Extending the social groups model: Social network analysis in recreation research
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Abstract Over the past two decades, the social groups model has received considerable attention in studies of the sociological aspects of leisure and recreation. This model is limited, however, in its ability to account for important structural and interactionist features of recreation behavior. The article proposes and describes an alternative model, the social networks perspective, which grounds recreation behaviors in the extended interpersonal relations of community life. By using a social networks perspective, investigators can study both the influence of social structures on individual behavior and the intentions of individual actors in creating various arrangements of social structures. Several aspects of network analysis methods that concern recreation investigators are described, and some potential avenues for application of the social networks model in leisure and recreation research are suggested.

Keywords Social networks, social groups, relationships, social network analysis, leisure behavior, recreation behavior.

How are leisure and recreation socially significant? The dominant perspective in the sociology of leisure frames this issue by focusing on the unique character of the involvements and interactions of people as members of social groups at recreation and leisure places. The social groups model suggests that people visit recreation places primarily with others, rather than alone, and that “the others usually constitute a recognizable social group” (Burdge, Buchanan, and Christensen 1981, 5).

The primacy of social group influences on individual leisure and recreation behavior was initially acknowledged in the reports of the 1962 Outdoor Recreation Resources Review Commission (ORRRC). In report 20, the commission analyzed findings of a national survey of recreation participation and suggested “one appeal of outdoor recreation is the opportunity it affords for fellowship with family, friends, and colleagues” (Mueller and Gurin 1962, 37). The authors of ORRRC report 5 (Department of Resource Development 1962) formally categorized user groups at forest and park areas along several dimensions, including families, extended families and friends, friendship groups, and singles. In the 20 years after the ORRRC reports a wealth of empirical studies were published that used these classifications, or variations of them, to identify recreation groups (Etzkorn 1964; West and Merriam 1970; Cheek 1971, 1976; Burdge and Field 1972; Lee 1972; Christensen and Yoesting 1973; Field and O’Leary 1973; Field and Cheek 1974; Orthner 1976; Cheek and Field 1977; Orthner and Mancini

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The key assumption of the social groups model is that recreation is a social, rather than an individual, experience: people recreate with others to whom they feel close. Burch (1969) provided the formal theoretical statement for the study of social groups in leisure, proposing that “personal communities” are the basis for recreation involvements. He said “The nature of the intimate social circles which surround the individual may be the crucial determinant of variation in leisure behavior” (p. 125). The personal communities hypothesis suggested that different people selected different recreation activities and styles throughout life on the basis of the influence of family, friends, and workmates.

As presented by Burch (1969), the personal communities hypothesis was theoretically based in interactionism. Socialization into recreation occurred as a result of personal influence, communication, and involvement with primary group members and significant others. The appropriate research questions, then, centered on the importance of within-group behaviors and included the following: How are social roles in recreation learned and maintained? How do reference groups influence recreation and leisure choices? How does group cohesion influence recreation satisfaction? Are there changes through the life cycle with respect to recreation group and activity participation?

However rich the interactionist stance suggested by the personal communities hypothesis may be, social groups research in recreation and leisure has fallen short of expectations. In operation, social groups studies sometimes disintegrate into mere taxonomies of groups (families, friends, mixed groups of families and friends, or singles) discovered on site at recreation places. The associated socialization processes and interaction features within and between groups—organizing processes, leadership development, group role taking, emergence of norms, patterns of communication, spatial arrangements, or extended ties to others outside the social group—remain incompletely analyzed.

In structural terms the social groups model presents an oversimplified, “Noah’s Ark” explanation of recreation behavior. In the same way that animals go two-by-two into the Ark, recreationists are seen to go, social group by social group, to recreation places. The simple taxonomy masks a complex arrangement of social structural arrangements that may influence leisure interactions and behaviors. For example, a group need not always be a group: there are many different kinds of associations and relationships (dyads, informal social ties, formal role relationships, cliques, institutionalized relations, weak ties with associates, or general ties of sociability) that probably have meaning for people in their activation of leisure and recreation choices.

The narrow focus on studying social groups on site ignores the broader community implications of Burch’s (1969) personal communities theory. People have social histories; they do not simply appear in groups at recreation places during free time to take part in activities that give them good feelings. People come from some place first to get to the recreation place and are returning to some place after recreation activities are concluded (recall the model of Clawson and Knetsch, 1966, of the recreation experience, which has seen only limited use in the sociological study of recreation and leisure). Along the way recreationists are meeting, traveling with, visiting, conversing with, watching, and listening to other people. The social groups model fails to consider that people stand in relation to one another socially before, during, and after recreation activity involvement (i.e., not only during the consumptive phase of recreation).

Burch’s (1969) personal communities hypothesis was grounded in the relational ties
and associations of close, personal interactions. Missing from the practice of social groups research is an understanding of how specific groups and individuals fit into the broader social networks of day-to-day community living. Sociological thinking about leisure and recreation should be concerned with how the extended range of social contacts, ties, and relationships surrounding an individual might encourage or inhibit leisure opportunities. A sociology of leisure should not be limited to the study of social groups on site but should also consider people’s social relationships both within and outside recreation participation.

The purpose of this article is to present and discuss an alternative model, the social networks perspective, which provides a framework for addressing the interactionist and structural issues that have generally been overlooked in recreation applications of the social groups model. The social networks perspective operationalizes the personal communities idea by attending to the reciprocal influences of individual action and social structure in an extended community context. The term social networks refers not to a theory in sociology but rather to a perspective for considering behavioral issues related to the simultaneous interactions and structural patterning of social entities (individuals, groups, organizations, or other corporate actors) in a context such as recreation.

An Alternative Paradigm: Social Networks

The idea of networks arose simultaneously in a number of different scientific disciplines. In biology and physics, the network metaphor was utilized to describe chains or webs of cellular and molecular interactions (von Bertalanffy 1950). In wildlife biology and population ecology, network applications were used to describe the movement of animal herds across land areas during seasonal migrations (Lewis 1977). In the social sciences, networks research has its origins in social, psychological, and anthropological research about small groups, sociometric analyses, organizational research, and studies of tribal and village systems (Simmel, trans. by Wolff 1950; Moreno 1951; Barnes 1954; Bott 1955; Mitchell 1969; Rogers 1987). Although social networks research has received considerable attention as an emerging scientific paradigm in other disciplines, it has yet to be developed fully in recreation and leisure research.

The vision of a network of people connected through social relationships provides the basis for network analytic techniques. Social network analysis is a set of methods for mapping the simultaneous interactions of multiple actors involved in interpersonal relationships and then analyzing the structural patterns and regularities that make up the network of relationships (Mitchell 1969; Bott 1971; Barnes 1972; Leinhardt 1977; Price 1981; Rogers and Kincaid 1981; Berkowitz 1982; Marsden and Lin 1982; Rogers 1987; Wellman and Berkowitz 1988a). In mapping social networks, individuals or corporate actors are described as nodes and the relational ties between them as links. A network is a composite pattern of actual and potential relational linkages that exist among a defined set or system of nodes.

The strength of the network approach to structural analysis is in analyzing what Wellman (1988, 33) calls “the social distribution of possibilities.” Extended patterns of social relationships are not always symmetric, not always chosen voluntarily, and sometimes not even visible to those persons outside the relation. People have differential access to information and resources (Wellman and Berkowitz 1988b) and to other people and correspondingly different opportunities for participation in society.

The social network perspective suggests that people live in worlds of potentially
expansive and diverse social connections. The sociological challenge is to determine how multiple social relationships are arranged and ordered and what the patterns mean for such phenomena as recreation behaviors. Conducting a network analysis requires that investigators direct attention to several issues that generally are not problematic in traditional recreation research: the nature of social relationships, specification of the network boundaries, the procedures of network sampling, and measurement of network structures.

**Social Relationships**

The basic unit of analysis in social network studies is the social relationship, a formal or informal link between two social entities. Social relationships provide structure, order, and meaning for people as they conduct their day-to-day lives. Berger and Kellner (1964, 4) observe that relationships are social arrangements that create for the individual the sort of order in which he can experience his life as making sense. . . . In a broad sense, all the other cohabitants of this world serve a validating function . . . however, some validations are more significant than others.

The importance of studying relations (rather than individuals) is evidenced by the recognition that relationships of significance are usually repetitive and regularized rather than random (i.e., people like to see the persons whom they call friends and seek them out rather than wait to bump into them by chance). A primary assumption of social network studies is that, because relationships are potentially predictable, they can be mapped or diagrammed on the basis of their structural characteristics. Relational patterns can then be compared to make predictions about social behaviors.

Networks have structure (after Giddens 1976): they comprise specific patterns of relational communication and interaction that are distributed among the roles and positions of social behavior. Networks are systems of people bounded by context. For example, a recreation network might describe how family relationships and friendship ties are activated for participation in various kinds of recreation activities; a job network might consider how work tasks are distributed among organization members for maximum efficiency.

**Analytic Techniques**

Two types of social network analyses are common: the study of egocentric networks and the study of total social networks. Egocentric network studies begin with an individual social actor and focus on the multiple extended relationships of that specific actor. This approach is appropriate when a scientist is attempting to describe and compare types of relational patterns. For example, Bott (1955) analyzed the joint or segregated role involvements of husbands and wives, and Fischer and Phillips (1979) studied the network patterns of individuals who were socially isolated.

Alternatively, an investigator might study the configuration of social relations throughout a total social network system. That is, all or some persons in a system are surveyed about their relationships along a particular dimension of interest. Studies in this vein include "small world" analyses of the patterning of indirect acquaintance linkages (Milgram 1967; Travers and Milgram 1969), research on productivity in organizations
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(Farace et al. 1977; Tichy, Tushman, and Fombrun 1979), diffusion of innovation research (Coleman, Katz, and Menzel 1957; Rogers and Kincaid 1981), and analyses of community well-being (Wellman 1979; Fischer 1982). In studies of total networks, the investigator specifies which kinds of relations, of all possible relations, are to be studied and the criteria for their selection. The boundary issue in network analysis remains hazy: because social networks have no previously determined size or composition, it is up to the investigator to specify clearly the relations under study and the ways in which they are theoretically relevant.

Network Sampling

Regardless of the type of network under study, the data collected are sociometric in nature. Questions are asked about a social actor's interpersonal relationships, exchanges, activities, and communication with other entities. Typical questions include the following: To whom are you related? Whom do you talk to about x? How frequently do you talk with them? What activities do you do together? What kinds of help do you share?

These data have traditionally been gathered by means of observational and interview techniques (when network systems are based on a small number of ties) or survey research methods (when all, or most, system members can be contacted in settings that are presumed to be bounded, such as organizations or isolated communities). These methods are labor intensive for the investigator, however, and require a high degree of recall from subjects. Scientists have thus devised several methods for sampling and estimating networks with mass survey approaches (Frank 1978; Jones and Fischer 1978; Burt 1981).

Data collection and analyses pose special problems for social network analysts. Not the least of the problems is understanding what subjects mean by the relational terms they use. Individuals assign meanings to interpersonal relations on the basis of various criteria. For example, to some people an immediate family member is also considered a best friend and is reported as such in a name-eliciting question. Other people may distinguish between friends and kin without overlapping affect with role. There is substantial work to be done on specifying relational criteria for network analysis and on determining whether reported contents are comparable.

Measuring Network Structures

In social network analysis, the focus of study is the interactional properties of relational linkages, the arrangement of nodes in relation to one another, and the structural characteristics of network systems. There are several interactional and structural properties that may be employed to measure network structures. Table 1 lists and defines some of the most commonly used concepts. In Table 1 interactional criteria refer to different aspects of specific relationships, and structural criteria refer to the nature of the network as a whole. These concepts are not all utilized in every study but are differentially utilized to analyze specific aspects of the relational or structural characteristics of social networks. The operationalization of concepts is not always consistent across disciplines, but there is a diverse literature about social networks to guide investigators on the proper application of concepts.

One particularly crucial issue in analyzing network structure concerns the ways in which complete networks can be partitioned into subgroups (called cliques or clusters) that contain similar network members and exclude those with different sets of ties. Two
Table 1
Social Network Concepts

<table>
<thead>
<tr>
<th>Type</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Interactional Criteria</td>
<td></td>
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<tr>
<td>Frequency of communication</td>
<td>Number and continuity of interactions over time</td>
</tr>
<tr>
<td>Content of ties</td>
<td>Purpose and functions of relation; types of relational tie (exchange, obligation, sentiment, power)</td>
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<tr>
<td>Multiplexity</td>
<td>Redundancy of relationships: how many contents are combined in a specific relation</td>
</tr>
<tr>
<td>Reciprocity</td>
<td>Degree of symmetry in relation (if A chooses B, does B choose A?)</td>
</tr>
<tr>
<td>Strength of ties (strong, weak)</td>
<td>Relative measure of time, affect, intensity, mutuality</td>
</tr>
<tr>
<td>Structural Criteria</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>Number of persons or relations in a defined network</td>
</tr>
<tr>
<td>Density</td>
<td>Connectedness of network; actual links computed as a proportion of total possible links</td>
</tr>
<tr>
<td>Distance or proximity</td>
<td>Number of links between any two nodes in network</td>
</tr>
<tr>
<td>Centrality</td>
<td>Adjacency and influence of nodes and subgroups in network</td>
</tr>
<tr>
<td>Clustering</td>
<td>Partition of ties into network subgroups and cliques</td>
</tr>
<tr>
<td>Network roles</td>
<td></td>
</tr>
<tr>
<td>1. Isolate</td>
<td>Peripheral node in a network</td>
</tr>
<tr>
<td>2. Bridge</td>
<td>Group member who provides a link to another network subgroup</td>
</tr>
<tr>
<td>3. Liaison</td>
<td>Node that links several groups without being a member of any</td>
</tr>
<tr>
<td>4. Star</td>
<td>Node with the largest number of communication links</td>
</tr>
</tbody>
</table>

 approaches to subdividing social networks have been devised: the relational approach (which aggregates actors who have cohesive bonds with each other) and the positional approach (which aggregates actors who have similar patterns of relations with others).

Relational and positional approaches can potentially yield different subgroups in network structures, and these differences may be meaningful both theoretically and in
practice (Burt 1978; Blau 1982; Rogers 1987). For example, do people participate in recreation activities because their close relatives and friends do, as implied by Burch’s (1969) social circles model? Or do people with similar social statuses choose similar recreation activities, as implied by West’s (1982) work on status-based diffusion? If the former is true, then recreation managers should encourage participation with word-of-mouth advertising and family discounts. If the latter is true, promotional appeals that rely on status attainment should be used by managers.

Summary

The networks approach offers several benefits in the analysis of social structure. First, network analysis provides a visual map or picture of how social entities stand in relation to one another based on specific interaction criteria. The network approach to structural research encourages analysis of individual linkages between pairs of actors as well as analysis of substructures (groups, clusters, and cliques) in the system under study.

In addition, network data are gathered by means of sociometric-type questions that are easily understood by subjects and relevant in their experience. Measures of strength, proximity, and similarity in network relationships are based on everyday, observable behaviors and interactions among people. Although there may be significant problems in the estimation of numbers of linkages and in recall of interactions by respondents, network data provide a wealth of information on which to base analyses of social structure.

Further, there are various advanced techniques available for analyzing network interactions, including graph theory (Davis 1967), block modeling (White, Boorman, and Breiger 1976), and multidimensional scaling (Kruskal and Wish 1978), and various computer algorithms for displaying maps of the relational ties in networks (see the review by Tichy, Tushman, and Fombrun 1979). Specific techniques and models are useful for analyzing different types of relationships and network systems and for exploring various hypotheses about social involvement on both the micro and macro level. Knoke and Kuklinski (1982) provide an especially useful review of potential applications.

Implications

Although a few sociologists have employed some limited measures of leisure and recreation behavior in their social network analyses (e.g., Bott 1955; Fischer 1982), few leisure and recreation investigators have applied network analytic techniques in their work. In recreation research, four recent studies that used a networks approach surfaced as “fugitive literature” (technical reports, theses, or dissertations). To illustrate how network analysis has been used to study recreation and leisure, these four reports are discussed briefly below.

Networks Research in Recreation

As part of a larger study about urban children and nature, Allen (1980) studied the network ties among several hundred children who attended environmental education programs at nature centers and camps in the northeastern United States. Children were
asked “If you could choose three people from camp to go on a hike with, whom would you choose?” The chosen individuals were then classified by type of relational tie (staff, camp friends, school friends, neighbors, or relatives). Allen (1980) mapped the resulting sociometric choices in two-dimensional network diagrams and concluded that nature camps and outdoor programs “may serve as surrogate extended families . . . (and) show higher levels of group cohesion because they incorporate preexisting kinship and neighborhood groups” (p. 94).

Eckstein (1983) surveyed visitor groups at several Michigan campgrounds and resorts to determine how tourists obtained information about travel destinations. By using interviews and self-administered questionnaires, she identified the kinds and sources of information used both before the trip and on arrival at the destination. Although this study was not directly an analysis of a network, it was a descriptive analysis of instrumental relational ties interpreted for their network potential. The data showed that travel planning information was primarily gathered through informal rather than formal communication linkages, that is, from family and friends rather than from organizations such as chambers of commerce, auto clubs, or businesses.

Cobb (1988) examined the network structures of influence and referral among business leaders in four Michigan resort communities. From a list of tourism-oriented businesses in each community, she sampled different tourism industry sectors (lodging, restaurants, stores, service stations, and recreation) and asked business owners and managers to identify key leaders in the community. Hypothesizing that centrality in exchange networks would predict social influence, she used path analytic procedures to trace relationships between network centrality and attributed influence. She found that business owners and managers “central in the communication and referral networks were perceived by others to have the greatest influence in the response of the community to tourism issues” (McDonough, Cobb, and Holecek 1987, 522).

Stokowski (1988) analyzed and compared the community networks of sociability with the recreation networks of a sample of residents in a rural Washington state town. Networks of sociability were defined as egocentric relational ties with any other community members maintained for various sociable reasons. Recreation networks referred to the activation of specific egocentric social ties for various recreation activities. Hypothesizing that some ties of sociability were more influential than others in stimulating recreation participation, Stokowski (1988) compared community network and activity network patterns for male and female respondents. She found that extended family and friendship ties provided the most sources of recreation partners for men, whereas immediate family ties defined the recreation choices and partners for women. Whether these patterns are typical for other rural, resource-dependent communities was suggested as an area for future research.

**Extending the Networks Idea**

The four examples described previously illustrate several dimensions of social network applications in leisure and recreation. Each investigator studied different kinds of social ties (children’s choices for outdoor activity partners, tourist information sources, exchange ties between business managers, and adults’ recreation and leisure partners). Both types of network analytic approaches were used: Allen and Stokowski each used egocentric network modeling, and Cobb used analysis of total networks. Observational (Allen), survey (Eckstein, Cobb), and interview methods (Allen, Eckstein, Stokowski) were used. Several interactional and structural network criteria were analyzed: relational
content (all four investigators), frequency of communication (Cobb, Stokowski), reciprocity and centrality (Cobb), and strength of ties and network size (Stokowski).

What distinguishes each of these studies from traditional recreation research is a conscious effort by each investigator to focus on the patterning of relations and actions not only within social groups but across social network structures. In each study, the investigators theorized that individual behaviors were enacted in the context of community rather than in the context of a bounded primary group. As used in these studies, the concept of community referred not to a place or locale but to extended social ties of sentiment, belongingness, and involvement (after Bender 1978). Although each study operationalized a different aspect of community relationships (Allen and Eckstein studied instrumental relationships, Cobb studied exchange behaviors, and Stokowski studied affect relationships), the social network was the locus of behavior. Personal action was influenced by participation in community networks.

Even though extended community interactions provided the theoretical focus for recreation behaviors, one might argue that in these studies too much attention was devoted to analyzing the interactional criteria over the structural criteria (i.e., analyzing the characteristics of relationships rather than the characteristics of social networks). This shortcoming perhaps reflects an implicit sensitivity by investigators to the need for a well-developed theory of leisure and recreation relationships. So far, both social groups research and social networks research have focused on close, interpersonal, affect, and sentiment relationships as the basis for recreation behaviors, and this is consistent with much of the interactionist theorizing in recreation and leisure (Cheek and Burch 1976; Kelly 1983). Nevertheless, social networks research raises the issue of how recreation and leisure behaviors also intersect with other types of potentially less intimate, or more distant, social involvements such as service exchanges, altruism, status comparison, acquaintanceship, and other ties of sociability.

To be meaningful for recreation and leisure research, the social network approach must be theoretically grounded in two ways. First, there is a need to specify how specific types of relational commitments underlay particular kinds of recreation and leisure behaviors. Of all types of community network relationships, which ties are the most productive and meaningful for recreation? Second, a theory about the structural consequences of recreation and leisure relationships must be constructed. Whereas social groups research begins and ends with individuals arranged in bounded groups at recreation places, social network analysis must consider how recreation ties have broader implication in day-to-day community life. Assuming that some social relationships are more important than others for recreation and leisure behavior, the next step is to describe how these significant relationships are ordered in broader, extended networks of community and to hypothesize about the meaning of networks for behavior. As yet, these issues remain unaddressed in recreation research.

**Theoretical Possibilities**

In developing an agenda for social networks research in leisure and recreation, there are at least three general research areas that must be considered. First is the analysis of how community social relationships promote varied social involvements and groupings at recreation places for leisure purposes. This grounds the analysis of social groups at recreation places in the context of community, where social relationships originate. It is also compatible with the planning and anticipation stages of the recreation experience as defined in the Clawson and Knetsch (1966) model. In addition, it considers the role of
both strong and weak social ties (Granovetter 1973) in recreation involvement. Networks research in this area might study whether and why different types of personal relationships (close or distant) result in different levels of recreation activity commitment; whether network size influences participation in specific recreation activities; how people use networks to gain access to recreation information, resources, and opportunity; and whether involvement in highly connected social networks provides individuals with more recreation opportunities and satisfactions than involvement in less dense networks.

A second area of necessary research is the analysis of how individuals and social groups interact in structuring on-site recreation activities and social meanings during the recreation experience. Equivalent to the on-site stage of the recreation experience, this topic broadens the study of social groups to question how interactions occur in and between groups during recreation. Research in this area might study how information is disseminated across the on-site network among groups of recreationists involved in activities, whether the presence or absence of specific others (significant or nonsignificant others, experts or nonexperts, network isolates or stars) influences behaviors in leisure settings, how solitary recreationists create and present network affiliations in an effort to enhance or limit interactions with others during activities, and how tourists differentially utilize host community networks to increase control and satisfaction during the recreation experience.

Third, there is a need to study how relationships activated in the context of leisure influence subsequent community social network relationships. In terms of the recreation experience, this issue considers postactivity network interactions and involvements during the return travel and recollection stages. It also acknowledges the potentially long-term effects of social relationships developed during leisure on future recreation and community action. Finally, it suggests that behavior in one social context is, to some extent, dependent on behavior in other contexts. Interesting research problems in this area might include analysis of the extent to which shared recreation activity participation produces further obligations for community social involvements; how conflict in one area of a recreation network influences subsequent social and recreational involvements with close, and more distant, others; how community networks are manipulated for personal interest; and, whether, or to what extent, recreation network ties offer unique resources to people.

Conclusions

Leisure and recreation are socially significant not only because people participate in these phenomena as members of social groups but because leisure and recreation provide social contexts through which people who have varied community network involvements might intersect. Whether they do, in fact, develop lasting social ties, and how they do this, is the subject matter of social network analysis in recreation and leisure research.

The social networks idea offers a perspective for improving and expanding traditional sociological analyses of leisure and recreation behaviors. A networks perspective implies a broader, community theory and an associated methodology for operationalizing interactionist and structural hypotheses about leisure and recreation behavior. Some of these hypotheses are implicit in Burch's (1969) personal communities theory but generally have been ignored under the social groups model.

The focus of social network analysis is the patterning of extended relational ties that
structure leisure and recreation involvement and the reciprocal influence of these social structures on individual actions. How social relations are ordered, what different arrangements of these relationships mean for recreation participation, and how leisure relationships fit in the broader social context of people's lives are all issues of importance in analysis of the social networks of leisure and recreation. The networks perspective provides an alternative to the social groups model and a stimulating perspective for the future study of personal, extended communities in the context of leisure and recreation.

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