

INTERRELATIONSHIPS AMONG MEDIATING PROCESSES, VALUES, AND BEHAVIOR¹

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ABSTRACT

Little is known about behavior and the processes that interact to influence it. With the increasing number of individuals who are visiting public forested land, ways and means should be found to understand the relationships among the interacting variables and behavior so that those who develop and administer these lands can do so more effectively. This study was undertaken to examine the relationships among the interacting variables and behavior as it relates to a public forested recreation area. The results from this study indicate that there are relationships. There are consistent and inconsistent patterns and the difference between these is a balance among interacting variables and behavior. The patterns that are consistent represent variables that are in balance. Inconsistent patterns represent variables that are out of balance and the limiting factor is usually the element related to behavior.

Introduction

As early as the 1930's [1] inconsistencies were noted between values and behavior. Through the years there has been much discussion about this particular issue and a considerable amount of empirical research illustrating the inconsistencies. There are a few instances where the relationships have been found to be more consistent.

Most of the theories about values and behavior change take these discrepancies into consideration but very few on a practical basis have dealt with

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this problem directly. Most of the empirical studies that have sought to gain an understanding about the relationships between values and behavior have been based upon a one component and unidimensional measure of either values or behavior. Those studies that have been most successful in adding understanding to value and behavior variability have been of a component and multi-dimensional nature [2-6]. Another element that has been missing from this type of research is a lack of a comprehensive model to add perspective in terms of component elements [7-10]. Lee has suggested that behavior is a product of values interacting with a particular situation [11]. Katz has expanded upon this model by suggesting the importance of elements that mediate the situation and value interaction [12]. Groves et al. have used these two concepts to develop a model for personal action based upon a systems approach that uses variable types as a basic unit of analysis [13]. The basis of this model is assimilation and accommodation processes. Assimilation is the taking of an object into the cognitive structure which is the result of the situation (stimulus and stimulus situation), mediating processes (perception, organization, intergration, and comparison processes), and values interacting. Accommodation is the process in which the cognitive structure has been stimulated to institute action based upon the status of an object. Accommodation is a product of the situation (response and response situations), the mediating processes (perception, organization, intergration, and comparison processes), and values interacting. This particular type of model focuses upon the understanding pathways among the interacting variables so that consistent and inconsistent relationships can be used to increase understanding about variations in human behavior.

This study was undertaken to identify patterns among the interacting variables upon a component and multi-dimensional basis of measurement to obtain greater understanding about the value-behavior interface.

Scope of Study

According to Heberlein one of the most viable content areas for exploration of the value-behavior interface is outdoor recreation and conservation [14]. This type of content area permits exploration of the diversity of responses because recreation and conservation cuts across all classes and styles of life.

This study was done in State College, Pennsylvania because the population structure in the community is so diverse which permitted the examination of a wide spectrum of interrelationships.

The recreational area of primary interest in State College was Game Lands 176. This is a dispersed type recreation area within five miles of downtown and is used by a diversity of people from the community. Both the user and general populations of State College were sampled because these are the populations who are primarily concerned with public outdoor recreation facilities. Most outdoor recreation and conservation studies are done primarily on the user

population but if the general population is studied the part to whole relationship can be examined to add perspective and context.

Sampling

A proportionate, stratified, random sampling technique was employed to reduce cost and increase the efficiency of the sample design. Stratifications used for sampling were age; age categories: (1) 18-34 years and (2) 35 + years, sex, marital status, occupation, and resident types; resident type categories: (1) resident—5 or more continuous years residence in country where State College is located and (2) non-resident—residual [15]. The variable occupation was deleted from the analysis because no consistent categories could be formulated between the occupational status of men and women. Situational variables were used for stratification because they are readily accessible. This is a necessary condition for the characterization of the sample so that if a similar population is sampled the results can be compared with this study. These variables were factor analyzed using principal component and Varimax methodologies to find interrelationships to reduce the effect of double sampling. A dummy variable framework was used to permit the use of factor analysis [16, 17]. The matrix used in the analysis was the one that clarified variable structure in terms of community influences. Random representative variables from each of the factors isolated were used as stratifications. The sample populations were proportionately stratified on the basis of the total local population within each strata.

There were two factors isolated in both the user and general populations. Sex and residential status were the representative variables used as stratifications in the user population. Sex and age were the variables used in the general population. The user and general populations were characterized as follows:

1. Users—55% were male residents; 30% were male non-residents; 8% were female residents; and 7% were female non-residents, and
2. general population—37% were males between the ages of 18 and 34; 17% were males 35 years of age or over; 27% were females between the ages of 18 and 34; and 19% were females 35 years or older.

Users of Game Lands 176 were identified and proportions isolated using sampling techniques similar to those developed by James and Henley [18]. The sample source included 89% of the total user population. A simple random sample of 180 users of State Game Lands 176 was contacted and asked to participate in the study. Of the 180 individuals, 173 (96%) were personally interviewed. Sixty of these individuals were proportionately, randomly selected to represent the user population.

Proportions for the general population were identified using the 1970 Census data. The sample was selected from the Centre County tax records and The Pennsylvania State University Student Directory. One hundred and seventy

individuals were randomly selected and 153 were personally interviewed. The sample source included 95% of the total general population (eighteen per cent of general population was users of Game Lands 176). Sixty of these individuals were proportionately, randomly selected to represent the population. Due to the large number of respondents in both populations, a non-respondent correction factor was not used to adjust the sample.

Measurement Methodology

A semi-structured interview patterned after an instrument developed by Harvey was used. This approach was designed to obtain a knowledge (cognitive), feeling (affective), and action (action tendency) commitment to recreation areas and relate to this commitment using “how” and “why” questions to obtain information about the other variables in the analysis [19,20]. The primary problem in the operational use of the interview was the establishing of reliable and valid items that discriminate the categories and hierarchical levels of the developed typologies. Experienced workers were consulted in the selection of items. These items were pretested on the user and general populations to test for semantic understanding. The items were then adjusted, but the conceptual basis obtained from the experts was maintained.

Interviewers and judges were trained in the use of the interview schedule. A tape recorder was used so that the interviewer could concentrate on his interviewing technique and improve his skill through correction by insight. The recorder also allowed a team of three experts as a group to examine the information for classification. The minimum criteria for placement on a level was based upon a two out of three decision by the judges. To aid the judges in the classification procedure responses from the preliminary interviews that characterized each level was used in the training procedures and were available for reference use. Response distribution, where possible, was also used to help establish critical levels in the measurement process.

Reliability of the interviews was checked using a test-retest design on every fifth person interviewed. A correlation coefficient and a coefficient of determination were used to determine the significance, direction, and degree of the relationship. A t-test for related samples was used to determine if there was a significant difference between test phases. The value components were used in the reliability check because these are the elements on which the interview commitments were based. There were significant positive relationships at the 0.001 probability level using the correlation coefficient but not a significant difference at the 0.05 probability level on the t-tests between the test phases for value components. As an indicator of the relationships, the correlation coefficients are as follows: cognitive r: user (U) = 0.926 and general population (GP) = 0.887; affective r: U = 0.899 and GP = 0.987, and action tendency r: U = 0.887 and GP = 0.978. The reliability check gives an indication about

interviewer and judge consistence because the same respondent was used with different interviewers and judges.

Typologies of Interacting Variables

SITUATIONAL VARIABLES

Situational variables are those that limit or inhibit the expression of cognitive processes [21, 22, 23]. Knowledge of these variables is limited, but research by Barker provided the basis for greater comprehension and understanding [24]. He has shown the controller elements are the components that aid in the understanding and management of the situation and that the primary characteristics of any situation is its consistence through time and space. Sonnenfeld has added considerable knowledge by making several of the variable types more explicit [15, 25]. He has identified sex, age, residential status, occupation and marital status as the basic variables that determine differences in the environmental preferences.

JUDGMENTAL PROCESS (FUNCTIONAL PERSPECTIVE)

The judgmental process is those variables that mediate the situation-value interaction [26]. They are processes that modify through selection and include perception, organization, integration, and comparison components (selection process styles). Perception is the attention, recognition, and interpretation of information about objects which can be evaluated using an awareness taxonomy developed by Lime [27].

Katz has noted that understanding context or function is necessary to obtain insight into the decision maker's frame of reference [12]. In order to understand the functional nature of the object, its meaning, expectations, needs, and habits must be evaluated because these are the interactive elements of the judgmental process where perspective is formulated [28]. Therefore, the judgmental process will be referred to as functional perspective variables.

Meaning is viewed as the importance of the land and water resources to the individual. There were four types of meaning identified. They have been identified using a three-point negative, neutral, and positive scale:

1. concrete—tangible results of the land being there in its present condition (higher taxes, firearm noise, etc.)—real;
2. use—utility of the land being there in its present condition (for hiking, bird watching, etc.)—rational;
3. emotional—intangible results of the land being there in its present condition (aesthetically pleasing, invigorating, etc.)—emotional; and
4. symbolic—intangible results that represent more than is seen; represents or suggests something else (freedom, bygone years, etc.)—abstract [29].

Expectations are the anticipated occurrence of an event. An anticipated encounter with Game Lands 176 was evaluated using a four point hierarchical scale based upon a development–wilderness continuum with these following characteristics: people; quantity, quality, and diversity of wildlife and habitat; smell; sound; and development. Groves and Erickson have used these characteristics to develop the continuum as follows:

1. no expectations,
2. low expectations–development oriented,
3. medium expectations–development oriented but still concerned about environmental quality; and
4. high expectations–wilderness oriented [30].

Needs are the initiating sustaining force of behavior. They were evaluated using a five point hierarchical scale:

1. physiological–hunger and thirst;
2. safety–security and order;
3. need to belong and be loved–affection and identification;
4. esteem–prestige and success; and
5. self-actualization–desire for self-fulfillment [31, 32].

Habits are an acquired behavior pattern regularly followed until it is almost involuntary. Since it is difficult to evaluate this dimension and there is no well defined quantitative scale, habits were evaluated using a subjective scale.

The organization, intergration, and comparisons components depend upon evaluation of the individual style in selecting alternatives. This allows for comparison upon a process basis. When Bettman's and Kernan's decision making models or typologies were related to Lime's taxonomy, a congruent system for evaluating selection process styles (perception, organization, intergration, and comparison processes) can be developed [27, 33-35]. Selection process styles deal with the amount of awareness and the rationality used in selecting alternatives. The process was evaluated using a three point hierarchical scale:

1. selection process level 1 (low)–familiarity with one type of public forested land or less (awareness factor) and selecting alternatives on the basis of chance (rationality factor);
2. selection process level 2 (medium)–a familiarity with two types of public forested land (awareness factor) and a selecting of alternatives on the basis of high risk methods (payoff or weighted comparison) and/or influences such as convenience, friends, or habits (rationality factor); and
3. selection process level 3 (high)–a familiarity with three or four types of public forested land (awareness) and a method of alternative selection on the basis of low risk methods (consequences or regrets) and/or influences

such as systematic exploration, discussion with professional personnel, quality of wildlife and habitat, and/or experience (rationality factor) [27, 33-36].

Each selection process level depends upon consistence between awareness and the mode of selection. When there was inconsistency, mode of selection was the factor that determined the selection process level.

VALUES

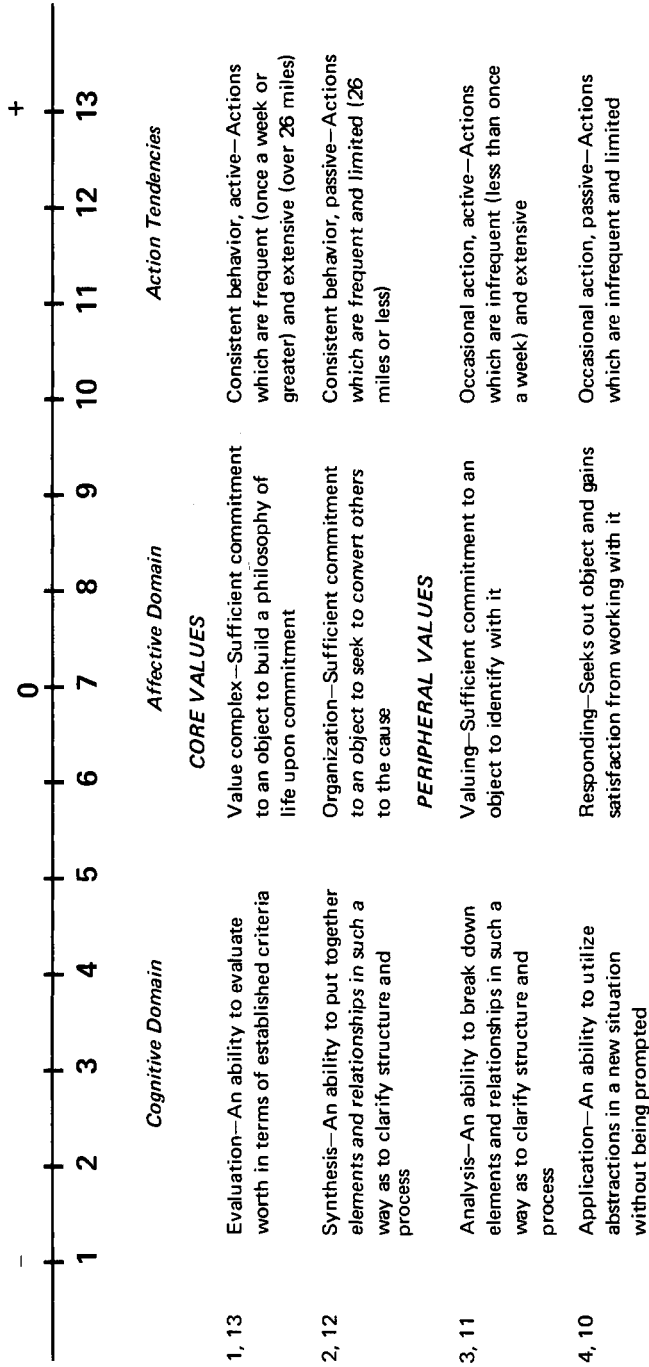
Values are organized into unified systems that situationally direct behavior [21]. Therefore, overt behavior of an individual is a partial indicator of his values, that is, his cognitions, feelings, and action tendencies toward various objects. The cognitive component is the knowledge or belief that an individual has about an object (persons or things). The feeling component is the emotion connected with an object. The action tendency component is the behavioral readiness associated with each value. Bloom et al. and Krathwohl et al. have developed typologies for measurement of these components of value (Model 1) [37, 38]. Groves et al. have developed these components into a multi-dimensional measurement system [39].

BEHAVIOR

Behavior was measured using a time budget [40, 41]. A time budget was used because time, activities, and areas can be incorporated into one framework easily [42]. Information was sought on the amount of free time (time spent free from work duties), leisure (time participated in activities of interest), time spent on outdoor activities, forest recreation, public forested land in the State College area, and the Game Lands 176. Due to the ambiguity involved with the activities associated with each time and/or area orientation, subjective definitions were used for activities within the broader context of interest or area limitations. The meaning of activities has and will continue to change especially in an industrial society where the nature of the work is changing rapidly. The basic unit of time was hours per week. An interviewing technique with time tables that began with the more general concept and proceeded to the more specific was the type of instrument used to isolate the basic dimensions of time utilization. The units of the time tables were in hours and per cents to permit the more relevant media for the response. A hierarchical question design helped maintain consistence in response because the part to whole relationship among activities, time, and areas was more apparent.

An equal interval assumption was made about the variables that were of an ordinal nature. This type of assumption does not seem to cause any major distortions in this type of data [43, 44].

Model 1
A Condensed Description of Bloom's and Krathwohl's Typologies



CORE VALUES

PERIPHERAL VALUES

5, 9	Comprehension—An ability to use ideas or materials without seeing their fullest implications	Selected attention—Attends to object in spite of competing stimuli, when the circumstances are favorable	Low tolerance level—Limited amount of stimulation needed for action; intends to use resource some day
6, 8	Knowledge—recall or recognition of material, ideas, or phenomenon	Receiving—Tolerates the presence of an object	High tolerance level—Crisis needed to stimulate action; no intention of using resource, but is willing to give up resource to know that the area, feature, or good will exist in a particular condition
7	Neutral	Neutral	Neutral

Results

According to the model presented, behavior is a function of the situational variables, mediating processes, and values interacting.

Since the situational variables are the elements in social environment which can limit value and behavior processes, these variables were used as stratifications to ensure sample variability. The relationships among the other variables, that is, mediating processes, values, and behavior were analyzed to obtain information about the relationships that exist between these variables. An assortment of variables found in literature were factor analyzed (principal component and varimax methodologies) for each variable type and representative variables from each factor were selected to form natural groupings using Q analysis [45]. (The factor matrix used was the one that clarified variable structure. The representative variable selected was the one with the highest positive factor loading. If there was not a positive value, the highest negative loading was used.) These groups were cross tabulated to isolate significant patterns among variables.

User Survey

JUDGMENTAL PROCESS (FUNCTIONAL PERSPECTIVE)

The judgmental process refers to the processes that mediate and influence the interaction between situational variables and values. The major variables isolated from literature were: meaning (concrete, use, emotional, and symbolic), expectations, needs, habits, and selection process styles. When these variables were factor analyzed, there were found to be four underlying dimensions: two concerning meaning, one concerning the motivational element, and the last concerning selection process styles (see Table 1).

Each of the four factors were examined using cross tabulation to characterize each factor. The first factor was composed of an emotional-symbolic dimension.

Table 1. Rotated Matrix of Factor Loadings: Expectations, Meaning, Needs, Selection Process Styles, and Habits

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>	h^2
Expectations	- 0.100	- 0.110	0.915	- 0.065	0.864
Meaning—Concrete	0.133	- 0.779	0.229	- 0.007	0.677
Meaning—Use	- 0.043	- 0.838	- 0.180	0.043	0.739
Meaning—Emotional	0.777	0.027	0.121	- 0.361	0.749
Meaning—Symbolic	0.906	- 0.124	- 0.096	0.080	0.851
Needs	0.380	0.256	0.577	- 0.402	0.704
Selection Process Styles	- 0.022	- 0.172	0.066	- 0.899	0.843
Habits	- 0.279	- 0.311	- 0.169	0.747	0.762
Per cent of Trace	20.95	19.11	16.40	20.90	

Game Lands 176 had neutral to neutral (23%) or positive to positive (55%) relationships between emotional and symbolic meanings. The second factor was made up of a concrete-use dimension. Game Lands 176 had neutral to neutral (22%) or positive to positive (60%) relationships between concrete and use meanings. The third factor was made up of an expectations dimension. The majority of the users anticipated a wilderness experience (70%), that is, they looked forward to an environment free from man's intrusions (high expectations) when they visited Game Lands 176. The needs variable loaded significantly on two factors so it was removed from the analysis. The fourth factor was composed of a selection process-habit dimension. It was discovered that those whose behavior 1) is over 50% habit were less aware and selected alternatives on the basis of reward (52%) (Selection process level 2) and 2) those under 50% habit were more aware and selected alternatives on the basis of consequences (30%) (Selection process level 3).

Representative variables from each of the factors (use and symbolic meanings, expectations, and selection process styles) were used to form three natural groupings. The differences among these groups were significant at the 0.001 probability level using Mahalanobis D square in a chi-square framework.

Use and symbolic meanings, expectations, and the selection process styles were factor analyzed for each group so that the underlying dimensions could be used to characterize each group (see Table 2). There were three factors in Functional Perspective Group (FPG) 1. Expectations were inversely related to the first factor and the selection process styles were directly related. The use meaning was inversely associated to factor 2 and symbolic meaning was inversely associated to factor 3. There were three underlying dimensions in FPG 2. Use was inversely related to the first factor and symbolic meaning was directly related. Selection process styles were inversely related to factor 2 and expectations were directly related to factor 3. There were three dimensions in FPG 3. Expectations and selection process styles were directly related to factor 1. Symbolic meaning was directly associated to factor 2 and the use meaning was inversely associated with factor 3.

The following is a summary of the cross tabulation of the significant score patterns by group.

FPG 1

- Factor 1—medium expectations = selection process level 3
- Factor 2—negative and neutral use meanings
- Factor 3—positive symbolic meanings

FPG 2

- Factor 1—negative and neutral use meaning = positive symbolic meaning
- Factor 2—selection process level 2
- Factor 3—high expectations

Table 2. Rotated Matrix of Factor Loadings: Expectations, Meaning, and Selection Process Styles

	FPG 1			FPG 2			FPG 3					
	Factor 1	Factor 2	Factor 3	h ²	Factor 1	Factor 2	Factor 3	h ²	Factor 1	Factor 2	Factor 3	h ²
Expectations	- 0.986	0.091	0.141	1.000	0.261	- 0.031	0.965	1.000	0.936	- 0.184	0.142	0.930
Use Meaning	0.115	- 0.982	0.150	1.000	- 0.955	- 0.195	- 0.225	1.000	- 0.017	0.325	- 0.945	1.000
Symbolic Meaning	0.180	0.154	- 0.972	1.000	0.955	0.195	0.225	1.000	- 0.040	0.941	0.330	1.000
Selection Process Styles	0.986	- 0.091	- 0.141	1.000	- 0.219	- 0.975	0.028	1.000	0.955	0.110	- 0.099	0.935
Per cent of Trace	49.73	25.12	25.15		48.46	25.71	25.83		44.76	25.92	25.78	

FPG 3

Factor 1—high expectations = selection process level 3

Factor 2—negative and neutral symbolic meaning

Factor 3—positive use meanings

The primary difference among the groups is the relationships among the variables. FPG 1 and FPG 3 are similar in structure in that they are both related to an expectations-selection process styles dimension and have independent use and symbolic meaning dimensions. The primary difference between these two groups is that FPG 1 is composed of a more coherent-symbolism dimension and FPG 3 is made up of a more rational-use dimension. FPG 2 differs from FPG's 1 and 3 in that use and symbolism are associated in one dimension and expectations and selection process styles are independent of each other. FPG 2 represents a more incoherent-symbolism dimension.

VALUES

The value components were not factor analyzed because of a need for more definitive information on all the components for interpretation. Therefore, cross tabulation was used to examine component interrelationships. When the value components of the users were analyzed, it was found that there were five types of value component interrelationships. There were three primary types. The first type (27%) were characterized by high cognitive and affective scores and low action tendency ratings. The second type (28%) was characterized by high affective and action tendency ratings and low cognitive scores. The last type (25%) was characterized by high affective scores and low cognitive and action tendency scores (see Table 3).

Table 3. Relationships Among Value Components

<i>Action tendency scores</i>	<i>Cognitive Scores</i>				<i>Row total</i>
	<i>High^a</i>		<i>Low^b</i>		
	<i>Affective Scores</i>				
	<i>High^a</i>	<i>Low^b</i>	<i>High^a</i>	<i>Low^b</i>	
<i>High^a</i>					
N	7.	0.	17.	0.	24.
%	11.7	0.0	28.3	0.0	40.0
<i>Low^b</i>					
N	16.	0.	15.	5.	36.
%	26.7	0.0	25.0	8.3	60.0
<i>Column Total</i>					
N	23.	0.	32.	5.	60.
%	38.4	0.0	53.3	8.3	100.0

^a 1 or 2 and 12 or 13.

^b 3-6 and 8-11.

Two natural groupings resulted from the Q analysis of the value components. The differences between these groups were significant at the 0.001 probability level using Mahalanobis D square in an F test. Individuals with 1) high cognitive and affective scores and low action tendency ratings; 2) low cognitive and high affective and action tendency ratings; and 3) low cognitive and high affective and action tendency scores were members of Personal Value Group (PVG) 1. Individuals with 1) low cognitive and action tendency scores and high affective ratings and 2) high cognitive, affective, and action tendency scores were members of PVG 2. Where the groupings were not clear, throughout the analysis, a conceptual classification based upon a summary of factor loadings was used to make a decision about the placement of individuals in the group. A peripheral-core value conceptual scheme was also used throughout the analysis to define the region of critical difference for interpretation.

The personal value components for each group were factor analyzed so that the underlying dimensions or threads could be used to characterize each group (see Table 4). The results indicated that there were two underlying dimensions in PVG 1. The cognitive element was inversely related to the first factor and the action tendency element was directly related. The affective and action tendency elements were inversely related to the second factor. The data suggested that there were two underlying dimensions in PVG 2. The first dimension was directly associated with all the components. The second dimension was inversely associated with the cognitive and action tendency components and directly associated with the affective element.

Table 4. Principal Components and Rotated Matrices of Factor Loadings:
Personal Value Components

	PVG 1			PVG 2		
	Factor 1	Factor 2	h^2	Factor 1	Factor 2	h^2
Cognitive Element	- 0.965	- 0.205	0.973	0.976	- 0.211	0.997
Affective Element	- 0.005	- 0.992	0.984	0.965	0.262	0.999
Action Tendency Element	0.846	- 0.499	0.965	0.995	- 0.047	0.992
Per cent of Trace	54.91	42.51		95.76	3.84	

The following is a summary of a cross tabulation of the significant score patterns by group.

PVG 1

- high (core) cognitive = low (peripheral) action tendencies
- low cognitive = high action tendencies
- low affective = low action tendencies

PVG 2

high cognitive = high affective = high action tendencies
 low cognitive = high affective = low action tendencies

PVG 1 was associated with two dimensions: a cognitive-action tendency axis and an affective-action tendency axis. PVG 2 was associated with two dimensions that included all three of the value components.

BEHAVIOR

Behavior was measured using a time budget. Information was sought on amount of free time, leisure time, time spent on outdoor activities, time spent on forest recreation, time spent on public forested land in the State College area, and time spent on Game Lands 176.

When these elements of behavior were factor analyzed, there were two dimensions isolated (see Table 5). Each of these factors were examined by cross tabulation to characterize the factors. The first factor was made up of a free-leisure time dimension. Since the time budget was expressed in hours per week, amount of time spent was expressed in terms of low and high values. The mean of the sample was used as a dividing point between low and high. There were low to low (40%) or high to high (42%) relationships between amounts of free and leisure time. The second factor was composed of the amount of time spent on forest recreation, public forested land in the State College area, and amount of time spent on Game Lands 176. The amount of time spent on outdoor activities was deleted from the analysis because of its high loading on both factors. There were low, low, to low (42%) or high, high, to high (40%) relationships among the variables in this factor.

Free and leisure time and amount of time spent on public forested land and Game Lands 176 were used to formulate behavior groups through Q analysis.

Table 5. Rotated Matrix of Factor Loadings: Free Time, Leisure Time, Time Spent On Outdoor Activities, Time Spent On Forest Recreation, Time Spent On Public Forested Land In the State College Area, and Time Spent On Game Lands 176

	<i>Factor 1</i>	<i>Factor 2</i>	<i>h²</i>
Free Time	0.290	- 0.902	0.897
Leisure Time	0.467	- 0.806	0.867
Outdoor Activities	0.752	- 0.609	0.935
Forest Recreation	0.873	- 0.422	0.941
Public Forested Land	0.890	- 0.411	0.961
Game Lands 176	0.911	- 0.286	0.912
Per cent of Trace	54.19	37.70	

Two variables from each dimension were selected to maintain variable number and symmetry because Q analysis does not work well with only two variables. All of the members of the sample belonged to one group. These results permitted the examination of inter-group differences, especially with the clear-cut relationships between the low and high time differentials. This low-high classification was used to formulate two groups. Three out of four consistent scores characterized the individuals to a particular group. When this system failed to assign an individual to a group, all the behavior variables were used in the assignment process. A majority of low or high scores was the criteria for assignment.

The four variables used to form the groups were factor analyzed to explore the underlying dimensions and characterize each group (see Table 6). There were two underlying dimensions in Behavior Group (BG) 1. Since leisure time loaded on both factors, it was deleted from the analysis. The first factor was directly related to amount of time spent on public forested land and Game Lands 176. Amount of free time was inversely related to factor 2. There were three dimensions to BG 2. The first factor was directly related to amount of time spent on public forested land and Game Lands 176. Leisure time was inversely related to factor 2 and free time was inversely related to factor 3.

The following list is a summary of a cross tabulation of the significant score patterns by group.

BG 1

- Factor 1—low amount of time—public forested land = low amount of time—Game Lands 176
- Factor 2—low amount of time—free time

BG 2

- Factor 1—high amount of time—public forested land = high amount of time—Game Lands 176
- Factor 2—high amount of time—leisure time
- Factor 3—high amount of time—free time

Results support the low-high differential between BG's 1 and 2. The interesting fact is not the low-high scores, but the patterns among the scores. These patterns characterize the behavior groups, that is, whether they are oriented toward public forested land and Game Lands 176, leisure time, or free time.

With the preceding grouping, it was possible to explore the interrelationships among the functional perspective, personal value, and behavior groups through cross tabulation (see Table 7). There was a relationship among functional perspective group 1, personal value group 1, and behavior group 1. These individuals were characterized by 1) familiarity with all types of public forested land and the selection of alternatives on basis of consequences (Selection process level 3), 2) tolerance of development if it is consistent with the natural

Table 6. Rotated Matrix of Factor Loadings: Free and Leisure Time and Amount of Time Spent on Public Forested Land and Game Lands 176

	BG 1			BG 2			h^2
	Factor 1	Factor 2	h^2	Factor 1	Factor 2	Factor 3	
Free Time	0.166	- 0.956	0.942	0.200	- 0.347	- 0.916	1.000
Leisure Time	0.608	- 0.663	0.819	0.151	- 0.924	- 0.340	0.993
Public Forested Land	0.868	- 0.301	0.844	0.897	- 0.281	- 0.188	0.918
Game Lands 176	0.931	- 0.162	0.892	0.959	- 0.013	- 0.120	0.935
Per cent of Trace	50.42	36.77		44.68	26.34	25.13	

Table 7. Relationships Among the Personal Value, Functional perspective, and Behavior groups (Users).

Behavior and Functional Perspective Groups	Personal Value Group 1 (individuals who are oriented toward particular components)				Personal Value Group 2 (individuals who are oriented toward all components)				Row Total	
	N	\$	N	\$	N	\$	N	\$	N	\$
	High Cognitive = Low Action Tendency	Low Cognitive = High Action Tendency	Low Affective = Low Action Tendency	High Cognitive = High Affective = Low Action Tendency	High Cognitive = High Affective = Low Action Tendency	Low Cognitive = High Affective = Low Action Tendency	Low Cognitive = High Affective = Low Action Tendency	Low Cognitive = High Affective = Low Action Tendency		
BEHAVIOR GROUP 1 - LOW AMOUNT OF TIME Low - Public Forested Land and Game Lands 176	13.	21.7	0.	0.0	0.	0.0	0.	0.0	13.	21.7
Functional Perspective Group 1 (Coherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Medium Expectations - Selection Process Level 5	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Functional Perspective Group 2 (Incoherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Use Meaning = Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Selection Process Level 2	0.	0.0	0.	0.0	4.	6.7	0.	0.0	4.	6.7
High Expectations	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Functional Perspective Group 3 (Rational - Use)												
High Expectations = Selection Process Level 3	2.	3.2	0.	0.0	0.	0.0	0.	0.0	0.	0.0	2.	3.2
Negative and Neutral Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Low - Free Time												
Functional Perspective Group 1 (Coherent - Symbolism)												
Medium Expectations = Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	4.	6.7	4.	6.7
Functional Perspective Group 2 (Incoherent - Symbolism)												
Negative and Neutral Use Meaning = Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Selection Process Level 2	0.	0.0	0.	0.0	1.	1.7	0.	0.0	0.	0.0	1.	1.7
High Expectations	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Functional Perspective Group 3 (Rational - Use)												
High Expectations = Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Symbolic Meaning	1.	1.7	0.	0.0	0.	0.0	0.	0.0	0.	0.0	1.	1.7
Positive Use Meaning	0.	0.0	4.	6.7	0.	0.0	0.	0.0	0.	0.0	4.	6.7

(cont)

Table 7. (Cont)

	Personal Value Group 1 (individuals who are oriented toward particular components)				Personal Value Group 2 (individuals who are oriented toward all components)				Row Total	
	N	\$	N	\$	N	\$	N	\$	N	\$
Behavior and Functional Perspective Groups										
BEHAVIOR GROUP 2 - HIGH AMOUNT OF TIME										
<u>High - Public Forested Land and Game Lands 176</u>										
Functional Perspective Group 1 (Coherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Medium Expectations - Selection Process Level 3	0.	0.0	1.	1.7	0.	0.0	0.	0.0	1.	1.7
Negative and Neutral Use Meaning	0.	0.0	4.	6.7	0.	0.0	10.	16.6	14.	23.3
Positive Symbolic Meaning										
Functional Perspective Group 2 (Incoherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Use Meaning = Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Selection Process Level 2	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
High Expectations	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Functional Perspective Group 3 (Rational - Use)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
High Expectations - Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
<u>High - Leisure Time</u>														
Functional Perspective Group 1 (Coherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Medium Expectations - Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Functional Perspective Group 2 (Incoherent - Symbolism)	0.	0.0	4.	6.7	0.	0.0	0.	0.0	0.	0.0	0.	0.0	4.	6.7
Negative and Neutral Use Meaning - Positive Symbolic Meaning	0.	0.0	1.	1.7	0.	0.0	0.	0.0	0.	0.0	0.	0.0	1.	1.7
Selection Process Level 2	0.	0.0	2.	3.2	0.	0.0	0.	0.0	0.	0.0	0.	0.0	2.	3.2
High Expectations														
Functional Perspective Group 3 (Rational - Use)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
High Expectations - Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Negative and Neutral Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Table 7. (cont)

Behavior and Functional Perspective Groups	Personal Value Group 1 (individuals who are oriented toward particular components)				Personal Value Group 2 (individuals who are oriented toward all components)				Row Total	
	N	\$	N	\$	N	\$	N	\$	N	\$
High - Free Time Functional Perspective Group 1 (Coherent - Symbolism) Medium Expectations = Selection Process Level 3 Negative and Neutral Use Meaning Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Functional Perspective Group 2 (Incoherent - Symbolism)																			
Negative and Neutral Use Meaning = Positive Symbolic Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0
Selection Process Level 2	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0
High Expectations	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0
Functional Perspective Group 3 (Rational - Use)																			
High Expectations = Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	7.	11.6	0.	0.0	0.	0.0	7.	11.6	0.	0.0	11.6
Negative and Neutral Symbolic Meaning	0.	0.0	1.	1.7	0.	0.0	0.	0.0	0.	0.0	1.	1.7	0.	1.7	2.	3.4	0.	0.0	3.4
Positive Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0
COLUMN TOTAL	16.	26.6	17.	28.4	5.	8.4	7.	11.6	15.	25.0	60.	100.0							

environment (medium expectations), 3) high cognitive and low action tendency scores, and 4) the acting out of behavior at a minimal level with an orientation toward public forested land and Game Lands 176. There was a relationship among functional perspective group 3, personal value group 2, and behavior group 2. These individuals had 1) familiarity with all types of public lands and selecting alternatives on the basis of consequences, 2) wilderness expectations, 3) all high component scores, and 4) acted out their behavior at a maximal level with an orientation toward free time. There was also a relationship among functional perspective group 1, personal value group 2, and behavior group 2. These individuals 1) were oriented around positive symbolism, 2) had high affective scores, and 3) maximally acted out their behavior toward public forested land and Game Lands 176.

General Population

JUDGMENTAL PROCESS (FUNCTIONAL PERSPECTIVE)

When the functional perspective variables for the general population were factor analyzed, there were three underlying dimensions: two concerning meaning and one made up of a selection process style-motivation dimension (see Table 8).

Each of the factors were examined using cross tabulation for characterization. The first factor was made up of an emotional-symbolic dimension. There were neutral to neutral (45%) or positive to positive (50%) relationships between the emotional and symbolic meanings. The second factor was composed of a concrete-use meaning dimension. There were neutral to neutral (65%) or positive to positive (30%) relationships between the concrete and use meanings. Habits were deleted from the analysis because they did not load high on any of the factors. The third factor was made up of a selection process styles-motivation dimension. Those individuals who have no expectations usually selected their alternatives on the basis of chance and had no need for the land (23%). Those individuals who tolerated the presence of development, if it was congruent with the natural setting (medium expectations), were usually less familiar with public forested land and usually made decisions on the basis of expected outcomes (selection process level 2). These individuals also had an identification need, which suggests that the outdoor experience may have been a function of social processes (20%). Those individuals who expected a complete natural environment (high expectations) were very familiar with all types of public lands and usually made decisions on the basis of consequence (selection process level 3). These individuals also needed the Game Lands for self-actualization. This suggests that this type of area is a place for self-fulfillment, recuperation of the spirit, or an escape from reality (15%).

Representative variables (use and symbolic meanings and the selection process

Table 8. Rotated Matrix of Factor Loadings: Expectations, Meaning, Needs, Selection Process Styles, and Habits

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>h²</i>
Expectations	0.420	0.214	- 0.818	0.891
Meaning—concrete	0.010	0.866	- 0.306	0.845
Meaning—use	0.270	0.929	- 0.043	0.937
Meaning—emotional	0.905	0.064	- 0.333	0.933
Meaning—symbolic	0.949	0.142	- 0.174	0.950
Needs	0.413	0.132	- 0.807	0.840
Selection Process Styles	0.130	0.229	- 0.880	0.843
Habits	- 0.013	0.444	- 0.418	0.371
Per cent of Trace	26.94	24.37	31.32	

styles) for each of the factors were selected and used to form two groups. The differences between these groups were significant at the 0.001 probability level using Mahalanobis D square in an F test framework.

Use and symbolic meanings and the selection process styles were factor analyzed so that the underlying dimensions could be used to characterize each group (see Table 9). There were two underlying dimensions to FPG 1. Use and symbolic meanings were directly related to the first factor. Selection process styles were inversely associated with factor 2. There were two underlying factors to FPG 2. Symbolic meaning was inversely related to factor 1 and selection process styles was directly related. The second dimension was inversely associated to use.

The following list is a summary of a cross tabulation of the significant score patterns by group.

FPG 1

Factor 1—positive use meaning = positive symbolic meaning

Factor 2—selection process levels 1 and 2

Table 9. Principal Component and Rotated Matrices of Factor Loadings: Use and Symbolic Meanings and Selection Process Styles

	<i>FPG 1</i>			<i>FPG 2</i>		
	<i>Factor 1</i>	<i>Factor 2</i>	<i>h²</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>h²</i>
Use Meaning	0.917	- 0.212	0.886	0.110	- 0.993	1.000
Symbolic Meaning	0.914	- 0.223	0.884	- 0.998	0.055	1.000
Selection Process Styles	0.231	- 0.973	1.000	0.998	- 0.055	1.000
Per cent of Trace	57.64	34.71		66.87	33.13	

FPG 2

Factor 1—negative and neutral symbolic meanings = selection process level
3

Factor 2—positive use meaning

The primary difference between the groups is the relationships among the variables. FPG 1 was characterized by positive meanings and the selection of alternatives, either by chance or pay-off, which indicates a more incoherent dimension. FPG 2 was characterized by positive use meaning, negative and neutral symbolic meanings, and the selection of alternatives on the basis of consequences, which indicates a more rational dimension.

VALUES

When the value components of the general population were analyzed, it was found that there were seven types of value component interrelationships. There were four primary types. The first type (30%) was typified by all low component scores. The second type (15%) was characterized by high affective scores and low cognitive and action tendency ratings. The third type (13%) was typified by high cognitive and affective scores and low action tendency ratings. The last type was characterized by all neutral scores (30%) (see Table 10).

There were two natural groups that resulted from the Q analysis of the value components. The differences between these groups were significant at the 0.001 probability level using Mahalanobis D square in an F test. Individuals with 1) neutral scores on all components, 2) high scores on all components, 3) low

Table 10. Relationships Among Value Components

<i>Action tendency scores</i>	<i>Cognitive Scores</i>				<i>Row total</i>
	<i>High</i>		<i>Low</i>		
	<i>Affective Scores</i>				
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	
High					
N	3.	0.	3.	1.	7.
%	5.	0.0	5.	1.7	11.7
Low					
N	8.	0.	9.	18.	35.
%	13.3	0.0	15.0	30.0	58.3
Column Total					
N	11.	0.	12.	19.	42.
%	18.3	0.0	20.0	31.7	70.0 ^a

^a Eighteen neutral scores were not included in the table.

scores on all components, and 4) low cognitive and affective scores on all components, and 4) low cognitive and affective scores and high action tendency ratings were members of PVG 1. Individuals with 1) high cognitive and affective scores and low action tendency ratings, 2) low cognitive and action tendency ratings and high affective scores, and 3) low cognitive ratings and high affective and action tendency scores were members of PVG 2.

The personal value components were factor analyzed so that the relationships among the components could be used to characterize each group (see Table 11). There were two underlying dimensions in PVG 1. The first dimension was directly associated with all three value components. The second dimension was inversely associated with the cognitive and affective components and was directly associated with the action tendency element. There were three underlying dimensions in PVG 2. The first factor was directly associated with the affective and action tendency elements. The second factor was inversely associated with the affective and cognitive elements. The third factor was inversely associated with the affective element.

The following is a summary of a cross-tabulation of the significant score patterns by group.

PVG 1

low cognitive = low affective = low action tendencies
 neutral cognitive = neutral affective = neutral action tendencies
 high cognitive = high affective = high action tendencies
 low cognitive = low affective = high action tendencies

PVG 2

high cognitive = high affective
 high affective = high action tendencies
 high affective

There were two groups of individuals isolated from the analysis. The first group was associated with all of the value components. The second group was associated with three dimensions: an affective-action tendency axis, an affective-cognitive axis, and an affective axis.

BEHAVIOR

When the behavioral variables were factor analyzed, there were three dimensions isolated (see Table 12). Each of these factors was characterized by cross tabulation. The first factor was composed of a free-leisure time dimension. There were low to low (45%) or high to high (55%) relationships between free and leisure time. The amount of time spent on outdoor activities was deleted from the analysis because of its high loading on two factors. The second factor was made up of time spent on forest recreation and public forested land in the State College area. There were low to low (38%) or high to high (48%)

Table 11. Principal Components and Rotated Matrices of Factor Loadings: Personal Value Components

	PVG 1			PVG 2			h^2
	Factor 1	Factor 2	h^2	Factor 1	Factor 2	Factor 3	
Cognitive Element	0.979	- 0.054	0.961	0.246	- 0.943	0.223	1.000
Affective Element	0.967	- 0.219	0.983	0.616	- 0.478	0.627	1.000
Action Tendency Element	0.959	0.276	0.996	0.940	- 0.239	0.242	1.000
Per cent of Trace	52.71	45.30		44.12	39.17	16.70	

Table 12. Rotated Matrix of Factor Loadings: Free Time, Leisure Time, Time Spent on Outdoor Activities, Forest Recreation, Public Forested Land in the State College Area, and Game Lands 176

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>h²</i>
Free Time	0.943	0.048	0.222	0.941
Leisure Time	0.912	0.094	0.341	0.957
Outdoor Activities	0.700	0.146	0.664	0.952
Forest Recreation	0.275	0.271	0.899	0.957
Public Forested Land	0.349	0.227	0.892	0.968
Game Lands 176	0.073	0.961	0.268	1.000
Per cent of Trace	40.22	18.01	38.04	

relationships between time spent on forest recreation and public forested land in the State College area. The third factor was composed of amount of time spent on Game Lands 176. The distribution between low and high was dissimilar to the other variables in the analysis. There were more individuals in the low category (78%).

Leisure time and amount of time spent on public forested land and Game Lands 176 were used to formulate behavior groups through Q analysis. It was found that all of the members of the sample belonged to one group. These results permitted the examination of the intergroup differences, especially with the low-high time differential. A low-high classification was used to formulate two groups. Two consistent scores characterized the individuals to a particular group. When this system failed to assign an individual to a group, all the behavior variables were used in the assignment process. A majority of low or high scores was the criteria for assignment.

Amount of leisure time and amount of time spent on public forested land in the State College area and Game Lands 176 were factor analyzed so that the underlying dimensions could be used to characterize each factor. There were three dimensions to BG 1. Factor 1 was represented by amount of time spent on public forested land and was directly related. Amount of time spent on Game Lands 176 was inversely related to factor 2 and leisure time was inversely related to factor 3. There were two dimensions to BG 2. Amount of time spent on public forested land and Game Lands 176 were directly associated with factor 1. Leisure time was inversely related to factor 2 (see Table 13).

The following list is a summary of a cross tabulation of the significant score patterns by group.

BG 1

Factor 1—low amount of time—public forested land

Factor 2—low amount of time—Game Lands 176

Factor 3—low amount of time—leisure time

Table 13. Rotated Matrix of Factor Loadings: Leisure Time and Amount of Time Spent on Public Forested Land and Game Lands 176

	BG 1			BG 2		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Leisure Time	0.403	0.223	- 0.888	0.147	- 0.973	0.969
Public Forest Land	0.935	- 0.048	- 0.351	0.800	- 0.417	0.813
Game Lands	0.031	- 0.986	0.163	0.940	- 0.025	0.884
Per cent of Trace	34.61	34.14	31.24	51.49	37.38	

BG 2

Factor 1—high amount of time—public forested land = high amount of time—Game Lands 176

Factor 2—high amount of time—leisure time

Results support the low-high differential between BG's 1 and 2. Noting the score patterns characterize the behavioral groups, that is, whether they are oriented toward public forested land, Game Lands 176, leisure time, or public forested land and Game Lands 176.

With the preceding groupings, it was possible to explore the interrelationships among the functional perspective, personal values, and behavioral groups (see Table 14). There was a relationship between functional perspective group 1, personal value group 1, and behavioral group 1. These individuals were characterized by 1) familiarity with very few types of public lands and selection of alternatives on the basis of chance or pay-offs, 2) all low or neutral components, and 3) the acting out of behavior at a minimal level with an orientation toward public forested land or leisure time. There was a relationship among functional perspective group 1, personal value group 2, and behavior group 2. These individuals were characterized by 1) an orientation toward positive use and symbolic meanings, 2) high affective and action tendency scores or high affective scores, and 3) the acting out of their behavior at a maximal level toward public forested land and Game Lands 176. There was also a trend toward functional perspective group 2 being related to personal value group 2 and behavioral group 2. These individuals were characterized by 1) an orientation towards a positive use meaning, 2) high cognitive and affective scores, and 3) maximally acted out their behavior with an orientation toward public forested land and Game Lands 176.

Implications

The primary differences among the functional perspective, personal value, and behavior groups of the user and general populations were the apathy of the general population and the commitment of the users. Where the majority of the general population had low component scores, the users tended to have high scores. Where the general population was oriented toward symbolic meaning, the users were oriented toward a use meaning. Where the general population was oriented toward selection methods based on pay-off, users were oriented toward selection methods based on consequences. Where the general population tended toward a non-active behavior pattern, users tended toward an active behavior pattern. The only score pattern common to both populations was those individuals who had an affective component orientation, were oriented toward symbolism, and maximally acting out their behavior.

There were consistent (relationships among groups of the same magnitude—

Table 14. Relationships Among Personal Value, Functional Perspective, and Behavior groups (General Population).

Behavior and Functional Perspective Groups	Personal Value Group 1 (individuals who are oriented toward all components)						Personal Value Group 2 (individuals who are oriented toward particular components)						Row Total			
	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$
BEHAVIOR GROUP 1 - LOW AMOUNT OF TIME Low - Public Forested Land Functional Perspective Group 1 (Incoherent - Symbolism)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
	12.	20.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	12.	20.0	0.	0.0
Functional Perspective Group 2 (Rational - Use)	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Low - Game Leads 176

Functional Perspective Group 1
(Incoherent - Symbolism)

Positive Use Meaning -
Positive Symbolic Meaning

Selection Process Levels 1 & 2

Functional Perspective Group 2
(Rational - Use)

Negative and Neutral Symbolic
Meanings - Selection Process
Level 3

Positive Use Meaning

0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
1.	1.7	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	1.	1.7

Low - Leisure Time

Functional Perspective Group 1
(Incoherent - Symbolism)

Positive Use Meaning - Positive
Symbolic Meaning

Selection Process Levels 1 & 2

Functional Perspective Group 2
(Rational - Use)

Negative and Neutral Symbolic
Meanings - Selection Process
Level 3

Positive Use Meaning

0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
0.	0.0	11.	18.3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	11.	18.3
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0

Table 14. (Cont)

	Personal Value Group 1 (individuals who are oriented toward all components)						Personal Value Group 2 (individuals who are oriented toward particular components)						Row Total			
	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$	N	\$
Behavior and Functional Perspective Groups																
BEHAVIOR GROUP 2 - HIGH AMOUNT OF TIME																
High - Public Forested Land and Game Lands 176																
Functional Perspective Group 1 (Incoherent - Symbolism)																
Positive Use Meaning = Positive Symbolic Meaning	2.	3.3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	3.	5.0	9.	13.3	13.	21.6
Selection Process Levels 1 & 2	3.	5.0	1.	1.7	0.	0.0	1.	1.7	0.	0.0	0.	0.0	0.	0.0	5.	8.4
Functional Perspective Group 2 (Rational - Use)																
Negative and Neutral Symbolic Meanings = Selection Process Level 3	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0
Positive Use Meaning	0.	0.0	0.	0.0	0.	0.0	0.	0.0	8.	13.3	0.	0.0	1.	1.7	9.	15.0

High - Leisure

Functional Perspective Group 1
(Incoherent - Symbolism)

Positive Use Meaning = Positive
Symbolic Meaning

Selection Process Levels 1 & 2

Functional Perspective Group 2
(Rational - Use)

Negative and Neutral Symbolic
Meanings = Selection Process
Level 3

Positive Use Meaning

0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0				
0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0		
18.	30.0	18.	30.0	3.	5.0	3.	5.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.	0.0	3.	5.0	60.0	100.0

COLUMN TOTAL

direct) and inconsistent relationships isolated in the user and general populations. These differences seem to be a result of a balance among the interacting variables. The patterns that were more consistent represented variables that were in balance. Inconsistent patterns represented variables that were out of balance and the limiting factor was usually the element that was related to behavior. As an example of a consistent relationship, the following user groups were related to one another: functional perspective group 3, personal value group 2, and behavior group 2. These results indicate an orientation toward wilderness expectations (high expectations), the selection of alternatives on the basis of consequences (selection process level 3), high cognitive, affective, and action tendency scores, and maximally acting out behavior toward amount of free time. All of the scores in this particular group are of relatively the same magnitude, that is, there is a high degree of consistency between the values and behavior. An example of a less inconsistent score among users is where functional perspective group 1, personal value group 2, and behavior group 2 were interrelated. The interrelationship indicates an orientation toward positive symbolic meaning, low cognitive, high affective, and low action tendency scores, and maximally acting out behavior on public forested land and Game Lands 176. In this case there is an inconsistency with regard to the low predisposition to act and the individual maximally acting out his behavior. The overriding element that seems to be causing the inconsistencies in scores may be the high emotional content because it is present in both the functional perspective and personal value groupings. These results suggest that the score patterns help to understand the orientations of an individual and suggests what particular components are important in the interaction to determine the makeup of the individual. The next step in this type of research is determining how these interrelationships affect one another and if possible what elements are important in the formation of each factor. Even though some people do not seem to act rationally in terms of a continuum there are certain overriding elements that seem to influence these individuals and in fact relate to a consistent pattern based on the important elements in the relationship. Only through the understanding of such interrelationships can variables important in formation of the value-behavior interface be better understood.

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