

James G. Kelly

Professor of Psychology and Research Associate
Institute for Social Research
The University of Michigan

The research that is described in this paper is based upon the writer's thesis that knowledge of how persons cope with their immediate social environment requires simultaneous knowledge of the behavior of persons and social settings. The thesis also affirms that how persons and social settings function and affect each other should derive from a point of view that persons and settings are interrelated. Concepts and methods employed to assess the person should also relate to the life of social settings. Concepts employed to understand a specific social environment should specify how these concepts affect individuals. For the present writer, analogies from biological ecology provide the context for responding to these questions^(2,3,4,5,6,7). An important ecological axiom is that varied environments produce different personal adaptations. This axiom has received substantial verification from ecological studies in biology.

A small but increasing amount of research in the behavioral sciences as well as personal experience suggest that we do in fact vary our behavior from place to place.^(8,9) If we spend enough time in one place, we acquire, without always our awareness, specific and unique ways of carrying out our life's work that are consistent with the varied settings in which we live. The ecological perspective can help to generate knowledge that focuses directly upon commonplace events specific to the local setting and provides a rationale for improvising our methods to affirm how social environments affect their inhabitants.

The theoretical perspective derived from biological ecology emphasizes that persons and social settings have some very specific relationships and that any change in the behavior of persons affects the larger environment as changes in the operation of the social environment affect the life of individuals. For the research investigator it means that he is simultaneously examining reciprocal effects of persons and social settings and is trying to locate those events that are typical for the environment and those processes that affect social participation and the regulation of the society.

The style of ecological research is, however,

somewhat different. It requires involvement with a social environment over a sufficiently long period of time in order to know which aspects of the social setting are salient. The research process is active without arousing persons who are members of the environment and distinct without attracting the preoccupations and attentions of multiple segments of the environment. This style of research can enhance our knowledge of socialization processes that affect the ways in which daily life is portrayed. Knowledge is made more authentic because the varied methods can focus upon the range of social settings. Research that begins with the premise that persons are related to the environment and research that employs methods that illuminate the culture of the social setting allows the varieties of the social units and their impact on their members to be presented as they naturally unfold. Knowledge gained in this way can illuminate what new organizations and resources are needed for improving the quality of the environment.

Two High School Environments: A Case Example

The present paper comments on the initial stages of a longitudinal study of a group of high school boys attending two demographically similar yet socially distinct high school environments. In the fall of 1968 when the boys were in the eighth grade, a stratified sample of 60 boys at each of the two schools was selected on the basis of their preferences for exploring or engaging their school environment. The construct of exploration refers to a preference for initiating and becoming actively involved in the culture of the school and includes items such as "I enjoy getting different groups to work together" and "I often have new ideas for class projects." Selection was based on a multiple method battery of questionnaires, thematic, biographical data and peer ratings.^(10,11,12) Revisions were made in the selection battery in 1969 when the students were in the ninth grade (1969-1970 school year). During the 1970-1971 school year, when the students were beginning the tenth grade and their first year of high school, a biannual census⁽¹³⁾, intensive structured interviews⁽¹⁴⁾, and a study of informal group behavior⁽¹⁵⁾ were employed to concentrate upon

assessing how these boys developed personal competences and social skills as they began high school. The study includes, then, students with varied levels of exploratory preferences who are attending two similar yet distinct school environments. The purpose of the research program is to assess the effects of the school upon exploratory behavior. It is the premise of this work that the social life

of a particular social environment does have specific and differential effects upon students as they move through their school. It is also expected that boys with varied levels of exploration preferences will adapt differently at the two schools because of each school's unique social culture.

The similarities and differences between the

TABLE 1
Differences between the Two High School Environments
(as presented in P. Newman)(17)

	School 1	School 2
1. Demographic Characteristics		
Sociocultural:	Suburban-industrial Middle class	Suburban-residential Upper-middle class
Student Enrollment and Exchange Rates*	1,963 18.7%	2,126 8.0%
Residence of High School Faculty	Faculty live in school district	Faculty live outside of school district
2. Architectural Design:	Multiple story Heterogeneous design	Single story Homogeneous design
3. Organization of Curriculum:	Ability grouping 10th graders take English with upper- classmen Comprehensive curriculum	No ability grouping 10th graders take English with 10th graders College preparatory curriculum
4. Extracurricular Activities	Socially oriented	Task oriented
5. Formal Social Organi- zation		
Principal	Autonomous Leader Long tenure in position	School board directed Facilitator Short tenure in position
Assistant principals	Clear division of labor	Similar responsi- bilities
Counselors	Division of students by grade & ability	Division of students by sex
Faculty	Departmental organ- ization Faculty Council	Interdepartmental organization Implementation Comm.

*These are the average rates of population exchange (number of students entering and leaving the school/total school population) for three years (1968-1971).

two schools, especially their gross social structure, are outlined in Table 1.

Some of the recent findings about the processes of coping and adapting to the two schools will be summarized. Gilmore, employing a case study, interviewed a sample of 36 tenth grade boys (18 boys at each school with six boys at each level of exploration preference) (14). He was particularly interested in differentiating competences between students with preferences for different levels of exploratory behavior. He found that while the boys at School 2 reported a greater number of competences than the tenth grade boys at School 1 those with high preferences for exploration behavior at both schools reported that they express their competences within the settings of the school. Both of these findings were clearly significant with F ratios at the .01 level for a two-way analysis of variance. The boys with high exploration preferences also had significantly higher perceptions of their ability to influence their friends and their school environment and reported that they expected that parents and teachers would agree with their own ideals. Gilmore's work suggests that the boys originally selected in the eighth grade to have high preferences for exploration have continued to view the high school, at the beginning of the tenth grade, as an environment where they can express their competences. Gilmore's work also suggests that these boys do vary in their expectations and confidence to influence their environment.

This relationship between exploration preferences and participation in school affairs found by Gilmore via structured interviews is strengthened by the independent results reported by Edwards (13). Edwards administered a comprehensive assessment battery to the 195 boys in the total longitudinal sample. He found that boys with high exploration preferences express more identification with school, express more initiative, have higher self esteem and satisfaction with self, and say they know the principal of the school better than moderate or low explorer boys. Consistent with this pattern, boys with high exploration preferences also report that they have less social problems, are less unhappy at school, chat with a fewer number of students at informal settings in the school, and feel less watched and less uncomfortable in group situations. These findings represent significant F ratios beyond the .05 level and express a striking array of predicted relationships for the convergent validity of exploratory behavior. But we have a long way to go to account for much variance between exploratory preferences and the dependent variables. The Omega statistic (W^2) (16) employed by Edwards keeps our vanity low for the above relationships account for between

only four percent and 15 percent of the variance between exploratory preferences and the other self-report personality measures. The follow-up phase of the longitudinal study will focus upon whether this initial involvement, reported by boys with high exploration preference, continues and is maintained in the same way at the two schools. The study also will be particularly interested in whether different levels of preference for exploration have varied adaptations at the two schools and whether the two schools have different social structures for attracting and repelling the boys who wish to be involved in the life of the school.

A few comments also can be made about the types of competences reported by the students in Gilmore's work. Between 61 percent and 71 percent of the first two competences mentioned in response to the question "What are some of the things you are good at and like to do?" related to recreational activities and sports. The relationship of exploration preferences and recreational competences at School 1 was positive and linear (45 percent, lo; 75 percent, mod; 92 percent, hi), while the relationship was more curvilinear at School 2 (83 percent, lo; 33 percent, mod; 67 percent, hi). These findings suggest that competences in sports at School 1 define the conditions for being involved in the culture of school. The boys at School 2 are reported to be involved in acquiring alternative competences via academic work, jobs or hobbies. We were also interested to find out that of the first two competences mentioned at either school only six percent at School 1 and three percent of the competences of School 2 were categorized as social competences. As the study continues, we will be particularly interested to see if the apparent and more active social environment of School 1 continues to nurture the development of more social competences than does the environment of School 2. At the beginning of the tenth grade the boys at School 1 expressed a slight tendency to be more responsive to their cultures than the boys at School 2.

What about the social structure of the high school environment and its opportunities for socialization? What settings for socialization are these schools providing? In a carefully designed representative sampling of the faculty and students at both schools, P. Newman (17) has found consistent differences in the quantity and quality of social interaction mentioned earlier. Not only was the quantity of social interaction reported by faculty and students to be greater at School 1 than at School 2 but the interaction between students and faculty took place both in more informal and formal settings at School 1 than at School 2. For example, differences in the quality of the

interaction were found to exist in the following way. Students at School 1 reported that they perceived more personal interest expressed by the faculty and that they felt more comfortable in informal interactions with the faculty and administrators than students at School 2. The students at School 1 also reported that the faculty encouraged more active student involvement. Social norms were perceived as being clearer and consequences for norm violation harsher at School 1 than at School 2. As expected from the above findings, students at School 1 demonstrated a greater preference for the company of faculty and reported that social norms encouraged more involvement with their school. Students at School 2 reported a greater preference for the company of their peers than students at School 1. These findings of P. Newman give empirical support for the impression that the social environment at School 1 is more responsive to students who do wish to be members of that society. School 2 makes it more difficult for students to be active social participants.

These findings are also consistent with the work of Edwards (13) and his data from the stratified sample in the longitudinal study. Edwards found in his sample of high, moderate and low explorer boys that all students at School 1 expressed more positiveness about the principal, believed that the students had greater influence over fellow students and student government, and believed their school to be a better place than did students at School 2. There is a consistent portrait emerging that the boys with different levels of exploration preference will be participating in quite different cultures.

Barbara Newman's work has provided further evidence of the differences in the cultures of the two high schools (15). She created an informal group in which nine boys from Gilmore's study -- three high, moderate and low explorers -- at each school met for eight discussion sessions. Her interest was to assess the verbal and non-verbal behavior of boys within the group. Consistent with the findings of Edwards (13), P. Newman (17), and Gilmore (14), she found that there was more diversity in the responses of the boys at School 1. The boys at School 1 also were more expressive in their participation than the boys at School 2. They related more to her and expressed more affect to her and the other group members than the boys at School 2. A statistically significant finding that differentiated the behavior of the boys between the two schools was that the boys at School 1 asked the leader for information and sought her opinions more than did the boys in School 2 who were more cautious in their approach to the group and the group leader. We are interpreting these findings generated from

this unstructured group setting in conjunction with the findings from P. Newman and Edwards as indicating that the culture of the schools is different and that School 1 serves as a more active and valued environment than School 2.

Further information was also obtained regarding differences in the expression of exploratory behavior from B. Newman's work. As mentioned above, the boys with high preference for exploration at School 1 were more expressive and involved in the group setting. But, the same was true for the low explorer boys at School 2. The high explorer boys at School 2 were less attracted to the group and less involved in group discussions. The findings of relatively less expressive behavior on the part of the boys at School 2 suggest that the less active milieu of School 2 may be "cooling" out the expression of affect. This work also suggests to us that the assessment of emotional feelings at School 2 will be more difficult in the future. If the boys with high exploration preferences at School 1 continue to be expressive, it will be a relatively easier task to learn about their adaptation than the more reserved response to novelty characteristic of the boys at School 2.

One of the most striking findings in the work of B. Newman was the vast individual differences she observed in the behavior of the boys independent of their level of exploration. The boys at both schools showed differences in physical size, in their interests and verbal skills. From the accounts of the wide range of responses to the group, we are beginning to subdivide the exploration groups to include categories of varied developmental levels. Exploration at a lower developmental level, for example, may be expressed via large body movements. At more advanced developmental levels, exploration preferences can be channeled into more ideational and perceptual activities. If such distinctions can be assessed, the research program provides an opportunity to learn more about the interaction of social forces and developmental levels which affect coping preferences in the period of middle adolescence.

The work of Philip Newman concentrated on assessing the social structure of the schools by using a representative sampling of the faculty's and students' reports of the quality and quantity of social interaction at each school. B. Newman used social interactions during informal group discussions to further characterize the culture of the schools. Todd (18) used still another approach to define the culture of the schools, namely, a case study of the helping behavior of two subcultural groups within School 2. His method involved a series of successive procedures including informal interviews, sample surveys, and an intensive

study of the boys through daily log reports of helping acts. This intensive study of the help-giving process in two subcultures provided validation of the nebulous quality of the social structure existing in School 2 when he found that students in both subcultures knew very little about the details of the rest of the social environment that did not involve them directly. A few comments will be made about the unique approach and the findings of this study.

The two subcultural groups that were selected represented quite distinctive qualities. One group was more visible within the formal social structure of the school, while the other group showed minimal involvement in school affairs yet participated very actively in a competing culture outside of school. In response to inquiries in the sample survey, Todd found that the non-school affiliative group, whom he called the "tribe," reported more reciprocal help-giving acts than the group he referred to as "citizens." When both groups of boys kept log reports of their helping behavior, however, the citizens showed a tendency to engage in more reciprocal helping transactions and were involved in receiving and giving help with girls more often than the tribe members. The differences in response to the two research methods is encouraging rather than disconfirming. A subgroup such as the "tribe," that is marginal to the main culture, could be expected to present an image of solidarity to an outside research investigator. The opposite response could be expected to be true for a member of the citizen culture who responds to "tests" more casually and who positively values preparing autobiographical reports for a "diary" of help-giving behavior. The increased appearance of help-giving incidents with girls in the lives of the citizens, as reflected in their log reports, is interpreted as representing the authentic and genuine significance of girl friends to the citizens in their personal interactions. The tribe members, on the other hand, who live in a more "routine," male-dominated culture, view social interactions with girls as infrequent and conflicting events. It appears, according to the results that Todd has reported, that the "tribe" pays a price in being a closely knit, cohesive male subgroup; namely, their marginal status in the high school environment prevents their seeing a woman in any other way than as a sexual object.

The dynamic interdependence between citizens and tribes was highlighted by the different responses to the two research methods. Todd's work has provided the research program with a provocative approach of funneling down to the social structure and revealing the clarity of the social environment without losing the complexities of life patterns of the two subcul-

tures. The choice of helping behavior, derived from the ecological perspective of the interrelationships of persons and natural settings, provides compelling findings for the subcultural groupings at School 2. We have learned that the socialization of help-giving competences does vary from subcultural group to subcultural group. We are now ready to examine in more detail the antecedents for these relationships and to document the varieties of ways in which persons and settings affect one another.

The studies of persons, such as the work of Gilmore, Edwards and B. Newman, and the studies of the social structure of the schools, such as the work of P. Newman and Todd, are examples of developing complementary methods and inter-related studies to understand the ecology of varied environments. On the basis of current work, it has been established that the social environments of the two high schools are perceived as different social climates and that boys with different levels of exploration preferences express different personal characteristics. As the work proceeds, the differential impact of the schools upon the socialization of exploration preferences can be assessed.

Implications for the Study of the Ecology of Socialization

On the basis of the present studies, it seems reasonable to discuss the social environment of the first school as a location where there is a variety of informal settings within the school for students to actively express their ideas and to participate in school affairs. Students who vary in their mode of accommodating to the school can do so, it seems, if they have the principal's expressed approval and if extracurricular activities absorb students with contrasting styles of living. There is a definite social organization working at School 1 which creates a forum for involving new resources. The social functions of the environment are intact; social settings for informal and formal interactions are available; and clear social norms are present to socialize new members. What is not so clear is how tolerant the setting is or how rapid organizational problems can be dealt with or how many extracurricular opportunities can be created that diverge from the values of the school principal.

At School 2 it is expected that there are diverse viewpoints within the larger community surrounding the school, but this latent variety is relatively unknown to the school faculty. The social norms generated by the school faculty seem to serve to reduce outside influences affecting the life of the school. At the present time the specific sources for such norms are unclear. One guess is that such school policies reflect the concerns of the local

school board and community leaders to keep the school free from more intrusive or conservative political influences that may place new demands upon the faculty and administration which they prefer not to meet. One of the consequences of this tension in keeping out external forces is that the faculty and students do not seek out and value the competences present in the school and larger community, and they go unnoticed. From this perspective it appears that School 2 is neither efficiently utilizing the resources that are available to them nor actively working to create values for the planned development of students or the social organization of the school. Instead, social norms operate to reduce external influences affecting the school and, perhaps most unfortunately, to reduce whatever opportunities there are for student/faculty interactions as well as to cement the differences between student and faculty cultures.

Implications for the Study of the Ecology of Competence

Our findings at this point in time suggest that one environment seems to behave as if it were a "scout camp" while the other generates a great deal of ambiguity. The research program is concerned with the consequences for students attending these two different schools. At School 1 the question is what happens to students who are not congruent with the modal social norms of the environment, who care about their school but choose not to become members of the "scout camp." At the second school the concern is for students who care about their school but who cannot locate the social supports for their activities. Our guess is that these two requirements for adaptation will have divergent effects upon students' future participation in school and their immediate and long-term preference for adults' help-giving roles. The thesis of the study is affirming that the quality and diversity of the social environment has definite effects on the ways in which young people learn to cope with environmental demands. If such effects are demonstrated, the study can provide concepts and empirical data for defining types of social interventions that can be applied to social environments.

The present work has developed from implicit criteria for a model "ecological" environment. The six criteria are presented in order to make explicit the benchmarks by which each school environment will be assessed. The ecological thesis affirms that personal development can be accomplished if criteria for the socialization of competences like the following are met: 1) a diversity of formal and informal settings encourage social interaction; 2) a variety of informal roles in the social environment allows

for spontaneous help-giving and for personal interactions across divergent roles; 3) varied competences are valued and persons contribute these competences to the larger community; 4) there are clearly recognized social norms for relating to the surrounding external environment; 5) there is a commitment to examine the impact of the social environment upon its members; 6) there is a value for designing a social environment where the dominant activities take into account the diverse cultures of members. The future work will describe these two schools and evaluate them in terms of these performance criteria.

These criteria will help the present work to analyze the mechanisms and those social forces that evolve in response to the demands of varying persons along with the means that different persons employ to cope with environmental demands which are incompatible with their aspirations and hopes.

Future Hypotheses

As the study continues, future work will focus upon differentiating characteristics of the social environment which are specifically salient for boys with different levels of exploration while simultaneously documenting the particular ways of life of the schools. From here on our task is to differentiate the socialization processes by hypothesizing how students who are members of different school environments learn contrasting competences. If we are successful, we then can concentrate upon creating plans for organizational and personal change which derive from these ecological findings.

Our thinking is starting to move in the following direction. Students at School 1 are expected to be able to learn how to interact with adults in authority roles, initiate social interactions with strangers, and feel optimistic about their own ability to influence the events of the school. Students at School 1 are expected to participate quite comfortably in hierarchical relationships, particularly with persons with assigned power. What the students are expected to learn as members of School 1 is to seek out, engage, and deal with those with influence. Students at School 2, on the other hand, are expected to be socialized to move on to their achievements without deviating from an abstract and minimally-shared objective and without participating actively in their immediate social settings. What the students at School 2 have, they are expected to keep and parlay for still greater achievements.

The students at School 1 are predicted to be involved and committed to making their world effective, while the students at School 2 are

concerned with insuring that they maintain their valued position. In wondering about the potential strains for the different patterns of socialization, the students at School 1 are expected to be naive about the realities of social milieus except for social settings which are very similar to their own. Their view of the world is expected to be cognitively more simple than the world view of the students at School 2. Students at School 2, in contrast, are expected to have a more realistic, if not cynical, view of how social institutions function and are expected to lack the emotional investment to actively participate to bring about change. On the basis of these ideas the boys with high preference for exploration at School 1 are expected to have a more personally satisfying and adaptive high school career than the boys with high preferences for exploration at School 2. The high explorer students at School 2 will feel more psychic strain as they attempt to engage and participate in a vague and unresponsive environment.

During the next two years of the research, increased attention will focus on the relationship between personal preferences, social structure and socialization. As we concentrate upon this task, our aim is to highlight the varieties of adaptive behavior of students who have the same predispositions to act. The hypotheses derive from our view of the boys and from the environments where they are students.

Conclusion

The ecological thesis is that different persons' competences vary in different environments. The comments in this paper have illustrated how a longitudinal study carried out in two high schools is an example of one approach to understanding how the natural features of social environments affect their members. At the conclusion of the research, it is hoped that knowledge will be available to illuminate socialization processes in high school environments. Equally important is the aim that the research will furnish cornerstones for the design of new social processes at the two schools. It is hoped that such new social settings can be authentic locales for youths to develop social competences in order to deal with future and unknown environments.

Notes

- (1) This paper, prepared for the Third Environmental Design Research Association Conference, UCLA, Los Angeles, January 24-27, 1972, is derived from comments presented at a symposium entitled "Social Competence and Mental Health," 79th Annual Meeting of the American Psychological Association, September 6, 1971. The research described in this paper has been supported by research grant MH 15606 from the National Institute of Mental Health.
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