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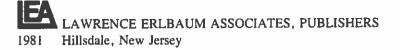
Author

Stokols, Daniel

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TOWARD A PSYCHOLOGY OF SITUATIONS:
An Interactional Perspective

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DAVID MAGNUSSON
University of Stockholm

24 Group × Place Transactions: Some Neglected Issues in Psychological Research on Settings

Daniel Stokols
Program in Social Ecology
University of California, Irvine

BACKGROUND

Recent developments in areas such as environmental, social, personality, cognitive, and developmental psychology reflect an increasing emphasis on the importance and complexity of the molar environment. The traditional focus of psychology on the experience and behavior of the person appears to be shifting toward a broader, contextual orientation in which the transactions between people and their sociophysical settings are emphasized.

Psychological research on situations and settings, though still at an early stage, reflects considerable definitional progress, a preliminary empirical base, and a diversity of conceptual and methodological guidelines for future work (Magnusson & Endler, 1977a; Pervin & Lewis, 1978). Distinctions have been drawn, for example, between objective and subjective dimensions of settings and among different levels of the environment ranging from situation-specific stimuli to the multiple settings that comprise an individual's life situation (see Magnusson, 1978 and Pervin, 1978b for recent reviews of this research). Moreover, taxonomic criteria for describing diverse situations and settings have been derived from alternative theoretical orientations (Barker & Schoggen, 1973; Bem & Funder, 1978; Bronfenbrenner, 1977; Fredericksen, 1972; Moos, 1973; Price & Blashfield, 1975).

The continued development of alternative perspectives on situations and settings would seem to be advantageous in light of the enormous range and complexity of person–environment relationships. At the same time, however, an important challenge for future research is to develop linkages among alternative conceptualizations and to move toward more comprehensive analyses of settings.

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The necessity of developing a "cross-paradigm" approach to the study of environment and behavior (Craik, 1977; Stokols, 1978) becomes increasingly apparent as we move from microlevel analyses of stimuli and events to the conceptualization of molar, sociophysical settings. For it is at the level of the large-scale environment that our theories must begin to integrate geographical, social-structural, and psychological properties of settings. Although architects, sociologists, and planners have focused primarily on the first two facets of the environment, psychologists have paid most attention to the third and (only recently) have begun to consider the nature of the interface among physical, social, and psychological dimensions of settings, (Magnusson, 1978).

Since the late 1960s and early 1970s, increasing interest among psychologists in environmental issues has spawned a large body of research concerning the effects of the physical environment on behavior (Craik, 1973; Proshansky & Altman, 1979; Stokols, 1978). Much of this research has attempted to isolate specific dimensions of the physical milieu (e.g., ambient temperature, spatial restriction, architectural design, noise) and to assess their respective effects on individual and group behavior (Baron & Bell, 1976; Baum & Valins, 1977; Bechtel, 1977; Glass & Singer, 1972). Relatively few attempts have been made, however, to chart the broader sociophysical milieu as it relates to psychological and behavioral issues. Among the exceptions to this trend are Barker's (1960, 1968) theory of behavior settings and Bronfenbrenner's (1977, 1979) analysis of the ecology of human development. Both Barker and Bronfenbrenner have attempted to delineate the ecological context of everyday behavior—structured settings characterized by the interdependence of their physical, social, and personal components. Although focusing on different psychological and developmental questions, Barker's and Bronfenbrenner's analyses of settings reflect a common set of elements, namely, a particular place in which specific individuals share recurring patterns of activity and experience (Argyle, 1977; Magnusson, 1978; Pervin, 1978b; Sells, 1973).

Though the psychological relevance of the molar environment is now widely recognized, the existing research literature provides a rather incomplete basis for understanding the dynamics of behavioral settings. First, most environment-behavioral studies have emphasized unidirectional ($E \rightarrow B$) rather than reciprocal ($E \leftrightarrows B$) relationships. This trend reflects a traditional goal of psychological research, namely, to discern stimulus–response regularities whereby behavior is viewed as the direct ($E \rightarrow B$) or mediated ($E \rightarrow (O) \rightarrow B$) product of environmental conditions. A basic limitation of both the behaviorist and mediational perspectives is that they construe behavior as essentially reactive and neglect the effects of goal-instigated behavior on the environment (Lazarus & Launier, 1978; Overton & Reese, 1973). Thus, although we know much about the impact of physical factors on behavior and well-being, we know considerably less about the conditions under which physical settings are designed, established,

or modified, or the processes by which physical environments come to be associated with widely shared social and cultural meanings.

A second limitation of earlier research concerns the restricted role of the physical environment in existing conceptualizations of settings. Whereas previous analyses treat the concept of "place" as a crucial component of settings, none have systematically examined the nature of the linkages between the architectural-geographical environment and the social system. Most of the research inspired by Barker's concept of the behavior setting, for example, has focused on the measurement of social and behavioral phenomena (e.g., adaptive reactions to conditions of undermanning and overmanning in groups) and placed less emphasis on the physical features of settings (Barker & Associates, 1978; Barker & Schoggen, 1973).[1] Similarly, Bronfenbrenner's analysis of human development focuses almost exclusively on the social-structural properties of settings with special emphasis on the developmental consequences of participation in social networks (i.e., interpersonal linkages both within and across settings). The role of the physical environment in the ecology of human development remains unspecified in Bronfenbrenner's analysis.

The general emphasis of environment-behavioral research on unidirectional rather than reciprocal processes and the perfunctory treatment of the physical environment in existing theories of settings suggest an important agenda for future research, namely, the analysis of group × place transactions. Group × place transactions encompass the processes by which groups are affected and, in turn, influence their physical milieu. A transactional approach to the study of settings highlights the active role taken by individuals and groups in creating and modifying their environments. Accordingly, the physical milieu of groups is construed not only as an antecedent of behavior but also as a sociocultural product (i.e., as the material reflection of collective behavior and as a repository of shared social meanings).

Several questions about group × place transactions remain to be examined. For instance, what factors determine the strength of group ties to a particular place? Can settings be characterized in terms of the compatibility of their physical and social components? Under what conditions will modifications of the physical environment or the social structure of settings be most likely to occur? Before such questions can be addressed, it is necessary to develop a set of terms for describing the interface (i.e., degree of interdependence) between social units and their physical milieu. We turn now to a consideration of this issue.

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[1]More recently, ecological psychologists have begun to examine the connnections between architectural design and conditions of undermanning and overmanning in settings (Bechtel, 1977; Wicker, 1979; Wicker & Kirmeyer, 1976). Also, a recent article by Barker (1979) examines the consequences of undermanning that arise as a result of migration to frontier environments.

THE PERCEIVED SOCIAL FIELD OF THE PHYSICAL ENVIRONMENT: A MATRIX OF SHARED SOCIOCULTURAL MEANINGS

A defining characteristic of settings is the interdependence of their physical, social, and personal elements. This attribute distinguishes ongoing, behavioral settings from less socially structured portions of the environment. Various terms have been used in the psychological literature to describe the differential interdependence among environmental elements: for example, the concepts of *causal texture* (Emery & Trist, 1965; Tolman & Brunswik, 1935), *synomorphy* (Barker, 1960), and Ashby's (1960) distinction between *poorly* versus *richly joined* environments.

In Barker's analysis, the behavioral program (recurring patterns of activity) conforms to the shape and requirements of the physical milieu: hence, the term *synomorphy* (or *sameness of form*), denoting the interdependence between environment and behavior. Yet the behavioral and physical components within different settings may not be uniformly synomorphic or linked. Thus, the social activities (e.g., economic functions) of a particular group may rely heavily on the physical resources available within its immediate vicinity whereas those of another group may be less tied to a single locale. Also, one family may grieve bitterly for its previous home following a residential relocation (Fried, 1963) whereas another may be negligibly affected by such a move. And, whereas the residents of certain communities will resist "urban renewal" projects to preserve the historical significance of their neighborhood, others may be less invested in maintaining the existing form of their community (Firey, 1945).

The Social Imageability of Places

In the present analysis, the degree of interdependence between groups and places is indexed in terms of the shared, sociocultural images that are conveyed by physical environments. These images constitute the nonmaterial properties of the physical milieu—the sociocultural "residue" (or residual meaning) that becomes attached to places as the result of their continuous association with group activities. Just as environments can be described in terms of the *imageability* (or *memorability*) of their physical elements (Lynch, 1960), they also can be understood in terms of their *social imageability* (i.e., their capacity to evoke vivid and widely shared social meanings among the members of a setting). As a place becomes increasingly "layered" with social meanings, the interdependence among social and physical components of the setting is assumed to increase. Thus, the sociocultural meanings associated with a setting are viewed as the "glue" that binds groups to particular places.

The present approach is in contrast to earlier taxonomic analyses of environments that have focused either on the objective features of settings (e.g., their

architectural features, membership size, overt behavior, and activity patterns) or on the individual's subjective impressions of and reactions to the environment (Magnusson, 1978; Pervin, 1978b). Underlying these analyses is the assumption that the perceived environment is of a personal or idiosyncratic nature (Lewin, 1935), unlike the objective environment that can be described consensually by a variety of observers. This assumption may account for the neglect of an important aspect of environmental perception in psychological research, namely, that portion of the perceived environment that is consensually shared by the members of a setting but not necessarily by outside observers (nonmembers) of the setting (James & Jones, 1974).

The description of sociophysical environments in terms of the perceptions shared among setting members is advantageous for several reasons. Most importantly, because the members of settings comprise organized social units rather than clusters of detached individuals, an analysis of the interdependence among setting components must address the nature of the bonds between groups and places, as distinct from those existing between individuals and their environments.[2] Yet, although psychologists have analyzed the personal ties between individuals and places (Cooper, 1974; Hansen & Altman, 1976; Proshansky, 1978), they have given much less attention to the nature of group–environment linkages (cf. Altman & Chemers, 1979; for sociological and anthropological analyses of this issue, see Duncan & Duncan, 1976; Firey, 1945; Fried, 1963; Gerson & Gerson, 1976; Rapoport, 1976).

The development of environmental taxonomies based on the shared perceptions of setting members is relevant to a number of theoretical and practical issues. First, the behavior and well-being of setting members might be predicted more reliably from their collective perceptions of environmental conditions (e.g., environmental constraints that are blocking the accomplishment of salient group goals) than from the vantage point of single individuals (Katona, 1979). Moreover, the classification of physical environments in terms of the social meanings that are typically associated with them would provide a basis for predicting the impact of architectural/geographical changes on group members across different kinds of settings and for designing future settings that are congruent with the activities and goals of their users.

Dimensions of the Perceived Social Field

The imageability of a place refers to those features of the environment that are highly salient to its occupants. Kevin Lynch's (1960) discussion of the physical imageability of places, for example, emphasizes the dimensions of *perceptual*

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[2]The subjective nature of the perceived social field distinguishes this concept from Lewin's (1936) "objective social field (i.e., the actual structure, activities, and composition of the group as it exists within the ecological environment) and from Durkheim's (1964) "social facts" (the unperceived yet powerful social forces that guide the behavior of community members).

salience (i.e., the number and intensity of highly noticeable features within an environment [Stokols, 1979; Taylor & Fiske, 1978]). Among the factors that heighten the perceptual salience of environments are stimulus contrast, novelty, and complexity (Berlyne, 1960; Kaplan, 1975; Wohlwill, 1976).

The concept of social imageability, as used in this analysis, refers not to the perceptual prominence of environments but rather to their *functional, motivational,* and *evaluative significance.* These dimensions of environmental salience encompass socially shared images that relate, respectively, to three basic facets of settings: (1) their *functions* (i.e., group-specific activities that occur within the setting, including the norms associated with these activities as well as descriptive information regarding the identities and social roles of setting members); (2) collective *goals* and purposes, each of which is weighted by its relative importance to setting members (these are distinguished from the personal needs and goals that are pursued independently by individuals within the setting); and (3) *evaluations* of occupants, physical features, and/or social functions within the setting (e.g., the negative stereotypes associated with certain neighborhoods relating to the presumed dangerousness of their occupants [Suttles, 1968]).[3]

The actual content of those sociocultural meanings associated with particular places will be referred to in this discussion as the perceived social field of the physical environment. More specifically, the *perceived-social field of a setting is defined as the totality of functional, motivational, and evaluative meanings conveyed by the physical environment to members of the setting.* This matrix of meanings is essentially a set of collectively shared images that evolves as the result of sustained social interaction within a particular place.

To illustrate the communication of sociocultural meanings via the physical environment, consider the example of a Manhattan resident driving along Main Street of a small midwestern town for the first time. As the visitor catches a glimpse of the town's church, post office, and town hall, certain culturally shared information about the social functions (e.g., worship services, town council meetings) of these settings is conveyed. The visitor would not, however, be privy to information about local functions that occur within each setting and are known only by town residents (e.g., the weekly flea market held in the church parking lot every Saturday at 2:00 P.M.). Also, although the American flag in front of the post office would convey to the visitor certain cultural meanings associated with national identity (e.g., evaluative feelings about being an American citizen), the Kiwanis Club sign posted outside Town Hall would communicate little information to a stranger about the townspeople who belong to the organization (e.g., who they are, their standing in the community) or about the reputation of the

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[3]The dimensions of functional, motivational, and evaluative salience reflect the three factors of semantic meaning identified by Osgood, Suci, and Tannenbaum (1957): activity, potency, and evaluation. The description of situations in terms of these focuses on person × setting rather than group × place transactions.

organization among town residents. These meanings would be noticed only by members of the local community, especially those who participate most directly in its organizations and settings.

The analysis of social meanings generally has been the province of sociology and anthropology (Agar, 1979; Berger & Luckmann, 1966; Garfinkel, 1967; Mead, 1934; Tyler, 1969) though the emphasis of these fields has not been on place-specific meanings per se but rather on the broader set of social rules and meanings (e.g., widely held ethical norms) shared by the members of a community. More recently, psychologists have begun to apply ethnographic methods to the study of social interaction and group structure (Harré, 1977; Harré & Secord, 1972).

The present conceptualization of the perceived social field differs from earlier analyses of related constructs in some important respects. First, in contrast with Argyle's (1977) and Harré and Secord's (1972) analyses of the "generative rules" and "ascribed meanings" of social interaction, the perceived social field refers only to that subset of socially shared meanings associated with the physical environment of a setting. For instance, the members of a church congregation might share the ethic of "doing unto others as you would have them do unto you," as well as a set of norms about what constitutes appropriate dress and behavior at Sunday worship services. Although the "do unto others . . ." ethic is a socially shared rule that would apply across a variety of settings, the latter norms are more specifically associated with social functions of the church and the particular individuals who participate in that setting. The perceived social field of the church setting, thus, would refer to the latter but not the former category of social rules.

The assumption that physical environments convey information about the sociocultural functions associated with them is also similar to Gibson's (1977) "affordance" concept. The affordance of an object refers to the potential uses or activities it suggests to observers by virtue of its physical properties. Kaplan (1978) has extended the concept of affordance to the level of the molar, physical environment and uses the term to refer to the potential actions suggested by a particular place to its current or prospective users. In the present analysis, the concept of social field encompasses those sociocultural functions afforded by the physical attributes of a setting but not the nonsocial activities associated with physical objects or places (e.g., the behavior of "sitting" suggested by the presence of a chair, or that of "swimming" afforded by the seashore).

Another construct that is closely related to the present conceptualization of the social field is "social climate" (Moos, 1976; Pace & Stern, 1958; cf. James & Jones' [1974] discussion of organizational climate). Although both the social climate and social field concepts pertain to collectively shared (versus idiosyncratic) perceptions of a setting, they differ in at least two important respects. First, the perceived social field, as defined here, subsumes only those aspects of social climate that are associated with or symbolized by the physical environment of a

setting. The interpersonal cohesiveness of a setting, for example, would be viewed as a dimension of the social field only to the extent that images of cohesiveness (e.g., evaluative memories of prior interactions that have been pleasant or supportive) become attached to a particular place. Second, the concept of social field emphasizes the specific content of those sociocultural meanings associated with an environment, whereas Moos' notion of social climate summarizes the collective perception of a setting in terms of three basic dimensions (social relationships, personal development, and system maintenance/ change).

The preceding discussion suggests some possible strategies for measuring the perceived social field of a setting. First, the *content* of the social field can be assessed by having a representative sample of group members list those functional, motivational, and evaluative meanings associated with the physical environment of their setting. This open-ended listing procedure is similar to Harré and Secord's (1972) notion of "accounting" (i.e., the explication of social action in terms of shared social meanings reflected in individuals' accounts of their social experiences) but pertains more specifically to the sociocultural images attached to the physical environment. The *scale* of the social field varies according to whether the listing of setting meanings is completed in relation to the physical milieu as a whole or to specific places comprising the broader milieu (e.g., Main Street of a small town versus the church, post office, and meeting hall located there).

The *complexity* of the social field can be indexed in terms of the number of shared meanings that emerge from the independent listings provided by different group members. The assessment of social-field complexity presumes the availability of criteria for distinguishing among shared meanings and idiosyncratic perceptions (i.e., those that are mentioned only sporadically by members of the setting) and between redundant and nonredundant meanings (i.e., those that are sufficiently different to warrant separate enumeration). Shared meanings might be operationally defined, for example, as those listed by at least a majority of respondents or, less restrictively, as those cited most frequently by respondents irrespective of whether they constitute a majority of the sample.

The more often a particular meaning is cited among setting members, the greater its *clarity*. An additional criterion for judging the relative clarity of shared meanings is the extent to which they are rated by setting members as being slightly or highly characteristic of a particular place. These criteria jointly define the relative clarity of sociocultural images attached to a particular place. Considering the perceived social field as a whole (i.e., as a composite of multiple meanings), an index of the social imageability of a place can be derived by weighting the diverse meanings of the social field (reflecting its content and complexity) by their relative clarity among setting members. An ambiguous social field would be characterized by low imageability (i.e., by a lack [or small

number] of vivid images and/or by a lack of agreement among group members regarding the social meanings of the physical environment).

In some situations, the content and clarity of setting meanings may vary according to subgroup membership. Thus, the perceived social field can be characterized in terms of its *heterogeneity*, or the number of subgroups within the setting for whom distinguishable patterns of meaning can be discerned. The social field also can be analyzed in terms of its *distortions*. Distortions are unrecognized discrepancies between the sociocultural images of a place and the nature of the social activities and experiences that actually occur there. Distortions can arise as the result of insufficient exposure to a setting (e.g., among outsiders who have never visited the setting or among group members who are minimally involved in its activities) or from misinformation about the setting. The discriminatory beliefs and negative stereotypes that sometimes become associated with the territories of opposing groups (Allport, 1958; Sherif, 1966; Suttles, 1972) exemplify distortions of the social field to the extent that these stereotypes diverge from reality.

Finally, the perceived social field can be characterized in terms of its consistency with or contradiction of the expectations and preferences of setting members. *Contradictions* (or "disjunctions," cf. Rausch, 1977) between the actual and preferred social meanings of a setting are exemplified by situations in which one's images of a place are negatively toned as a result of earlier unpleasant experiences there or where the actual uses of a setting are contradictory to its intended functions (e.g., a congested and smog-filled Yosemite Valley, a noisy library, a dormitory lounge that is rarely used by residents for socializing). Unlike distortions, contradictions involve recognized discrepencies between actual and preferred conditions within settings.

Having outlined the major dimensions of the perceived social field, an important question remains to be addressed: How useful are the proposed dimensions as a basis for describing, categorizing, and understanding settings? Ideally, environmental taxonomies should provide a framework not only for describing settings but also for predicting the relationships among their components (Mischel, 1977a; Pervin, 1978b). Some of these relationships are considered in the following section.

A THEORETICAL ANALYSIS OF GROUP × PLACE TRANSACTIONS

In this section, the dimensions of functional, motivational, and evaluative salience are employed as a basis for developing the constructs of *place dependence*, *group-environment congruence*, and the *transformational potential* of settings. These concepts suggest a number of hypotheses concerning the transactions between groups and places.

Functional Salience and the Place Dependence of Settings

The dimension of functional salience encompasses descriptive information about the activities, norms, and group members associated with particular places. The description of places in terms of their functional meanings is pertinent to several aspects of group-environment transaction. For instance, an assessment of the sociocultural meanings of places reveals the variety of functions supported by geographical and architectural environments, ranging from the purely physical (e.g., the provision of physical shelter and resources for performing numerous behaviors) to the psychological and social (e.g., the provision of opportunities for aesthetic fulfillment, social contacts, and the establishment of personal and social identity). The range of functions associated with different environments is potentially relevant to predictive as well as descriptive concerns. For example, the complexity and clarity of functional meanings attached to a place may mediate the intensity of group members' reactions to sudden or substantial changes in the physical milieu. Also, to the degree that a physical environment is associated with clear and undistorted functional meanings, it may not only support but, in some instances, may actually substitute for direct participation in group activities. Thus, proximity to areas that convey a high level of supportiveness and cohesion may provide a measure of vicarious social support to group members even in the absence of direct social interaction (Jacobs, 1961; Newman, 1973).

From a transactional perspective, the functional meanings that become associated with places must be understood both as a product as well as an antecedent of social behavior. Once these meanings are established, they become part of the collectively perceived environment that guides social behavior and affects personal and social well-being. The role of functional salience in mediating behavior and well-being is perhaps most clearly revealed through a comparison of two kinds of settings: those in which group functions are strongly tied to a particular place and those in which they are not.

In the ensuing discussion, the concept of place dependence is used to describe the strength of association between group functions and the physical environment. *The place dependence of settings is defined as the degree to which group members perceive the major functions of their setting to be exclusively tied to a particular location.* Major functions are those that are viewed as essential for the existence and/or effectiveness of the setting.

Place-dependent settings are those whose functions and existence are intimately linked to a particular physical environment whereas place-independent settings are those whose major functions could thrive equally well within a variety of alternative locations. For instance, the economic functions of certain businesses (e.g., sawmills, shipbuilding, ski resorts) are highly dependent on the natural resources available within particular geographical areas whereas those of others (e.g., banks, restaurants, pharmacies) are less closely tied to the im-

mediate locale. And at a social-psychological level, the residents of certain ethnic enclaves in urban areas sometimes express greater dependence on their neighborhood for social identity and support than do those of suburban areas (Fried & Gleicher, 1961; Gans, 1967).[4]

To arrive at a more precise conceptualization of place dependence, it is necessary to consider the kinds of functions that occur within settings. Specifically, we can speak of the place dependence of social, cultural, economic, psychological, and physiological functions, or, more simply, of social and personal functions. At the social level, certain interpersonal and organizational processes (e.g., love, friendship, membership in political or professional groups) transcend the boundaries of specific places whereas others are intimately tied to the locations in which they occur (e.g., the economic functions of a setting that are dependent on local resources). Similarly, certain personal functions (e.g., eating, thinking) occur within diverse locations whereas others are more closely linked to specific places (e.g., establishment of personal territory, Altman, 1975; and "place identity," Proshansky, 1978).

Psychological and physiological functions are relevant to the present analysis only to the extent that they are accomplished through the joint efforts of setting members (e.g., the enhancement of psychological security through identification with a particular group). Personal functions that do not depend on the presence of others for their accomplishment (e.g., aesthetic experiences associated with natural environments; Kaplan, 1975; Wohlwill, 1976) are excluded from this analysis.

The place dependence of a setting reflects the degree to which the various social and psychological functions associated with it are, themselves, locationally dependent. Accordingly, the measurement of place dependence at the level of settings involves the following steps: (1) a listing of the major social and psychological functions (F) associated with the setting, compiled by a representative sample of its occupants; (2) the categorization of each function, f, within the set, F, as either place dependent (f_d) or place independent (f_i); (3) the subjective rating of each function according to its relative degree of place dependence (PD_{fd}) or place independence (PI_{fi}) (this step assumes that the dimension

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[4]In the present analysis, *place dependence* is defined in relation to an ongoing setting, and refers specifically to the degree to which the major functions and actual existence of the setting are dependent on a particular physical environment. Also, place dependence is operationalized in terms of group members' collective perceptions of the connections between setting functions and places. In a subsequent manuscript (Stokols & Shumaker, in press), the concept of place dependence has been broadened to incorporate the following issues: (1) individuals' perceptions of the interdependence between *themselves* and places, as well as between their *group* and places; (2) settings whose functions are oriented toward individuals and aggregates as well as toward organized groups; (3) psychological processes underlying the development of people's subjective attachments to places; and (4) people's dependence on functionally-similar places as well as on a specific geographical area ("categorical" vs. "geographical" place dependence).

of place dependence is more usefully construed as continuous rather than dichotomous); and (4) the weighting of setting functions according to their "relative centrality" (RC), or the degree to which they are viewed by occupants as crucial to the existence and/or effectiveness of the setting. The fourth step assumes that the place dependence of a setting is most closely related to the locational dependence of its major (versus subsidiary) functions. The *place dependence of a setting* (PD_s) can now be represented as the proportion of place-dependent to place-independent functions, where each function is weighted by its degree of locational dependence and relative centrality to the setting:

$$PD_s = \frac{\Sigma_d (PD_{fd} \times RC_{fd})}{\Sigma_d (PD_{fd} \times RC_{fd}) + \Sigma_i (PI_{fi} \times RC_{fi})} \tag{1}$$

The previous formulation suggests some potential determinants of place dependence, including: (1) the length of association between a group and a particular place; (2) the availability of alternative locations in which the key functions of a setting can be carried out effectively; (3) the territorial and population size of settings; and (4) the complexity of settings (i.e., the number and diversity of its major functions). It seems reasonable to assume that the ties between the physical environment and social system of a setting become stronger as their temporal association increases, the availability of suitable alternative locations decreases, and the size and complexity of the setting increase (because such settings are less easily transported to new environments).

A number of hypotheses can be derived from the place-dependence construct. First, place-dependent settings are more likely to be vulnerable to sources of turbulence in the physical environment (e.g., sudden geographical or architectural changes, or the presence of unwanted stimuli such as noise and congestion) than are place-independent settings. This hypothesis is based on the assumption that the physical environment is more closely associated with various social and psychological functions in place-dependent settings. Therefore, abrupt changes in the physical milieu or undesirable environmental conditions are more likely to disrupt social and psychological processes within place-dependent versus place-independent settings.

Second, members of place-dependent settings are more likely to be psychologically committed to and actively protective of their environment than are those of place-independent settings. This prediction derives from the assumption that the members of place-dependent settings perceive that they have fewer alternative settings to choose from. In Thibaut and Kelley's (1959) terminology, they have a lower comparison level for alternative settings (CL_{alt}) and, therefore, tend to have more of an investment in their present situation. To the extent that these assumptions are valid, members of place-dependent settings are also more likely to: (1) overevaluate their own group's products; (2) discriminate against out-group individuals (Allport, 1937); and (3) exhibit greater sensitivity

to conditions of overmanning (Barker, 1960; Wicker, 1979) than are those of place-independent settings.

Third, it is predicted that transitions (e.g., relocations) between place-dependent settings will be more difficult for group members than will those involving place-independent settings, even when such moves are anticipated and voluntary. This hypothesis is based on the assumption that disengagement from a familiar environment will be more difficult for members of place-dependent settings, due to their greater investment in the situation (Firey, 1945; Fried, 1963). Moreover, entry into novel, place-dependent settings may be more stressful because the social and psychological meanings of the setting may take longer to decode than in situations where the physical environment is less closely linked to social-psychological functions.

The previous hypotheses reflect some interesting extensions of earlier analyses. First, in relation to Barker's (1960) assumption that the behavioral programs of settings are synomorphic or closely linked to their physical location, the present analysis suggests that settings are not uniformly place dependent, and that this attribute of settings has important implications for the ways in which their members respond to social or physical constraints (e.g., overmanning, geographical change). And within the context of Bronfenbrenner's (1977, 1979) ecological analysis of human development, the present formulation suggests that the existence of "multi-setting linkages" (social networks) may be more crucial as sources of social support to individuals moving between place-dependent rather than place-independent settings. The sharing of setting transitions by two or more individuals may provide each person with a link to the past and a basis for social support in novel, unpredictable situations. One benefit of such support may be the collective translation of subtle, functional meanings embedded in the physical structure of unfamiliar settings. Participation in social networks, particularly among newcomers to place-dependent settings, thus may serve to reduce ambiguity and distortion within the perceived social field.

The gist of the preceding discussion is that place dependence plays an important role in mediating group reactions to conditions of environmental turbulence and/or deterioration. But an analysis of the functional features of settings, by themselves, sheds little light on the more active modes of group-environment transaction (e.g., the attempts of group members to establish new settings or to alter the structure and meanings of existing ones). To address these issues, the motivational and evaluative salience of settings also must be considered. For it is the level of congruence between setting functions (the environment as it is perceived to exist) and salient group goals (images of the environment as it "ought to be") that determines the perception of environmental quality and prompts efforts to establish or restructure settings.

In the following section, the dimension of motivational salience is examined and strategies for assessing group-environment congruence are discussed. Sub-

sequently, the relationship between evaluative salience and environmental change is considered.

Motivational Salience and the Concept of Group–Environment Congruence

The term, *motivational salience*, denotes the degree to which an environment is associated with subjectively important goals. At the level of person–environment transaction, motivational salience, MS, is simply the subjective importance rating assigned by an individual to a specific goal or need, n_i, from among the larger set of situationally relevant needs, N (Stokols, 1979).[5] In the present analysis of group–environment transaction, the motivational salience of a setting, MS_s, denotes a composite score consisting of two basic components: (1) a set of collectively shared goals, G, identified by a representative sample of group (or subgroup) members; and (2) a set of motivational significance (i.e., subjective importance) ratings, MS, each of which is associated with a particular goal, g_i. These ratings reflect the average significance weights assigned to each goal, g_i, by group members. The *motivational salience of the setting* is defined as the sum of the average goal weights for all setting–relevant goals, G, as follows:

$$MS_s = \Sigma_i \ (MS_{gi}). \tag{2}$$

The dimensions of functional and motivational salience, although closely related, are conceptually distinct. As noted earlier, functional salience encompasses a wide array of descriptive information about settings, including the kinds of activities that occur within the setting, the schedules and locations of these activities, the identity of group members and their relationships to each other, as well as the rules and norms that guide social interaction. To the degree that physical environments convey such information to setting members, they are said to be functionally salient. The preceding discussion has focused primarily on the activities component of functional salience and, more specifically, on the extent to which the major activities or uses of a setting are perceived as being restricted to a particular location.

To distinguish between functional and motivational salience, it is necessary to consider the relationship between setting functions and group goals. Often, the

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[5]The term *needs* refers in this analysis to emotional, physiological, and behavioral states of the individual that are actually advantageous and/or are perceived as being necessary or advantageous for personal well-being. Needs are not restricted to somatically determined drives but also subsume personally chosen goals and plans. Although the terms *needs* and *goals* often are used interchangeably in analyses of person–environment transaction (Stokols, 1979), the present discussion uses only the term *goals* to describe conditions of the group (and/or its environment) that are viewed by setting members as being necessary or advantageous for collective well-being. Thus, the term *needs* is restricted to the analysis of person–environment relations whereas the term *goals* pertains exclusively to group–environment transactions.

major functions of a setting (e.g., activities considered to be crucial for its existence and effectiveness) correspond closely with salient-group goals. For instance, a church provides a context for numerous activities including worship services, Sunday School, adult education classes, weddings, and dances. Participation in these activities enables members of the church to accomplish a variety of religious and social goals. But although members of the setting might agree on its major activities, the motivational significance of these functions (and related goals) would vary considerably. Thus, younger members of the congregation might view the educational, recreational, and social-identity functions of the church as more important than its religious functions, whereas older members might assign greater importance to religious activities. Furthermore, the salient goals of certain subgroups within the setting might be quite unrelated to the major functions of the church. The groundskeepers and janitors employed by the church, for example, would be more interested in earning a decent salary, having a flexible work week, and maintaining the physical appearance of the church, than in the religious and social purposes of the setting.

The dimensions of motivational and functional salience, therefore, are different in at least two respects. First, in those instances where setting goals and functions overlap, motivational salience pertains not only to the content of these goals but also to their relative importance to group members. Second, the motivational and functional meanings of a setting are not always correspondent. This point can be illustrated by considering the concept of *place dependence*. It was hypothesized earlier that members of place-dependent groups (e.g., residents of ethnic enclaves) are more likely to be committed to (or motivationally invested in) their settings than those of place-independent groups (e.g., residents of suburban areas), due to the fewer alternative settings available to the former. But if the level of place dependence is held constant, several other sources of motivational salience become apparent. For example, although the behavioral settings within an ethnic neighborhood (e.g., specialized restaurants, bookstores) may be quite place dependent and, therefore, might not flourish in other parts of the city, the motivational significance or importance of these settings probably would vary among resident groups depending on how committed they are to the cultural-identity functions of the neighborhood. Some families might be highly committed to the culturally supportive activities of the neighborhood whereas others, whose social networks extend to other parts of the city, would be less invested in their immediate residential area.

The description of settings in terms of their motivational salience is directly relevant to the issue of *group-environment congruence (i.e., the degree to which an environment accommodates the important goals and activities of group members)*. The congruence between group goals and perceived environmental opportunities for accomplishing them has a direct bearing on the quality of group-environment transaction and on the behavior and well-being of group members. Although previous analyses of congruence have focused on the degree of fit

between individuals and their environment (French, Rodgers, & Cobb, 1974; Hunt, 1963b; Kahana, 1975; Michelson, 1976; Mischel, 1973; Stokols, 1979; Streufert & Streufert, 1978; Wicker, 1979), they have given little attention to the issue of group-environment congruence and the possibility of describing settings along this dimension.

The present discussion extends an earlier analysis of person-environment fit (Stokols, 1979) in which congruence is conceptualized as a function of two basic components: environmental controllability and environmental salience. Controllability is defined in terms of the multiple need dimensions that are relevant to an individual within a given situation and the degree to which the actual facilitation or thwarting of these needs is perceived to be discrepant within ideal or preferred levels of facilitation. Salience refers to the dimensions of motivational and perceptual salience as defined earlier. The ensuing discussion emphasizes the role of motivational salience in mediating group-environment congruence, though it is assumed that perceptual salience also contributes to the congruence equation by intensifying people's awareness of controllable (goal-facilitative) or uncontrollable (goal-constraining) features of the environment (Stokols, 1979).

The present discussion of group-environment congruence retains the key assumptions of the earlier analysis but emphasizes the facilitation of collectively shared goals rather than personally defined needs. A major assumption of this analysis is that group-environment congruence depends not only on the level of goal facilitation (controllability) afforded by a setting but also on the subjective importance (motivational salience) of the goals that are facilitated or thwarted by the environment. A high degree of control over trivial (goal-irrelevant) features of the setting, for example, would be associated with a lower level of congruence than the same degree of control over important dimensions of the environment. The present analysis also assumes that the perceived level of actual/ideal goal facilitation within a setting provides a valid (functionally equivalent) index of the group's capacity to control the environment (i.e., to maintain or modify it in accord with collective preferences).

As a basis for arriving at an operational definition of group-environment congruence, let G represent those goals that are relevant to a group within a particular setting. Further, let g_f denote each goal within the set, G, that is perceived by group members as being facilitated by environmental conditions, and let g_t denote each goal among G that is perceived to be thwarted. The identification of relevant goals, G, and their classification as either facilitated or thwarted, reflect the modal judgments of a representative sample of group members. Each goal, g_f or g_t, is assumed to be weighted by an actual facilitation (AF) or thwarting (AT) score, respectively, and by an ideal facilitation (IF) score. The AF and AT scores reflect the average subjective ratings (across all respondents) of the degree to which a specific goal is either supported or constrained by the environment, whereas the IF score reflects the group's appraisal

of the optimal or desired level of facilitation associated with that goal. The *environmental controllability of a setting*, C_s, can be represented as a ratio of actual/ideal goal facilitation as follows:

$$C_s = \frac{\Sigma_f (AF_{gf}) - \Sigma_t (AT_{gt})}{\Sigma_f (IF_{gf}) + \Sigma_t (IF_{gt})} \qquad (3)$$

To illustrate the application of this equation, suppose that the members of a company are asked to list those goals (G) that are relevant within the context of a work environment and to rate on seven-point scales the degree to which each goal (g_f or g_t) is facilitated (AF) or thwarted (AT) by the environment. Let us assume that the group identifies company productivity, opportunities for socializing and interesting work assignments as the major goals associated with the setting. Also, suppose that the facilitation scores associated with these goals are 2, 5, and -4, respectively, where the latter number reflects a thwarting score of $+4$. Assuming that the ideal facilitation (IF) scores for each of the three goals is $+7$, we can represent the perceived controllability of the work environment as $(7 - 4)/(14 + 7) = .14$.

Equation 3 emphasizes the multidimensional nature of environmental controllability but it does not reflect the differential importance of various goal dimensions in determining the overall level of congruence. It is assumed in this analysis that motivational salience affects environmental congruence through its adjustment of actual and ideal levels of goal facilitation. In operational terms, the facilitation (AF, IF) and thwarting (AT) scores associated with different goals are multiplied by the respective importance ratings (MS) of these goals, and the sum of these products is used to derive an index of *environmental congruence* (CG) *within a given setting*, s:

$$CG_s = \frac{\Sigma_f (AF_{gf} \times MS_{gf}) - \Sigma_t (AT_{gt} \times MS_{gt})}{\Sigma_f (IF_{gf} \times MS_{gf}) + \Sigma_t (IF_{gt} \times MS_{gt})} \qquad (4)$$

To illustrate the effects of motivational salience on goal facilitation, we can return to the previous example of the work setting where the actual facilitation (AF) scores associated with productivity, socializing, and interesting work assignments were 2, 5, and -4 and the ideal facilitation (IF) score for each goal was 7. Previously, we assumed that the relative importance of these goals was equal. Now, however, let us assume that the importance ratings (MS) of the goals, on a seven-point scale, are 1, 6, and 3, respectively. The ratio of actual/ideal goal facilitation is, thus, $(2 + 30 - 12)/(7 + 42 + 21)$, or .29, as compared to the previously unadjusted value of .14.

The proposed formulation of congruence is pertinent to an important facet of group–environment transaction, namely, the vulnerability of groups to physical and social-structural stressors. Recent research on stress has documented the negative effects of uncontrollable stimuli on health and behavior (Averill, 1973;

Glass & Singer, 1972; Holmes & Rahe, 1967; Seligman, 1975). Many programs of stress research, although focusing on the consequences of specific, uncontroll-able events, have neglected to consider the sociophysical context in which these events occur. This tendency to overemphasize the impact of isolated, acute stressors has precluded an analysis of issues such as the proportion of uncontrollable/controllable events within a setting and the relative importance of those goals with which a stressor (or set of stressors) interferes.

By considering the multiple goals that are salient to group members within a particular setting, the present analysis offers a basis for describing the ecological context in which stressors occur and for estimating the impact of these events on social organization and well-being. Estimating the impact of a potential stressor can be illustrated in relation to the earlier-mentioned example of the office environment. Suppose, for instance, that a program of Muzak is installed in the work setting by the office manager and that this change in the environment reduces productivity from 2 to 1, increases socializing from 5 to 6, and decreases the interestingness of work assignments from -4 to -6. Also, assuming that the Muzak has been installed against the wishes of the workers, additional goal dimensions relating to workers' autonomy and respectful treatment by superiors are salient and are perceived as being constrained by the environment to the degree of 5 and 7, respectively. With the addition of Muzak, then, the perceived controllability of the work setting (from the employees' point of view) shifts from .14 to $(7 - 18)/(21 + 14)$, or $-.31$, reflecting a net loss of 45 points on a continuum ranging from complete uncontrollability (-1.0) to complete control-lability $(+1.0)$. As depicted in Equation 4, the net deterioration in congruence prompted by the addition of Muzak to the setting also depends on the motivational salience of the workers' goals.

In accord with the findings from earlier research, the present analysis suggests that reduced controllability is associated with increased levels of stress (e.g., social conflict, reduced efficiency, psychological and physiological imbalances). The main effects of controllability, however, are mediated by motivational (and perceptual) salience, with higher levels of salience being associated with greater symptoms of stress in relatively uncontrollable environments (where $-1 \leq C_s <$ 0) and less stress in relatively controllable settings (where $0 < C_s \leq 1$).

Whereas much of the research literature on stress is directly relevant to the issue of environmental controllability and its implications for personal well-being, little attention has been given to the role of motivational salience in mediating the behavioral and health consequences of controllable events. Nonetheless, certain studies pertaining to urban stress and learned helplessness offer preliminary (albeit indirect) evidence for the interactive effects of salience and controllability. First, a comparison of the findings from several crowding studies conducted in a diversity of settings suggests that high density exerts a more negative impact on health and behavior when it occurs within psychologi-cally important (i.e., "primary") environments than within less salient ("secon-

dary'') settings (Stokols, 1976).[6] As a case in point, a naturalistic study of the consequences of living in "tripled-up" dormitory rooms (originally designed for two rather than three students) found that those students who spent the greatest amount of time and felt most invested in their dorm rooms exhibited more negative reactions to their crowded living conditions (e.g., dissatisfaction with roommates, health problems) than did those who spent less time and felt less involved in their dorm residence (Aiello, Epstein, & Karlin, 1975).

Second, experiments on learned helplessness further suggest that motivational salience mediates the intensity of stress reactions, with exposure to uncontrollable stimuli leading to more extreme symptoms of learned helplessness in situations that are of high rather than low importance to the individual (Roth & Kubal, 1975; Wortman & Brehm, 1975). Although these data pertain to the experiences of individuals, they suggest that the impact of stressors on groups (e.g., roommates sharing a crowded dormitory suite) may be mediated by the motivational salience of shared goals.

The hypotheses discussed previously emphasize the impact of the environment on people rather than the reciprocal influence of groups on the environment. The actual impact of environmental demands on well-being, however, depends on the group's capacity to cope effectively with salient sources of uncontrollability. Within the present framework, coping processes can be understood as efforts to enhance controllability and/or to regulate the salience of group goals and relevant environmental conditions (Lazarus & Launier, 1978). A crucial question pertaining to stress and coping is under what conditions individuals and groups actively attempt to restructure the environment in accord with personal and collective goals. This issue is addressed in the following section.

Evaluative Salience and the Transformational Potential of Settings

The evaluative salience of the physical environment is the degree to which it evokes positive or negative feelings about the occupants, social functions, and physical features of a setting. A setting tends to be associated with positive evaluative meanings when the level of group-environment congruence is high and negative meanings when congruence is low. To the extent that environmental congruence remains low and negative evaluations of the environment persist, group members are motivated to improve or withdraw from the setting.

The *transformational potential of a setting refers to the motivation of group members to modify the physical or social structure of their setting in accord with collective preferences*. The degree of transformational potential reflects the dis-

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[6]Additional evidence suggesting the interactive effects of density and environmental salience is presented by Altman (1975); Booth (1976); Cohen, Glass, and Phillips (1979); Galle, Gove, and McPherson (1972); and Stokols (1978).

crepancy between present and potential levels of environmental congruence: $[CG_{s(potential)} - CG_{s(present)}]$. *Potential congruence denotes the highest level of goal facilitation thought to be available in the best alternative setting*. The potential congruence of a setting is essentially the collective comparison level of group members for what they perceive to be their best available, alternative setting (Thibaut & Kelley, 1959).

The measurement of potential congruence is similar to that of actual congruence (see Equation 4) except that the actual facilitation or thwarting score (AF or AT) associated with each goal is replaced by a potential facilitation or thwarting score (PF or PT). The resulting index of potential congruence reflects the ratio of potential/ideal facilitation of salient goals perceived to be attainable in the best alternative setting. The "best alternative setting" can be either a transformed version of the existing setting or a completely different setting that has not yet been established or experienced.

To the extent that group members possess clear images of preferred future environments, potential congruence is greater than actual congruence. Images of preferred settings arise from the collective imagination of group members in response to existing environmental conditions.[7] But the salience of preferred environmental arrangements (i.e., a high level of transformational potential) does not necessarily promote structural modification of the setting. For, the accomplishment of environmental change requires not only salient images of the future but also sufficient levels of environmental flexibility and behavioral competence among group members. Thus, assuming that group members are motivated to improve their environment, the greatest amount of change would be initiated by imaginative groups within flexible settings whereas the least change would be accomplished by unimaginative groups within rigid settings. The present discussion suggests certain factors that may promote active efforts to ameliorate negative features of settings. Among these factors are the collective imagination of group members, their behavioral competence, and the flexibility of the existing environment. This list of change-promotive conditions hardly constitutes a theory of environmental change, but it does highlight some intriguing directions for future research.

One implication of the present analysis is that psychology has paid too little attention to the ecological conditions under which generative or creative thought, adaptive social behavior, and functional environmental change occur (Gergen, 1978). Accordingly, it suggests the importance of developing a particular kind of theoretical construct in future research—namely, "transformational constructs," or those relating to conditions within settings that promote observable environ-

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[7]For an empirical analysis of historical antecedents of innovation, see Hamblin, Jacobsen, and Miller's (1973) mathematical model of social change.

mental change. The focus of transformational constructs is on properties of the setting at time$_1$ that prompt intrapersonal and intragroup processes, (O), and collective or individual action, B, yielding a modified environment at time$_2$: $E_1 \rightarrow (O) \rightarrow B \rightarrow E_2$.

At least three categories of transformational ($E_1 \rightarrow E_2$) constructs can be developed. The first category describes environmental conditions that prompt insight and imagination pertaining to possible environmental change: $E_1 \rightarrow (O) \rightarrow (E_2)$. The enclosure of E_2 within parentheses denotes a "cognitive transformation" (Kelley & Thibaut, 1978; Mischel, 1973) of the existing environment involving the mental representation of an alternative situation(s). The cognitive transformation of environments can be differentiated from those processes within settings that promote actual environmental change via planning and intentional action. This second category of constructs can be summarized as follows: $E_1 \rightarrow (O) \rightarrow B \rightarrow E_2$. Environmental change also can occur unintentionally as the product of unplanned or serendipitous behavior. This sequence of events is depicted by a third category of constructs: $E_1 \rightarrow B \rightarrow E_2$.

Changes occurring within the sociophysical environment between times 1 and 2 can be conceptualized and measured along several possible dimensions. Moreover, the quantity of environmental change can be represented as a composite of $t_2 - t_1$ difference scores along these theoretically relevant dimensions. As for the quality of environmental change, situation-specific criteria must be designated for evaluating the degree to which physical or social-structural changes are functional or dysfunctional for the individual and group. On the basis of these criteria, "generative environments" would be defined as those which promote insight and functional environmental change, whereas "degenerative environments" would be those that discourage insight and/or promote dysfunctional environmental change.

The proposed conceptualization of transformational constructs suggests several questions for future research. First, what properties of settings promote insight as well as functional versus dysfunctional modifications of the environment? Among the possible antecedents of social–environmental change are direct or vicarious exposure to environmental problems (e.g., resource scarcities, community noise, and air pollution) that require creative solutions, socially programmed reinforcers designed to increase aggregate rates of "proenvironmental" behavior (Cone & Hayes, 1977), physical mobility resulting in exposure to unfamiliar cultures and geographical regions, and situations involving interpersonal conflict (Kelley & Thibaut, 1978).

The relative salience of change-inducing circumstances undoubtedly varies across situations and settings. In general, though, it is assumed that those situations that heighten the salience of alternative (preferred) environmental arrangements, although offering behavioral opportunities for achieving those arrangements, are most conducive to change.

SUMMARY AND CONCLUSIONS

The traditions of Lewin (emphasizing the subjective environment of individuals) and Barker (emphasizing the objective environment of groups) generally have remained separate in psychological research on settings. In an effort to bridge these perspectives, the present analysis has focused on the shared, sociocultural meanings conveyed to group members by their physical milieu. These consensually defined images constitute the perceived social field of places—the functional, motivational, and evaluative meanings attached to the physical environment. The perceived social field reflects the linkages between groups and places and plays an important role in mediating the quality and intensity of group-environment transactions.

The description of physical environments in terms of their social meanings is relevant to a number of theoretical and practical issues. At a theoretical level, the concepts derived from the dimensions of functional, motivational, and evaluative salience provide a framework for analyzing several neglected aspects of group-environment transaction, including the strength of group ties to specific locations, the determinants of perceived environmental congruence and quality, and the antecedents of structural changes within settings.

An analysis of the social meanings attached to places also seems germane to various social, political, and community planning issues. The notion of place dependence, for example, seems to be reflected in the behavior of groups living in hazardous areas who often refuse to resettle in a different region, despite recent or imminent disasters (Burton, Kates, & White, 1978). Within the political arena, the fervor of terrorist groups is apparently heightened rather than neutralized by the perception that they have been denied a desired geographical area. In these and other instances of intergroup conflict, the place dependence of groups and the collectively perceived contradiction between existing and preferred functions of an area can have enormous political ramifications. And within the realm of community planning, the identification of conditions that increase the transformational potential of settings (e.g., ecological antecedents of innovation and behavioral competence) could provide valuable guidelines for environmental design.

The present analysis has focused on the development of theoretical terms for describing group $\times$ place transactions rather than on the methodological and statistical complexities associated with the measurement of these phenomena.[8] This strategy seems justified in view of the limited attention that has been given in psychological research to the conceptualization and description of settings.

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[8]These complexities include the development of reliable procedures for measuring shared goals and their salience to group members, an assessment of the statistical relationships among the indices proposed earlier (Equations 1-4), and the drivation of criteria for distinguishing among functional versus dysfunctional modifications of the environment.

Only by developing an adequate vocabulary for the description of settings can we begin to move toward a systematic empirical analysis of group-environment transactions.

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