Examining Leisure Event Opportunities of Isle Royale National Park: Bridging the Gap Between Social Process and Spatial Form

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Abstract—To manage various recreation opportunities, managers and planners must consider the spatial and temporal scale of social process when identifying opportunities on base maps. However, analyses of social process and spatial form are often treated as two distinct approaches--sociological and geographical approaches. A *sociologist* might control for spatial form by adopting landscape zones before examining social process (such as the attainment of solitude). On the other hand, a *geographer* might control for social process (by selecting and studying visitors who attain solitude for example) before examining spatial position of visitors. The two contradictory strategies can lead to very different results. To avoid this contradiction at Isle Royale National Park, leisure event opportunities—a concept that harmonizes both sociological and geographical approaches—were examined during a visitor study.

Recreation providers are given the responsibility to manage various recreation opportunities. In doing so, they must consider both the social process of attaining recreation opportunities (sociology) and the spatial form of the recreational setting (geography). However, the separation of sociology and geography has led to two contradictory management strategies. This paper proposes a way of viewing recreation opportunities as a whole, rather than as separate parts. It recasts recreation opportunities as leisure event opportunities. A leisure event opportunity considers how a visitor perceives *something happening to something* while moving through an environment, and it harmonizes both sociological and geographical approaches to management. To demonstrate how this ecological and holistic approach to planning might work, selected results of an Isle Royale National Park visitor study are presented. More specifically, the purpose of the visitor study was to describe the sociological and geographical characteristics associated with three types of leisure events that were realized by hikers at Isle Royale National Park.

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Past studies have defined and measured four types of recreation opportunities—activities, settings, experiences, and benefits (e.g., Floyd and Gramann, 1997; Manfredo and others, 1983; Stein and Lee, 1995; Virden and Knopf, 1989; Yuan and McEwen, 1989). Taken together, these four kinds of opportunities comprise the recreation demand hierarchy. At the bottom of the hierarchy are activities. Settings occupy the second rung of the hierarchy, and experiences and benefits occupy the third and fourth rungs, respectively. These four types of opportunities also can be configured to illustrate the recreation production process. In this case, activities and settings are considered inputs into the process—they are the elements that managers have some control over; and experiences and benefits are considered the outputs of the production process—they are the physical, social, psychological, economic, and environmental attributes that visitors realize and attain from a recreation engagement.

Problems can occur when recreation providers consider social process (activities, experiences, and benefits) separately from spatial form (settings) during the production of recreation opportunities. The analysis of social process and spatial form are often treated as two distinct approaches and use different languages. For example, sociologists and social psychologists often work in a world without space. They are more interested in social process, such as the realization of solitude experiences. Therefore, when sociologists work at the interface between social process and spatial form, they seek to control for spatial form.

On the other hand, geographers often work in a world where spatial form is critical, but they may fail to understand how spatial form is perceived during social processes. That is, they are interested in describing the spatial and temporal coordinates of an object of a recreational setting. Therefore, geographers may seek to control unwanted social process variables when examining problems that exist at the interface between spatial form and social processes. The results from either approach are often confusing, confounding, and different because they fail to understand how spatial form interacts with social processes (or vice versa). In addition, the results obtained by the sociologist often cannot be translated into the results obtained by the geographer (Harvey 1973).

Recreation planners often control for social process or spatial form when they work at the interface of sociology and geography. Controlling for either of these two variables is one of the most difficult problems created by language inequality. The following examples demonstrate the challenges associated with both strategies.

Strategy 1: Controlling for Social Process. Suppose Area A exists in a national forest, and a geographer has been given the responsibility of managing it for solitude opportunities. To begin, the geographer gathers information from a random sample of visitors recreating throughout Area A. Next, the geographer controls for unwanted social process variables, such as the realization of recreation opportunities other than solitude—excitement or family bonding). *To control for these social process variables, only those visitors who experienced solitude would be included in the analysis.* Finally, the spatial positions of these study participants would be displayed on a map. Assume the geographer finds three different regions or types of spatial form in Area A. That is, 10%, 30%, and 60% of the study participants were reported traveling in regions 1, 2, and 3, respectively (fig. 1). In this example, region 3 would be considered as having the best solitude opportunities because the majority (60%) of visitors who experienced solitude recreated in that area. The geographer might suggest that region 3 provides natural barriers that physically separate visitors and contributes to solitude opportunities.

Strategy 2: Controlling for Spatial Form. Suppose a sociologist was given the responsibility of managing Area A for solitude opportunities. Like the geographer, he/she might gather information from a random sample of visitors recreating throughout Area A. Next, the sociologist controls for unwanted spatial form variables (setting characteristics). *To control for spatial form (setting characteristics), the sociologist would divide Area A into three regions that represent different physical, social, and managerial settings.* (For simplification, assume that the sociologist used the same regions that were identified by the geographer in the previous example.) The sociologist then begins to characterize the visitors of each region with certain properties, such as attaining or not attaining solitude. For example, assume that 25% of region 1 visitors, 50% of region 2 visitors, and 20% of region 3 visitors attained solitude experiences (fig. 2). The sociologist might suggest that social conflict between visitors seeking solitude and visitors seeking other recreation opportunities are minimized in region 2. Therefore, visitors of region 2 (rather than region 3) are more likely to attain solitude—a very different conclusion from the geographer's.

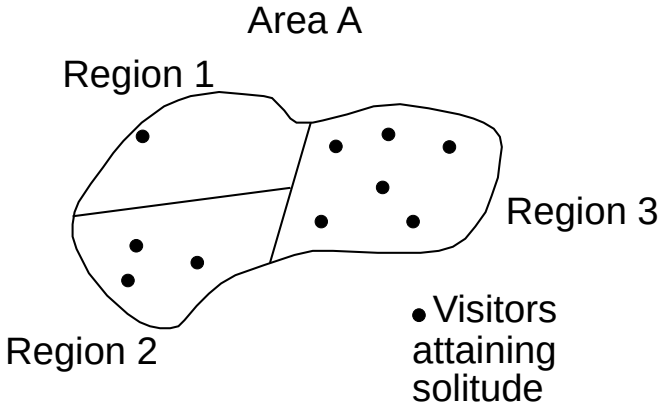

Figure 1—Location of visitors who experience solitude in Area A.

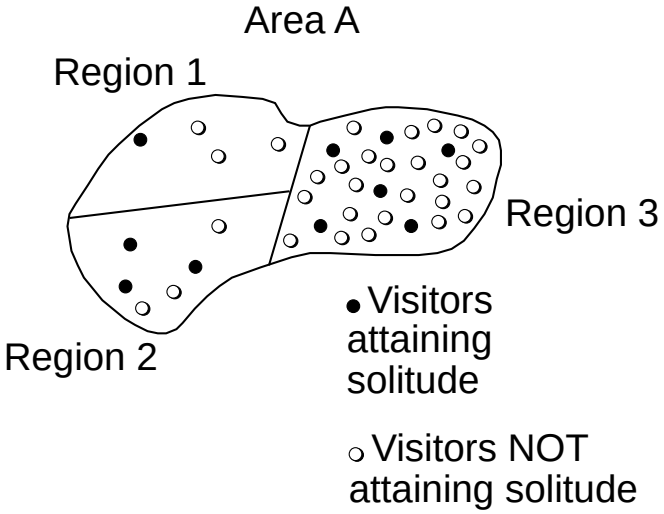

Figure 2—Location of visitors who experience or do not exerience solitude in Area A.

Why did the geographer and sociologist report different conclusions? The difference occurred because the sociological and geographical approaches have distinct languages. The languages were used in different ways and at different times when examining the planning problem: How do we manage Area A for solitude opportunities? The sociologist, who used a social process language, approached this problem by controlling for spatial form very early in the planning process: He/she zoned Area A into 3 regions. As a result, the sociologist was able to examine solitude opportunities in light of social conflict, which made it possible to explain social processes during the later planning stages. On the other hand, the geographer, who used a spatial form language, controlled for social processes during the early planning stages: He/she only examined visitors who experienced solitude. Therefore, the geographer identified three types of spatial form that exist in Area A and was better able to understand spatial form later in the planning process. The final product was the development and explanation of landscape zones.

Harvey (1973) believes that spatial form and social process languages should be regarded as complementary: "The trouble is that the use of one sometimes conflicts with the use of the other. Any successful strategy must appreciate that spatial form and social process are different ways of thinking about the same thing. We must therefore harmonize our thinking about them or else continue to create contradictory strategies for dealing with city problems." That is, there is a need to develop a concept that harmonizes both sociological and geographical imagination in planning.

Theoretical Background

It is necessary to develop a metalanguage that will help recreation providers like planners avoid the problems that exist at the interface of various disciplines. Although Pierskalla and Lee (1998) have discussed a concept (leisure event) that bridges the gap between phenomenology (the world of mind) and physics (the world of matter), it is still

unclear if the same concept is effective at the interface of sociology and geography. "Bridging the gap between the two involves making use of the two languages simultaneously or, preferably, writing some metalanguage which embraces the relevant characteristics of both languages" (Harvey 1973). That is, the metalanguage must be effective so that the results generated in one language can be translated into another as a result of embracing the relevant characteristics of different languages (Harvey 1973). The following review of ecological perception theory suggests that the concept, leisure event opportunities, does satisfy this criterion of an effective metalanguage.

The ecological approach to perception was first presented by Gibson (1950) and flourished through his later work and the work of others in ecological psychology (Shaw and others 1974; Reed 1993). Central to the ecological approach to perception is Gibson's conceptualization of information as ecological—"as special patterns in the energy fields of the environment (not in the organism)" (Reed 1996). For example, the ratios of frequencies and durations of notes (such as the beginning notes used in the song, *Three Blind Mice*) are perceived over time and specify a melody. In outdoor recreation, a visitor might perceive the drumming sounds of ruffed grouse. In summary, the ecological approach suggests that information is perceived as events (or styles or patterns of change). More simply, Michaels and Carello (1981) summarized the words of Shaw and others (1974) and Pittenger and Shaw (1975) when they described an event as *something happening to something* in time and space.

It is important to note that "...both time and space are needed not only for a description of change but also for a description of information that specifies change" (Michaels and Carello 1981). "If events are the significant units of the world, the world must be described in a way that preserves their integrity. The world must be described in terms of both time and space...Time is not chopped into an arbitrary succession of nows, but organized into naturally occurring events of varying duration...Thus, information, like the events it specifies, lasts over time...If information can last over time, so, too, can perception, which is simply the detection of information" (Michaels and Carello 1981). For these reasons, leisure events were used as the unit of analysis in the study presented in this paper. That is, the study controls for leisure events (rather than social process or spatial form) when describing sociological and geographical characteristics of recreation opportunities realized by visitors to Isle Royale National Park.

Methodology

Data were collected at Isle Royale National Park during the summer of 1997. Isle Royale National Park is an island archipelago in Lake Superior, Michigan. It became a national park in 1931. The Park has more than 500,000 acres of land and interior lakes. More than 98 percent of the land area was added to the National Wilderness Preservation System in 1976. In 1980, Isle Royale was made an International Biosphere Reserve. Moose and wolves are among the wildlife inhabiting this remote island. The historical and cultural resources of the island include shipwrecks, fisheries, lighthouses, and abandoned copper mines. Most of the 12,000 to 18,000 annual visitors who travel to the Park arrive by private powerboats or commercial ferries. Developments such as visitor centers, stores, and lodging are located on the east end (Rock Harbor) and the west end (Windigo) of the 45-mile-long island. The two harbors serve as primary landing areas (DuFresne 1991).

In this study, an interview was designed to assess the sociological and geographical characteristics that hikers realized during three types of localized (one-day) events: (1) traveling *to* Windigo, (2) traveling *to* Rock Harbor, and (3) traveling *within* the island interior (away from the developed ends of the island).

The prepositions, *to* and *within*, were used to help operationalize the concept, event, and bridge the gap between sociology and geography. Prepositions are especially useful for explaining spatial relationships. For example, traveling is an activity or social process, and Windigo is a known spatial location. Together, traveling *to* Windigo is something happening to something in time and space.

Study participants were asked to tell their day's story regarding the social process of their leisure activities. To facilitate the story-telling process, study participants were asked to respond to 12 interview questions. The questions are provided below. In addition, study participants were asked to report their day's travel route by drawing arrows on a map. The geographical characteristics associated with the day's leisure event, such as the total number of miles traveled, were determined from this data.

Interview Questions:

- What did you notice happening or existing in the surrounding environment that attracted your attention today? For example, did you notice moose, wolves, birds, weather events, other people, etc. today? If so, what happened or what were they doing?
- How is the environment you experienced today different than the Rock Harbor or Windigo environment you experienced on the first day of your trip?
- What activities did you participate in while in the environment you specified on the map? What did you to today?
- What were you able to accomplish today?
- Why did you choose to participate in these activities?
- How does today's activities compare to other activities such as riding in a car, mountain biking, running, walking, or rock climbing?
- Why did you choose to spend today in the environment you specified on the map?
- What did you get out of your experience today?
- What did this environment mean to you?
- Suppose the events you experienced today were a movie, book, or song, what title would you give it?
- Why did you choose these words for the title of today's events?
- Is there anything else you would like to tell me about today's events?

A total of 76 hikers and paddlers were contacted and agreed to participate in the study. (Less than five visitors declined to participate in the study). One member 16 years of age or older from each party contacted was randomly selected and asked to participate in the study. Visitors were contacted at campgrounds throughout the island. Interview contacts were made in the late afternoon and evening and tape-recorded for later transcription.

The transcribed texts were aggregated for each study participant and examined using a computerized content-analysis technique, Minnesota Contextual Content Analysis (MCCA). This software was used to systematically code word patterns in the open-ended text. MCCA consists of a dictionary of words that accounts for about 90% of English usage. Words in each text were assigned to one of 116 mutually exclusive idea categories. These categories cover a wide variety of general social science interests. MCCA counts each word of a text once. Words with multiple meanings are disambiguated; that is, it looks at how a word is used and, based on the context, assigns it to a category. Scores were calculated for each idea category by taking the difference between the proportion of all words in a text that are in a given category, minus the expected use of the category's words (McTavish and Pirro 1990).

MCCA uses the whole profile of the scores as conceptual calculations of C-scores (or contextual scores). C-scores that are assigned to each text are a measure of emphasis on traditional, practical, emotional, and analytic perspectives expressed in the language. McTavish and Pirro (1990) defined the four contexts:

Traditional Context—A normative perspective on the social situation predominates, and the situation is defined in terms of standards, rules and codes that guide social behavior.

Practical Context—A pragmatic perspective of the social situation predominates, and behavior is directed toward the rational achievement of goals.

Emotional Context—An affective perspective predominates, and the situation is defined in terms of expressions of emotion (both positive and negative) and maximizing individual involvement, personal concern and comfort.

Analytic Context—An intellectual perspective predominates, and the situation is defined in objective terms.

In this study, C-scores represent the sociological perspective of leisure events that were realized by study respondents. A high C-score represents an overemphasis of a social perspective, while a negative score represents an underemphasis.

Results

C-scores and trip characteristics were loaded into the Statistical Package for the Social Sciences (SPSS) and analyzed. Analysis of variance (p - 0.05) and Tukey's post hoc multiple comparison test were conducted to determine if significant sociological and geographical differences exist among the three types of events—traveling to Windigo, traveling within the island interior, traveling to Rock Harbor—that were examined.

The text associated with the three event types differed significantly from one another when looked at from a sociological perspective (table 1). Visitors who were traveling within the island interior during the day expressed a significantly greater emphasis on emotion than those visitors who were traveling to Windigo. However, visitors who were traveling to Windigo expressed a significantly greater analytical perspective than those visitors engaged in other leisure events.

The three event types did not significantly differ when traditional and practical sociological perspectives were examined (table 1).

The type of geographical characteristics realized by respondents significantly differed among the three event types (table 2). Those visitors who were traveling to Windigo hiked significantly farther (mean = 8.7 miles) than visitors who were traveling to Rock Harbor (mean = 6.1 miles). The visitors who were traveling within the island interior hiked an average of 6.9 miles to their campsites.

Discussion

Past studies have defined and measured four types of recreation opportunities—activities, settings, experiences,

Table 1—Comparison of mean C-scores (social perspectives) by leisure event types.

Social perspective	Overall mean	Event type[a]			ANOVA F-test	Fukey post hoc[b]
		1 (n = 14)	2 (n = 44)	3 (n = 18)		
Traditional	-5.0	-3.5	-5.2	-5.8	0.4	
Practical	-4.0	-5.3	-4.9	-1.0	1.1	
Emotional	17.8	9.2	20.0	19.1	4.7[c]	2,3>1
Analytical	-8.7	-0.4	-9.9	-12.3	5.6[c]	1>2,3

[a]1 = traveling to Windigo, 2 = traveling within the island interior, 3 = traveling to Rock Harbor.
[b]Statistically significant at 0.05 level.
[c]Statistically significant at 0.01 level.

Table 2—Comparison of mean number of miles traveled by leisure event types.

mean	Overall	Event types[a]			ANOVA	Tukey
	1 (n = 14)	2 (n = 42)	3 (n = 14)	F-test[b] post hoc[b]		
Miles traveled	7.1	8.7	6.9	6.1	3.2	1>3

[a]1 = traveling to Windigo, 2 = traveling within the island interior, 3 = traveling to Rock Harbor.
[b]Statistically significant at 0.05 level.

and benefits. However, this study suggests that visitors do not necessarily view the four types of recreation opportunities as distinct entities. A visitor often travels through a variety of management zones or settings, engages in more than one activity and has more than one type of experience or benefit during a day at Isle Royale National Park. Realizing this, how can recreation providers distinguish how much the geography of settings (management zones) contribute to the social process of attaining experiences and benefits without creating confusing, confounding, and unreliable results? Also, how can recreation providers know where to implement management actions when the social process of attaining recreation opportunities (as well as the implications of management actions) often goes beyond zone boundaries. For example, reducing the number of visitors entering a trailhead has implications that cannot be easily contained within the spatial boundaries of a management zone. Rather, the management implications have a blurred spatial and temporal scale that more closely resembles leisure event opportunities such as leaving a trailhead on the first day of a trip. As Pierskalla and Lee (1998) suggested, recreation managers can better address these difficult issues if they understand how time and space are related in a leisure setting. Empirical data from this study supports their contention.

The study findings suggest that the three leisure events are distinct recreation opportunities, requiring different management prescriptions. For example, visitors who traveled to Windigo on the last day of their trip traveled farther and expressed a greater 'analytical' perspective. That is, they reported spending a great deal of their time estimating the number of miles that they had left to travel. Apparently, concerns such as wondering whether they have enough water and other supplies to last until the end of their trip and whether they will make it to Windigo in time to catch the ferryboat back to the mainland interfere with their recreational experience. To alleviate the latter worry, managers could provide mileage markers on trails near Windigo to help these visitors better understand where they are. This management suggestion was provided by study participants traveling to Windigo.

> It was a long, hard hike. It was somewhere around ten miles and it was a lot of uphill. It was tough compared to the other two days. It really was a tough hike. If the trails were marked, if there were more markings, I think it would be better. I met other people on the way that said the same thing...they were confused at points because they weren't even sure they were on a trail.

Another study participant said,

> It would be nice to see a sign every once and awhile even if it wasn't a marker. As far as millage goes, just the name of the trail every once and awhile...could [help you] see where you're going.

This study examined a more holistic recreation opportunity—a leisure event. Leisure events were defined as something happening to something in time and space. Rather than clustering study participants, zoning, or using other methods that control for social process or spatial form, this study controlled for leisure events (an ecologically valid unit of the world).

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