THE PSYCHOLOGICAL ENVIRONMENT OF UNIVERSITY STUDENT RESIDENCES (1)

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Introduction

While the "environment" is generally considered to be pervasive and extraordinarily powerful influence on behavior, the exact specification of environmental or situational variables has been relatively neglected and, with the exception of the work of Barker (3), empirical attempts to specify environmental variables have, until recently, been notably absent. In the last few years a number of investigations have focused on certain delimited environments (4) including studies relating to personality, therapeutic behavior change, psychiatric ward environments (5), correctional facilities (6), high schools and high school classrooms (7).

University institutions have been the subject of a number of environmental studies designed to measure dimensions along which campuses vary and to relate there environmental characteristics to the psychological and intellectual development of students. The College Characteristics Index (CCI) (8) and the College and University Environment Scale (CUES) developed by Pace (9), were designed to measure the environment of colleges and universities by means of true-false questionnaires asking students about their activities and impressions of the college environment. More recently, Astin (10) has developed the Inventory of College Activities (CA) which covers four broad areas of environmental "stimuli"; peer, classroom, administrative and physical facilities.

While these measures represent notable advances in the assessment of environments and their impact on individuals particularly in educational environments, it appears quite clear that college environments are not monolithic and undifferentiated (9) but are composed of various sub-environments which may have considerable impact in themselves of students and also in the larger college environment.

One such important environment may be the immediate on-campus living residence (dormitory, fraternity, sorority, etc.) where students spend much of their non-classroom time and is the setting in which a large proportion of interpersonal learning and peer influence occur (11). For example, it may be that the immediate living environment (as distinguished from the general college environment) may have differential effects on students in areas such as satisfaction with college life, intellectual and academic productivity, and changes in subjective mood states and the development of psychiatric symptomatology. In order that these and other questions about the effect of the residential environment on students could be approached a scale was developed which attempts to measure both salient features of the residence environment and allows for the systematic comparison across a wide variety of living arrangements of varying collegiate settings.

Three methodological approaches can be utilized to measure residence environments. The ecological approach might include the measurement of residence size, sex ratio of residents, student to staff ratio, the number of one, two and three persons rooms, etc. A behavioral observation method might focus on types and frequency of various activities of residents such as amount of time spent together, the attendance at house social functions, types of behaviors at mealtime and house meetings, etc.

A third method, and the one employed in the present study, is logically similar to that used in the CCI (8), CUES (9), and the Ward Atmosphere Scale (12); this may be termed the perceptual approach. Students and staff are asked to describe the usual patterns of behavior in their living units and their perceptions of the house. While each person may perceive his environment in idiosyncratic ways, there is a point at which each individual's private world

merges with that of others so that common interpretations of events tend to arise out of common experiences. It is this common consensual perception of the press of immediate environment which the University Residence Environment Scale (URES) was developed to measure.

Each of the approaches to the measurement of environments described above undoubtedly would yield important information about the climate of university residences, and would be expected to be moderately correlated with data obtained using other methods. The usefulness of the perceptual appr ach may in part be seen by noting that the press of the external environment (including the behavior of other persons and ecological variables) suggests the direction a resident's behavior must take if he is to function with a minimum of stress and a maximum of satisfaction within his particular living group. For example, a student's perception of the friendliness or hostility of the environment regarding certain behaviors will channel his behavior as a function these anticipated rewards and punishments possible in his living unit. These perceptions will in turn, direct him to various aspects of the environment such as particular groups or individuals in his dormitory who may through modeling and reinforcement processes, have an important impact on his subsequent attitudes, value orientations, intellectual curiosity and self evaluations.

Method

Two major questions were asked in the present study: 1) Does the psychological environment vary from one living environment to another, and can these differences be measured by the URES; 2) Can the psychological environment of a residence be described in relatively homogeneous ways by persons in that milieu?

Several methods were employed in obtaining the initial pool of questionnaire items and in gaining a naturalistic understanding of dormitory climates. First, meetings with groups of dormitory residents were arranged to talk about their perceptions of their individual houses and to discuss with them their likes, dislikes and general observations on dormitory living. These interviews consisted of 10-12

students and usually lasted for one to two hours. The format was informal and unstructured with the interviewer asking various questions about their unit to elicit the group's response and noting the replies and debates which sometimes resulted. Interviews were arranged in approximately 10 different dormitories ranging from freshmen through graduate and professional dormitories and consisting of both male, female, and coed dorms. Second, various environmental scales (e.g., the Moos WAS, Stern's CCI, Pace's CUES) were studied to generate additional ideas about items which might discriminate between university residences. Third, several books and articles were read in an effort to identify differing dormitory atmospheres and to understand dimensions along which university residences would vary. Lastly, observations by university housing personnel were solicited and the authors' own reminisences of their college experiences were scrutinized and wherever possible formalized into items.

The resulting form consisted of 274 items, including twenty items drawn from the Crowne-Marlow Social Desirability Scale were included to furnish a measure of the response set, and 16 items to measure positive and negative "halo" effects.

The questionnaire was given to both student and staff residents in 13 dormitories at a private university. These dormitories included male, female and coeducational houses, large and small units, and houses composed of students who were either exclusively freshmen, exclusively upperclassmen or all four undergraduate classes combined.

Revision of Preliminary URES

The first question of interest was to determine whether the items actually discriminated between the tested houses. One-way analyses of variance were computed among all 13 dormitories for each of the 238 environmental items (of the total 274 items 20 were Crowne-Marlow S.D. and 16 were "halo" items which were later dropped from the scale). Of these items 87.9 percent were significant beyond the .05 level with 199 or 83.6% of the total discriminating at the .01 level. Of the 238 environmental items 18 or 7.6% had significant ($p < .05$) correlations with the total Crowne-Marlow scale, indica-

ting that item responses by subjects were not confounded by social desirability.

Since it appeared that measures of the perceived environment could significantly discriminate among different living units, the next step was to select items for a revised version of the scale. Criteria used in selecting items for the revised (R1) form were as follows. First, an item should signigicantly discriminate between the houses tested. Secondly, items should not have true-false response splits more extreme than 80%-20% to be descriptive of all residences. Third, each subscale should have 5 true keyed and 5 false keyed items so that acquiescent responding could be controlled. Lastly, items should not be correlated with the Crowne-Marlow scale.

These four criteria were applied to the item responses from the dormitory sample and resulted in a 140 item R1 form of the URES composed of 14 environmental subscales. Ninety-five percent (133) of the items significantly discriminated between residences and only 9 items had significant correlations with the Crowne-Marlow S.D. scale.

Each of the 14 subscales of the URES R1 version were then subjected to one way analyses of variance to determine if they could differentiate among the 13 dormitories. All 14 environmental subscales reliably differentiated among houses in the sample at highly significant statistical levels.

Revision of the URES R1 Form
The psychometric properties of the scale results from initial data collection and enthusiasm from feedback of results to dormitory residents and administrative personnel encouraged the authors to collect data on a larger number and wider range of student residences.

Subsequent to these data collections, the decision was made to revise the R1 version of the URES to: 1) reduce the total number of items in the scale, 2) reduce the content overlap and seeming redundancy of some items, and 3) to reduce the overlap among some subscales.

A random sample of students was chosen from each house in the norm group of 73 houses with selection being made to insure proportional sex and class representation within each floor of the residence. (Total revision sample N=505)

First, a factor analyses (VARIMAX rotation) was performed to provide information about possible item clustering other than the a priori method initially employed in defining the subscales. In general, the factors which emerged in this analysis closely paralleled the R1 subscales. Item intercorrelations, subscale intercorrelations and item-to-subscale correlations were than calculated for 3 successive trials with item deletion and subscale recomposition after each trial as indicated.

The subscales were reorganized using the criteria previously mentioned (i.e., reduction of item and subscale overlap; reduction of total scale length) and the additional ones of 1) high item-subscale correlation, and 2) maximum discrimination of items. This latter criterion was met by computing one way analyses of variance for each item across all 73 houses in the norm group and choosing items with the most significant F ratios. This procedure resulted in a 96 item URES (Form R2) grouped into 10 subscales (13). Table I presents the subscales and their definitions.

TABLE I

Subscales Composing the URES

Relationship Subscales: The emphasis on interpersonal relationships in the house.
Involvement: Measures the extent of interpersonal and house involvement felt in the house; also, the degree of friendliness and group cohesion and loyalty.
Support: The extent of general emotional support and the degree of emphasis on open honest communication.

Personal Growth: Subscales measuring psychosocial development of residents.
Independence: The stress placed on independent actions and thoughts versus more social proper and unformist climate in the house.
Traditional Social Orientation: The degree traditional dating and related behavior is stressed in the house.
Competition: (This subscale is a bridge between the personal and intellectual growth subscales.) Mea-

sures the degree to which a wide variety of activities (e.g., dating, grades, etc.) are cast into a competitive framework.

Intellectual Growth: Subscales measuring emphasis on academic and intellectual activities.

    Competition: As above.
    Academic Achievement: The degree of house climate emphasizeng grades and other formal academic accomplishments.
    Intellectuality: The emphasis on cultural, artistic and other intellectual activities not related to classroom achievement.

System Change and Maintenance: Subscales measuring the stability and possibility for change of the house environment from a system perspective.

    Order and Organization: The emphasis on rules, schedules and the following of established procedures.
    Innovation: Measures the degree of stress placed on novel activities and spontaneous events, both at the house level and between individual residents.
    Student Influence: The amount of control student residents perceive they have in the running of their house versus control by staff or administration.

The subscales are grouped into 4 categories: 1) The emphasis on interpersonal relationships, 2) the pressure toward change in emotional and psychological functioning, 3) the emphasis on intellectual and academic development, and 4) the emphasis on a rigid versus more fluid social organization.

Results

Subscale Discrimination

Each of the the URES subscales were subjected to one way analyses of variance across all 73 residences in the current norm group to determine whether they differentiated among these houses. All 10 subscales reliably and very significantly discriminated among houses in the sample. Thus, one of the major criterions of the scale construction has been achieved.

Reliability

The reliability of the URES Form R2 was estimated by employing internal consis-

tency, test-retest and profile stability methods. KR20 correlations range between .772 and .879 and mean item-total correlations reveal that all of the subscales are composed of homogeneous items.

The temporal stability of individual perceptions was measured by administering URES to the same subjects on three separate occasions in one men's and one women's dormitory at a public university. The product-moment correlations reveal that individuals living in these two dormitories perceive their respective environments in similar ways both 1 week and 1 month after an initial testing. The correlations range from about .6 to .8 after 1 week and .5 to .7 after 1 month. While there is some decrease of the correlations from the 1 week to the 1 month testing, the drop off is quite small indicating adequate individual stability over a relatively long time period (11% of the academic year).

The third important reliability component for an environmental scale is the stability of subscale scores when the residence as a whole is the unit of measurement. The intra-class correlation was used to estimate profile stability 1 week and 1 month after the initial testing and reveal very great profile stabilities for the above two houses clustering around .90.

Intra-House Agreements

The homogeniety of living unit perceptions by persons within the house was approached by computing the percentage agreement for each subscale over the initial sample of 13 dormitories from a private university. For the 130 (13 houses by 10 subscales each) agreement rates 128 are greater than 70%. While some variation would be expected (and may even itself be indicaive of an environmental quality) a reasonably high degree of agreement by residents in a house should obtain and be reflected in environmental measurements. In general, the URES fares well on this criterion and reflects a high degree of consensus among residents (a similar method is presented by Pace (9) who used a 2/3 agreement criteria for scoring the CUES).

Residence Profiles

Profiles can be constructed which show the average perceptions of a residence group or any subgroup within a house.

Figure 1 presents the perceptions of student residents in 1 women's, 1 coed, and 1 men's dormitory, using the mean (50) and standard deviation (10) of the 73 house norm group as the frame of reference. Compared to the norm group, each of these houses stress relationship variables heavily except the women's house which is lower on involvement.

FRESHMEN WOMEN'S HOUSE   N=46   ▲——▲
ALL CLASS COED HOUSE   N=48   ●——●
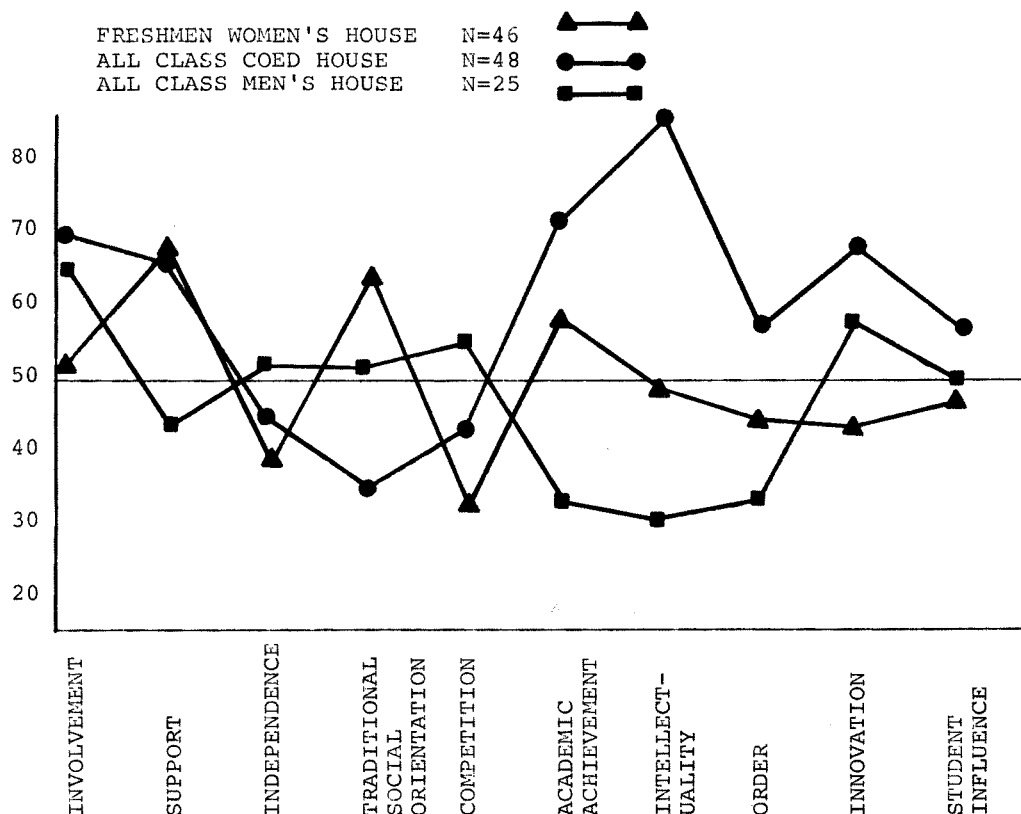ALL CLASS MEN'S HOUSE   N=25   ■——■

FIGURE 1

The personal growth areas generally show the coed house less concerned with traditional behavior, with the women's house stressing this variable. As could be anticipated the men's house stresses competition more highly than the other houses. Intellectual growth variables show the coed house emphasizing these areas very heavily while the other houses are either close to the norm group or below. Finally, system change and maintenance show the coed house balancing the two forces. The other houses do not seem to have a coherent orientation.

It is interesting to note that residents of the coed house perceive their environment as stressing personal concern, involvement, mutual support and a high degree of achievement. While this finding in itself may be significant in the assessment of these different living arrangements, a further important question is whether these environmental differences are due to pre-selection of student residents, the results of the living experience itself, or an interactive effect. Further studies are planned to elucidate this process.

Intra-House Comparisons
Within any residence various subgroups may perceive the environment differentially, and this may in turn influence the overall level of satisfaction or conflict in the house and provide clues to the locus of such strain. One example of such subgroup comparisons are

the perceptions of male and female students living in the same coed residence. Other interesting comparisons could be made for students versus staff, senior versus freshman students, new versus old residents, etc. In a sample of three coed dormitories from one university, the men and women perceive the house environment almost identically. One factor contributing to the close congruence of perceptions in these three houses may be attributed to the fact that coed housing was in its fourth year at the university sampled and this may have allowed sufficient time for a set of "cultural" norms to be established and transmitted to new residents. Thus potential desparities of attitude, perceptions and behavior of both sexes could be accommodated within an over-arching set of values. An alternative hypothesis is that students living in the relatively few coed houses then available on this campus were self selected and thus entered with similar expectations, etc., rather than these

attitudes and perceptions being shaped by the living environment. It would be quite interesting to make similar comparisons at institutions that were in their first year of coed living arrangements where the student's housing choices are more restricted. Measurements of anxiety and tension within the house and behavioral indices of strain and conflict would be useful correlative data in examining subgroups within houses.

Comparison of Dormitories and Fraternities

An important use of the URES may be in comparing different residence philosophies as reflected in the type of programs and residence organizational structures developed at various institutions. Not only can the pervasive dormitory-fraternity dichotomy be compared as below, but also residences with various programs can be evaluated and contrasted to other such experiments.

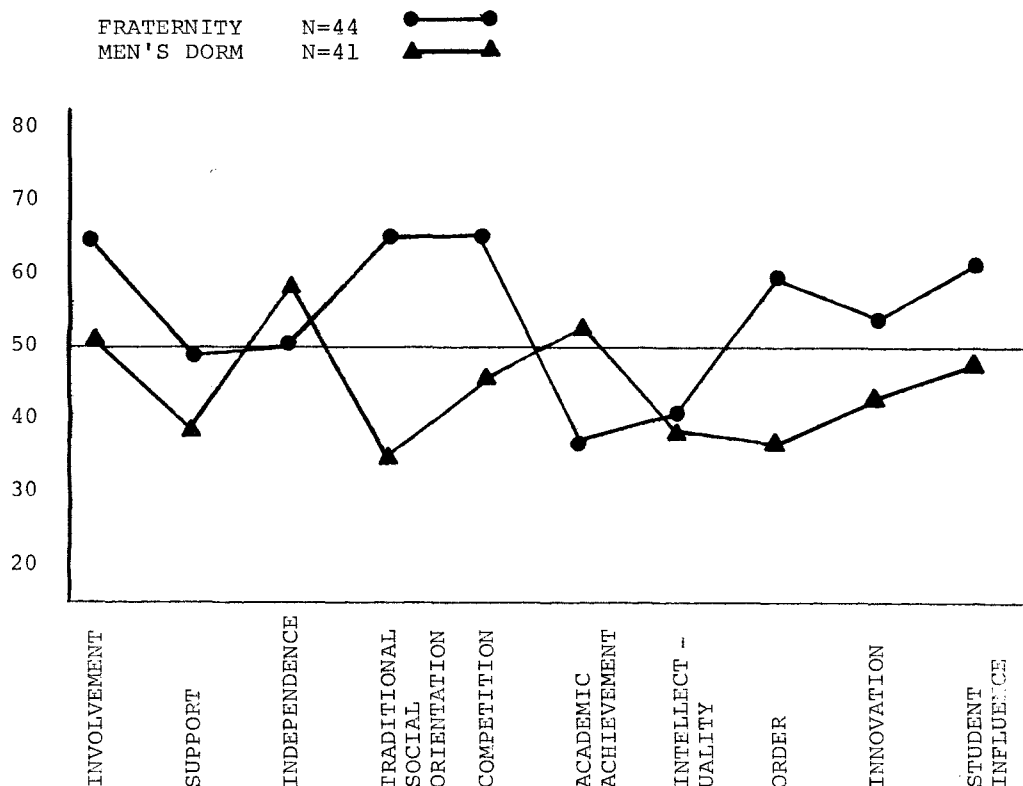Figure 2 presents the profiles of 1men's dorm and one fraternity.

FIGURE 2

The differences between these groups
are significant for all subscales ex-
cepting Intellectuality. While some
differences such as Student Influence,
Traditional Social Orientation and In-
novation would be expected (e.g., Scott,
1964) it is surprising to note the
much higher scores for the fraternity
on the relationship variables. These
results may be the joint effect of two
variables. First, since fraternities
select future members and initiate
them, the degree of loyalty and group
cohesion may be enhanced. Secondly,
this selection process tends in increase
the likelihood that members are similar
in values, interests and attitudes which
may lead to greater interpersonal attra-
ction among members and thus further in-
crease group cohesion and organizational
loyality. A third variable may be the
more "home-like" physical design of the
fraternity which obtained greater face-
to-face interaction and mutual influence.

Individual House Profiles
Individual profiles such as Figure 1
may be used for "feedback" to particu-
lar residences and can serve as the
basis for discussions aimed at making
specific changes in house atmosphere
by the residents themselves. In Figure
1 the women's and coed houses may be
compared as to their program development
emphasis to indicate directions for
possible change. The women's house in
Figrue 1 had only a minimum of planned
activities consisting mainly of a few
parties and exchanges with neighboring
men's dormitories during the academic
year. Naturalistic observation of this
house indicated it to be a quite friendly
and open house, which nevertheless
seemed to be rather conventional and
dull, with for example, sexual behavior
and psychedelic drug usage minimal.

On the other hand, the coed house in
Figure 1 had organized an extensive
program around a theme of international
living and study of international pol-
itics. These emphases showed up most
clearly in the high involvement score
and very strong emphasis on the Intel-
lectual Growth scales. Further, the
pattern of scales in the System Mainten-
ance and Change area shows a more delib-
erate attempt at change through meetings
and refocusing of rules and methods of
house government.

Discussion
The purpose of the research was to
develop a social-psychological environ-
ment scale which would accurately des-
cribe and differentiate among the per-
ceptions of residents in different
student housing. The results from the
URES demonstrate that the perceived
social-psychological climate can be
reliabley measured and thus aid in the
systematic description and comparison of
university residences. The psychometric
and conceptual properties of the scale
encourage its use in a number of research
directions, some of which are summarized
below.

Programatic Evaluation
The URES may be an effective tool in the
evaluation of the impact on students of
programatic and compositional innova-
tions. For example many universities
are currently instituting "living and
learning" dormitories where much of
the traditional class and seminar
teaching is integrated into the resid-
ence with faculty members often living
in the house. Other colleges and uni-
versities are establishing experimental
living arrangements such as the coed
housing presented above and bi-ethnic
dormitories whereby 20-50% of the resid-
ence members of minority groups currently
entering universities in significant
numbers.

Change in Residence Climate
While programatic innovations may effect
changes in the environment of a student
residence, student initiated change
may be more effective and provide a
richer interpersonal learning experi-
ence for students. Such internally
generated changes (via encounter groups,
student projects, etc.) may be assessed
by the URES and more interestingly the
scale itself may be incorporated in a
change program. There is some evidence
(14) that people's knowledge of their
own environment may be a powerful tool
in enabling them to plan and implement
changes along desired dimensions.

URES feedback may take a variety of
forms. For example, a comparison
showing residents their perceptions of
an "ideal" house versus their percep-
tions of their actual living situation
may be used as a basis to plan change
strategies to reduce the real-ideal
discrepancies. Further, a comparison
of the perceptions of staff and students

of their residence could make clear to each the areas of conflict, confusion and contradictory exp   tions of their shared environment and thus enhance the possibility of designing change measures.

Individual Impact

The effect of the immediate social environment on individual student development may also be approached using this instrument. For example, the manner in which a student perceives the social climate of his residence may influence his subjective mood states such as feelings of depression, alienation and isolation. Furthermore, a student's satisfaction with his residential environment may influence his feeling of satisfaction with himself and his overall college experience such that it influences his pursuit of relationships with others and the degree of involvement in intellectually and emotionally significant activities.

Person X Environment Interaction

The URES and other environmental assessment instruments such as WAS (Moos), the CCI (Stern), the ITA(Astin), etc., as examples of the measurement of situational and environmental regularities, also have implications for the assessment, prediction and modification of behavior. As trait theories of personality have been replaced by interactive theories, the necessity for the measurement of environmental settings in which behavior occurs has increased (15). Not only must situational variables be specified more exactly, but the boundaries and common elements of various environments must also de delimited.

Architectural and Design Influences

While large sums of money have been spent on the design and construction of student housing only sporadic attempts to assess the impact on their users have been made (16). For example, it may be that student residences which are designed in small clusters of rooms around a central courtyard are perceived as having more affiliation and involvement than dormitories arranged in straight line corridors.

Further by selecting dormitories from the very large number currently in operation on U.S. campuses, it would be possible to group samples of houses

which were equated for age, sex, class, etc. of the residents while varying specific sets of design variables. For example, the number of one, two, and three person rooms may affect the quality of the perceived climate. Similary, traffic flow, the placement and number of lounge and kitchen areas may induce variations in perceptions.

While the above implies that the physical design is logically prior to and only lineally causal to perceived environment, in fact it seems reasonable that the process is more nearly interactive and mutually influential. That is, a dormitory which is perceived as having desirable psychosocial environment may be perceived as more esthetically pleasing than a house with an undesirable climate. It may also be that houses with "bad" design principles employed would help to induce a sense of cohesion and involvement among the residents and in the end allow it to become a more desirable unit in which to live. In turn, this "feedback loop" could mean that the house is then perceived as physically more pleasing although along dimensions different than those initially employed by the architect and even the residents themselves at first.

It may be possible that the psychological and behavioral consequences of variations in architectual planning c n be approached using the URES as a measure of the psychosocial atmosphere.

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