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The work described in this paper on natural environments is designed as an aid in conceptualizing preventive interventions. Primary interest is centered on such questions as: (1) What types of psychological treatments are relevant for social settings?, (2) What are the effects of such treatments upon the behavior of participants in social settings?; (3) What change in organizational functions will emerge as a result of interventions: An emerging ecological thesis is presented by illustrating the kinds of integrative tasks involved in a planned research program. As an introduction for this thesis, four principles from field biology are presented in order to provide the context for discussion of the research program and its implications for preventive services. (Author)

"Towards an Ecological Conception of Preventive Interventions"[1]

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The work described in this paper on natural environments is designed as an aid in conceptualizing preventive interventions. Primary interest is in such questions as: (1) What types of psychological treatments are relevant for social settings?; (2) What are the effects of such treatments upon the behavior of participants in social settings?; (3) What change in organizational functions will emerge as a result of interventions?

More specifically, an emerging ecological thesis will be presented by illustrating the kinds of integrative tasks involved in this research program. As an introduction for this thesis, four principles from field biology will be presented in order to provide the context for the discussion of the research program and its implications for preventive services.

Ecological Analogies

Elsewhere the writer has presented a case for the ecological analogy, both for studying social environments and for changing them. (Kelly, 1966a; Kelly, 1966b; Kelly, 1967) The premise for this analogy is relevant for studying the expression of effectiveness in varied environments, e.g., this axiom states that functions of individuals and organizations are interdependent.

The translation of this particular ecological analogy affirms that as the structure and functions of social units vary, modes of dealing with

disruptive events also shift, with a corresponding variation in the behavior of individuals who perform adaptive and maladaptive roles in the specific society. Interrelationships between the functions of social units and the participation of individual members then becomes a primary focus for designing programs of interventions where the intervention rearranges the interrelationships or couplings between individual behavior and social functions as much as they alter the behavior of one social unit or the expressive behavior of any one member of the society. For the work of the writer the conception of the interdependence of specific variables such as: (a) individual preferences for dealing with environments (coping styles); (b) the development of role requirements for social settings (adaptive role functions); (c) the type and range of units for social interaction that are characteristic of specific environments (social settings); and (d) the structural properties of the environment, such as rate of population exchange. The development of a conception for these four types of variables can then lead to the design of interventions based upon knowledge for topics like: (1) What styles of coping behavior are correlated with effective performance in varied environments?; (2) How are adaptive roles distributed in different environments?; (3) How do changes in the structures of social environments affect changes in social functions? The primary integrative and conceptual task is to specify how these four types of variables are interrelated.

Before discussing the interrelationships for these variables in more detail, a few comments are in order about ecological analogies. Ecology, with its concern with the relationship of organisms or groups of organisms

with their environment, historically has been a multidisciplinary enterprise. Smith (1966) cites Macfadyen (1957), who has made the following observations about the scope of ecology:

> "The ecologist is something of a chartered libertine. He roams at will over the legitimate preserves of the plant and animal biologist, the taxonomist, the physiologist, the behaviorist, the meteorologist, the geologist, the physicist, the chemist, and even the sociologist; he poaches from all these and from other established and respected disciplines. It is indeed a major problem for the ecologist, in his interest, to set bounds to his divagations." (Smith, 1966, p. 5)

In spite of the breadth of the field and the number of relevant disciplines involved, there are some principles that have an empirical basis in field biology and which offer a point of departure for the study of social environments.

Principle I: Functions within a Social Unit are Interdependent (The Ecosystem Principle)

One of the primary analytic terms in field biology is the concept of the ecosystem, the interdependence of living and non-living elements. This term uniquely defines the emergence of ecology as an identifiable point of view. A brief summary of the principle can be stated like this:

> "...a naturally occurring assemblage of plants and animals that live in the same environment, are are mutually sustaining and interdependent, and are constantly fixing, utilizing and dissipating energy. The interacting populations are characterized by constant death and replacement and usually by immigration and emigration of individuals. The populations are always fluctuating with seasonal and environmental changes. The community depends upon and is

> influenced by the habitat, the specific set of conditions that surround the organisms, such as sunlight, soil, mineral elements, moisture, temperature, and topography. The biotic (living) and the abiotic (nonliving) interact, thus creating an ecological system or ecosystem." (Smith, 1966, p. 12-13)

This principle of interdependence or reciprocity between structures and functions is one of the axioms for the ecologist (see Watt, 1967, as a very recent example). One implication of the knowledge generated from ecosystem studies of the natural habitat is the awareness that organisms depend not only upon food sources but also directly or indirectly upon one another for their well-being and existence.

The translation of this axiom for a study of social environments presents difficulties since psychologists do not often view the coupling of structure and function as the focus for theory construction. More often we select one aspect of social structure, i.e. social class, and study its effects upon individuals who vary along certain dimensions, such as response to psychotherapy. We also will select individuals, such as persons who vary in their attitudes (dogmatism) and identify how they function in an organization (resist change). Both of these prototypic methods do not, however, usually include hypotheses or inferences that focus on a conception of cause and effect as one of interdependence between structure and function, between social class and response to therapy or dogmatism and organizational participation.

Roger Barker's work and that of his students and colleagues is a distinguished and notable exception in psychology not only for the methodological

contributions in defining the social setting, but for their efforts to identify the effects of such variables as size and physical distance upon the behavior of participants (Barker, 1960; Barker, 1964; Barker, 1965). However, as Sommer's recent review indicates (Sommer, 1967), much of this type of work and other research on the ecology of group behavior is taxonomic or descriptive and is not concerned with explicating the social processes that mediate between such variables as size or density of a setting and the behavior of individual group members.

The translation of the ecological analogy for designing preventive services requires a definition of the functions of a society in conjunction with a view of those persons who are unique in performing or not performing adaptive functions. The creation of hypotheses for such interdependence should be derived from a motivational theory that <u>is</u> ecological. For the present work I am asking: What social functions are generated for high school students attending a school with a high rate of exchange?; How do students attending a school with high preferences for exploration fulfill or take part in such functions?; and, What are the effects of such interrelationships for the performance of adaptive and maladaptive behavior of the organization and its members?

<u>Principle II</u>: <u>The Cycling of Resources</u>

This principle as it applies to field biology is a corollary of the first principle and is a direct derivation from the laws of thermodynamics. The first law of thermodynamics is often translated to mean that energy is transferred, neither created nor destroyed, while the second law of thermodynamics states that the transformation of energy assumes a form that

cannot be passed on any further. In biology this principle is expressed by methods to define how energy is transferred from one organism to another and how a large part of that energy is degraded as heat with the remainder stored as living tissue. An example of the cycling of resources in animal ecology is the food chain. Marsh vegetation is eaten by the grasshopper, the grasshopper is consumed by the shrew, the shrew by the marsh hawk or the owl, with the effect that no organism lives wholly on another but resources are shared. From this principle, measurement of the production of energy in different plant or animal communities has been attempted in order to specify how net and gross production varies among plant communities and to determine the efficiency of production of communities -- the useful output of energy in relation to input.

The translation of this principle of energy transfer to the measurement of social environments is undeveloped. Except for contemporary organizational psychologists such as Katz and Kahn (Katz and Kahn, 1966) and a few of the studies cited by Pugh's recent review (Pugh, 1966), an equivalent concept is undeveloped. For the development of interventions, assessment of the procedures for utilizing resources is essential in order to clarify how skills are distributed in an organization and how an organization shares competences.

Viewing social environments in this light does make it possible to view the developmental history of an organization in terms of its management of resources, Katz and Kahn for instance present as one approach for defining organizational efficiency the ratio of energic output to energic

input (Katz and Kahn, 1966, p. 161). They attempt to conceive how much input to an organization emerges as product and how much is absorbed by the system.

One implication of this principle for my own work is the study of the effects of population exchange of high school students upon the development and absorption of informal leaders. My guess is that high exchange environments make more efficient use of resources than low exchange environments. One of the predicted adaptive responses an organization can make to a high rate of population exchange is an unplanned-for increase in utilizing rare resources.

Principle III: The Environment Affects Styles of Adaptation

This principle derives from Von Lubig's law of minimum and Shelford's later modification of the law of tolerance (Smith, 1966, p. 60). The modern derivation of these laws states that the availability of nutrient substances affects the presence of an organism. The empirical research on this law has demonstrated that an organism that exhibits a wide range of tolerance for all environmental influences will be widely distributed in multiple and contrasting settings (Ardrey, 1966; Smith, 1966). Current research in field biology concerned with this principle is focusing upon a re-examination of evolutionary theory, and is leading to restatements of natural selection (Simpson, 1967; Williams, 1966).

Levins, in discussing the context for the construction of model building on biology, concludes that work on the joint evolution of habitat selection and niche breadth, on the role of productivity of biotic

environments and on food-getting procedures, all converge in supporting the theorem that environmental uncertainty (randomness) leads to increased niche breadth while unchanging environments lead to specialization of members (Levins, 1966, p. 426-427). Such work as Levins' and that of Lewontin, who has defined adaptive behavior as the relative diversity of environments in which a unit of evolution can survive and reproduce, provides a provocative set of questions for specifying the form of adaptations for varied social environments (Lewontin, 1958).

Principle IV: The Succession Principle: The Evolution of Natural Communities

The principle of succession is characterized by progressive changes in species structure, in organic structure and in energy flow. In field biology, the principle assumes that there is a gradual and continuous replacement of one kind of plant and animal by another, until the community itself is replaced by another that is more complex. This principle focuses on those factors that contribute toward progressive change in species structure and the changes in the flow of energy distribution and community production. This process in biology assumes that as organisms exploit the environment, their own activities make a habitat unfavorable for their own survival. But in doing so, they create an environment for a different group of organisms, with an equilibrium or steady state with the environment that is more or less achieved for a limited period of time. As natural environments receive greater and greater modification, the succession process is altered affecting the composition and even the functions of communities.

This later phenomenon is the subject for much of the theory, research, and contemporary work in conservation. As Smith summarizes,

> "To provide food for himself, man has cleared away natural vegetation and replaced it with simple, highly artificial communities of cultivated species, adapted to grow on disturbed sites. This has brought about an explosion of insect pests and accelerated erosion of unprotected soil. Nowhere is land change more complete than in industrial and urban areas, a climax type of human succession. Natural communities are completely destroyed and replaced by the concrete, asphalt, and steel of cities, highways, and dams. And the process is accompanied by air and water pollution from industrial and human wastes. Most communities exist only through man's continued, deliberate interference, usually motivated by economic interests. In these 'economic climaxes', the animals and plants present either are desired by man or are adaptable to existing conditions." (Smith, 1966, p. 155)

This principle of succession is particularly relevant for studying social environments, for the principle defines a time perspective for the organization, and alerts the investigator to assess and define the systemic change already present in the organization prior to any proposed intervention. It is also an aid in drawing implications for the relevance of the adaptive effects of specific coping processes. To the extent that a high exchange environment is approaching constancy or a low exchange environment is unsettling, there will be expected to be changes in how persons who vary in their coping preferences assume adaptive or maladaptive roles. For example, persons with high preferences for exploration will be able to assume more adaptive roles as the environment becomes less constant and more fluid.

A Summary of a Research Example: A Study of Adaptive Behavior in Varied High School Environments

These four principles have provided the context for the development of a conception of the coupling process between individuals and organizations and provides a dynamic understanding of the role of individuals in large organizations, and the relative levels of ineffectiveness and effectiveness that are specific for particular environments.

The major work is a study of teenagers' preferences for coping with their high school environment. The specific coping style selected for study is exploratory behavior. Exploration is defined as preferences for trying out alternative behaviors and sampling diverse social situations in the high schools. A 30-item paper and pencil questionnaire and the description of preliminary work carried out in two high schools in Columbus, Ohio has been described previously (Kelly, 1966a; Kelly, 1967).

The current research is planned as a longitudinal study of four cohorts of male high school students, who vary in their preferences for exploratory behavior, and who are attending high school environments which contrast in the amount of students who enter and leave during a school year. Two high schools of equal size have been selected from a suburban area of Detroit. One of these high schools has an exchange rate of students which is 22 per cent, while the other school has an exchange rate which is only 6 per cent. Two other high schools of equal size and of equal demographic characteristics, have been selected in the inner city of Detroit. One of these inner city schools has an exchange rate of 50 per cent of its students,

while the second school has an exchange rate of 15 per cent.

Population exchange has been selected as the main independent variable for defining the social environments of these two schools, because of the premise that rate of population turnover has predictable effects not only upon the social functions in these two environments but also upon the coping preference of the students. For example, one hypothesis states that students who have high preferences for exploration will have a high probability of emerging as adaptive members in a fluid environment but will develop maladaptive roles in a constant environment. Male high school students who are low explorers will have a contrasting adaptive history and are predicted to emerge as effective members in a constant society, but are more likely to assume maladaptive behaviors in a fluid environment. The research will involve studies of the peer society, and faculty-student relations as well as naturalistic observations of relevant social settings in order to present a comprehensive view of the context of exploratory behavior.[3]

My interest in developing principles of intervention from an ecological conception of adaptation is derived from the conviction that most programs of individual or organizational change focus on either organizational behavior or the activities of specific individuals, with only slight consideration of the interdependence of individuals and the organization or the benefits and costs of any intervention for individuals or organizations. The goal of this research is the creation of empirical knowledge of the interdependence of societies and their members. It is my belief that without knowledge of the process of adaptation to varied environments, it will not be

possible to evolve a science of preventive interventions. The remainder of these comments will focus upon ideas about how the primary variables of the research can be defined a priori as interdependent.

Individual Coping Styles (Exploratory Behavior)

One of the interpretations of an ecological analogy is that the dominance of certain behaviors will be specific for social settings (Smith, 1966; Kelly, 1967). As has been mentioned, the general class of environments studied are high schools. It has been assumed that the behavior of students in the high school will affect their behavior when they are not in school. It was also thought that life in the high school will have observable effects upon the socialization process of the adolescent, a critical data source for planning and evaluating interventions.

In concluding an analysis of sources of behavioral variance dealing with anxiousness, Endler and Hunt (1966, p. 345) conclude:

> "The fact that interactions contribute approximately a third of the variance implies that personality descriptions can be improved by describing people in terms of responses they manifest in various kinds of situations."

The writer, in taking this mandate seriously, has asserted that male high school students who are high in their preferences for exploration are predicted to undertake more adaptive roles in a high turnover environment than in another. The research also is aimed to define the type of roles students will perform in the school setting as well as the type of behavior they will manifest in varied social settings.

Exploratory behavior has been identified to have different effects

for the expression of social competence in varied environments. The term refers to preferences for participation in varied social settings and an attraction for novel or unique social situations, and is currently measured by a 30-item paper and pencil questionnaire with items such as "I like staying home and keeping friendships with people I've known a long time", and "I don't like it when a special TV program takes the place of the one I usually watch". On the basis of pilot studies, these scales have been found to be uncorrelated with social desirability, independent of measures of other coping styles, and positively related to Rotter's measure of internal-external control (Kelly, 1966; Rotter, 1966).

Preliminary findings have suggested partial validity since male high school students who were defined as high explorers had a higher probability of being nominated as deviant members in a high school with little population exchange than did students who preferred low exploratory activities (Kelly, 1966). It is hoped that one of the by-products of this approach to construct validation is to specify the diverse conditions for expression of exploratory behavior.

The Conception of Adaptive Roles

The ecological analogy also assumes that as environments vary so do the adaptive and maladaptive behavior they generate. Defining adaptive roles for a particular social environment highlights two complementary issues: the relationship between the social settings and the type of adaptive behaviors that develop in such settings, and the second issue is

the type of personality variables that are correlated with adaptive roles. For the present work, the prediction is that persons who prefer one coping style will fulfill comparable organizational requirements. For example, persons who have expressed a preference for high exploratory behavior will emerge as effective in performing the following activities: (a) assessment of alternatives for solving organizational problems (analysis); (b) proposing recommendations for organizational change (criticism); (c) defining new activities, new norms or new modes of social control for that environment (planning); (d) identifying relationships of the present environment with other resources (scouting). Adaptive roles which the person with high preferences for exploration is <u>not</u> likely to value or take part in are: (a) implementing a solution for one specific activity or event (execution); (b) monitoring current activities, norms or modes of social control for the organization (surveillance); (c) assessing the members' responses to the current environment (facilitation); (d) identifying obstacles limiting operation of the organization (confirmation).

While both kinds of behaviors are identified as essential for every organization, it is assumed that environments with a high exchange of members will generally reward and value the first set of adaptive roles rather than the second set. This latter set of roles will be viewed as more congruent for organizations with little exchange in their membership. It is expected that there is a selective process operating for each of these environments whereby high explorers will adopt the first set of roles and not the others. Postulating this distinction between differences in individuals and variations

in organizations hopefully will generate data to clarify not only the varieties of adaptive roles within an organization but also the relationship between personality and organizational variables.

The Social Setting

The measurement of social settings, the spatial locations for social interaction within environments, provides a definition for those aspects of the structure of the environment that are related directly to the expression of adaptive roles as just described. Again the interdependence of individual behavior and organizational roles is linked with the functional taxonomy of the organization and its environmental form.

Where 50 per cent of the members of an environment come and go during any period of the life cycle of the organization, there will be a greater quantity of social settings than are expected for an environment in which only a small percentage of its members are new. The values attached to participation in social settings in the high-exchange environment is also expected to vary considerably over time, so that new settings will arise, have a short life history, and then be replaced by new modes of action correlating with the changing standards for that environment. Conversely, social participation and social interaction in the constant environment are predicted to have a smaller number of settings which are not expected to change over time. These predictions for the effects of population exchange complement Barker's findings on the effects of school size on social settings (Barker, 1964). He found that although there were a greater number of settings in the large schools, more students took part in the affairs of

the small schools. The student body in the large high schools did not participate in the larger number of available activities. The present work suggests that a fluid environment can compensate for the negative effects of large size by generating new settings as a consequence of population exchange.

Another prediction for the effects of rate of population exchange upon the functions of social settings is the level of the formality of the settings. The social process in a high-exchange environment is as likely to occur in informal social interactions, on playgrounds, at football games, in the cafeteria, or at the favorite pizzeria. The settings at the constant school are expected to be almost identified to the formal settings such as the classroom, assembly halls, study halls, and at the meeting places for extracurricular activities. There is also expected to be differences for behavior expressed in school settings and those outside of school. For the fluid environment, what one does in school and on school property will be equivalent to the same wide range of behavior expressed off school grounds. An analysis of the social settings at the constant school will present more dichotomous behavior. More students will be doing the same things in the same way over a long period of time in school, yet will be doing quite different things in their leisure activity. It's a guess that the almost complete predictability of the constant environment for the students will function as a motivator for seeking uniqueness in new environments.

Wheeler (Brim and Wheeler, 1966, p. 78) has suggested two concepts for studying the structures of socialization settings which are also apt for

making additional predictions for social participation in these contrasting environments. In discussing the idea that authorities in organizations vary in their response to recruits, he states that in homogenizing settings there is a tendency to reduce the relevance of prior experience for present adjustment. In differentiating settings, there may be an urging of recruits to give expression to the different backgrounds and interests they bring into the organization. In the present example, fluid environments would be expected to have more differentiating settings, while constant environments would be predicted to generate more homogenizing settings. On the basis of preliminary findings of organizational responses to newcomers in two Columbus, Ohio high schools, this is the case (Kelly, 1966; Kelly, 1967). New students at the fluid environment were actively welcomed, were informed of both acceptable and unacceptable activities going on at the school and were given a mandate "try us out". New students not only perceived that the total resources of the school were available to them but they reported that their previous activities and experiences were utilized. New students at the constant school seemed compelled to make the first move and were judged, studied and categorized according to the existing social order before any social relationships began and then only with persons in equivalent status positions.

The Effects of Environmental Exchange

Before discussing the nature of the integrative tasks for this work and the implications for designing interventions, brief comments will be made on the predictive power of population exchange as a unit in the ecological chain. It is assumed that this variable will affect not only the number

and range of social settings but the generation of adaptive roles and the socialization for exploratory behavior. This particular ecological variable was selected for study not only for its intrinsic value but because of the number of parallel predictions that can be generated for the effects of this type of environment upon a range of plant and animal populations (Smith, 1966; Levins, 1967). The other primary reason for the selection of this particular variable is that it should be possible to document the simultaneous effects of how individuals (explorers) respond (take adaptive roles) in varied environments and how organizations respond (generate social settings and adaptive roles) to varied rates of immigration and emigration.

The Integrative Tasks

Interdependence of Variables

This work requires at least three distinct integrative tasks. One is the conceptual integration of the interdependence of variables, which has been mentioned. A second is the integration of methods and the third is the integration of theory with practice.

Specifying the environmental conditions for various forms of behavior can provide two sources of data for defining mental health. One is the effects of an organization upon specific coping styles, in persons performing specific adaptive roles. The second is an analysis of the consequences of adaptive performance in one organization as it relates for membership in a new organization. An adaptive member of a fluid environment may learn the rudiments of innovative behavior, but if faced with physical relocation may perceive himself to be in crisis. The adaptive member of a constant

environment may learn a set of specialized roles and the rudiments of citizenship, but react in a maladaptive fashion in an organization when he is relocated or when his environment undergoes rapid changes. The provision for a cohort design in each of the selected high schools will be created to assess the profits and costs for high and low explorers who are living in these contrasting environments. If this kind of integration can be made, it will help to define the context for generating varieties of "healthy" behavior.

The Utility of Multiple Methods

In the preliminary work, two methods have been used, a paper and pencil questionnaire to assess coping preferences, and naturalistic observations to document the type and range of social settings within each school. The next phase of this work will include additional methods to reduce the effects of method variance, and to represent the intricacies of the environment. Survey instruments will be created to assess the perceptions of the students and faculty regarding the normative rules within the school and the mode of faculty-student relations. Intensive case studies will also be conducted with a sample of high and low explorers in order to provide complementary information regarding their perceptions of the environment and their views of the socialization process.

One of the major methodological assignments will be to create data collection procedures so that an estimate can be made of the research process in the natural life of the environment. On the basis of preliminary work, it was found that observing hallways in the fluid school seemed to

have no noticeable effect on the students' behavior. The same observers, however, in a constant school were perceived by both faculty and students as an intrusion. For the present work we will recruit high school students from the host school to carry out observations in the schools and to employ video tape recordings to supplement these personal observations. Also, we will be responsive to document the effects of naturally occurring crises in the local communities and schools. The diversity of methods to be employed is intended to increase the precision of assessing the school society as they respond to unplanned events.

Theory and Practice

The integrative task of linking theory to practice is provocative since it focuses on the utility of the knowledge. The objective of this work is to contribute basic knowledge about relationships between social structures and individual coping styles in order to establish an ecological basis for deducing preventive services. One axiom of the ecologist is that an intervention in one part of the organization will affect the total organization. An ecological orientation is particularly apt for most community mental health services, because not only are preventive services usually imposed or added onto an ongoing program, but by the nature of preventive work multiple agencies and organizations are usually involved as participants if not consumers.

Geertz (1963) reports an example, attributed to the ecologist Clarke (Clarke, 1954) that illustrates an ecological chain. Clarke tells of ranchers,

> "...who, disturbed by losses of young sheep to coyotes, slaughtered, through collective effort, nearly all coyotes in the immediate area. Following the removal of coyotes, the rabbits, field mice, and other small rodents, upon whom the coyotes had previously preyed, multiplied rapidly and made serious inroads on the grass of the pastures. When this was realized, the sheep men ceased to kill coyotes and instituted an elaborate program for the poisoning of rodents. The coyotes filtered in from the surrounding areas, but finding their natural rodent food now scarce, were forced to turn with even greater intensity to the young sheep as their only available source of food." (Clarke, 1954, p. 4-5)

While there is no intent here to equate mental health professionals with these ranchers, mental health programs do not always anticipate any adverse effects of their interventions for the resources of the community or the functions of key persons. A more prevalent view is to alter overt behavior with minimal assessment of organizational or personal side effects. One ethic for the ecologist is to assess the host organization in order to anticipate the effects of the intervention upon the functions of the organization.

Referring to constant and fluid environments as examples, it is predicted that reports of mental health problems in a constant environment will be quite different from the reported concerns from the fluid environment. In the constant environment with its value for absorption for its members, members of this setting will be expected to ask for help for those persons who "criticize", who question normative structures or who may "agitate for change". The treatment fantasies of the faculty will be to "fit" persons in or exclude them. Faculties from the fluid schools who are oriented by

necessity to develop and actualize their members, will tend to see anybody who prefers "direction" as a person in "crisis" and will want advice from the consultant on how to motivate him.

These predictions about the effects of living in these two diverse environments and the generation of maladaptive behaviors, lead to quite different proposals for interventions. For the remainder of these comments examples of interventions considered relevant for these two contrasting environments will be presented.

Contrasting Interventions

A change program for the fluid environment would be designed as a program aimed to improve the socialization for the students of the high school.[4] The change programs for the constant high school would be focused on the adult faculty and administration, with less attention to the student body. The purposes of these interventions are different, as are the methods and style of the change agents and the bases for evaluating program success.

Socialization Aid for A Fluid Environment

A tentative intervention for this setting is to supplement existing informal and formal social processes and promote the identity development of the students. Older high school students, high school graduates and a variety of formal and informal community resources could be involved to strengthen the existing life of the high exchange environment, without limiting the open-ended quality of the environment or creating new

organizational structures. Change agents working in this program would be trying to facilitate the operation of the fluctuating activities of these multiple social units. For example, simultaneous programs such as car maintenance, athletic skill development, vocational training, educational enrichment, could be interventions for school environments that are fluid and serving lower class populations. Equivalent socialization programs relating to leisure time activities, such as sailing clubs, as well as courses and seminars relating to personal development, would be the suggested content for students from fluid schools serving a higher socio-economic class. Tutorial programs with informal supervision by peers and adults would characterize the relationship of the change agents and the clients in both types of fluid schools.

The time periods needed for developing these contrasting programs would vary as well. For instance, there would be a short period of preparation and a longer period of implementation for the fluid high school. Because this type of school is expected to define change as a way of life, the school authorities and students will not require long periods of orientation, warm-ups, clarification, and rationales; their thirst for action will lead to instant programming. To refine the intervention and to enable the program to become an integral part of the total society, a longer period of time would be required. This difference in the metric of the intervention is a consequence not only of the students' and faculty's unfamiliarity in coping with intact organizational structures but also because of the time required to establish functional communication for all the diverse and

scattered units of this changing environment.

An evaluation of the interventions for this type of environment could be measured by the performance of individuals. Will a person with preferences for exploration be able to develop a self-perception and self-esteem as a risk-taker?; Does he emerge with a self perception of a more integrated individual? If the interventions have been effective the high explorer, in addition to surviving in a chaotic society, should be able to differentiate himself in that society.

Faculty Development for a Constant Environment

This type of social environment could receive an equal number of services but in this case they are faculty-oriented, to allow the faculty to consider the expected personal costs for those students attending such an environment. The interventions could be provided by a variety of professional persons and could include various forms of human relations training and consultative services, including studies of the school environment. The goal of this program for this type of environment is to help the faculty of the school redefine the purposes of the school, and to create feedback functions so that the organization can begin to assess the effects of their environment upon its members. For this type of social organization the period of preparation for the change program would be expected to be longer than the period of implementation. Because of the absence of organizational diversity, long periods of time would be expected to be required to interpret the program, to receive sanction from the faculty for the program, and to communicate the goals of the program. Following interpretation, the

operation of the program can be expected to be implemented in a shorter period of time. In fact, the change agents for this program will be alert to insure that the services do not receive premature adoption, and the faculty become preoccupied with a newer ideology.

Evaluating the effects of interventions for the constant environment would assess the effects of the program upon the functions of the organization, particularly aspects of the school environment such as use of resources, relationships to other community resources, how the organization plans for change, and how the school goes about developing mechanisms for increasing diversity.

Conclusions

The proposed interventions for these two types of schools are based upon a view of the social settings and the individual behavior of the members as interdependent. The interest in this work is in knowing as much about adaptive societies as adaptive persons. The approach to this integrative task is to study both processes in contrasting environments, and to learn how people emerge in changing societies, without limiting the development of either themselves or the evolution of the society.

W. Bennis cites A. N. Whitehead who crisply sums it up:

> "The art of free society consists first in the maintenance of the symbolic code, and secondly in the fearlessness of revision...Those societies which cannot combine reverence to their symbols with freedom of revision must ultimately decay..." (Bennis, 1966, p. 205)

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Footnotes

[1]This chapter is a revised statement of ideas initially presented in two papers at the 75th annual meeting of the American Psychological Association in Washington, D. C. on September 2 and 3, 1967. One paper titled, "The Ecology of Adaptation", was presented at a symposium, "Ecology and Coping Behavior: Challenge to a Bridging Discipline". The second paper titled, "Towards a Theory of Preventive Intervention", was presented at a symposium, "Integration of Theory in Mental Health Research". The work described in this chapter and the above two papers was supported by the College of Education, The Ohio State University, and the Office of Research Administration, The University of Michigan. Their help is gratefully acknowledged.

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[3]See Orth, 1962; Mechanic, 1962; and Becker et al, 1961, as examples of studies of coping responses to social environments; Lazarus (1966) presents a review of the recent experimental and theoretical literature on the topic. Klein and Lindemann (1961) and Caplan (1964) provide excellent conceptions for preventive services.

[4]See H. Bredemeier (1964) for a comprehensive socialization program which does not take into account diverse environments.