

PERCEPTION OF CONFLICT BETWEEN OFF-ROAD VEHICLE AND NON OFF-ROAD VEHICLE USERS IN A LEISURE SETTING

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ABSTRACT

The usefulness of a goal-interference model was examined in evaluating a potential conflict in the out-of-doors. It was hypothesized that if conflict was present among site users, the following minimal elements would likely be present: 1) that each party is able to consciously express a set of goals for a situation, 2) that elements frustrating the attainment of a goal are recognized by the parties, and 3) that blame is placed by the parties on each other for interfering with the goal attainment process. The results of this survey establish support for identifying a conflict situation in terms of a goal-interference model.

The resolution of social problems is often held captive by the character of complex social systems [1]. Competition among alternative goals, division between subsystems and the larger systems' goals frequently result in conflict because of strains caused by divergent demands on resources, time, or energy. A growing consensus is emerging that a universal goal of outdoor recreation management would provide visitors with quality experiences [2]. But an equally increasing awareness of conflicts between recreationists is also surfacing which may frustrate the attainment of this goal [3]. Nowhere has recreation conflict been more evident in recent years than in those areas where motorized and nonmotorized recreationists mix. Hikers, jet boaters and other groups

have been frequently reported in conflict relationships [4-8]. In a theoretical examination of conflict in outdoor recreation, Jacobs and Schreyer generally define conflict as goal interference attributed to another's behavior [9]. They advance a set of characteristic conditions for recreation conflict but fall short of specifically defining the essential or basic elements which constitute identification of a conflict relationship between parties [10]. Although there is no dispute with Jacob and Schreyer's observations, it is still difficult to tease out just which classes of conflict-producing factors are operating in any particular situation. An important but formidable research task still faces researchers seeking to model recreation conflict for the multiplicity of outdoor recreation populations, settings and activities. At a minimum, parties in a conflict situation should be expected to have distinctly divergent viewpoints about how to use a situation. The research will examine the usefulness of a goal-interference framework in evaluating a potential recreation conflict. If conflict is present, it is expected that each party will be able to consciously express a set of goals for a situation, to recognize elements of interference frustrating the attainment of their goal, and to place blame on another for that interference.

The nonmotorized user has frequently defined the off-road vehicle (ORV) user as a dominating social force, controlling the environment with their technological edge. It is not surprising that most conflict has been perceived as an asymmetrical relationship largely resulting from the possibility of multiple sources of conflict. Many precipitous acts are unilaterally associated with mechanized vehicles such as noise, rutting, speed or reckless driving. In an examination of conflict perception between water skiers and fishermen, Gramann and Burdge reported that a substantial body of literature maintains that interference with recreational goals is a source of conflict perception [10]. "Activity style," where the presence of casual recreationists cheapens the experience of those experts highly committed to the activity has been well articulated by Bryan [11]. Support for a goal interference model is also exemplified by analyses involving competitive roles for site location, such as hikers vs. horseback riders, snowmobilers vs. cross-country skiers, water skiers vs. fishermen, or ORV users vs. bathers. The point of conflict for the roles is explained by referring to "incompatible expectations of how a resource" will be used by recreationists. If expectations diverge about how certain leisure situations are used, then a cognitive rationale comprising an attitude is likely to become part of a user's perception of the situation. The conflict derives from differing interpretations of the meaning of the recreation place. Such conflict is illustrated in the confrontations between the walker who views a wooded area as a shrine to nature and the trail biker who sees it as an interesting challenge to be overcome. Another conflict-producing situation is based on divergent modes of self experience which varies from the focused to the unfocused. The unfocused experience is characterized by "movement, fleeting images, and broad, sweeping impressions" [9], lending itself to rapid movement through the environment.

In contrast, specific details in the focused mode are sought, movement is repeatedly interrupted, and tolerance of extraneous stimuli is low. And finally, tolerance for lifestyle diversity often changes for age groups and socioeconomic levels. Recreational activities are expressions of an individual's lifestyle, and conflict may derive from visitors' unwillingness to share outdoor recreation space with others of divergent lifestyles. Conflict of this class is well illustrated by Knopp et al. between snowmobilers and cross-country skiers over socioeconomic differences among the groups [5]. The circumstances influencing the perceptions of different users may be related to any one of the above kinds of circumstances. *The resulting conflict generally grows out of the advantage of a group or party to thwart, frustrate, or hinder others in their pursuit of a recreation activity.*

If the goal interference model has possible explanatory value for understanding role and interpersonal conflict, then we would expect that there would be cognitive expressions of recognition collectively held by the parties. To be assured that conflict exists between groups and not just tolerance of each other's acts, the parties in disagreement would be expected to hold divergent attitudes toward each other's actions. It cannot simply be assumed that because a user employs a "mechanized vehicle" that conflict between nonmotorized users of the same resource automatically emerges. This research will examine whether an attitudinal context exists identifying recreational goals and whether cognitive expressions of a goal orientation are perceived by the ORV-non ORV user in the situation. If conflict emerges between parties within a recreational act, each party to the conflict should recognize elements of interference frustrating the accomplishment of their goal, overtly place blame on another for it, and be able to identify an expected goal. These elements are felt to be minimum requirements for designating a goal interference model in explaining interpersonal conflict between recreationists.

METHODS

Sample

A random stratified cluster sampling procedure was designed, taking into consideration site location, time of day, weekday and month to identify the sampling frame. The sample design presented a reasonable compromise between a simple random sample and the higher variance associated with a clustering technique. The study population consisted of individuals who visited Cape Hatteras National Seashore from June through November with the heavier visitation months receiving more sample coverage. For each month in the half-year period, a two-day sample was randomly chosen for weekdays and weekends. The visitors were divided into two strata consisting of ORV users and non ORV users (pedestrians) who were quota sampled from among the various

sites. Only one person among the 598 beach users contacted refused to participate in the study. A return rate of 80.5 was obtained on the mailed questionnaire described below. Response rates for ORV-users and non ORV users were identical. The high response rate was probably due to the planned structure of the questionnaire items, the personal contact procedure, the intensity of the follow-up, and the importance of the issue among recreational visitors to the beach.

Survey

A combination of site interviews and a mailback questionnaire was used to gather the data. The on-site interviews were short and basically introduced the sample respondent to the subject and obtained a mailing address. Various sources of information were used to help structure the items in the mailed questionnaire. Input was obtained from: 1) National Park Service managers and researchers, 2) letters written to NPS by interested visitors, area residents, and various organizations, and 3) literature regarding the ORV conflict. An initial draft questionnaire was pretested in the spring of 1978 among visitors and residents at Cape Hatteras National Seashore. In addition, this questionnaire was sent to various conservation-preservation organizations, ORV organizations, and NPS managers and researchers. Based on the pretest results and the comments of the reviewers, the individual items and the physical layout of the questionnaire were reevaluated. A twelve-page questionnaire was finally prepared that asked the following series of questions: location visited, activities pursued, motives for visiting, expenditures, problems experienced, attitudes towards ORV use, preferred management alternatives, attitudes towards the environment, socioeconomic background. Many of the problems associated with this type of survey have been avoided following a Dillman et al. strategy [12] and by careful attention to design, pretesting and review. None of the items were forced choice situations and neither were any of the items limited to simply testing expectations associated with a goal interference model.

Analysis

A multivariate approach to the study data was taken in order to ensure a maximum use of the Likert items. Although the questionnaire clearly identified sections relating to "managing ORV use" and the "consequences associated with ORV use," no assumption was made that these issues were socially perceived to be distinct and independent. A matrix of fifty-eight Likert items probing attitudes toward the operation of vehicles, their effects, effects of non ORV users, and control of use over the seashore was analyzed using principle components analysis with varimax rotation. Separate analyses were conducted for ORV users and non ORV users. These distinct sets were then examined and

only those items in the pool were retained which were the most highly loaded. In all cases, factor loadings were in excess of 0.40, and all eigenvalues were 1.0 or larger. This analysis strategy was warranted given the data set and appropriate given the purpose of this investigation—namely, to see whether ORV users and non ORV users think differently about the situation at Cape Hatteras.

Results

Results of the principle components analysis for ORV users are presented in Table 1 detailing three discernible factors. Factor 1 contains items which exemplify consequences of using an ORV that create problems for other users. Taken together, the items reflect the kind of problems which very probably frustrate the use of the seashore by other visitors. The interference recognized by the ORV user establishes at least one of the conditions which would be a necessary outcome of any conflict model. This is especially important if the goal interference explanation is going to have any merit. No mention however, is made of pedestrian users who may frustrate the activity of the ORV user. The vehicle operators assert that they cause problems with non ORV users but they do not identify non ORV users as being threatening by their use of the vehicle. In factor 2, a set of items express an attitude toward blame about who should be labeled as being responsible for the condition. In three situations littering, erosion, and vandalism, ORV vehicle operators assert that they are unduly singled out as being culprits in the situation when, in fact, other users are also at fault. They do not associate these problems with any kind of remedial action or regulation which would reduce the possibility of non ORV users being more strenuously controlled at the seashore. Factor 3 specifically points out that current regulations should be enforced and continued at the seashore. In other words, the ORV operator's goal permits continued use of the seashore with few restrictions. They also recognize being blamed (sometimes unfairly) but feel no need to be excluded from the seashore.

The ORV user appears in Table 1 to be relatively passive as concerns non ORV users, does not recognize a need for additional regulation or constraints being placed upon non ORV users, nor is willing to deny disrupting the activities of others. From the perspective of the ORV user, this is a one-way conflict, substantiating previous findings associated with motorized vehicles in outdoor recreation areas. As expected from the goal interference model, in the three factors, ORV users have recognized that vehicles cause problems for other users, raised the issue of blame, and sought to maintain a goal which allows for continued use of the seashore environment by ORV users.

Results of the principle components analysis for non ORV users are presented in Table 2. While they also produce three salient factors, these differ somewhat from those of the ORV user. Factor 1 identifies problems associated with ORVs and in addition supports restricting and placing greater

Table 1. Off Road Vehicle Users

<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>h²</i>
The noise from ORVs at Cape Hatteras is a real problem.	.82		0.757
The tire tracks ORV use makes in the beach are a problem for pedestrian users.	.74		0.626
ORV use of the beach creates hazards for bathers.	.52		0.550
It's very hard to find anyplace at Cape Hatteras where you can get away from ORVs.	.46		0.495
	ORV users are unfairly blamed for vandalism caused by other beach users.	.79	0.763
	ORV users are unfairly blamed for erosion problems caused by pedestrians.	.69	0.725
	ORV users are unfairly blamed for litter left by other beach users.	.58	0.521
	Continue current regulations on ORV use.	.84	0.732
	Eliminate existing regulations on ORV use.	-.78	0.742
	Enforce current ORV regulations more strictly.	.47	0.645
Percent common variance	28.2	11.4	10.0
Eigenvalues	8.44	3.42	2.98

Table 2. Non Off Road Vehicle Users

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>h²</i>
	ORV use of Cape Hatteras conflicts with other uses.	.82		0.747
	ORV use of the beach creates hazards for bathers.	.78		0.708
	Strict regulations must be placed on ORV use of Cape Hatteras National Seashore to preserve the area.	.76		0.767
	The noise from ORVs at Cape Hatteras is a real problem.	.72		0.682
	There is no real problem for pedestrians from ORV traffic.	-.69		0.625
	Close Cape Hatteras National Seashore completely to ORVs.	.68		0.839
	Traveling in an ORV is a good way to experience the outdoors at Cape Hatteras.	-.66		0.775
	Close Cape Hatteras National Seashore to all ORV use in June, July, and August.	.66		0.790
	ORVs damage the natural environment at Cape Hatteras.	.65		0.666
	ORV users tend to think of Cape Hatteras National Seashore as their personal playground.	.64		0.736
	The tire tracks ORV use makes in the beach are a problem for pedestrian users.	.62		0.639
	Restricting ORV use of Cape Hatteras would seriously hurt the economy of the Outer Banks area.	-.59		0.670

Table 2. (Cont'd)

<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>h²</i>
Rather than restricting use, the Park Service ought to rehabilitate damaged dunes.	-.53		0.602
It is better to permit some damage to the dunes than to further restrict people's use of Cape Hatteras.	-.52		0.614
Prohibit all ORV use of the Pea Island Wildlife Refuge.	.44		0.538
Very few ORV users drive their vehicles irresponsibly.	-.42		0.581
	Limit pedestrian use during peak surf fishing seasons.	.80	0.725
	Allow only a certain number of visitors per day, regardless of the type of use.	.75	0.653
	Require permits of all beach users which specify where they can go.	.71	0.569
	Allow bathing only at guarded beaches.	.49	0.474
	ORV users unfairly blamed for litter left by other beach users.	.74	0.736
	ORV users are unfairly blamed for vandalism caused by other beach users.	.70	0.780
Percent common variance	36.3	9.5	8.2
Eigenvalue	12.61	3.28	2.84

control on ORVs if not denying them the use of seashore. The non ORV user recognizes problems associated with the use of such a vehicle and seeks greatly curtailed use of the vehicle at the seashore. In addition, there are items which characterize the ORV operators as being so irresponsible that they think of the seashore as a "personal playground." Finally, in factor 1 the non ORV user links concern about the environmental impacts of ORVs with perceptions of conflicts and desire for more restrictive regulations. In factor 2, the non ORV user calls for limited use of the seashore by pedestrians and ORV users alike. The resulting goal expectation is a highly limited use pattern for recreationists. Factor 3 asserts that the ORV user is unfairly blamed for littering and vandalism. Consequently, specific recognition of problems associated with the use of vehicles and those which ORV operators have been blamed for are clearly distinguished by the non ORV user. In summary, the non ORV user identifies interference associated with activities but also specifies action to change that interference as they perceive the situation. Their general goal orientation is one that limits all use not only for themselves but for others using the seashore. And finally, they recognize that the operator of an ORV is not totally to blame for all negative consequences that occur at the seashore.

The goal interference model appears to embody a sufficient rationale for identifying the presence of conflict between recreational users. There is obvious recognition on the part of both ORV and non ORV users that travel through the seashore creates problems for both the user and the environment. The ORV user does not recognize a situation which would warrant restriction in the use of a vehicle. The non ORV user, however, not only associates negative consequences with ORV use of the beach but calls for greater restriction of the vehicle user. At the same time, the non ORV user recognizes a general principle for overall use which accepts limitations on all recreational use of the national seashore. In general, therefore, the two groups are not compatible in their perception of ORVs and the use of the vehicle in the environment. Eventual reconciliation of this conflict must take into consideration the goal expectations of both groups. The non ORV users tend to expect a highly restrictive and controlled environment, whereas the ORV users do not. Both groups recognized interference and blame in the process of social interaction. Neither group, however, was willing to play a zero sum game so that both users ought to be able to adjust their activities within the environment on a seasonal or site locational basis. In analyzing any apparent conflict situation, it is very possible to assume conflict processes function where none exists. For the social situation examined at Cape Hatteras, there was dissension among the group of users.

Since the attitudinal items were not preselected or biased toward narrowly testing a goal interference model, the factoring approach followed does signal salient dimensions and added confidence to the results. The scope of the results embodied attitudinal beliefs with regard to perceived interference, goals, and blame. In the case of the ORV user at Cape Hatteras, the data analysis supports

the contention that a conflict situation exists between the ORV and non ORV user. Whether other recreational situations lead to opposition is a question better tested than assumed. The goal interference model provides a basis upon which a more fully developed explanation of interpersonal conflict might be grounded. The fundamental elements of perceived interference, goals and blame might be elaborated by reference to other explanations of conflict as described by the effort of Louis which contains parallel elements [13]. Such interpretation of theory will hopefully lead to a more meaningful explanation of what constitutes a conflict situation.

REFERENCES

1. G. W. Forrester, *World Dynamics*, Wright-Allen Press, Cambridge, Massachusetts, 1973.
2. J. A. Wagar, Quality in Outdoor Recreation, *Trends in Parks and Recreation*, 3(3), pp. 9-12, 1966.
3. H. Bryan, Leisure Value Systems and Recreational Specialization; The Case of Trout Fisherman, *Journal of Leisure Research*, 9:3, pp. 174-187, 1977.
4. R. W. Butler, How to Control 1,000,000 Snowmobilers, *Canadian Geogr. J.*, 88:3, pp. 4-13, 1974.
5. T. Knopp and J. Tyger, A Study of Conflict in Recreational Land Use: Snowmobiling vs. Ski Touring, *Journal of Leisure Research*, 5:3, pp. 6-17, 1973.
6. R. J. Badaracco, ORVs: Often Rough on Visitors, *Parks and Recreation*, 4:9, pp. 32-35, 68-75, 1978.
7. R. McCay and G. Moeller, Trail Talk, Report on File, U.S.F.S. NE Exp. Stn., Upper Darby, Pennsylvania, 9 pp., 1975.
8. Council on Environmental Quality, *Off-Road Vehicles on Public Land*, Washington, D.C., USGPO, 84 pp, 1979.
9. G. R. Jacobs and R. Schreyer, Conflict in Outdoor Recreation: Theoretical Prospectus, *Journal of Leisure Research*, 12:4, pp. 368-380, 1980.
10. J. H. Gramann and R. J. Burdige, *The Effect of Recreation Goals on Conflict Perception: The Case of Water Skiers and Fisherman*, Rural Sociological Society Meeting, Burlington, Vermont, 1980.
11. H. Bryan, *Conflict in the Great Outdoors Sociological Studies No. 4*, Bureau of Public Administration, University of Alabama, 98 pp., 1979.
12. D. A. Dillman, J. Christensen, E. Carpenter, and R. E. Brooks, *Increasing Mail Questionnaire Response: A Four State Comparison*, Rural Sociological Society, Montreal, 1974.
13. M. R. Louis, How Individuals Conceptualize Conflict: Identification of Steps in the Process and the Role of Personal/Development Factors, *Human Relations*, 30:5, pp. 451-467, 1977.
14. R. C. Lucas and G. H. Stankey, Social Carrying Capacity for Backcountry Recreation, *Outdoor Recreation Research: Applying the Results*, U.S.D.A. Forest Service, 1974.

15. U.S. Department of the Interior, *ORRV: Off-Road Recreation Vehicles*, USDI, Washington, D.C., 1971.
16. D. Sheridan, *Off-Road Vehicles and Public Land*, U.S. Government Printing Office, Washington, D.C., 1970.

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