971

Dear

Re: Research Proposal On The Relationship Between Organizational Climate, Space And Human Density In Vancouver Elementary Schools

Mr. F. H. Bennett, a graduate student in Business Administration at the University of British Columbia, has requested permission to conduct a research study of Vancouver elementary schools. This study for a Master's thesis has been approved by the Planning and Evaluation Department. Schools which were randomly selected by Mr. Bennett are encouraged to cooperate with this research study.

In each school Mr. Bennett plans to distribute copies of the enclosed Organizational Climate Description Questionnaire by Halpin and Croft to 5 - 9 teachers who were randomly chosen from the Teaching Staff Directory. Although participation is voluntary, teachers are encouraged to cooperate with the survey as the School Board has reduced the research sample to a minimum number for completing the study.

Although respondents need not sign the questionnaire, the school name is requested as Mr. Bennett wants to relate teachers' responses to pupil enrolment and floor space information which will be supplied by the School Board. Please be assured that the name of the school is for research purposes only. The Vancouver School Board will not examine the data provided by teachers and Mr. Bennett has agreed not to reveal the identity of the schools in his thesis.

As there is a relatively short period of time to complete this research study, I will assume, unless I hear to the contrary by June 4th, that you will distribute the survey questionnaires when Mr. Bennett brings them to your school.
APPENDIX B

Organizational Climate Description Questionnaire

Form IV
The OCDQ administered in this study is identical to the original version developed by Halpin and Croft with the exception of the following items which have been slightly altered to more properly fit within the Canadian context:

1. The word "faculty" has been changed to "staff" in each applicable item.

2. Item 23 originally read ... "Let's get things done" has been changed to "let's get things accomplished" to avoid possible misinterpretation as "getting it over with".

3. Item 23 originally read "Teachers have fun socializing together during school time" has been changed to "... socializing together during their 'free' school time" to avoid confusion between "teaching" time and "free" time before classes commence, between classes, and the end of the school day.

4. Item 42 originally read "Teachers at this school stay by themselves" has been changed to, "Teachers at this school stay by themselves during their 'free' school time", to avoid possible confusion between school hours and after school hours.

5. Item 58 is not generally applicable to British Columbia since most decisions related to curriculum are not made at the school level; hence teachers were asked to answer on the basis of whatever participation did take place with regard to those curriculum decisions which are permitted within the school.

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1 The changes made have been recommended by D.M. MacKenzie in The Organizational Climate and Socio-economic Background of Selected Elementary Schools in the Lower Mainland Area of British Columbia, Unpublished Master's Thesis, University of British Columbia, 1962, pp. 63-65.
6. Again, in British Columbia, item 63 is not strictly applicable. Teachers were asked to respond on the basis of what they would expect if obtaining better teacher salaries actually was a normal part of their respective principal's duties.

7. Item 64 originally read "The rules set by the principal are never questioned", was altered to "..., are often questioned", to avoid possible confusion over the strict, negative form.

8. Item 76 originally read, "Teachers are informed of the results of a superintendent's visit", but since many, if not most teachers are not necessarily visited the item was changed to read "..., informed of the results of a principal's inspection."
ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE
A. W. HALPIN AND DON B. CROFT

The items herein attempt to describe typical behaviours or conditions that occur in an elementary school organization. It is not necessary to answer them on the basis of what you would consider as "desirable" or "undesirable" behaviour; simply circle the answer that corresponds closely with your own feelings regarding your school. You need not identify yourself in any way whatsoever.

The purpose of this questionnaire is simply to secure a description of the organizational climate of your school in order to relate it to the amount of space available to you and your pupils.

This instrument has been reproduced and its use sanctioned by A. W. Halpin and D. B. Croft.
PLEASE BE SURE THAT YOU MARK EVERY ITEM

MARKING INSTRUCTIONS

Circle the answer 1, 2, 3 or 4 that most nearly corresponds to your feeling about your school.

1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

For example, teachers call each other by their first names. 1 2 3 4

EXPLANATION

In this example the respondent marked alternative 3 to show that the interpersonal relationship described by this item "often occurs" at his school. Of course, any of the other alternatives could be selected, depending upon your feeling as to how often the described behaviour actually does occur in your school. Work rapidly--your first impressions are probably the most accurate.

PLEASE BE SURE THAT YOU MARK EVERY ITEM.
BIOGRAPHICAL INFORMATION

4. School: __________________________ (Write in the name of your school)

Please circle the appropriate number.

5. Position: Principal 1
              Teacher 2
              Other 3

6. Sex: Male 1
       Female 2

Please write the following information in the space provided.

7-8 Age: ________________

9-10 Years of experience in education: ________________

11-12 Years at this school: ________________
1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

13. Teachers' closest friends are other staff members at this school.
1 2 3 4

14. The mannerisms of teachers at this school are annoying.
1 2 3 4

15. Teachers spend time after school with students who have individual problems.
1 2 3 4

16. Instructions for the operation of teaching aids are available.
1 2 3 4

17. Teachers invite other staff members to visit them at home.
1 2 3 4

18. There is a minority group of teachers who always oppose the majority.
1 2 3 4

19. Extra books are available for classroom use.
1 2 3 4

20. Sufficient time is given to prepare administrative reports.
1 2 3 4

21. Teachers know the family background of other staff members.
1 2 3 4

22. Teachers exert group pressure on non-conforming staff members.
1 2 3 4

23. In staff meetings, there is a feeling of "let's get things accomplished."
1 2 3 4

24. Administrative paper work is burdensome at this school.
1 2 3 4

25. Teachers talk about their personal lives to other staff members.
1 2 3 4

26. Teachers seek special favours from the principal.
1 2 3 4

27. School supplies are readily available for use in classwork.
1 2 3 4

28. Student progress reports require too much work.
1 2 3 4
1. Rarely occurs  
2. Sometimes occurs  
3. Often occurs  
4. Very frequently occurs  

29. Teachers have fun socializing together during their "free" school time.  
30. Teachers interrupt other staff members who are talking in staff meetings.  
31. Most of the teachers here accept the faults of their colleagues.  
32. Teachers have too many committee requirements.  
33. There is considerable laughter when teachers gather informally.  
34. Teachers ask nonsensical questions in staff meetings.  
35. Custodial service is available when needed.  
36. Routine duties interfere with the job of teaching.  
37. Teachers prepare administrative reports by themselves.  
38. Teachers ramble when they talk in staff meetings.  
39. Teachers at this school show much school spirit.  
40. The principal goes out of his way to help teachers.  
41. The principal helps teachers solve personal problems.  
42. Teachers at this school stay by themselves during their "free" school time.  
43. The teachers accomplish their work with great vim, vigour, and pleasure.  
44. The principal sets an example by working hard himself.  
45. The principal does personal favours for teachers.  
46. Teachers eat lunch by themselves in their own classrooms.
<p>| | | | | |</p>
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1. Rarely occurs</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2. Sometimes occurs</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3. Often occurs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Very frequently occurs</td>
<td></td>
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</table>

47. The morale of the teachers is high. 1 2 3 4
48. The principal uses constructive criticism. 1 2 3 4
49. The principal stays after school to help teachers finish their work. 1 2 3 4
50. Teachers socialize together in small, select groups. 1 2 3 4
51. The principal makes all class-scheduling decisions. 1 2 3 4
52. Teachers are contacted by the principal each day. 1 2 3 4
53. The principal is well prepared when he speaks at school functions. 1 2 3 4
54. The principal helps staff members settle minor differences. 1 2 3 4
55. The principal schedules the work for the teachers. 1 2 3 4
56. Teachers leave the grounds during the school day. 1 2 3 4
57. The principal criticizes a specific act rather than a staff member. 1 2 3 4
58. Teachers help select which courses will be taught. (Answer on the basis of the amount of teacher participation in any curriculum decisions made within your school.) 1 2 3 4
59. The principal corrects teachers' mistakes. 1 2 3 4
60. The principal talks a great deal. 1 2 3 4
61. The principal explains his reasons for criticism to teachers. 1 2 3 4
62. The principal tries to get better salaries for teachers. (Answer on the basis of the behaviour which you would expect if this were part of your principal's duties.) 1 2 3 4
63. Extra duty for teachers is posted conspicuously. 1 2 3 4
1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

64. The rules set by the principal are often questioned.  

65. The principal looks out for the personal welfare of teachers.  

66. School secretarial service is available for teachers' use.  

67. The principal runs the staff meeting like a business conference.  

68. The principal is in the building before teachers arrive.  

69. Teachers work together preparing administrative reports.  

70. Staff meetings are organized according to a strict agenda.  

71. Staff meetings are mainly principal-report meetings.  

72. The principal tells teachers of new ideas he has run across.  

73. Teachers talk about leaving the school system.  

74. The principal checks the subject-matter ability of teachers.  

75. The principal is easy to understand.  

76. Teachers are informed of the results of a principal's inspection.  

77. Grading practices are standardized at this school.  

78. The principal ensures that teachers work to their full capacity.  

79. Teachers leave the building as soon as possible at day's end.  

80. The principal clarifies wrong ideas a teacher may have.
APPENDIX C

CONFIDENCE INTERVALS FOR EACH SCHOOL SAMPLED
The following tables have been calculated from the general formula representing confidence limits for population means:

\[ \bar{x} - t_{c} \frac{s}{\sqrt{n-1}} \]

where \( \bar{x} \) = sample mean, \( t_{c} \) = critical value from "student's" t distribution, \( s \) = sample standard deviation, \( n-1 \) = degrees of freedom. Specifically

\[ \bar{x} - t_{.975} \frac{s}{\sqrt{n-1}} < \mu < \bar{x} + t_{.975} \frac{s}{\sqrt{n-1}} \]

yields an interval in which \( \mu \), the actual population mean, can be reasonably expected to lie with a 95 per cent degree of certainty. However, it either does or does not lie within the interval; thus the 95 per cent degree of confidence should not be interpreted as meaning that out of all possible samples of size "n" which could be drawn 95% will fall within the interval.
### Ninety-Five Per Cent Confidence Interval

**School A**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sample Average</th>
<th>Standard Deviation</th>
<th>Population Average Lies Between</th>
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<tbody>
<tr>
<td>Principal as Leader</td>
<td>3.19</td>
<td>0.41</td>
<td>2.72 - 3.66</td>
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<tr>
<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>1.78</td>
<td>0.41</td>
<td>1.31 - 2.25</td>
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<tr>
<td>Non-Classroom Teacher Satisfaction</td>
<td>2.56</td>
<td>0.66</td>
<td>1.81 - 3.31</td>
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<tr>
<td>Working Conditions</td>
<td>2.42</td>
<td>0.50</td>
<td>1.85 - 2.99</td>
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<tr>
<td>Hindrance</td>
<td>2.42</td>
<td>0.64</td>
<td>1.68 - 3.15</td>
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### Ninety-Five Per Cent Confidence Interval*

**School B**

<table>
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<td>Principal as Leader</td>
<td>2.28</td>
<td>0.76</td>
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<tr>
<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>1.84</td>
<td>0.60</td>
<td>1.00 - 3.06</td>
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<tr>
<td>Non-Classroom Teacher Satisfaction</td>
<td>1.78</td>
<td>0.34</td>
<td>1.07 - 2.48</td>
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<tr>
<td>Working Conditions</td>
<td>1.56</td>
<td>0.16</td>
<td>1.00 - 3.20</td>
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<tr>
<td>Hindrance</td>
<td>1.50</td>
<td>0.41</td>
<td>1.00 - 2.34</td>
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* Ninety-five per cent confidence interval is too wide to yield any meaningful information from this sample.
# Ninety-Five Per Cent Confidence Interval

## School C

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<td>0.23</td>
<td>2.22 - 3.60</td>
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<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>2.33</td>
<td>0.40</td>
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<td>Non-Classroom Teacher Satisfaction</td>
<td>1.72</td>
<td>0.32</td>
<td>1.00 - 2.68</td>
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<td>Working Conditions</td>
<td>1.33</td>
<td>0.24</td>
<td>1.00 - 2.05</td>
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<tr>
<td>Hindrance</td>
<td>1.81</td>
<td>0.14</td>
<td>1.41 - 2.20</td>
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## Ninety-Five Per Cent Confidence Interval

## School D

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<td>1.60</td>
<td>0.35</td>
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<td>Non-Classroom Teacher Satisfaction</td>
<td>2.38</td>
<td>0.29</td>
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<td>1.84</td>
<td>0.35</td>
<td>1.49 - 2.19</td>
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<td>Hindrance</td>
<td>1.86</td>
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<td>1.41 - 2.31</td>
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### SCHOOL E

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<td>0.32</td>
<td>1.64 - 2.80</td>
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<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>1.75</td>
<td>0.21</td>
<td>1.36 - 2.14</td>
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<td>Non-Classroom Teacher Satisfaction</td>
<td>1.83</td>
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<td>1.40 - 2.27</td>
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<tr>
<td>Working Conditions</td>
<td>2.37</td>
<td>0.37</td>
<td>1.69 - 3.05</td>
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<tr>
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**Population:** 29

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**Population:** 19

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### NINETY-FIVE PER-CENT CONFIDENCE INTERVAL

#### SCHOOL I

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### NINETY-FIVE PER-CENT CONFIDENCE INTERVAL

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**Population:** 32

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NINETY-FIVE PER CENT CONFIDENCE INTERVAL

SCHOOL 0

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NINETY-FIVE PER CENT CONFIDENCE INTERVAL

SCHOOL P

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### NINETY-FIVE PER CENT CONFIDENCE INTERVAL

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### NINETY-FIVE PER CENT CONFIDENCE INTERVAL

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APPENDIX D

ROTATED ITEM FACTOR MATRIX FOR

64 ITEMS OF THE OCDQ FORM IV

HALPIN & CROFT

(n = 1151)
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<th>III</th>
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<th>V</th>
<th>VI</th>
<th>VII</th>
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**ÉSPRIT**

**INTIMACY**

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**PRODUCTION EMPHASIS**

| 50. Out of way   | 74    | 06    | 10    | -06   | -09   | 23    | 03    | -02   | 63    |
| 51. Example      | 70    | 05    | -00   | 10    | 01    | 11    | -12   | 07    | 54    |
| 52. Criticism    | 72    | 09    | 04    | -04   | -01   | 12    | -17   | 03    | 58    |
| 53. Wel prep      | 60    | 10    | -03   | 07    | -09   | 04    | -06   | -06   | 40    |
| 54. Explains      | 64    | 02    | 07    | 05    | 01    | 17    | -20   | 14    | 50    |
| 55. Welfare       | 49    | -06   | 07    | 00    | -01   | -04   | -27   | 00    | 32    |
| 56. Arrive        | 41    | 09    | 02    | 19    | 02    | 07    | -11   | -02   | 23    |
| 57. New ideas     | 51    | -03   | -02   | 07    | 06    | 29    | -24   | 08    | 42    |
| 58. Essay         | 63    | 11    | 11    | -17   | -09   | 10    | -05   | -03   | 47    |

**THRUST**

| 59. Solve pblm    | 20    | -09   | 19    | -01   | 01    | 51    | 09    | -05   | 36    |
| 60. Does fvrs.    | 30    | -11   | 35    | -10   | -01   | 40    | 07    | -16   | 43    |
| 61. Finish        | 21    | -08   | -01   | 15    | 06    | 52    | -04   | 03    | 35    |
| 62. Minor         | 26    | -08   | 08    | 09    | 03    | 38    | -00   | -11   | 25    |
| 63. Courses       | 06    | 01    | 15    | -18   | 01    | 29    | -15   | -03   | 17    |
| 64. Salaries      | 32    | -12   | -04   | -02   | -17   | 37    | -07   | 04    | 29    |

**CONSIDERATION**
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*Adapted from Halpin and Croft, *Organizational Climate of Schools*, (Chicago: Midwest Administrative Center, 1963, pp. 34, 35).
APPENDIX E

CLIMATE PROFILES BASED ON INDIVIDUAL SUBTESTS

Twenty Vancouver Schools
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116)

School: A
Area: 48110
Staff: 18
Enrolment: 497
Density: 93

Subtest Score

I  Principal as Leader
   3.19

II  Teacher "qua" Teacher Group Perception
    1.78

III  Non-Classroom Teacher Satisfaction
     2.56

IV  Working Conditions
    2.43

V  Hindrance
   2.41

1.67  2.69  3.02  2.40  2.63  2.15  3.69  2.86
Disengagement  Hindrance  Esprit  Intimacy  Aloofness  Production Emphasis  Thrust  Consideration
1  2  3  4  5  6  7  8
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

School: B  Area: 41267  Staff: 20  Enrolment: 527  Density: 70

<table>
<thead>
<tr>
<th>Subtest Score</th>
<th>I Principal as Leader</th>
<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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<tr>
<td>2.28</td>
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<td>1.81</td>
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![Graph image]

1.97  1.72  2.70  1.81  2.11  1.76  2.33  1.67
Disengagement  Hindrance  Esprit  Intimacy  Aloofness  Production  Emphasis  Thrust  Consideration
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

<table>
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<th>Score</th>
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<tr>
<td>II</td>
<td>2.33</td>
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<tr>
<td>III</td>
<td>1.72</td>
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<tr>
<td>IV</td>
<td>1.33</td>
</tr>
<tr>
<td>V</td>
<td>1.82</td>
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- **I** Principal as Leader 2.91
- **II** Teacher "qua" Teacher Group Perception 2.33
- **III** Non-Classroom Teacher Satisfaction 1.72
- **IV** Working Conditions 1.33
- **V** Hindrance 1.82

Disengagement 2.33, Hindrance 1.82, Esprit 2.17, Intimacy 1.95, Aloofness 1.96, Production Emphasis 1.81, Thrust 3.63, Consideration 2.83
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

<table>
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<tr>
<th>Subtest Score</th>
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<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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<td>1.61</td>
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<td>1.68</td>
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School: D
Area: 64950
Staff: 24
Enrolment: 679
Density: 92
### FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION

**QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES**

(Vancouver Data (n=116)

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<th>Staff: 21</th>
<th>Enrolment: 621</th>
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<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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**Graph:**

- **Disengagement:** 1.68
- **Hindrance:** 2.13
- **Esprit:** 2.33
- **Intimacy:** 1.78
- **Aloofness:** 2.19
- **Production:** 2.15
- **Emphasis:** 2.22
- **Thrust:** 1.75
- **Consideration:**
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<td>2.50</td>
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<td>V</td>
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**School:** F  
**Area:** 52192  
**Staff:** 25  
**Enrolment:** 606  
**Density:** 83
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

School: G  Area: 56405  Staff: 29  Enrolment: 832  Density: 66

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<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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Disengagement Hindrance Esprit Intimacy Aloofness Production Emphasis Thrust Consideration

1.67  2.28  2.92  2.40  2.46  2.52  2.93  1.85
### FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
### QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

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<tr>
<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
<td>1.67</td>
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<td>Non-Classroom Teacher Satisfaction</td>
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<tr>
<td>Working Conditions</td>
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<tr>
<td>Hindrance</td>
<td>1.60</td>
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- **School:** H
- **Area:** 42080
- **Staff:** 19
- **Enrolment:** 351
- **Density:** 114

The diagram shows the scores for each subtest, with the x-axis representing the subtest numbers and the y-axis representing the scores. The scores for each subtest are as follows:

- **Disengagement:** 1.64
- **Hindrance:** 2.10
- **Espirit:** 3.02
- **Intimacy:** 2.29
- **Aloofness:** 2.44
- **Production Emphasis:** 2.31
- **Thrust:** 3.56
- **Consideration:** 2.33
<table>
<thead>
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<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
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<td>2.58</td>
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(Vancouver Data (n=116))
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

<table>
<thead>
<tr>
<th>Subtest Score</th>
<th>I Principal as Leader</th>
<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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<td>1</td>
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School: J
Area: 41345
Staff: 19
Enrolment: 457
Density: 87

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<th>Hindrance</th>
<th>Esprit</th>
<th>Intimacy</th>
<th>Aloofness</th>
<th>Production Emphasis</th>
<th>Thrust</th>
<th>Consideration</th>
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FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

<table>
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<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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| 1.79 Disengagement | 2.52 Hindrance | 2.68 Esprit | 2.41 Intimacy | 2.30 Aloofness | 2.12 Production Emphasis | 3.10 Thrust | 2.33 Consideration |

Graph showing scores distribution.
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

School: L  Area: 35709  Staff: 17  Enrolment: 428  Density: 80

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<th>Enrolment: 428</th>
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<tr>
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</tr>
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<td>Teacher &quot;qua&quot; Teacher Group Perception</td>
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<td>V</td>
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<td>Working Conditions</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
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1.58  2.17  3.15  2.31  2.44  3.86  3.86  1.69

1. Disengagement
2. Hindrance
3. Espirit
4. Intimacy
5. Aloofness
6. Production Emphasis
7. Thrust
8. Consideration
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

School: M
Area: 30935
Staff: 13
Enrolment: 346
Density: 86

Subtest Score
I Principal as Leader 2.56
II Teacher "qua" Teacher Group Perception 1.58
III Non-Classroom Teacher Satisfaction 2.25
IV Working Conditions 2.79
V Hindrance 2.13

Disengagement 1.45
Hindrance 2.50
Esprit 3.13
Intimacy 2.29
Aloofness 2.47
Production Emphasis 2.54
Thrust 2.89
Consideration 2.46
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<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
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<th>IV Working Conditions</th>
<th>V Hindrance</th>
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1.70  2.07  3.37  2.48  2.11  1.83  3.33  3.00

Disengagement  Hindrance  Esprit  Intimacy  Aloofness  Production  Emphasis  Thrust  Consideration
FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

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1.70 2.24 2.74 1.83 2.06 1.84 2.78 2.39
Disengagement Hindrance Espirit Intimacy Aloofness Production Emphasis Thrust Consideration
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<td>Emphasis</td>
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<td>Thrust</td>
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</table>

- **Disengagement**: 1
- **Hindrance**: 2
- **Esprit**: 3
- **Intimacy**: 4
- **Aloofness**: 5
- **Production Emphasis**: 6
- **Thrust**: 7
- **Consideration**: 8
### Five and Eight Factor Organizational Climate Description

**Questionnaire Subtest School Profile Scores**

(Vancouver Data (n=116))

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<th>II Teacher &quot;qua&quot; Teacher Group Perception</th>
<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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<tbody>
<tr>
<td></td>
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| 4 |

| 3 |

| 2 |

| 1 |

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<th>Esprit</th>
<th>Intimacy</th>
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FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

School: R
Area: 42270
Staff: 21
Enrolment: 589
Density: 63

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<th>V Hindrance</th>
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1.72 1.86 3.30 1.81 1.96 1.98 2.85 2.18
Disengagement  Hindrance  Espirit  Intimacy  Aloofness  Production  Emphasis  Thrust  Consideration
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FIVE AND EIGHT FACTOR ORGANIZATIONAL CLIMATE DESCRIPTION
QUESTIONNAIRE SUBTEST SCHOOL PROFILE SCORES
(Vancouver Data (n=116))

<table>
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<th>School: T</th>
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<th>III Non-Classroom Teacher Satisfaction</th>
<th>IV Working Conditions</th>
<th>V Hindrance</th>
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</thead>
<tbody>
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<td>2.29</td>
<td>1.79</td>
<td>1.84</td>
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1.75 2.17 2.99 2.32 2.21 1.86 2.88 2.21

Disengagement Hindrance Esprit Intimacy Aloofness Production Emphasis Thrust Consideration
APPENDIX F

EFFECT OF SCHOOL C ON DENSITY

AND ITS RELATIONSHIP WITH THE FIVE

FACTOR SOLUTION
While analysing the data two apparent anomalies seemed to stand out. First, and probably most important, why did the type of behavior described by Teacher "qua" Teacher Group Perception increase with "expansive" density, i.e., with an increase in the number of square feet available per person? Second, why would the Esprit scores decrease with "expansive" density? (Because the five-factor pattern does "fit" the data better than the eight-factor pattern, the concern was not so much related to the seemingly unusual relationship between Esprit and Density as it was to what the effect might be on Principal as Leader subtest which contained the Esprit items.) Although there was no reason to believe that the more "uncrowded" a school was the more likely the climate conditions would tend to be "closed" (in terms of Teacher "qua" Teacher Group Perception behavior and Esprit), "common sense" would nevertheless seem to dictate that some investigation of the matter should be undertaken before any such a conclusion could be drawn from the data.

In order to determine what might be "happening" the extreme scores obtained for Teacher "qua" Teacher Group Perception and Esprit were checked by scanning the individual school profiles shown in Appendix E. Only a cursory check beyond School C was necessary. Its profile revealed that this particular school had obtained not only the highest extreme score for Teacher "qua" Teacher Group Perception and the lowest extreme score for Esprit, but it also had by far the least "crowded" conditions in terms of Human Density. Whereas the sample average for Teacher "qua" Teacher Group
Perception was 1.71 (sample standard deviation equal to 0.23), School C obtained the high extreme of the sample range, i.e., 2.33; for Esprit the sample average was 2.84 (sample standard deviation equal to 0.35) while School C obtained the low extreme of the sample range, i.e.; 2.17; for Density the sample average was 89.1 square feet (sample standard deviation equal to 4.46), while School C obtained the high extreme of the sample range, i.e., 272.

Having obtained all three extremes in question out of the entire Vancouver sample the only feasible alternative seemed to revolve around the reconstruction of each of the questionable statistics excluding School C. In this manner it was hoped that any contaminating influence caused by the conglomeration of extremes would be clearly revealed. This decision was further reinforced by a check of Appendix C in that School C is one of the few schools with a sample size too small to obtain a relatively narrow confidence interval.

Pearson's product-moment correlation coefficient, defined as

\[ r_{XY} = \frac{N\Sigma XY - \Sigma X(\Sigma Y)}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}} \]

was calculated for Density, i.e., X and Y, i.e., Principal as Leader, Teacher "qua" Teacher Group Perception, Non-Classroom Teacher Satisfaction, Working Conditions and Hindrance (V), respectively, and N is the number of cases excluding School C. The degree of contamination caused by the three extremes attributable to a single sample are illustrated in page 3.
The effect of the extremes is dramatic with regard to Teacher "qua" Teacher Group Perception—even to a change in direction—but the extreme Esprit score effect on Principal as Leader is negligible.