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Social interaction in the college union environment: An examination of the physical setting

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Social interaction in the college union environment: An examination of the physical setting

Abstract
The purpose of this paper is to better understand the effect of the college union physical environment upon informal social interaction. The application of such knowledge may enable college union practitioners to design college union physical settings that enhance, rather than impede, student-faculty and peer informal interaction. This paper briefly presents pertinent research concerning the outcomes associated with student-faculty and peer interaction. Relevant person-environment interaction and physical-environmental models are examined. The social relationship between architecture and human interaction behavior is addressed, as well as the consequential affect of interior seating and furniture arrangements on informal interaction. The ambient environment which impacts the quality and pleasantness of social function within the physical setting is reviewed. Finally, implications of the models and research for college unions is presented.
SOCIAL INTERACTION IN THE COLLEGE UNION ENVIRONMENT:
AN EXAMINATION OF THE PHYSICAL SETTING

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A Research Paper
Presented to
The Department of Educational Administration
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In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Education

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by
Richard David Fekel
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The American college union is referred to as a social "hub", "a home away from home", a "community center", the "living room" or "hearthstone" of the campus (Butts, 1971). These references underscore a basic objective of many college unions, to bring together the college community: faculty, students, alumni, and administration. Recognizing the value of out-of-classroom experiences, the college union plays a central role in the day-to-day social life of college students. For the college union provides a physical setting where students can gather, make friends, participate in intellectual discourse, relax, study, and meet friends and faculty. The idea of bringing together interactive groups of student-faculty, student-student, and faculty-faculty in the college union is not new. Yet in years past, the far reaching benefits of informal face-to-face interaction was taken lightly. Today, however, the significance of student-faculty and peer informal interaction is clear. Pascarella (1980) for example, states that "frequent informal contact between faculty and students has been viewed as a desirable educational end in and of itself" (p. 545). Moreover, a body of research inclusive of Sommer and Ross (1958), Holahan and Saegert (1973), Valins and Baum (1973), and others have contributed to
a greater understanding as to how the physical setting shapes human interaction behaviors.

The purpose of this paper is to better understand the effect of the college union physical environment upon informal social interaction. The application of such knowledge may enable college union practitioners to design college union physical settings that enhance, rather than impede, student-faculty and peer informal interaction.

This paper briefly presents pertinent research concerning the outcomes associated with student-faculty and peer interaction. Relevant person-environment interaction and physical-environmental models are examined. The social relationship between architecture and human interaction behavior is addressed, as well as the consequential affect of interior seating and furniture arrangements on informal interaction. The ambient environment which impacts the quality and pleasantness of social function within the physical setting is reviewed. Finally, implications of the models and research for college unions is presented.

**Literature Review**

Numerous studies have concluded that positive outcomes are associated with student-faculty interaction beyond the classroom and student-student
interaction (Pascarella, 1980). A sampling of this large body of research supports this hypothesis. For example, studies by Bean (1985) and Pascarella, Duby, Terenzini and Iverson (1983) reported the significance of student-peer interaction as being positively associated with institutional persistence, cognitive and personal development during the first year in college. More specifically, summarizing college student peer influence outcomes, Pascarella and Terenzini (1991) noted that change may take place in many areas. Among the various identified areas are "intellectual development and orientation; political, social, and religious values; academic and social self-concept; intellectual orientation; interpersonal skills; moral development; general maturity and personal development; and educational aspirations and educational attainment" (p. 621).

Astin (1993) reported that student-faculty informal interaction has a positive correlation "with every self-reported area of intellectual and personal growth, as well as with a variety of personality and attitudinal outcomes" (p. 383). Pascarella & Terezini (1991) note that "substantial evidence exists to suggest that interactions with major socializing agents (faculty and peers) are, in fact, significantly
linked to the development of general cognitive skills during college" (p. 149). Pascarella and Terenzini (1991) commenting on the impact of student-faculty and peer interaction state that:

A large part of the impact of college is determined by the extent and content of one's interactions with major agents of socialization on campus namely, faculty members and student peers. The influence of interpersonal interaction with these groups is manifest in intellectual outcomes as well as in changes in attitudes, values, aspiration and a number of psychosocial characteristics (p. 620).

Other studies have focused on environmental factors which have been found to influence student-faculty and peer interaction opportunities. For example Astin (1977) concluded that the most significant negative correlate regarding student-faculty interaction contacts was institutional size. He maintains that students attending smaller institutions felt closer to faculty and reported greater relationship satisfaction than students at large institutions. Additional research conducted by Boyer (1987), Chickering (1969), Wood and Wilson (1972) may hold an explanation. Their findings suggest that
with the exception of small colleges and some selective liberal arts colleges, student-faculty interaction is generally restricted to formal classroom lectures, labs, and structured discussions.

In light of these studies, it seems reasonable to conclude that many large university environments inhibit student opportunities to interact with faculty outside of the classroom. Furthermore, one may deduce that the physical setting may either encourage or discourage informal interaction behaviors. Strange (1991) points out that "the challenge to many institutions is to compensate for the inherent problems of oversizing with the intentional development of smaller sub-environments" (p. 175). The college union, as a campus sub-environment, can play a calculated role in fostering out-of-class student-faculty and peer interaction.

Some research associated with the professional fields of architectural and environmental psychology give insight as to how the physical setting influences human behavior. The foundation of much of this work is rooted in person-environment theory which attempts to explain human behavior in terms of a cause and effect relationship with the environment. To date, a single model does not exist, however several models have
stimulated significant research such as: Pervin's (1968) transaction approach, Stern's (1970) need-press model, Holland's (1973) human aggregate model, and Moos' (1979) social climate theory. These models may provide insight into how the physical environment can increase the probability of informal student-faculty interaction.

Person-Environment Models

Pervin's (1968) transactional approach proposes that each individual fits into an interpersonal or a non-interpersonal environment which favors the individuals self-concept. According to Pervin, when the environment and personality characteristics of the individual are congruent, the individual experiences greater performance, satisfaction, and less stress with the environment. Behavior is explained in terms of perceived interactions (cause-effect relationships) and transactions (reciprocal relationships) between the environment and individual.

Central to Pervin's theory is that discrepancies exist between individual perceived actual-selves and their notion of perceived ideal-selves. Pervin assumes that individuals seek environments which enable them to move toward their perceived ideal-selves and that they are less attracted to environments which inhibit such
growth (Walsh, 1975). Pervin further suggests that for each individual there is a matching environment, congruent with the individual’s perceptions of self.

Stern’s (1970) need-press model elaborates on the earlier works of Murray (1938) and Lewin (1936). The basic rationale of this model is that the relationship between individual (needs) and the environmental (press) produce human behavioral outcomes. The individual is viewed in terms of his/her personal needs which provide a directive to the individual’s behavior. The environment is considered to be represented by presses that are generated perceptions or interpretations of the environment. Environmental presses may or may not meet the needs of the individual. Stern hypothesized that congruence between the individual and environment is considered to produce growth and positive outcomes. Negative outcomes, such as stress and dissatisfaction, are the result of an incongruent need-press relationship where dissonance is present (Huebner, 1989).

Holland’s (1973) human aggregate model maintains that predictable and understandable human behavior is a product of a congruent relationship between the individual and environment. There are three basic assumptions regarding Holland’s theory. First,
individuals have certain characteristics which are classified by one or more personality types. The second assumption is that environments have characteristics which fall into one or more of six model environments which in turn correspond to an individual's personality type. The final assumption holds that individuals search for an environment which fits their personality type. A congruent personality-environment relationship, according to the theory, produces predictable and understandable behaviors which are associated with vocational satisfaction, high performance, and stability (Walsh, 1975).

In sum, Holland's theory contends that human behavior is a product of an individual's interests and personality. Information about an individual's personality is central to understanding a particular environment. Therefore, individuals seek surroundings which are in keeping with their preferences and needs, according to their personality type.

Moos' (1979) model of social climate maintains that environments have individual personalities, social climate, which effect the individual's inhabiting them. The social climate is built upon three environmental dimensions. First, Relationship dimensions assess how involved individuals are in the
environment, the extent to which they are supportive of others, and the extent of freedom of expression. Second, Personal Development dimensions are those which assess the environments potential to provide opportunities for individual growth and self enhancement. Finally, System Maintenance and System Change dimensions assess the environment's order, clarity of expectations, and response to change and the ability to maintain control (Moos, 1974). Each of these three dimensions, according to Moos, are found in any given environment, however, they manifest themselves differently depending on the type of environment.

More recent work by Moos and his colleagues have developed a conceptual environmental systems model to measure environments and examine the "impact of various environments and social climate dimensions on inhabitants" (Huebner, 1989, p. 174). Overall, Moos' approach takes into consideration the individual's perception of his/her environment. The consensus of individual perceptions characterize the environment which influences human behavior (Smail, De Young & Moos, 1974).

The person-environment models previously examined present various views to understand the impact
environments have on human behavior as well as the influence human behavior has upon the environment. The models imply that common to some environments are certain elements which tend to facilitate satisfaction, personal growth, and well-being. To this end, person-environment models may prove useful, in the college union setting, to understand environmental designs which can support and sustain informal interaction behaviors.

Physical Environment Models

Another approach which has served useful in exploring the effects of building design and physical settings upon human behavior are physical environmental models. The basic rationale for this approach is that "all environments contain physical features, both natural and synthetic, that influence human behavior within them" (Strange, 1991, p. 162). One such model, developed by Michelson (1970), is the intersystems congruence approach. The foundation of this model is that "environments are viewed not as determining behavior in themselves but as setting broad limits on the phenomena that can occur in a given setting" (Moose, 1976, p. 111). Thus limiting conditions may enable some behaviors to occur more or less frequently than others as the environment "shapes behavior by
permitting certain kinds of activities while limiting or making impossible other kinds" (Pascarella & Terenzini, 1991, p. 39).

Environmental limits may pose challenges to inhabitants resulting in a lack of congruency requiring the inhabitant to manipulate the environment. Porteous (1977) captured this example when he wrote "if we cannot manipulate the environment for our own advantage, it may manipulate us" (p. 135).

Another model considered to fall into the physical environmental category is Baker's (1968) behavior setting approach. Baker maintains that individuals inhabiting the same specific environment will behave in similar ways irregardless of individual differences. According to the theory, the environment substantially influences the behavior of inhabitants, however both the environment and inhabitant play a vital role in establishing a predictable behavior (Walsh, 1978). Baker (1968) identifies these behavior responses as "behavior settings" which are described as units of "standing patterns of behavior" that occur naturally in a specific environment (p. 18). Behavior settings refer to the behavior of groups of individuals behaving together not the behavior of a particular individual (Baker, 1968). For example, a spectator at a
basketball or football game will generally behave in much the same manner as other spectators, thus partaking in a behavior setting. Attendants at a movie, church service, or lecture engage in behavior settings as well.

In sum, the behavior setting approach formulates that the individual and the environment are responsible for shaping behavior. However, it is the environment that is emphasized as the significant element in the formation of group behavior, not the individual.

Architecture and Human Interaction

Common to these models is the acknowledgment that the environment has an effect on shaping human behavior. Brebner (1982) suggests that "architecture plays an important role in governing our perception and behavior, including social interactions, within our built environment" (p. 152). However, many buildings in use today were designed using traditional design techniques which merely took into account stability, function, cost, and aesthetics. The traditional design process failed to take into consideration social contact as a human need, which in turn has been a major flaw in traditional designs (Deasy, 1974).

Contemporary designs can fail as well, far too often "physical settings that are designed to support
contact among people ... are built without full appreciation of personal behavior. Such settings may then function to impede the very social contact they were originally intended to encourage" (Holahan, 1982, p. 301). Such impersonal settings may also be created by "many aspects of the proximate environment, including furniture and room dividers, which have been placed for ease of maintenance and efficient cleaning with little cognizance of their social functions" (Sommer, 1967, p. 150). In this sense, buildings are not remembered for their architectural features, rather a building's functionalism takes on major significance (Moore, 1979).

Designers and facility managers need to understand that impersonal settings pose limitations that control and impede informal social interaction. Moreover, in the college union, student-faculty and peer interaction must be considered a "behavior setting" which demand the attention of planners, architects, and interior designers.

In order "to facilitate communications between people a designer must recognize that conversations take place wherever people meet" (Deasy & Lasswell, 1985, p. 29). However, not all building designs support this concept. For example, public corridors
"serve as traffic routes, but the fact that they are also primarily areas for social contact is rarely reflected in their size, configuration, or the way they are equipped" (p. 35). It is the organization and configuration of a building that determines where individuals meet: the physical locations of entrances, exits, corridors, stairways, elevators, and foodservice lines create traffic patterns where people encounter each other and converse.

Deasy & Lasswell (1985) report that planned interaction locations defined by F. Duncan Case are known as "architecturally determined domains of acquaintance" (p. 20). Case maintains that buildings can be designed in a centrifugal fashion which disperses individuals, limiting social interaction (i.e., using separate entrances to an adjacent office). According to Case, buildings may also be designed to promote social interaction by bringing individuals together in a centripetal fashion (i.e., using a common entrance). As illustrated earlier, the width of a public corridor can also influence interaction and communication. Corridors under 12 feet wide are centripetal, they tend to encourage communication, while corridors wider than 12 feet are centrifugal and promote noninvolvement. Greater distances between
passing individuals enables them to pass each other without stopping to communicate (Deasy & Lasswell, 1985).

Centripetal facility designs, therefore, take into consideration human traffic patterns and natural group formation tendencies. The utilization of centripetal concepts can assist designers in locating seating and other conveniences to increase the probability of human interaction. According to Yancey (1978), "it is evident that space does not cause social exchanges but space properly arranged can play an important enabling role" (p. 293).

Spatial Arrangement

According to Humphry Osmond (1957), interior environments can be arranged into settings which either facilitate or impede social interaction. He classifies libraries, airport terminals, and jails as "sociofugal" for they discourage social interaction. Conversely, Osmond classifies "sociopetal" environments as those that encourage interaction behaviors, such as semi-curricular classrooms, and the French sidewalk cafe (Hall, 1970).

Hall (1970) argues that "what is sociofugal in one culture may be sociopetal in another" (p. 20). Research conducted by Canter failed to support Hall’s
notion of large cultural differences (Canter, Kenny, 1975). Yet Hall's concepts have initiated a considerable amount of interest and research, although little focus has been given concerning spatial behavior in a cultural context. Much of the research thus far has been supportive of Hall's concepts and findings as to how different cultures use space (Aiello & Thompson, 1980).

One component which influences informal interaction in a sociopetal or socifugal manner is the arrangement of furniture. Robert Sommer's (1969) research pertaining to spatial layouts and comfortable conversation concluded that during informal casual conversation individuals prefer a face-to-face orientation rather than side-by-side.

Sommer (1969) also studied the effects of individual distance and angle orientation in relation to conversation. He concluded that individual pairs of college students seated at rectangular cafeteria tables preferred to sit at an open angle, corner-to-corner during casual conversation. Other studies observed that pairs involved in competitive conversation sat across from one another face-to-face. Side-by-side seating was used when individuals were engaged in group task which did not facilitate informal interaction.
A study conducted by Mehrabian and Diamond (1971) demonstrated support for Sommer's findings. Their research concluded that side-by-side seating was detrimental to informal interaction and therefore less conducive to conversation than right angle orientations. These studies provide additional evidence "that locational behavior is one of the mechanisms for controlling social interactions" (Canter & Kenny, 1976, p. 150).

A limited study conducted by Sommer (1959) observed that women pairs tend to make use of side-by-side seating more so than male pairs. Maccoby (1966) offers one explanation that females tend to maintain closer attraction-proximity relationships with other females while male pairs prefer less physical closeness.

Sommer (1974) observed lounge areas at several large metropolitan airports. He discovered that airport lounges are typically arranged in a sociofugal manner which discourages casual comfortable conversation. Typical to each setting were fixed in line seats arranged back-to-back. Sommer found this type of seating to be inappropriate for travelers conversing with family, friends, and business associates. He discovered that the use of sociofugal
seating arrangements is economically driven. Sommer concluded that sociofugal airport lounge areas are designed to drive people out of impersonal spaces to the income producing areas within the terminal.

In a field research project at a psychiatric hospital, Sommer and Ross (1958) observed a lack of social interaction among female patients due to the sociofugal arrangement of chairs that had been placed along outside walls. When the researches rearranged the furniture into sociopetal settings, chairs placed around small tables, interaction doubled among ward patients.

The studies described above provide essential information concerning the means by which small groups use physical space to communicate. It becomes clear that "knowledge of how groups arrange themselves can assist in fostering or discouraging group relationships" (Sommer, 1967, p. 149). Sommer (1969) suggests that the normal size of informal groups is misunderstood by designers and facility administrators. A common indicator is lobby and lounge furniture layouts which are arranged to accommodate large groups of six or eight individuals. Sommer points out that the most common size of conversant interactive groups is two. Consequently, small groups are forced to
rearrange ill-suited seating arrangements designed to accommodate much larger groups that meet infrequently (Deasy, 1974).

Due to human differences, flexibility in the existing physical setting may be "one way to achieve greater congruence...thereby insuring that the space can support a variety of behaviors" (Fisher, Bell, Baum, 1978, p. 278). For example, a traditional classroom setting, rows of desks and chairs facing one direction, is not likely to produce much discussion. However, rearranging the classroom into an amphitheater arrangement, consisting of chairs in a semi-circle, provides a setting where discussion is more probable. Fixed seating bolted to the floor, in this situation would not allow for rearrangement, placing physical limitations on the type of behavior which may take place within the setting.

If individuals cannot modify an incongruent setting to suit their intended behavior "they may cope by changing their behavior, by changing their mental images of the environment, or by "dropping out and selecting a more suitable setting" (Moose, 1976, p. 127). Hall (1970) states that "what is desirable is flexibility and congruence between design and function so that there is a variety of spaces, and people can be
involved or not as the occasion and mood demand" (p. 20). Furthermore, an individual’s need for sociopetal or sociofugal settings may change due to the desired level of interaction. It is not uncommon for individuals to "often gravitate unconsciously to a place that suits the way they want to interact" (Farbstein & Kantrowitz, 1978, p. 102).

The arrangement of furniture and its flexibility within the physical setting control the where and how of informal interaction. Yet, there are many nonvisual factors that influence the mood and pleasantness of the physical setting. The term ambient environment refers to the climatic characteristics of the environment: the temperature, level of light, and noise.

The Ambient Environment

Pleasing amounts of ambient properties aid in comfortable productive surroundings; on the contrary, extreme amounts of ambient conditions generally produce uncomfortable settings. Extreme levels of heat or cold bring about human discomfort and can effect many kinds of social behavior such as aggression toward others. Studies by Griffitt and Veitch (1971) observed that high temperatures reduce social interpersonal attraction tendencies especially in crowded conditions.

A considerable amount of research has been
conducted concerning thermally comfortable environmental conditions. Thermal comfort levels for most individuals generally ranges in the upper seventies fahrenheit. Comfort also tends to be slightly related to humidity which can be high if the temperature is a bit lower (Bennett, 1977). High humidity levels are negatively correlated with human energy levels such as vigor and other positive moods (McAndrew, 1993). Maintaining a thermally comfortable physical setting is advantageous, insofar as it may encourage social interaction behaviors by minimizing discomfort, aggressive behavior, and unpleasant feelings toward others.

"Different lighting conditions can also affect our mood, and may impact on our social behavior" (Fisher, Bell & Baum, 1978, p. 271). A demonstration conducted by Gergen, Gergen, and Barton (1973) observed behaviors of college students, who were complete strangers, in darkened rooms. The researches found that darkness increased physical intimacy, aggressiveness and impulsive behavior. While arousal levels in human beings are considered to increase with brighter lighting, this study suggests that darkness removed customary societal restraints among strangers (McAndrew, 1993).
Dark physical spaces may be perceived in many ways by the observer; a darkened space can be depressing, frightening, or romantic depending on the setting. The intensity of illumination sets the tone of the physical space by suggesting its level of friendliness. It is the luminous environment that transfers to the observer, meaningful information regarding the physical setting which translates into visual perceptions (Boyce, 1975).

The illuminous environment also has an effect on "social interaction which depends on nonverbal communication as well as verbal communication, that is on facial expressions and body gestures and positions" (Wolf & Proshansky, 1974, p. 195). The reception of nonverbal clues during face-to-face interaction is dependant upon levels of adequate illumination. Dull or dark visibility hide nonverbal clues which render informal conversation difficult.

Some lighting designs are more aesthetically pleasant than others. One study conducted by Flynn (1973) determined the lighting arrangements most pleasant in a meeting room. He concluded that a combination of lighting systems: overhead diffuse, downlighting, and peripheral lighting were preferred. This arrangement provided adequate visibility and
contributed to a feeling of spaciousness and overall pleasantness in the room (Boyce, 1975).

People also have a strong preference for natural daylight over artificial light (McAndrew, 1993). Windows provide interior visual linkages with outdoors and make a room pleasant and more attractive. The lack of windows tends to have a negative effect on mood (Fisher, Bell & Baum, 1984). Individuals that suffer from seasonal affective disorder require brightly lit rooms of natural or artificial light to reduce symptoms of depression and social withdraw (McAndrew, 1993).

The luminous environment of an interior setting can have an impact on human task performance. Generally, higher levels of illumination are preferred for detailed visual work tasks. Whereas reduced levels of light are desired for other activities such as dining. Well established research indicates that the level of light in an interior work environment can help or hinder task performance. As light levels increase, visual tasks improve up to a critical point (Holahan, 1982).

Light glare which reduces the ability to see produces discomfort and adversely effects human performance (Fisher, Bell, & Baum, 1978). Fluorescent light flicker has also been associated with discomfort.
Boyce (1975) notes that "for virtually all working and most relaxing interiors the occurrence of flicker is disliked" (p. 105).

In sum, the effect of the luminous environment may be aesthetically pleasing or discomforting dependant upon levels of natural and artificial light, glare, flicker, and the type of lighting system utilized. Lighting plays an important role in evoking a desired emotion, mood, image, and atmosphere in a particular setting. A study by Russell and Mehrabian (1978) concluded that individuals have more of a tendency to converse with one another when they are in pleasant surroundings.

Unwanted, distracting noise can have a disruptive negative effect on verbal communication and may influence social behavior and interpersonal relationships (Fisher, Bell & Baum, 1978). More specifically, noise has been found to decrease attraction, lower helping behaviors, and facilitate aggression. In a study concerning the effect of noise upon social behavior, Appleyard and Lintell (1972) concluded that residential neighbors interact less in noisy neighborhoods. One explanation suggests that noise may cause people to focus more on their immediate surroundings, paying less attention to other people.
Noise has other related behavioral consequences; for example, research conducted by Mathews & Canon (1975) observed that individuals have less helping attitudes toward strangers in noisy environments. This study suggests that noise may put some individuals in bad, irritable moods which reduces the likelihood that they may assist others in need of help.

Researchers have also found a consistent relationship between noise and aggression. Laboratory experiments in this area have usually attributed noise to increased arousal, which in turn, results in aggressive behavior (Cohen & Spacapan, 1984). The source of noise may also be a contributing factor to the degree of annoyance (Ittelson, Rivlin, Proshansky, & Winkel, 1974). Individual ability to tolerate and adapt to noise appears to be subject to individual threshold characteristics. Brebner (1982) reports that individuals have different levels of noise-sensitivity, that is some people are more or less sensitive to noise. Consequently, those who are noise-sensitive may have the need to escape from noisy environments.

In regard to informal communication, it is generally understood that "acoustic noise adversely affects aural communication, and ... should be more annoying in situations where auditory communications
are required or desired" (Webster, 1984, p. 185). Normal human aural communication levels range from about 35-90 decibels. Noise levels between 70-88 decibels render voice communication difficult to completely impossible to understand (Webster, 1984). Continuous background noise within the 70-88 decibel range, therefore, inhibits intelligible interaction between talker and listener.

Noise, one element of the ambient environment, to a great extent, establishes the level of comfort, mood, and individual attraction to the physical setting. Failure of the ambient environment to maintain a comfortable climate, luminous range, and noise level may produce occupant discomfort and undesirable behaviors. Consequently, the perceived relationship between occupant and the ambient environment is critical to individual congruency and satisfaction with the physical setting.

Implications

Person-environment interaction and physical environment models may provide college union practitioners with a framework to better understand the relationship between informal interaction behavior and the physical setting. For example, Pervin's (1968) transactional approach assumes that individuals are in
search of interpersonal environments which match their personal perceived goals of self-concept. In this context, college students may tend to perceive their ideal self associated with educational and career attainment. Astin (1993) suggests that faculty may influence student career goals and states that "student-faculty interaction has positive effects on both career choices and major field choices" (p. 384). Pascarella (1985) found that "social integration with faculty did have a positive influence on individual educational aspirations" (p. 660). Applying Pervin's model, a college union environment rich with student-faculty interaction opportunities should enable the college student to interact with faculty, whereby moving the individual closer to an actual and ideal self. Theoretically, movement in the direction of an ideal self should increase individual satisfaction with the environment.

Stern's (1970) need-press model assumes that satisfaction is a consequence of a congruent person-environment relationship. Application of this model may underscore the importance of student, faculty, and peer interaction preferences and the environment's ability to satisfy individual needs. In this regard, student-faculty and student-student interaction have
positive outcomes concerning satisfaction with student life (Astin, 1993). Consequently, a college union environment that can facilitate student, faculty and peer interaction opportunities may tend to be congruent with student preferences (needs) resulting in satisfaction with the environment (press). Should the college union environment not provide the press to fulfill student needs, students may become dissatisfied with the environment and leave it to find another.

Holland's (1973) model assumes that individuals are in search of environments that fit their personality type and "permit them to use their skills, exercise their attitudes and values, and play desirable roles" (Pascarella & Terenzini, 1991, p. 40). This model suggests that college unions which provide students with part-time employment, numerous opportunities for membership in recognized student groups, involvement in committee work, hands on experience, and opportunities for student-faculty and peer interaction maximize the potential for students to find sub environments that fit their personality type. Membership and involvement enable students to fit into the college union environment enabling them to utilize learned skills & experience. These opportunities may even provide an initiative to involve the
nonconformist. Astin (1977) feels that higher education may "reward certain types of conformity to the point where the more independent students become alienated" (p. 170). The college union that invites and encourages involvement and student-faculty and peer interaction provides greater opportunities for all students to fit into the college union environment. Theoretically the optimal fit of personality and environment is predictive of stability, satisfaction and achievement.

Moos' social climate model (1979) consists of three sets of dimensions: Relationship, Personal Development, and System Relationship and System Change. The degree to which each dimension exists in the college union environment can have a profound effect on students. For example, Moos maintains that environments that emphasize supportive and warm relationships such as student-faculty and peer interaction and peer cohesion have a considerable positive impact on students. Moreover, Moos notes that Relationship dimensions "appear to exert a consistent positive influence on morale and satisfaction in all environments (1976, p. 415). Strange (1991) concludes that "institutional environments most satisfying, secure, and productive to humans are those that
emphasize involvement, affiliation, and other Relationship dimensions" (p. 183). Along these lines, the college union environment that maximizes opportunities for student-faculty and peer interaction, underscores the importance of this dimension. Kuh, Schuh & Whitt (1991) concur that "without spending time together, people cannot develop the relationship and understanding needed to establish and maintain a sense of community" (p. 16).

Personal Development dimensions may possibly be influenced by student-faculty and peer interaction. Moos (1976) classifies Personal Development dimensions as "humanism, breadth of interest, reflectiveness, broad intellectual emphasis, independent study, and criticism" (p. 414). Moos (1976) feels that Personal Development dimensions attract more productive students. Consequently, it may be construed that student-faculty interaction beyond the classroom may tend to enhance personal growth and development, and intellectual curiosity.

System maintenance and System Change dimensions assess the order, clarity of expectations, and ability to change and maintain control of the environment. College union policies, procedures, and practices fall to this category, which may have a direct impact on
the frequency and quality of student-faculty and peer interaction. For example, reduced union operating hours, during summer session, may inhibit student interaction opportunities outside-the-classroom. Changes in policies and procedures, therefore, may effect the social climate sometimes with unexpected consequences.

Knowledge of person-environment interaction models may serve to assist college union practitioners in the development of an environment supportive of informal interaction. Application of the models reviewed may improve the likelihood of student-faculty and peer interaction. Above all else implementation may serve to increase student satisfaction with the college union sub-environment.

Physical environmental models may prove equally important to person-environment interaction models in establishing an interactive environment. Michelson's (1970) intersystems congruence approach maintains that an "environment may make some phenomena ... either easier or more difficult to maintain, so that all else equal, these phenomena will tend to be found successfully maintaining themselves more in some types of settings than in others" (p. 25). With this in mind, the way in which buildings are designed and
arranged may impose limits on informal interaction patterns, thereby limiting interaction behaviors. A major concern from the outset of any architectural design should be the behavioral consequences of design. This is of particular importance when a centripetal design is the goal. In this context college union practitioners must take into account the affect architecture will have on informal interaction behaviors. The relationship that exists between architecture and behavior is considerable and must not be overlooked.

In recent years, architectural awareness has increased as to how architecture effects human behavior. One such behavioral perspective reflects Michelson’s model. Environmental possibilism "views the environment as presenting us with opportunities as well as setting potential limits on behavior" (Fisher, Bell & Baum, 1984, p. 26). Consequently, environmental possibilism holds that architectural design has the ability to make some behaviors more likely to occur while limiting other behaviors. In order to increase desired interaction behaviors, an integration of environmental possibilism may be incorporated into the college union design process. Such design strategies
should increase the likelihood of a centripetal design, bringing people together. Sommer (1974) comments that "the most devastating and depressing argument against good design is that the present building was constructed to be in harmony with the already existing (ugly) buildings" (p. 105). Today one may argue that even more devastating is to replicate a building design that ignores the consequences of human behavior and human needs. College union practitioners bear a responsibility to avoid such designs that render informal interaction difficult or impossible.

The college union can be considered a behavior setting consisting of many standing patterns of behavior. Baker (1968) describes a standing pattern of behavior as a "discrete behavior entity with ... a precise and delimited position in time and space" (p. 18). When students attend a college union sponsored comedy show, or listen to a speaker, attend organizational meetings or informally interact with faculty and peers they are participating in a standing pattern of behavior. As posed earlier, the spatial layout has a profound affect on such behavior. Baker (1968) explains that "the size and arrangement of rooms, and the distribution of furniture and equipment are often important factors in coercing certain
features of standing patterns of behavior and in restricting others" (p. 30). Therefore, if the intent is to provide opportunity for informal student-faculty and peer interaction, college unions must arrange the spatial setting to encourage such patterns of behavior.

Flexible sociopetal settings, which welcome interaction, should be created where appropriate to maximize interaction opportunities. However, not all spaces in the college union should be sociopetal, for some students seek environments that are congruent with differing cultural backgrounds, personality types, and needs. In this regard, it is realized that considerable human differences exist concerning human needs and preferences for physical spaces.

College union practitioners should evaluate spatial arrangements and where necessary take steps to redesign settings to accommodate and support small interactive groups of student-faculty and peers. Baker (1968) concludes that "physical forces from the milieu mold behavior to conform to its shape" (p. 30). Therefore, the spatial arrangement plays an essential role in the establishment of patterns of behavior.

Human behavior, mood, and comfort are also affected by the ambient environment consisting of temperature and humidity, illumination, and noise.
Controlling the ambient environment within tolerable limits may help maintain or increase interaction opportunities, simply by attracting new or retaining existing levels of occupation. Unfortunately, thermal, light, and noise tolerance ranges vary among individuals and human comfort is influenced by a number of variables. However, the ambient environment should permit occupants to perform their intended purpose without discomfort.

To provide a comfortable ambient environment for each individual may appear to be an impossibility, for a standard seems to exist. Bennett (1977) explains that "as technology has developed, our tolerance of discomfort has declined" (p. 15). Such an observation suggests that building occupants expect facilities to be thermally comfortable all year round. Moreover, there is little tolerance for uncomfortable lighting arrangements that produce glare or continuous annoying noise within the physical setting.

The ambient environment plays a consequential role in supporting or alienating informal interaction opportunities in the college union. By monitoring and evaluating the ambient environment, college union practitioners may take appropriate action to relinquish imposed limits on the physical setting which may
inhibit informal interaction opportunities.

Conclusion

Substantial evidence exists to conclude that student-faculty, and peer nonclassroom informal interaction is a meaningful behavior with significant positive student outcomes. It seems reasonable to suggest that some college union environments, unintentionally encourage isolation rather than interaction between student-faculty, and peers. Student isolation may be the result of limitations imposed on the environment by poor architectural designs that ignore human communication needs, ill-suited small group spatial layouts, and unpleasant and uninviting ambient conditions. It is therefore contended that such environmental limitations have a profound negative effect upon informal interaction behaviors.

The planned arrangement and organization of building walls, doors, entrances, main corridors, furniture, and ambient conditions direct human movement patterns which ultimately encourage or hinder communication opportunities. In this respect, college unions may be designed, arranged, and maintained to either bring people together or to disperse them.

If a principal design goal of the college union is
to foster informal interaction, then sociopetal furniture arrangements which encourage interaction are crucial to this end. Furthermore, without practitioner understanding of conversational seating preferences and social group behavior, informal interaction in the college union, shall be at best, haphazard. Rapoport 1982) acknowledges a powerful relationship which exists between the built-environment and human interaction behavior:

who communicates with whom, under what conditions, how, when, where, and in what context and situation is an important way in which communication and the built environment are related. Environments both reflect communication and modulate it, channel it, control it, facilitate it, inhibit it (p. 181).

College unions are inhabited by a wide range of occupants with different personality characteristics, varying cultural backgrounds, and different personal needs. All of whom, to varying degrees, have a natural desire to communicate with others. If college union practitioners have a clear understanding of the close relationship between human interaction behavior and the built-environment, they may create settings which are positive and beneficial to social processes. For
individuals cannot adequately converse if the physical setting interferes with the natural process of group interaction. Students have a need to interact with others and are in constant search of physical settings which meet their needs. If college union practitioners do not remove impersonal limitations which preclude informal interaction, students may leave in search of another environment.
References


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