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*CONCEPTUALIZING
EDUCATIONAL ENVIRONMENTS*

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INTRODUCTION

First, this paper presents a framework which conceptualizes the major methods by which human environments have been assessed. It begins in this way because I am convinced that a broad perspective on characterizing human environments helps to pose more adequately basic questions about environmental impact on human functioning and development. Next, the paper focuses upon the concept of "social climate." This concept is defined in order to provide an overview of three basic categories of dimensions which characterize a wide variety of social environments. The paper then addresses the practical utility of the concept of social climate by considering how social climate may relate to certain environmental outcomes such as satisfaction and morale, and levels of academic aspirations and achievement; how social climate may mediate the effects of other environmental variables and its measurement aid in understanding the "effects" of these variables; and how certain practical implications for beneficial social change may follow from the concept of social climate and its measurement applications. Finally, the paper discusses some conceptual and methodological issues in the measurement of social climate.

METHODS FOR CONCEPTUALIZING HUMAN ENVIRONMENTS

Six major methods by which characteristics of environments have been related to indices of human functioning have recently been identified.¹ These are: (1) ecological dimensions, (2) behavior settings, (3) dimensions of organizational structure, (4) dimensions identifying the collective personal and/or behavioral characteristics of the people living and functioning in the environment, (5) variables relevant to the functional or reinforcement analyses of environments, and (6) dimensions which assess social and organizational climates. The six categories of dimensions are non-exclusive, overlapping, and mutually interrelated. Their common relevance is that each has been shown to have an important impact on individual and group behavior. Also, there is evidence linking each of the six types of dimensions to affective and behavioral outcome criteria in educational environments. This overview is presented in order to illustrate the point that the measurement of social climate represents only one of several major ways in which educational environments may be characterized.

1. R. Moos, "Systems for the Assessment and Classification of Human Environments: An Overview," in R. Moos and P. Insel (eds.), *Issues in Social Ecology: Human Milieus* (Palo Alto: National Press Books, 1973).

Ecological Dimensions

The idea of geographic environmental influence has been a recurrent one in almost every society. This is essentially the notion that the culture, character, and activities of societies are significantly shaped by the climate (temperature, rainfall), topography, and other geographical features of the region in which they are located. Environmental determinists believe that there are specific connections between environmental characteristics such as mountainous terrain, soil condition, humidity, and personality traits such as strength of character, assertiveness, bravery, and laziness. Phenomena of great importance have been attributed to climate; for example, the riots in Los Angeles and Chicago during the summer of 1965 were widely believed to stem in part from the discomforts of hot weather. It has been suggested that climate may be one of the major factors in economic development throughout the world. On a more individual level, most people seem to feel that their efficiency is impaired by extremes of heat and cold. Climate has also been associated with general health, intellectual performance, admissions to mental hospitals, and organizational participation and interpersonal relations.²

Many investigators have demonstrated the potential importance of the weather environments on school children. Thus, Dexter studied the effect of certain meteorological variables on school children in New York City and Denver.³ He found that their behavior and deportment was worse under conditions of moderately warm room temperatures (74° to 77°), low barometric pressure, low humidity, and winds of high velocity. In a more recent and considerably more detailed study, Auliciems related the work efficiency and intellectual performance of children in secondary schools in Reading, England,⁴ to both the indoor atmospheric and the outdoor meteorological environment. He found that intellectual performance was better under conditions of lower indoor and outdoor temperature, lower indoor humidity, increased indoor "air motion" (lack of room stuffiness), and low wind speed. These and other studies indicate that the "weather environment" can have effects on "educationally relevant" behavior.

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2. See, for example, W. Griffitt and R. Veitch, "Hot and Crowded: Influences of Population Density and Temperature on Interpersonal Affective Behavior," *Journal of Personality and Social Psychology*, Vol. 17, 1971; and W. Michelson, "Some Like it Hot: Social Participation and Environmental Use as Functions of the Season," *American Journal of Sociology*, Vol. 76, 1971, pp. 1072-1083.
 3. E. Dexter, "School Deportment and the Weather," *Educational Review*, Vol. 19, 1900, pp. 160-168.
 4. A. Auliciems, "Some Observed Relationships Between the Atmospheric Environment and Mental Work," *Environmental Research*, Vol. 5, 1972, pp. 217-240.

Ecological dimensions also include dimensions related to the man-made environment, that is, to architectural and physical design variables. There is a growing belief within the design profession that the man-made physical environment may profoundly influence psychological states and social behavior. For example, Maslow and Mintz have demonstrated that interpersonal perceptions can be highly sensitive to variations in the physical environment.⁵ They found that judgements of psychological states (for example, weary, zestful, irritated) based upon photographed faces differed considerably in three physically different rooms. Myrick and Marx studies the relationship between high school building design and student behavior.⁶ They found some evidence that the lay-out of the school buildings affects the size of student groups which in turn affects the content of student conversations. Central or cohesive lay-outs seem to facilitate the formation of larger student groups. This seems to promote student conversations which are less in keeping with the goals of the school administration. Building lay-outs which are extended or isolating require students to spend more time traveling from one classroom to the next. This means that smaller groups are usually formed, and these smaller groups appear to have conversations which are more in keeping with the goals of the school administration.

Behavior Settings

Barker and his associates have developed the concept of the behavior setting, which they consider to be the essential element in studies of the ecological environment.⁷ Behavior settings (for example, drug store, garage, junior high school play, basketball game) are natural phenomena, that is, they are not created by an experimenter for scientific purposes. They have both a space and a time locus. They have two sets of components which are: (a) behavior, for example,

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5. A. Maslow and N. Mintz, "Effects of Esthetic Surroundings: 1. Initial Effects of Three Esthetic Conditions Upon Perceiving 'Energy' and 'Well Being' in Faces," *Journal of Educational Psychology*, Vol. 52, 1961, pp. 247-254.
 6. R. Myrick and B. Marx, *An Exploratory Study of the Relationship Between High School Building Design and Student Learning*, (Office of Education, Bureau of Research; U.S. Department of Health, Education, and Welfare, 1968).
 7. R. Barker, *Ecological Psychology* (Palo Alto: Stanford University Press, 1964).

reciting, discussing, sitting, and (b) non-psychological objects with which behavior is transacted, for example, chairs, walls, a black-board, paper. Behavior settings are stable environmental units which have great coercive power over the behavior that occurs within them. They have pervasive effects on individuals, not only in terms of the specific behavior which is "demanded" by the setting (such as, reading and writing in classrooms) but also on other behaviors and on affects experienced by individuals. Barker and Gump have done an extremely intriguing analysis of the different demands of undermanned (not enough people to fill the available roles in the environment) and optimally-manned behavior settings.⁸ An example of a potentially undermanned setting occurs when only ten students decide to try out for a high school play which has fifteen character parts. The point is that undermanned, optimally-manned, and overmanned behavior settings have very different effects on their inhabitants. For example, students in small schools with relatively few associates with behavior settings, in comparison with students of larger schools with relatively many associates report twice as many pressures on them to take part in the settings; they actually perform in more than twice as many responsible positions in the settings; and report having more satisfactions related to the development of competence, to being challenged, to being involved in group activities, to being valued, and to gaining morale and cultural values.

Organizational Structure Dimensions

Many investigators have assessed organizations using relatively objective dimensions such as size, staffing ratios, average salary levels, organizational control structure, and the like.⁹ Porter and Lawler define structure to mean the positions and parts of organizations and their systematic and relatively enduring relationships to each other.¹⁰ Within this broad definition they identify several

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8. R. Barker and P. Gump, *Big School, Small School* (Palo Alto: Stanford University Press, 1964).
 9. J. March (ed.), *Handbook of Organizations* (Chicago: Rand-McNally, 1965).
 10. L. Porter and E. Lawler, "Properties of Organization Structure in Relation to Job Attitudes and Job Behavior," *Psychological Bulletin*, Vol. 64, 1965, pp. 23-51.

dimensions of organizational structure such as the size of the organization, whether it is centralized or decentralized, the number of organizational levels, and its span of control (the number of subordinates a manager is responsible for supervising). Porter and Lawler conclude that several of these dimensions are significantly related to one or more attitude or behavior variables; for example, morale, need satisfaction, absenteeism, and turnover.

Relevant work in this area has been done in colleges and universities. For example, Astin used relatively objective indices differentiating among universities and attempted to relate these differences to undergraduate achievement.¹¹ The types of institutional quality dimensions he used included: selectivity (an estimate of the average academic ability of the entering student), per-student expenditures for educational and general purposes, the number of books in the library per student, faculty/student ratio, percentage of faculty with Ph.D. degree, total undergraduate enrollment, and percentage of men in the student body. Astin concluded that these traditional indices of institutional quality did not contribute much to student achievement, but there is some disagreement on this point. A great deal of relevant work has been conducted in educational environments, which I will not attempt to review here. Suffice it to say that an important recurrent issue is the extent to which "objective" organizational structure dimensions account for the relevant "outcomes" in an environment versus the extent to which "subjective" dimensions such as social climate account for these outcomes.

Personal and Behavioral Characteristics of the Milieu Inhabitants

Various factors related to the characteristics of individuals inhabiting a particular environment -- average age, ability level, socioeconomic background, and educational attainment, among others -- may be considered to be situational variables in that they partly define relevant characteristics of the environment. This idea is based on the suggestion made by Linton that most of the social and cultural environment is transmitted through other people.¹² It implies that the character of an environment is dependent in part upon the typical characteristics of its members.

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11. A. Astin, "A Re-examination of College Productivity," *Journal of Educational Psychology*, Vol. 52, 1961, pp. 173-178.
 12. R. Linton, *The Cultural Background of Personality* (New York: Century, 1945).

This approach is illustrated by Astin's Inventory of College Activities (ICA).¹³ His ICA provides information about the characteristics of the college environment by the following kinds of items: (1) questions about activities in college, such as whether or not the individual flunked a course, became engaged, got married, participated in a student demonstration, or changed his or her major field; (2) the median number of hours per week the student spent in different activities such as attending class, studying for school assignments, reading for pleasure, watching T.V., attending athletic events, sleeping, playing games; (3) the kinds of organizations to which the student belonged, such as fraternities or sororities, college athletic teams, marching band, religious club, and service organizations. Remarkable diversity was found among the environments of 246 colleges and universities. Thus, the proportion of students who engaged in any particular activity (such as dating, going to church, drinking beer, or voting in a student election) often varied from no students in some institutions to nearly all students in others. Astin feels that this considerable diversity indicates that the college and university environment has great potential for differentially influencing the experience and behavior of the individual student.

To illustrate his point, Astin assumes that a new student enrolls in an institution with high academic standards in which certain environmental stimuli occur relatively frequently: classroom examinations, discussions among students about grades, studying, intellectual arguments among students, and debates between faculty and students. The new student would be exposed to these and related stimuli and might thus feel anxiety about possible academic failure (a change in immediate subjective experience), increased fear of, or hostility toward fellow students, increased feelings of competitiveness, and/or feelings of inferiority. Presumably the student might be affected differently if he attended a different sort of college. In terms of short-term behavioral effects, the student may increase the time he devotes to study, reduce the time he devotes to social activities, and perhaps increase his intellectual aggression. He may consequently experience greater feelings of loneliness and isolation. Finally, there may be longer lasting alterations in his self concept and/or relatively permanent changes in behavior which may persist beyond college (for example, devoting a great deal of time to the job or competing constantly with others).

13. A. Astin, *The College Environment* (Washington, D.C.: American Council on Education, 1968).

FUNCTIONAL OR REINFORCEMENT ANALYSES OF ENVIRONMENTS

The methodology of functional analyses of environments is an outgrowth of a social learning perspective.¹⁴ The social learning theorist takes it as a given that people vary their behavior extensively in different social and physical environments, mainly because the reinforcement consequences for particular behaviors also vary extensively. People are expected to behave similarly in different settings only to the extent that those settings are alike (or perhaps are perceived to be alike) in their potential reinforcing properties. Social learning theorists attempt to identify the exact controlling stimulus conditions for particular behaviors; for example, the specific models involved, the substantive reinforcers, and the precise discriminative stimuli.

Some investigators have identified aspects of a total environment which are likely to be related to the development of certain characteristics. Thus Wolf listed the conditions in the environment that were likely to influence the development of general intelligence and/or academic achievement, such as the climate created for achievement motivation, the opportunities for verbal development, the nature and amount of assistance provided in overcoming academic difficulties; the level of intellectuality in the environment, and the kinds of work habits expected of the individual.¹⁵ Wolf developed a technique for assessing these variables and found that the relationship between the total rating for the degree of intellectual "press" of the environment and measured general intelligence was .69. He states that environments for the development and maintenance of such characteristics as dependency, aggression, and dogmatism could be delineated, measured, and systematically related to measures of that particular characteristic.

14. See, for example, A. Bandura, *Principles of Behavior Modification* (New York: Holt, Rinehart & Winston, 1969) and W. Mischel, *Personality and Assessment* (New York: Wiley, 1968).
15. R. Wolf, "The Measurement of Environments," in A. Anastasi (ed.) *Testing Problems in Perspective* (Washington, D.C.: American Council on Education, 1966), pp. 491-503.

Social Climate

The social climate perspective assumes that environments have unique "personalities." Just as methods have been developed to describe a person's personality, so environments can be similarly portrayed with a great deal of accuracy and detail. For example, some people are supportive; likewise, some environments are supportive. Some men feel the need to control others; similarly, some environments are extremely controlling. Order and structure are important to many people; correspondingly, many environments emphasize regularity, system and order. People make detailed plans which regulate and direct their behavior; likewise, environments have overall programs which regulate and direct the behavior of the people within them. Pace has provided an excellent illustration of the importance of a college's social climate.¹⁶ He points out that only certain information about a college is commonly available. It is easy to determine the size of a college, whether it is coeducational or not, where it is located, when it was founded, what degrees it offers, whether it is public or private, religious or non-sectarian, what it costs, and so forth. Pace believes that having learned the answers to all these questions one knows little that is important about a college:

"Suppose one asked the same kinds of questions about a prospective college student. What is his height and weight, sex, residence, age, vocational goal, religious affiliation, and family income. Knowing all these things one is still left in ignorance about what kind of a person the prospective student really is. The important knowledge concerns his aptitudes and interest, his motivations and emotional and social maturity. In short the crucial knowledge concerns his personality. So, too, with a college the crucial knowledge concerns its overall atmosphere or characteristics, the kinds of things that are rewarded, encouraged, emphasized, the style of life which is valued in the community and is most visibly expressed and felt."¹⁷

But how can the "blooming, buzzing confusion" of a natural social environment be adequately captured and assessed? Many techniques have

16. C. Pace and G. Stern, "An Approach to the Measurement of Psychological Characteristics of College Environments," *Journal of Educational Psychology*, Vol. 49, 1958, pp. 269-277.

17. *Ibid.*, p. 45.

been developed to that end. An early attempt was the work of Kurt Lewin and his associates on the differential effects of authoritarian, democratic, and laissez-faire social climates on the behavior of ten year old boys in various activity groups. They found that the social climate did have important effects; for example, hostility was usually much more frequent in autocratic than in democratic groups.¹⁸ Withall's Social-Emotional Climate Index was an early technique specifically relevant to classrooms.¹⁹ In another interesting approach, Simpson defined the construct of "social weather" as the overall social treatment a person receives, that is, some people may "give him the cold shoulder" whereas others may "treat him like a king," and so on.²⁰ Most of the more recent empirical work in this area derives directly or indirectly from the contributions of Henry Murray.²¹ Murray pointed out that the concept of need could describe the general course of individual behavior but that this "leaves out the nature of the environment, a serious omission."²² Murray decided to classify environments in terms of the kinds of benefits or satisfactions and the kinds of harms or dissatisfactions which they provide. He selected the term press to designate a directional tendency in an object or situation and he concluded that

"one can profitably analyze an environment, a social group or an institution from the point of view of what press it applies or offers to the individuals that live within or belong to it...furthermore, human beings in general or in particular can be studied from the standpoint of what beneficial press are available to them and what harmful press they customarily encounter"²³

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18. K. Lewin, R. Lippitt, and R. White, "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates'," *Journal of Social Psychology*, Vol. 10, 1939, pp. 271-299.
 19. J. Withall, "The Development of a Technique for the Measurement of Social-Emotional Climate in Classrooms," *Journal of Experimental Education*, Vol. 17, 1949, pp. 347-361.
 20. J. Simpson, "A Method of Measuring the Social Weather of Children," in R. Barker, *The Stream of Behavior* (New York: Appleton Century Crofts, 1963).
 21. H. Murray, *Explorations in Personality* (New York: Oxford University Press, 1938).
 22. *Ibid.*, p. 116.
 23. *Ibid.*, p. 120.

Pace and Stern developed the concept of environmental press further by applying the logic of "perceived climate" to the study of "atmosphere" at colleges and universities.²⁴ They constructed the College Characteristics Index (CCI) to measure the global college environment by asking students to act as reporters about that environment. Specifically, the task was to answer true or false to items covering a wide range of topics about the college, such as student-faculty relationships, rules and regulations, classroom methods, and facilities. The general logic was that the consensus of students characterizing their college environment constitutes a measure of environmental climate and that this environmental climate exerts a directional influence on their behavior. Generally similar approaches have been used by many investigators, including Findikyan and Sells²⁵ who quantified and measured the dimensions of sixty campus organizations and Halpin and Croft²⁶ who developed the Organizational Climate Description Questionnaire (OCDQ) to assess the climate of elementary schools.

Underlying Patterns of Social Environments

One of the most important findings emerging from the empirical work on social environments is that three major categories of dimensions characterize a variety of different social milieus. Some of the author's own work in the Social Ecology Laboratory will illustrate this point. Our central interest over the past few years has been the development of techniques (social climate scales) by which psychosocial environments can be assessed systematically. We have engaged in extensive work in nine different social milieus which are representative of four major categories of environments: (1) Treatment Environments, that is, hospital-based and community-based psychiatric treatment programs²⁷; (2) "Total" Institutions, that is, correctional institu-

24. *Op. cit.*

25. N. Findikyan and S. Sells, "Organizational Structure and Similarity of Campus Student Organizations," *Organizational Behavior and Human Performance*, Vol. 1, 1966, pp. 169-189.

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

27. R. Moos, *Evaluating Treatment Environments: A Social Ecological Approach* (New York: Wiley, in press, 1973).

tions²⁸ and military training companies; (3) Educational Environments, that is, university student living groups²⁹ and junior high and high school classrooms³⁰; and, (4) naturalistically occurring Community Settings, that is, industrial or work milieus, social task-oriented and psychotherapeutic groups and, finally, families. Common categories of dimensions have emerged from our studies of these nine environments. These are conceptualized in three broad classes: Relationship dimensions, Personal Development or Personal Growth dimensions, and System Maintenance and System Change dimensions. These dimensions are similar across the environments studied although unique variations within the general categories occur in specific settings.

Relationship dimensions assess the extent to which people are involved in their social environment. They identify the nature and intensity of personal relationships within the environment. They assess the extent to which individuals are involved with each other and the extent to which they support and help each other. As Table 1 indicates, the Relationship dimensions are relatively similar across the nine social environments, except for two important variations. First, a dimension of Spontaneity or Expressiveness does not emerge separately in every environment. For example, in university student living groups expressiveness items empirically merged with emotional support items, that is, these two sets of items were highly inter-correlated. Also, the dimension of Spontaneity or Expressiveness does not vary extensively in certain environments; for example, very few of our Expressiveness items significantly differentiated among military training companies and thus our Military Company Environment Inventory (MCEI) does not have an Expressiveness dimension.

Secondly, there may be either one or two Support dimensions. Support in a treatment program indicates the extent to which patients are encouraged to be helpful and supportive toward other patients and the extent to which staff are supportive toward patients. Staff support in a work milieu indicates the extent to which management is

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28. E. Wenk and R. Moos, "Prison Environments: The Social Ecology of Correctional Institutions," *Crime and Delinquency Literature*, Vol. 4, 1972, pp. 591-621.
 29. M. Gerst and R. Moos, "The Social Ecology of University Student Residences," *Journal of Educational Psychology*, Vol. 63, 1972, pp. 513-525.
 30. E. Trickett and R. Moos, "The Social Environment of Junior High and High School Classrooms," *Journal of Educational Psychology*, in press, 1973.

TABLE 1

Similarities of Social Climate Dimensions Across Environments

Type of Environment	Relationship Dimensions	Personal Development Dimensions	System Maintenance and System Change Dimensions
<u>Treatment</u>	Involvement Support Spontaneity	Autonomy Practical Orientation Personal Problem Orientation Anger & Aggression	Order & Organization Clarity Control
<u>Total Institutions</u>			
Correctional Institutions	Involvement Support Expressiveness	Autonomy Practical Orientation Personal Problem Orientation	Order & Organization Clarity Control
Military Companies	Involvement Peer Cohesion Officer Support	Personal Status	Order & Organization Clarity Officer Control
<u>Educational</u>			
University Student Living Groups	Involvement Emotional Support	Independence Traditional Social Orientation Competition Academic Achievement Intellectuality	Order & Organization Student Influence Innovation
Junior High and High School Classrooms	Involvement Affiliation Teacher Support	Task Orientation Competition	Order & Organization Rule Clarity Teacher Control Innovation
<u>Community Settings</u>			
Work Milieus	Involvement Peer Cohesion Staff Support	Task Orientation Competition	Work Pressure Clarity Control Innovation Physical Comfort
Social, Task Oriented & Therapeutic Groups	Cohesiveness Leader Support Expressiveness	Independence Task Orientation Self-Discovery Anger & Aggression	Order & Organization Leader Control Innovation
Families	Involvement Emotional Support Expressiveness	Autonomy Achievement Orientation Intellectual-Cultural Orientation Recreational Orientation Moral-Religious Orientation	Order & Organization Clarity & Consistency Control

supportive of workers and encourages workers to be supportive of each other. A Peer Cohesion dimension quite separate from Staff Support also emerges in the work milieu. Peer Cohesion assesses the social and interpersonal relationships that develop among workers and their tendency to stick together and help each other. Staff Support, on the other hand, assesses the degree of friendship and communication between management and non-management personnel. To follow the earlier example, the Spontaneity or Expressiveness aspect of the climate in a work milieu is more appropriately part of both the Staff Support and Peer Cohesion components. This distinction between Peer Cohesion or Affiliation and Staff Support (or Teacher Support, Officer Support) is maintained in both military training companies and junior high and high school classrooms.

Personal Development dimensions assess the basic directions along which personal growth and self-enhancement tend to occur in the particular environment. The exact nature of these dimensions varies among the different environments studied depending upon their basic purposes and goals. For example, in psychiatric and correctional programs these dimensions assess basic treatment goal, such as Autonomy (the extent to which people are encouraged to be self-sufficient and independent); Practical Orientation (the extent to which the program orients an individual toward training for new jobs, looking to the future, setting and working toward concrete goals, and so forth); and Personal Problem Orientation (the extent to which individuals are encouraged to be concerned with their feelings and problems and to seek to understand them). These are dimensions of psychiatric programs which represent different basic psychiatric treatment orientations.

University student living groups clearly have different personal growth goals than do psychiatric treatment programs. Thus, a different set of Personal Development dimensions are identified in these milieus. These dimensions include: Independence, (the extent of emphasis on independence of thoughts and actions by individuals and on acting in diverse ways without social sanction); Competition (the emphasis on competing with one another for grades, dates, and the casting of many activities into a competitive framework); Academic Achievement (the extent to which strictly classroom achievement and concern are prominent in the house), and Intellectuality (the extent to which scholarly, intellectual, and cultural activities and interest are manifest).

Families are characterized by other but related Personal Growth dimensions; for example, Autonomy (the extent to which family members are encouraged to be self-sufficient and to make their own

decisions); Achievement Orientation (the extent to which activities are cast into an achievement oriented or competitive framework); Intellectual-Cultural Orientation (the extent to which the family emphasizes intellectual discussions about political, social, and cultural issues and the emphasis on music, art, and literature); Active Recreational Orientation (the emphasis on active recreational pursuits such as individual or team sports, fishing, bowling, and the like) and Moral and Religious Orientation (the extent to which the family emphasizes and discusses ethical and religious issues and values).

System Maintenance and System Change dimensions are highly similar across all the environments studied. These dimensions assess the extent to which the environment is orderly, clear in its expectations, maintains control, and is responsive to change. For example, the relevant dimensions in classroom environments are Order and Organization (the emphasis on students' behaving in an orderly and polite manner and on the overall organization of assignments and classroom activities); Rule Clarity (the emphasis on establishing and following a clear set of rules and on students knowing what the consequences will be if they do not follow these); Teacher Control (how strict the teacher is in enforcing the rules, the severity of the punishment for rule infractions, and the ease with which students get in trouble) and Innovation (how much students contribute to planning classroom activities and the amount of unusual and varying activities and assignments planned by the teacher).

Thus three basic categories of dimensions appear to characterize a wide variety of social environments. The Relationship and the System Maintenance and System Change dimensions are with relatively few exceptions similar across all these environments. The Personal Development dimensions vary a good deal across environments depending upon the basic vectors along which the particular environment attempts to direct the people functioning within it. Different environments orient the individuals functioning within them toward different "vectors of development." These different vectors of development essentially become the dimensions in the Personal Development category.

Since the nine Social Climate Scales discussed above were all developed in the Social Ecology Laboratory at Stanford University, it

seemed important to identify the extent to which the three categories of dimensions are adequate to account for the organizational climate dimensions identified in other standard perceived climate scales. Without going into detail here, suffice it to say that the results of eight different investigators were used, as summarized in Table 2. The overall conceptualization holds as well for scales developed by other investigators as it does for our own.³¹

PRACTICAL UTILITY OF THE SOCIAL CLIMATE CONCEPT

The concept of social climate has a somewhat broader range of applicability than is commonly realized. Three major types of applications will be discussed; these are in no sense mutually exclusive.

Social Climate and Outcome

Attempts have been made to relate social climate indices to a number of different types of institutional outcome criteria; for example, to subjective criteria, such as morale and satisfaction, various mood states, helping, and self-esteem; to objective criteria, such as actual achievement levels, student dropout and absenteeism rates, and faculty turnover rates; and to health related criteria, such as complaints of physical and mental symptoms, mild sickness rates (colds, flu, and like illnesses) and major illness, such as heart attacks.

The most dependable findings about the effects of social climates concern what the author has termed Relationship dimensions. The fact that these dimensions are of critical importance in individual and

31. For more details see, R. Moos, *Evaluating Treatment Environments: A Social Ecological Approach*, *op. cit.*, Chapter 14.

TABLE 2

Dimensions of Organizational Climate Scales

	Relationship	Personal Development	System Maintenance & System Change
College & University Environment Scale (Pace, 1969)	community	awareness scholarship	practicality propriety
Institutional Functioning Inventory (Peterson et al., 1970)	institutional esprit	intellectual esthetic extra-curriculum concern for improvement of society concern for undergrad learning concern for advancing knowledge meeting local needs	freedom democratic governance self-study & planning concern for innovation human diversity
Learning Environment Inventory (Walberg, 1969)	intimacy friction cliqueness apathy favoritism	difficulty speed	formality goal direction democratic disorganization diversity
Organizational Climate Description Questionnaire (Halpin & Croft, 1963)	esprit intimacy consideration disengagement	thrust hindrance	production emphasis aloofness
Agency Climate Questionnaire (Schneider & Bartlett, 1970)	managerial support intra-agency conflict new employee concern	agent independence	managerial structure
Climate Questionnaire (Litwin & Stringer, 1968)	warmth support conflict identity	responsibility risk standards reward	structure
Dimensions of Group Processes (Fairweather et al., 1968)	group cohesiveness	group performance	leadership & role delineation
Organizational Climate Index (Stern, 1970)	closeness group life	intellectual climate personal dignity achievement standards	orderliness impulse control (constraint)

group psychotherapy, in social and task-oriented groups, and in industrial and educational environments has been substantiated in a wide variety of research. The Relationship dimensions appear to have general positive effects across many different types of institutions. It certainly comes as no surprise that people are more satisfied and comfortable, less depressed and irritable, and more likely to report beneficial effects on their self-esteem in environments which emphasize Involvement, Support, and Expressiveness.

The dimension of Support-Cohesion also relates consistently to a number of objective institutional outcomes. For example, we found that patients are much more likely to drop out of treatment programs lacking in Support. Friedlander and Greenberg found that the only variable which related to how long hardcore unemployed individuals stayed on the job was the amount of support they perceived from their supervisors.³² Schneider found that perceived lack of support was the most important variable in making bank customers decide to switch their bank accounts.³³ And we have shown that peer cohesion in military companies is highly related to objective indices of graded test performance at the end of basic training. It is assumed that the variables of Peer Cohesion (affiliation) and Teacher Support will be shown to relate consistently to differential student achievement and dropout rates provided that educational achievement is also supported and rewarded in social environments external to the classroom; in the family, for example.

The Personal Development dimensions also appear to have generally positive effects, at least for most people. For example, in both treatment and correctional environments it was found that emphasis on the Personal Development dimensions of Autonomy, Practical Orientation, and Personal Problem Orientation was positively related to liking for staff, and to perceived opportunities for personal development. Enlisted men feel much less anxious and depressed in military companies which empha-

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32. F. Friedlander and S. Greenberg, "Effect of Job Attitudes, Training, And Organization Climate on Performance of the Hard Core Unemployed," *Journal of Applied Psychology*, Vol. 55, 1971, pp. 287-295.
 33. B. Schneider, "The Perception of Organizational Climate: The Customer's View," *Journal of Applied Psychology*, in press, 1973.

size Personal Status. In recent work on two closely matched samples of eighteen classrooms each, Trickett and Moos found that students express greater satisfaction in classrooms characterized by high student involvement and by a personal student-teacher relationship.³⁴ When the classrooms also emphasized Competition students reported that they learned more.

Finally, evidence on the System Maintenance and System Change variables is somewhat unclear. The author's current conclusion is that there are generally beneficial effects related to the dimensions of Order and Organization, Clarity and Innovation, and moderately detrimental effects related to the dimension of Control. However, even this tentative conclusion must be tempered by the fact that considerably less attention has been paid to System Maintenance dimensions and that these dimensions have never, to the author's knowledge, been varied independently of the other two categories of dimensions. Thus, the finding that Control is related to low morale may in part be due as much to a lack of emphasis on Relationship dimensions as to a strong emphasis on Control.

The problem of relating social climate to objective criteria of institutional outcome has some particularly thorny methodological pitfalls.³⁵ Nevertheless, the reproducibility of findings across environments begins to weave a network of "reasonable relationships." For example, several studies of psychiatric treatment outcome indicate that programs with high dropout rates have little emphasis on either the Relationship or the System Maintenance dimensions. Perhaps more relevant here is the history of the "Ph.D productivity" problem. In brief, Thistlethwaite presented evidence that the environmental press at different colleges was related to measures of Student Achievement.³⁶ His findings were complex but one of his major conclusions was that the presence of a supportive involved faculty enhanced student achievement. These studies were criticized by Astin, defended and extended by Thistlethwaite and again

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34. E. Trickett and R. Moos, "Personal Correlates of Contrasting Environments: Student Satisfaction in High School Classrooms," *American Journal of Community Psychology*, in press, 1973.
 35. A. Astin, "The Methodology of Research on College Impact: Part One," *Sociology of Education*, Vol. 43, 1970.
 36. See D. Thistlethwaite, "College Environments and the Development of Talent," *Science*, Vol. 130, 1959; and "College Press and Changes in Study Plans of Talented Students," *Journal of Educational Psychology*, Vol. 51, 1960.

criticized by Astin in an exchange of papers which makes for instructive reading.³⁷ In his own studies, Astin concluded that college environmental measures added very little to the prediction of college productivity once student input factors were adequately controlled.³⁸ The interesting thing is that more recent studies indicate that this literature has now come "full circle." Thus Astin and Panos concluded that the colleges' social environment did have some effects, even though student input factors were still more important.³⁹ For example, institutions high in cohesiveness (students have close friends, and social interaction is frequent) had a favorable effect on persistence in college, that is, they had unusually low dropout rates.

A recent set of studies conducted by the Educational Testing Service is even more interesting. Rock, Centra, and Linn found that colleges with a higher income per student and with larger proportions of faculty with a doctorate tended to have students who achieved better than expected.⁴⁰ Centra and Rock indicated that whereas indices of institutional resources or quality such as college income per student might be important they are presumably important because they are related to other features of the college environment which more directly influence student learning.⁴¹ They found that students at colleges which were high in faculty-student interaction tended to overachieve in humanities and natural sciences. They conclude that: "Some of the

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37. See A. Astin, "A Re-examination of College Productivity," *Journal of Educational Psychology*, Vol. 52, 1961, pp. 173-178; "Influences on the Student's Motivation to Seek Advanced Training," *Journal of Educational Psychology*, Vol. 53, 1962, pp. 303-309; "Undergraduate Institutions and the Production of Scientists," *Science*, Vol. 141, 1963, pp. 334-338; and D. Thistlethwaite, "Fields of Study and Development of Motivation to Seek Advanced Training," *Journal of Educational Psychology*, Vol. 53, 1962, pp. 53-64.
 38. A. Astin, "Undergraduate Achievement and Institutional 'Excellence'," *Science*, Vol. 161, 1968.
 39. A. Astin and R. J. Panos, *The Educational and Vocational Development of College Students* (Washington, D.C.: American Council on Education, 1969).
 40. D. Rock, J. Centra, and R. Linn, "Relationships Between College Characteristics and Student Achievement," *American Educational Research Journal*, Vol. 7, 1970, pp. 109-121.
 41. J. Centra and D. Rock, "College Environments and Student Academic Achievement," *American Educational Research Journal*, Vol. 8, 1971, pp. 623-634.

results reinforce popularly held notions: in particular, that students learn more than might be expected if they feel that instructors are readily accessible, interested in teaching, and interested in students as individuals."⁴² Thus, thousands of subjects and dozens of papers later these authors came to conclusions which are quite similar to those which Thistlethwaite reached some twelve years earlier. Surprisingly, they also make sense!

One final point needs to be made here. The characteristics of relevant community environments must be taken into account in institutional outcome studies. A psychiatric treatment program, no matter what the characteristics of its social environment, cannot achieve success with patients who enter highly stressful community environments once they leave the hospital. A correctional program, no matter how good, cannot keep young adolescents out of trouble if these adolescents are discharged into high crime areas in which they continually associate with delinquent peers. Correspondingly, a classroom with a highly facilitative learning environment cannot have beneficial effects on student learning if the student lives in a family in which learning is devalued or ignored. Thus, the effects of school environments cannot be properly measured unless the other relevant community environments in which students function are also measured.

Social Climate as Mediator and Moderator

The concept of social climate may help in the understanding of how some of the observed relationships between other types of environmental dimensions and specific outcome criteria may be mediated. Centra and Rock were addressing themselves to just this point in their attempt to identify the social climate mediators of the effects of college affluence on student achievement.⁴³ For example, many studies indicate that large size and/or poor staffing ratios may have important negative effects. Typical findings indicate that accident rates, duration of absences due to accidents, and sickness rates rise as factory size increases; that absence rates in hospitals rise as hospital size increases; that tardiness is more frequent in larger organizations and that people prefer to steal from, and are more approving of others stealing from, large impersonal rather than small cohesive organizations.

Thomas and Fink point out that many investigators implicitly assume that size itself has an immediate effect on behavior and that, there-

42. *Ibid.*, p. 633.

43. *Ibid.*

fore, the relevant mediating variables are almost never measured.⁴⁴ There is some conflict in the literature about the extent to which mediating variables are the relevant variables. For example, Cohen and Struening related the social atmospheres of psychiatric hospitals to the length of time discharged patients spent in the community.⁴⁵ They found that authoritarian-restrictive staff attitudes (high staff control) were negatively related to community tenure, whereas other types of hospital atmospheres were positively related to community tenure. Ullmann argues that these results can be "explained" by differences in size and staffing among the hospitals studied.⁴⁶ The author agrees with Cohen and Struening's cogent reply that size and staffing are not psychological variables which bear directly on individuals and that they are thus only important because of their effects on staff attitudes which do bear directly on patients.⁴⁷

There are a host of relevant "mediating" questions which can be investigated with social climate indices. For example: To what extent do universities with different populations of entering freshmen differ in social climate? Do young less experienced teachers establish different learning environments than older more experienced teachers? Do certain building designs have differential effects on the social climate of high schools? To what extent can certain "negative" effects of organization structure or other environmental dimensions be ameliorated? It is the author's opinion that one can more fully understand the effects of different environmental dimensions, if close attention is paid to the mediating social climate variables.

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44. E. Thomas, and C. Fink, "Effects of Group Size," *Psychological Bulletin*, Vol. 60, 1963, pp. 371-384.
 45. J. Cohen and E. Struening, "Opinions About Mental Illness: Hospital Social Atmosphere Profiles and Their Relevance to Effectiveness," *Journal of Consulting Psychology*, Vol. 28, 1964, pp. 291-298.
 46. L. Ullmann, "A Discussion of Hospital Social Atmosphere Profiles and Their Relevance to Effectiveness," *Journal of Consulting Psychology*, Vol. 29, 1965, pp. 277-278.
 47. J. Cohen and E. Struening, "Simple-Minded Questions and Twirling Stools," *Journal of Consulting Psychology*, Vol. 29, 1965, pp. 278-289.

The social environment may also be viewed as a moderator of various relationships. There is evidence that individuals who perceive environments deviantly are generally less satisfied and do worse in those environments. However, deviant perceptions may be related to greater individual satisfaction and to better performance when the environment itself is particularly negative and/or undifferentiated. For example, in the author's own studies there were certain treatment programs in which more satisfied patients viewed the program more deviantly.⁴⁸ These programs had particularly low scores on Relationship and Treatment Program dimensions and high scores on Staff Control. Thus, whereas deviancy per se has negative consequences in most situations the relationship between deviancy, satisfaction, and performance in an environment varies as a function of the characteristics of the environment itself. The social milieu is a "moderator" variable; deviancy must be viewed as an adaptive reaction in some environments. This also indicates that research findings may not generalize across settings precisely because the settings have important differential characteristics. Social climate indices have utility both in selecting environments in which replication studies should be carried out and in suggesting explanations why certain relationships are not replicated in varying milieus.

Planned Social Change and Clinical Intervention

Information about the social climate can be fed back to the participants in a social environment. The logic is that this kind of feedback will often motivate people in the environment to seek to change it. Miles, et al identified the basic processes that may result from this kind of feedback.⁴⁹ Presentation of data leads to a detailed inquiry of why certain results were obtained and to a discussion of problems that were not originally the primary focus of the data collection. Individual involvement at this level promotes acceptance of the data and creates a positive atmosphere toward its use. Group meetings increase individual responsibility for making changes, can lead to positive interaction among members of problem-solving groups, to clarification of issues, and through increased discussion of values, to the establishment of a useful conformity of norms based on reason. As practical group problems are being worked on and change effected, groups also

48. R. Moos, *Evaluating Treatment Environments: A Social Ecological Approach*, *op. cit.*

49. M. Miles, H. Hornstein, P. Calder, D. Callahan, and R. Schiavo, "Data Feedback: A Rationale," in H. Hornstein, B. Panker, W. Burke, M. Gindes, and R. Lewicki (eds.), *Social Intervention: A Behavioral Science Approach*. (New York: The Free Press, 1971.)

learn how to interact more effectively and this leads to basic changes in the relationships among the members of the social milieu, that is, to a change in the social climate.

The author has conducted two successful demonstrations of how detailed feedback of social climate scale results can be useful in facilitating social change.⁵⁰ He also found that feedback and discussion sessions using perceived environment data are a very important mechanism in the acceptance and use of research, as well as a critical source of information and ideas about future relevant research. Since it is often extremely difficult to obtain the extensive cooperation needed in order to carry out detailed evaluations of social programs effectively, the use of social climate indices is particularly important.⁵¹

Social climate indices can also help to describe institutional environments more accurately. The rapid proliferation of new types of institutional environments (for example, new educational programs) has increased the need and demand for more accurate and complete descriptions of these environments. Many people feel that different institutions know much more about the individuals they are attempting to recruit or place than those individuals know about the institution. For example, colleges know more about the characteristics of entering students than entering students know about the colleges which they plan to enter. Social workers know more about the characteristics of the individual patient than the patient knows about the characteristics of the treatment program which he enters. This imbalance of information may be partly responsible for the extremely high rate of "dropouts" characteristic of almost all environments. The completeness and accuracy of descriptions of environments would almost certainly be enhanced if they systematically included information about psychosocial characteristics and social climate. Information about the social climate of an environment should help individuals choose more accurately the specific social environments which might be most beneficial to them.

To sum up, social climate indices have a uniquely broad range of practical utility. The social climate may mediate observed relationships between other types of environmental dimensions and outcome criteria. Information about social climates can be fed back to participants in an environment and can be used to motivate change in that environment.

50. R. Moos, *Evaluating Treatment Environments ...*, *op. cit.*

51. R. Caro, "Issues in the Evaluation of Social Programs," *Review of Educational Research*, Vol. 41, 1971, pp. 87-114.

Social climate indices give a "feel" about an environment on dimensions which everyone immediately recognizes to be relevant. In educational institutions, for example, this information can be used by students, teachers, administrators, board of education members and interested members in the larger community. Finally, social climate indices can be used to identify and counsel individuals about their environmental choices. These indices measure people and their environments on basically commensurate dimensions, thus raising the possibility of increasing person-environment congruence.

SOME CONCEPTUAL AND METHODOLOGICAL ISSUES

In this section of the paper, important issues which have been raised in relation to the concept of social climate will be discussed briefly.

- 1) Is not the social climate of an environment adequately explained or accounted for by other readily available more objective environmental dimensions?

There is some evidence on this question. Pace concluded that data about perceived environmental characteristics such as obtained by the College and University Environment Scales give information which is congruent with, but in substantial addition to, information presented by more objective institutional variables.⁵² This conclusion is consistent with findings reported by others on the relationships between social climate data and more objective indices differentiating among universities.⁵³ For example, Centra administered the Questionnaire on Student

52. R. Pace, "College and University Environment Scales," *Technical Manual, Second Edition* (Princeton, New Jersey: Educational Testing Service, 1969).

53. See, for example, A. Astin, *The College Environment, op. cit.*; J. Centra, R. Hartnett, and R. Peterson, "Faculty Views of Institutional Functioning: A New Measure of College Environments," *Educational and Psychological Measurement*, Vol. 30, 1970, pp. 405-416; J. Creager and A. Astin, "Alternative Methods of Describing Characteristics of Colleges and Universities;" *Educational and Psychological Measurement*, Vol. 28, 1968, pp. 719-734; and G. Stern, *People in Context: Measuring Person Environment Congruence in Education and Industry* (New York: Wiley, 1970).

and College Characteristics (QSCC) to upperclass students at over two hundred institutions.⁵⁴ He compared three different methods of assessing the college environment: student perceptions, student self reports, and objective institutional data. He concluded that "each method seems to tap some information not predictably obtained by other methods. Quite likely then there are certain kinds of information that can be obtained by only one method even when it appears that two or more methods assess the same domain."⁵⁵ Thus, different methods of assessing institutional environments should be used in conjunction with each other. Data about social climate does add some unique information about an environment.

- 2) Do social climate indices actually discriminate among environments; if so what proportion of the variance is actually related to differences among environments?

Social environments are very different and basically every social climate scale discriminates significantly among the relevant environmental units. The author calculated the average proportion of the total subscale variance accounted for by differences among environmental subunits for several of the social climate scales developed by him and his colleagues. It was found that differences among treatment programs accounted for between 20 and 30 percent of the subscale variance. The results were similar in correctional programs. In a sample of thirty-eight classrooms, Classroom Environment Scale subscales accounted for 48 percent of the variance for Innovation and 47 percent for Task Orientation, but only 21 percent for Affiliation. Centra found that the proportion of total factor variance attributable to differences among institutions on the QSCC ranged from 21 to 68 percent with a mean of 35 percent for the eight factor scales and from 3 to 75 percent with a mean of 21 percent for the seventy-seven items.⁵⁶ In sum, no single answer can be given to this question. The proportion of variance which is accounted for by environmental differences obviously depends on the

54. J. Centra, "The College Environment Revisited: Current Descriptions and a Comparison of Three Methods of Assessment," *Research Memorandum 70-44*, Educational Testing Services (Princeton, New Jersey, 1970).

55. *Ibid.*, p. 39.

56. *Ibid.*

sample of environments being studied. The author's own conclusion is that the proportion of variance accounted for by differences among environments is usually quite substantial. Interestingly, it is very similar to the proportion of variance which is usually accounted for by individual difference measures of personality traits.⁵⁷ Social climate scales discriminate among environments about as well as personality tests discriminate among people.

- 3) Are not measures of social climate highly unstable? After all, social environments can and do change very rapidly.

The data compiled by the author and colleagues indicate that the social environments of psychiatric and correctional programs may remain stable over relatively long periods of time, assuming that the program retains a consistent overall treatment philosophy. For example, we have found profile stabilities averaging around .75 with nine-month test-retest intervals. We also found profile stabilities of over .90 in two week test-retest administrations of the Classroom Environment Scale. This and other work indicates that the underlying characteristics of social environments may remain highly stable.

- 4) Is not a person's perception of an environment really a function of his personality characteristics? To the extent that this is so, indices of perceived climate do not really measure environmental characteristics at all; rather they measure personality characteristics.

There is substantial empirical evidence on this question, most of which is consistent with the conclusion that individual personality characteristics are only minimally related to environmental perceptions. For example, McFee studied the relationship between student perception of the college environment as measured by the College Characteristics Index (CCI) and student personality needs as measured by the Activities Index (AI).⁵⁸ She failed to find any correlation between scale scores of individuals on the CCI and their parallel scores on the AI. In addition, there was no strong relationship between personality needs and student perception of environmental press as reflected by individual items. Items about conditions which the student was unlikely to have encountered (for example, those low in "exposure value") produced less agreement and were somewhat more influenced by need than were items about widely shared experiences.

57. W. Mischel, *Personality and Assessment* (New York: Wiley, 1968).

58. A. McFee, "The Relation of Students' Needs to Their Perceptions of a College Environment," *Journal of Educational Psychology*, Vol. 52, 1961, pp. 25-29.

Pace reported that responses to CUES items were not influenced by the personal characteristics of the students. He stated that: "Of 245 correlations between the responses of individuals about their environments and such personal characteristics as are measured by the Alport-Vernon-Linzey Study of Values, the Omnibus Personality Inventory, the Heston Personality Inventory, the Activities Index, the ACE Psychological Examination and the College Qualification Test 86% have been between .00 and + or -.29."⁵⁹ In the author's studies it was also found that individual background variables were not consistently related to environmental perceptions.

However, individuals also perceive the "same" environment differently. Herr used the High School Characteristics Index (HSCI) to describe the perceptions of students at differing achievement and extra-curricular participation levels.⁶⁰ He found that students categorized as high or middle achievers perceived such things as more press for affiliation, for intense open emotional display and for detached impersonal problem solving. He concluded that responses to the HSCI items provided descriptions of the different environmental demands faced by students. He argued that these individual differences had implications for counselling and might be used to identify students who did not perceive environmental demands upon them that were strongly evident to the majority of other students. In this connection, Jansen found that social-political action leaders perceived less friendliness, cohesiveness, and emphasis upon the search for personal meaning in their campus environment than did other types of campus leaders.⁶¹

Thus there are some relationships between individual personality and/or background characteristics of subjects and their perceptions of the environment, but these relationships are not usually very substantial. It is also unclear to what extent they reflect differences in the sub-environments actually experienced by individuals. However, it seems reasonable that under high environmental uncertainty and high need an individual will answer an environmental item in a way that is congruent with his particular need structure. Most importantly, the role position an individual has in an environment (for example, teacher or student, supervisor or worker) usually has a substantial effect on his perceptions of that environment. Personality and background variables might thus be related to environmental perceptions through the mediating effects of role position.

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59. R. Pace, "College and University Environment Scales," *op. cit.*, p. 10.
60. E. Herr, "Differential Perceptions of 'Environmental Press' by High School Students," *Personnel and Guidance Journal*, Vol. 7, 1965, pp. 678-686.
61. D. Jansen, "Characteristics of Student Leaders," Doctoral Dissertation, Indiana University. *Dissertation Abstracts*, Vol. 28;3768A, 1967.

- 5) Are there not sub-environments within larger environments which differ in social climate?

There are some environments which show large variations in social climate, particularly in institutions which are organized into smaller subunits, such as, hospitals, prisons, high schools, and colleges. The social climate may vary extensively from one classroom to another within the same high school. University students who major in different fields and/or who live in different dormitories are often operating in very different social climates, even though they are in the same university. This is one of the reasons why the work of the author and his colleagues at the Social Ecology Laboratory at Stanford University have focused on smaller environmental units, for example, on psychiatric wards, correctional cottages, classrooms, and dormitories. It would seem that the applications of the social climate notion make somewhat more sense in these smaller milieus.

- 6) The social climate methodology is much too subjective. Either more specific questions with concrete behavioral referents and/or more objective outside observers should be used to provide data on social environments.

These would appear to be reasonable criticisms, although it might be argued that there is currently very little available evidence which clearly points to the superiority of a more objective methodology. In addition, it simply is not known whether judgments of social climate dimensions by objective observers relate more highly to relevant outcome criteria than do the perceptions of environmental participants themselves. Social climate dimensions can easily be observed and rated by outsiders, as can specific behaviors which are considered to be relevant indicators of each dimension. This is basically the procedure Walberg and Thomas used in differentiating open education from traditional classes in Great Britain and the United States.⁶²

There is some evidence that global perceptions may relate more highly to relevant outcome criteria than do specific behaviors. Schneider found that bank customers decide to switch their bank accounts on the basis of generalized perceptions they have of the bank.⁶³ Items descriptive of employee behavior had the highest correlations (negative)

62. H. Walberg and S. Thomas, "Open Education: An Operational Definition and Validation in Great Britain and the United States," *American Educational Research Journal*, Vol. 9, 1972, pp. 197-208.

63. B. Schneider, "The Perception of Organizational Climate: The Customer's View," *Journal of Applied Psychology*, in press, 1973.

with customer intention to switch; for example, "the bank employees bend over backwards to provide good service" and "the atmosphere in my bank is warm and friendly." The important additional finding was that these general impressions (which must be based on specific events and experiences of bank customers, such as waiting time, procedure for queuing customers, and the like) were more strongly related to switching intentions than were the specific events and experiences themselves. Considerably more data is needed on these questions. The author's own guess is that subjective global perceptions of social climate will fare relatively well, since it is these global impressions which individuals remember and take into account in making major decisions about their lives.

- 7) The three major categories of social climate dimensions certainly seem interesting, but they are clearly not sufficient in the sense that one can identify many other relevant dimensions.

The author agrees. In brief, he believes that Relationship, Personal Development, and System Maintenance and System Change dimensions occur in all environments studied to date and that in this sense it is necessary to assess them if one wishes to have a reasonably complete picture of a social environment. These three categories of dimensions, it is believed, account for the major proportion of the differences among environmental subunits, at least in most situations. However, additional dimensions and/or conceptual schemes certainly need to be developed. Other dimensions may be most useful in certain specific prediction situations. For example, the author is currently involved in an outcome study of alcohol treatment programs; in this work it is felt that the "alcohologenic" properties of the community environment (for example, how heavily does the spouse drink, how many of the person's friends drink, and so forth) might predict alcohol treatment outcome better than any other social climate dimension.

- 8) Some investigators have argued that certain dimensions of the social environment are growth-producing or anabolic, whereas other dimensions are growth-inhibiting or catabolic. Is it not too soon to make this kind of global statement, particularly since the effects of social environments depend on so many different variables?

The author strongly agrees with this point. As mentioned earlier in this paper, there is some evidence indicating that Relationship and Personal Development dimensions tend to be growth-producing and that the System Maintenance dimension of Staff Control tends to be growth inhibiting. On the other hand, some people react very positively to control and some social environments need high control in order to function. In the author's view, the detrimental effect of making premature value judgments is amply illustrated by the history of work on the Organizational Climate Description Questionnaire (OCDQ), particularly in rela-

tion to the dichotomy of open versus closed schools. The author's reading of this research convinces him that no clear-cut conclusions have emerged from it. One must of course always make value judgments in arranging new and changing old social environments. But one must also be careful not to confuse these value judgments with dependable empirical data which indicate what the differential effects of social environments on different outcome criteria actually are.

- 9) The social climate of an environment does not constitute a stimulus (or a set of stimuli) and thus cannot affect behavior. Only stimuli can affect behavior.

This criticism has been raised by Astin, who illustrates his point by an example from the College Characteristics Index: "Many students drive sports cars."⁶⁴ Astin points out that the item simply reflects the impression of the observer and that the observer's judgment is not itself a stimulus which can affect other students. Astin suggests an alternative method of phrasing the question: "Did you drive a sports car at college during the past year?" The measure of the environment would then consist of the proportion of students at a college who responded positively. Driving a sports car represents a stimulus which can (and does) affect the behavior of other students.

Although Astin's distinction is an interesting one, he may be picking a relatively easy example with which to illustrate his point. First, there are many examples of items in his own Inventory of College Activities (ICA) which do not generally constitute stimuli for most other students; for example, "Had psychotherapy or personal counselling," "Ate lunch or dinner alone," "Violated college rules or regulations without getting caught." Second, the ICA itself does not really follow Astin's own "stimulus" logic, presumably because much of the relevant information about environments is judgmental. Astin includes such items as asking the student whether the instructor in one of his courses was "exceptionally well grounded in the course subject matter," whether the instructor was "enthusiastic," "had a good sense of humor," "was often sarcastic," "was often dull and uninteresting." These items are certainly judgmental and subjective. Third, as pointed out above, some of the most important information about social environments probably relates to people's overall global impressions of those environments.

Astin's point is of sufficient importance that one should systematically include information about potential stimuli (in our terms, the average behavioral characteristics of the inhabitants of the environment) in any differentiated analysis of social milieu. The extent to

64. A. Astin, *The College Environment*, *op. cit.*

which these behavioral stimulus characteristics relate to more global impressions and the extent to which each relates to important outcomes then becomes an empirical question. The author is currently involved in completing such a study investigating the differential effects of college dormitories.

In summary, the author believes that advances in the systematic study of human environments are beginning to be made. The six major methods of characterizing environments discussed in this paper should be used in conjunction with each other whenever possible. The evidence is that they provide somewhat different kinds of information about environments. Studies of educational or learning environments should not be limited to measuring social climate. However, it is believed that the concept of social climate is of great practical utility, particularly in providing accurate and complete information about environments and in helping people change their social environments in directions which they themselves desire.