

**ANTECEDENTS TO HUNTING PARTICIPATION:
AN EXPLORATORY STUDY OF THE SOCIAL-PSYCHOLOGICAL
DETERMINANTS OF INITIATION, CONTINUATION, AND
DESERTION IN HUNTING**

BY

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STUDY NUMBER AND TITLE: VII - Evaluation of Hunting Programs, Participation and Satisfaction

STUDY OBJECTIVE: To gain a broader understanding of the dynamics of hunting including (1) the types of satisfaction (experiences) sought by those who take up hunting, (2) the ability to provide these types of satisfaction in New York, and (3) reasons why hunters discontinue hunting.

JOB NUMBER AND TITLE: VII-6 - Investigation of Antecedents and Satisfaction Associated with the Potential, Sporadic and Desertion Hunting Segments

- JOB OBJECTIVES:
1. To determine the satisfactions anticipated by high potential hunters classified in Job VII-3, and to determine why the inactive segment of this group has not hunted in the intervening three years.
 2. To develop a more detailed understanding of the causes of inactivity among individuals studied in Jobs VII-3 and VII-4 who once hunted.

JOB DURATION: April 1, 1982 through March 31, 1983

ABSTRACT

A key concern among wildlife managers is the degree to which their programs provide the opportunities for recreation that are sought by existing and potential recreationists. Previous studies in Project 146 have documented the existence of substantial numbers of people in New York with some interest in the benefits associated with hunting but who have never initiated participation in the activity or have quit hunting after a period of active participation. DEC is attempting to gain a better understanding of factors influencing people's initiation, continuation, and desertion in hunting. They are interested in determining the extent to which their programming has affected people's participation in hunting. Of special concern is assessing the potential for developing program elements that will enhance initiation into hunting of people with a predilection to participate and continuation of those who are already involved, thereby ensuring that the benefits associated with enjoying the wildlife resource via hunting are known and available to all who

would like to receive them. This study has attempted to identify the range, relative importance, and relationships between social-psychological antecedents to hunting initiation, continuation and desertion. Using a theoretical framework grounded in accepted social-psychological theory, new insights have been gained regarding the relationships of external social influences and personal motivations to hunting participation. This exploratory study has resulted in tentative findings, working hypotheses, and potential program implications that will require further detailed research for full explication. However, many hypotheses emerging from this study were testable using existing databases from previous studies. Wherever possible, such testing was done and reported.

PREFACE

This study is presented in three formats to accommodate different information needs of various readers. The "Study Highlights" (gray) section is an overview of the study, concentrating on results and implications. This section is probably best used as a review after one of the other two sections has been read. The "Executive Summary" (blue) is an abbreviated version of the detailed report. For most readers, the executive summary has sufficient detail to allow a functional understanding of the study approach, findings and implications. The "Detailed Report" (white) is the basic analytic document from which the "Study Highlights" and "Executive Summary" were derived. This section may often be most useful as a reference for the reader who would like more detail about a point made in the "Executive Summary", including literature review materials used in developing the "Theoretical Background and Conceptual Framework".

This multiple approach to reporting the results of this study is a bit unusual, but was determined by Project 146 and Bureau of Wildlife staff as being an appropriate presentation format to facilitate use of the results.

D.J.D.

*** * STUDY HIGHLIGHTS * ***

OBJECTIVE

- To determine the social-psychological antecedents to hunting initiation, continuation, and desertion.

METHODS

- Literature review.
- Indepth personal interviews.
- Reanalysis of existing databases from previous studies of hunters in New York.

ASSUMPTIONS (THEORETICAL FRAMEWORK)

- The development of an individual's interest in hunting is a temporal process having several stages: awareness, interest, trial, and continuation or desertion.
- Hunting is a social action, involving a decision-making process for each individual.
- An individual's decision to hunt could involve one or a combination of five components: family, economic, social-fraternal, recreational, and health. These essentially define hunting for an individual.
- Social-learning theory is applicable to explain the social process whereby people learn to place importance on various components of hunting—people learn their goals, values, etc. by watching others (e.g., role modeling) and through language and written communication (i.e., vicarious processes).
- Individuals go through stages of hunting involvement that are characterized by different levels of participation and interest in hunting.
- An individual may not readily recognize all the social-psychological influences impinging upon his or her decision to begin or terminate hunting, nor will s/he necessarily be aware of the relative importance of these influences to the decision, without probing.
- Resource-related factors pertinent to hunting, such as game abundance, overcrowding of hunting areas, etc., are important to hunting initiation or desertion only in so far as they affect social-psychological constructs, such as the individual's goals, beliefs, values, etc., relevant to hunting participation.

RESULTS

Hunting Initiation

Tentative Findings and Interpretations:

- Two basic types of hunters were identified: (1) "family-supported hunters"--(come from families where hunting was a leisure activity and began hunting at age 14 or earlier, often having a "tag along" apprenticeship period prior to coming of age to hunt legally and (2) "family-nonsupported hunters"--not exposed to hunting by a family member or did not begin hunting by age 14.
- Family-nonsupported hunters outnumber family-supported hunters by about 3:2. This is an important statistic from a program standpoint considering the less stable hunting participation of family-nonsupported hunters and the resulting desertion rates.
- Family-supported hunters indicated that a combination of family and recreational components were most important, whereas family-nonsupported hunters indicated recreation and social-fraternal components were most important (family was unimportant) during their initial hunting stage. (For some people, the initial hunting stage may be a "tag along" period prior to being legally of age to carry a firearm afield.)
- Over two-thirds of family-supported hunters who had a prehunting or "tag along" stage gave the highest possible rating for their interest in small game hunting at that time, compared to one-third of those without a prehunting stage and one-tenth of all family-nonsupported hunters.
- The diversity of components used to define hunting during the initiation stage is greater for family-supported hunters than for family-nonsupported hunters.
- Family-supported hunters had a higher interest in hunting than family-nonsupported hunters during their initial hunting stage.
- Females are much less likely than males to be introduced to hunting by parents and therefore women hunters are largely family-nonsupported.
- Individuals who cannot fully participate in deer hunting (i.e., family-supported hunters in a prehunting stage) or whose hunting is very socially oriented (e.g., family-nonsupported women hunters) receive a variety of rewards associated with deer hunting in New York (e.g., reunion of friends and family, story-telling, special meals, etc.) that apparently are sufficient to generate high interest in deer hunting even though many have low participation rates.
- Over one-third of the hunters interviewed reported some degree of negative feelings associated with killing game (we believe this to be an underestimate of the degree to which this occurs). This may have considerable importance for hunting continuation or desertion.

Working Hypotheses:

- Family-supported hunters, having a richer, more complex definition of hunting, are more likely to continue hunting beyond the initiation stage, because if one component should be eliminated, these individuals would be more likely to have remaining sufficient other reasons to hunt.
- Taking youngsters afield is important to their development of interest in hunting but it is not necessary that a firearm be carried for interest to be high. The pre-hunting stage (no firearm carried) was reported to be a time of high hunting interest, which carries over into the next stage when the youngster can hunt with a firearm.
- Big game (i.e., deer) hunting is special in a social-psychological context and is a socio-cultural event for many hunters and their families/friends.
- The unique combination of a person's values and goals/expectations results in that person being primarily achievement-oriented or affiliative-oriented in his/her motivation to begin hunting.
- The unsuccessful, highly achievement-motivated new hunter may be more prone to unethical or illegal behaviors, because of the frustration and dissatisfaction resulting from lack of achievement.
- Boys 10 to 18 are the most achievement oriented in their decision to start hunting.
- Women tend to be more affiliative oriented than achievement oriented in their decision to hunt.
- The greater the degree to which hunting is portrayed or perceived as an achievement-oriented activity the more it will discourage female participation.

Hunting Continuation

Tentative Findings and Interpretations:

- Three types of principal motivations influence the decision to continue hunting after being initiated into the activity: achievement, affiliative, and appreciative.
- The importance of family, recreation, and fraternal components of hunting change over time.
- Among family-supported hunters, the family component is very important in preteens, is less important through the teens and early 20's, when the fraternal component gains in importance, and then increases in importance slightly from the late 30's on. The recreation component

steadily rises in importance from preteens through the early 40's, then drops quickly to a moderate level, but nevertheless appears to be of primary importance in the middle-adulthood of family-supported hunters.

- Among family-nonsupported hunters, the fraternal component takes a sharp rise in importance in the early 20's and a sharp fall in the late 20's. The importance of the recreation component experiences a reciprocal decline and rise; generally, the recreation component is more important than the fraternal component for family-nonsupported hunters.
- Among family-supported hunters, from age 8-14, interest in small game hunting is greater than that in big game hunting, but from age 16 on the reverse is true, until the 50's when interest is about equal. Participation in small game hunting is greater than that in big game hunting from age 8 to 14, similar from age 16 to 30, and thereafter participation in big game hunting is greater.
- Among family-nonsupported hunters, interest in both small game and big game hunting peaks in the early 30's, and thereafter declines gradually; at no age does interest in small game hunting exceed that in big game hunting. Family-nonsupported hunters have greater participation levels in big game than small game hunting, especially between the ages of 34 to 40.

Working Hypotheses:

- Hunters generally reach an appreciative orientation for hunting over time, typically starting from primarily an achievement or affiliative orientation; but not all hunters become primarily appreciative oriented.
- There are 3 mechanisms whereby highly affiliative-oriented hunters, especially women, may develop a moderate to high interest in deer hunting, yet maintain a low interest in small game hunting:
 - 1) there are affiliative rewards associated with deer hunting not found in small game hunting that strongly appeal to affiliative-oriented hunters; (e.g., family gatherings, hunting camp, etc.);
 - 2) for the men who only hunt deer, if they are the object of the affiliative needs that motivate their spouses to hunt, then their spouses will also only hunt deer, and thus have interest only in deer hunting;
 - 3) many men hunt both small and big game, but only encourage their spouses to go afield during deer season so an "extra" deer tag is available.

Hunting Desertion

Tentative Findings and Interpretations:

- Among family-supported hunters some highly affiliative-oriented hunters desert soon after they leave the family; however, the dominant and long-lasting influence of familial socialization and the continuous, if increasingly irregular, contact with family members combine to suppress desertion of most family-supported hunters until relatively late in life.
- Family-nonsupported hunters have no such central and stable social unit as the family (i.e., relative to hunting) to maintain the incentives that affect their decision to hunt.* The result is that they experience a high desertion rate relatively early. Eventually this desertion rate drops to equal that of family-supported hunters; this occurs because the more stable, committed hunters who are originally a minority in this population of family-nonsupported hunters come to comprise a majority as the less involved hunters desert in large numbers soon after initiation.
- The desertion rates of family-supported and family-nonsupported hunters converge after 40 years of age.
- Two major types of deserters seem to exist: affiliative deserters and gradual deserters.
- Affiliative deserters have no strong desire to reap the intrinsic rewards associated with hunting--enjoying the outdoors, using hunting skills and bagging game. Rather, they hunt only for the purpose of maintaining or strengthening a relationship. In essence, affiliative deserters are simply affiliative hunters who quit hunting.
- Affiliative deserters were not socialized into hunting; they began hunting in response to the support/expectations of a significant other person, and the affiliative orientation of their goals.
- The affiliative deserter's decision to stop hunting seems to be catalyzed by one or a combination of three processes:
 - 1) a reversal in support/expectations to hunt on the part of the person who is the object of affiliation;
 - 2) a change in the personal relationship with the significant other;
 - 3) the usurption of unmet affiliative needs by another more favored activity.
- The desertion of gradual deserters is an evolutionary process that is too ambiguous and gradual to be attributed to a single, specific cause.

*An exception may be some family-nonsupported female hunters who are encouraged to hunt by their husbands, and, possibly eventually their children.

Working Hypothesis:

- The more diverse the structure of a stage for a particular hunter, the less likely is the possibility that the next stage will be an inactive one. (A diverse stage structure is one with multiple components of nearly equal importance.)

Potential Hunters*

Tentative Findings and Interpretations:

- Most people who do not hunt within 2 years of taking a Hunter Training Course are unlikely to hunt soon thereafter, despite earlier intentions to do so.
- Two general types of reasons seem to exist which are important barriers to potential hunters becoming active hunters: changes in the support/expectations of others (i.e., premature desertion by affiliative-oriented people) and reservations about killing game animals.

Working Hypotheses:

- It can be expected that all three processes of desertion for affiliative deserters are applicable to the nonrecruitment of many never-active potential hunters; i.e., the factors that cause affiliative deserters to stop hunting affect some people like they have actually had a chance or made a decision to hunt.
- An individual with negative values pertaining to the killing of game may be persuaded to attend the course, but is likely to resist actual participation in hunting because it is the act of hunting that conflicts most sharply and strongly with these values.

PROGRAM IMPLICATIONS

Influencing Initiation

- Individuals experiencing a pre hunting stage (typically family-supported hunters) are more likely to initiate hunting when legally of age and to remain involved for a longer time than individuals deprived of pre hunting experiences. Thus, programming to encourage a pre hunting stage is of high priority; however, it should not be expected that lowering the legal hunting age will affect the likelihood that more individuals will be recruited into hunting.

*Potential hunters were a group of 1978 Hunter Training Course participants who did not hunt by 1980 when first contacted in a previous study, but who indicated they would do so within the next two years, i.e., by the time we contacted them again for this study.

- Family-supported hunters have such strong and diverse influences in their hunting activity, it seems unlikely that external programming is required with this group to increase initiation. They are part of a self-perpetuating system of incentives and rewards where little outside influence is required to feed the system. One exception to this laissez-faire approach toward family-supported hunters is in the encouragement of hunting as a family activity, rather than a "man's sport", and, for those families with a nonparticipating parent, by other attempts to broaden interest in hunting so that the activity could be seen by the nonparticipating parent as a more desirable use of the youngster's leisure time.
- The characteristics of family-nonsupported hunters present a variety of opportunities for influencing their hunting activity. They differ fundamentally from family-supported hunters in that they have fewer reasons for initiation into hunting. Basically, increasing the breadth of reasons for hunting, or components of hunting as we have referred to them, will result in increasing the likelihood of both initiation and continuation. Recreation and fraternal affiliation were the most important components for family-nonsupported hunters during initiation--broadening component diversity would likely increase the motivation to hunt. This might be accomplished by promoting the largely unrecognized (i.e., by our study group) economic and health aspects of hunting.
- Family-nonsupported hunters who are teenagers, especially younger teenagers (<16), may be effectively provided pre hunting experiences, such as that enjoyed by family-supported hunters, via innovative programs. In this situation, programs that provide pre hunting role models (in essence, surrogate parents) seem most on target. Youngsters are more likely to get involved if their first experiences are positive and expose them to the diversity of benefits that can be derived from hunting. Programs that create the pre hunting, apprenticeship stage and offer exposure to a full "benefits package" may go a long way toward increasing initiation and ensuring continuation. Such programs would have to provide considerable "pre hunt youth/role model" contact--contact that should be frequent and over a period of time. It will be necessary to enlist the help of and to work with hunting clubs (role models) and youth agencies such as 4-H.
- Potential hunters decide not to hunt for one or both of two kinds of reasons: affiliative reasons and reasons related to killing game. Hunter training programs need to address these reasons to enhance recruitment into hunting.
- Means of decreasing affiliative desertion and of increasing initiation of affiliative hunters will also apply to potential hunters who decide not to hunt for affiliative reasons. It may be advisable to have clubs recruit members at hunter training courses so immediate affiliative links are facilitated.
- Hunter training courses should develop and use teaching aids which would ease an individual's apprehension over killing game. To help the potential hunter to overcome this apprehension, the "kill" should be

placed in the context of the entire hunting experience--planning, talking to friends, selection of equipment, pursuit of game, the kill (maybe), then dressing, storing, preparing and consuming game, as well as recreating the event for friends. Also, discussion of ethical considerations related to meat consumption may help, i.e., a person is just as "responsible" for the death of an animal whose meat the person has purchased in a store as he is for killing the animal personally.

- Only about one-half of the individuals we studied following the hunter training course and classified as potential hunters actually will hunt, implying that communications efforts might be wasted on these individuals. Although this audience has the advantages of not being opposed to hunting, being legally able to hunt (certified), and not having overtly discounted participation, their participation is highly improbable unless they are initiated for strongly affiliative reasons. And even then, participation rates are likely to be low. Furthermore, unless they are sustained by affiliative reasons, rapid desertion is likely unless some powerful intervention program is in effect to facilitate broadening their reasons for hunting to include more than the fraternal/familial component as important aspects of hunting for them.

Enhancing Continuation

- Among the ways continuation in hunting might be enhanced emerged the idea of increasing people's interest in small game hunting. A strategy for doing so is to promote the attractive aspects of small game hunting that are similar to those our subjects attributed to big game hunting. Big game hunting was portrayed as a socio-cultural event, having a variety of dimensions that resulted in people having high interest in big game hunting even if their participation level was low. This socio-cultural event phenomenon made big game hunting especially attractive to affiliative hunters. If the perception of small game hunting could be modified so that it more closely approached that of big game, small game hunting interest might increase, resulting in more opportunity to meet the affiliative hunters needs. *do we really want to do this through?*

- A new hunter may have either achievement or affiliative motives (or a combination of these) for hunting. Highly achievement-oriented initiates may have a greater propensity for unethical hunting behavior if achievement needs are not adequately met by a degree of hunting success. And if the highly achievement-oriented hunter is repeatedly unsuccessful, to his/her satisfaction, this hunter will quit hunting. Programs to influence these hunters should have three dimensions: (1) initially (via hunter training courses, etc.) try to ensure that new hunters have a realistic view of hunting success--be sure expectations reflect reality. (2) Provide opportunities or encourage hunters to avail themselves of existing opportunities to exercise or demonstrate their hunting skills, especially shooting. Possibly all new hunters should be encouraged to join an active sportsman's club or other organization where shooting sports are pursued. (3) Try to temper the achievement motivation of highly achievement-oriented hunters by stressing the affiliative and appreciative aspects of hunting.

- Hunters' interest and participation levels in big game and small game hunting change over time as they move from one stage of their hunting lives to another. Furthermore, the fundamental components in their definition of hunting also change, from stage to stage. Recognizing that the most frequent changes occur between initiation and age 30 (or about 10 to 15 years hunting experience) brings into perspective the difficulty in targeting communications or specific hunting opportunity programs for the below age 30 group. Nevertheless, some objectives of communications and management programs need to be consistent regardless of age; e.g., increase the diversity of components of hunting (family, fraternal, recreational, health, economic) for individuals, move hunters toward a predominately appreciative orientation, and diversify hunters' interest in types of hunting (big game and small game). After age 30, stages are fewer and changes in stage structure are less conspicuous. Consequently, communications and management programming could be more consistent. As the population structure over the next 2-3 decades tends to have an increasingly larger percentage of middle-aged people (U.S. Census predictions), many hunter programming considerations will be required to deal more specifically with this group because it will comprise a greater segment of the hunter population.
- There is some evidence in support of structuring hunter education programs (e.g., hunter training courses) at two levels: for <16-year-olds and for >16-year olds. This suggestion stems largely from data showing a dichotomy in primary hunting interest--<16-small game/>16-big game--and from basic understanding of differences in teaching approaches for these age groups.

Averting Desertion

- Many of the processes and implications presented thus far affect desertion. Increasing hunters' involvement (e.g., diversity of types of hunting, diversity of reasons for hunting, etc.) in hunting, as discussed previously, will diminish their propensity to desert.
- Potential affiliative deserters should be encouraged to develop a partial achievement orientation in their hunting motivation, but more importantly, they should be encouraged to progress as quickly as possible to a strong appreciative orientation; this diversification should lead to stabilization in hunting commitment.
- Hunters who have companions who hunt largely for affiliative reasons (e.g., spouse) should be encouraged to strengthen their support of the affiliative hunter.
- Affiliative hunters (potential affiliative deserters) should be encouraged to broaden their hunting affiliations (e.g., join hunting club) so their participation is not contingent upon the affiliative relationship with just one person or one social group.

RECOMMENDATIONS FOR FUTURE RESEARCH

- Improve our understanding of the nature and importance of a pre-hunting stage to an individual's participation in hunting.
- Refine operational definitions of family-supported and family-nonsupported hunters.
- Identify the expectations and satisfactions associated with affiliative, achievement, and appreciative orientations toward hunting, as well as the frequency and characteristics of people with each orientation or combination thereof.
- In relation to the first 2 items above, describe the various types of support structures which exist for hunters, especially in the contexts of family support and of activity role modeling, including the value and effectiveness of surrogate role models.
- Investigate the effects of various family structures on hunting initiation, continuation, and desertion.
- Determine the components of and development of wildlife-related values, including those regarding killing of wildlife.
- Determine the characteristics of various types of hunting which act as incentives v. impediments to hunting participation.
- Monitor temporal changes and identify causal factors for (a) changes in hunting support structure, (b) changes in stage structure (i.e., social action components of hunting) of hunters, (c) changes in achievement, affiliative, and appreciative motives for hunting (i.e., document the existence of a developmental process), (d) changes in attitudes toward killing game (possibly in relation to the developmental process of c above), and (e) changes in participation and interest in various types of hunting.

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****EXECUTIVE SUMMARY****

INTRODUCTION

This study is a departure from traditional descriptive research on hunting participation. Both the purpose and the approach of this study are unique. Using the insights and experience gained through our previous research and that of others reported in the literature, this study was designed to expand our knowledge of the reasons individuals begin, continue, and terminate hunting. Specific objectives for this study center around determining the social-psychological antecedents of people's decisions whether or not to: (a) initiate hunting activity; (b) continue hunting, once participation is initiated; and (c) desert from hunting after participation is initiated.

We will portray the dynamics of hunting participation via a comprehensive social-psychological model that incorporates the concepts of classical innovation adoption theory (a temporal model), social action theory (a decision-making model) and social learning theory (an explanatory theory relevant to understanding the antecedents to decision-making). Tentative findings are presented; however, we stress that this pilot study should not be considered definitive. Rather, our intent is to lay the groundwork (conceptual framework and hypothesis development) for subsequent studies scheduled under W-146-R. One potential outcome of this effort is an improved ability to assess the practical, management utility of further research in this area. We hope the analysis will allow DEC and Project 146 staff to determine which aspects of hunting participation hold the greatest potential for DEC program application and which are beyond influence by such programs.

Study Strategy

Our general strategy for this study followed these steps:

1. A wide-ranging literature review was completed in the areas of outdoor recreation generally (and hunting specifically), sociology, psychology, and social-psychology.
2. Preliminary indepth personal interviews were conducted with individuals knowledgeable about wildlife management and avid about hunting.
3. Preliminary research hypotheses were developed related to hunting behavior (in the context of initiation, continuation, and desertion).

4. An indepth, partially structured interview instrument was developed, pretested, evaluated, and then revised.
5. Interviews were conducted with a small group of individuals.
6. Data from this exploratory research were analyzed to obtain a better understanding of the antecedents to hunting participation and to identify the most important directions for future research on this topic.
7. Data from several previous studies were reanalyzed to "test" these hypotheses and to permit their refinement. We used a combination of inductive and deductive approaches in this strategy. The principal outcomes of this study are a conceptual framework within which future research can be guided and several research hypotheses (broadly defined in the implications section) awaiting assessment by sample surveys to test them specifically.

Our approach to this research was based largely on three general assumptions:

1. An individual may not readily recognize all the social-psychological influences impinging upon his or her decision to begin or terminate hunting, nor will s/he necessarily be aware of the relative importance of these influences to the decision, without probing.
2. Resource-related factors pertinent to hunting, such as game abundance, overcrowding of hunting areas, etc. are important to hunting initiation or desertion only in so far as they affect social-psychological constructs, such as the individual's goals, beliefs, values, etc., relevant to hunting participation.
3. People participate in an outdoor recreation activity such as hunting for interrelated reasons; an individual may pursue an activity for health reasons, and also out of a sense of familial duty, due to peer group pressure, etc.

THEORETICAL BACKGROUND AND CONCEPTUAL FRAMEWORK

Three basic theories of human behavior, in combination, serve as the background for this study. Our adaptation of them to the context of hunting participation comprises the conceptual framework for the study methods and analyses. A brief summary of the three components will be presented here; for more details refer to the main report (pages 7-25). Aspects of these theories of human behavior essentially become assumptions for our investigation.

Innovation Adoption

New ideas and practices are adopted by individuals via a process having several stages: awareness, interest, trial, and adoption (or rejection) (Rogers and Shoemaker 1971). We propose that the development of interest and involvement in hunting follows a similar temporal process (Fig. A), with continuation or desertion being the ultimate outcomes.

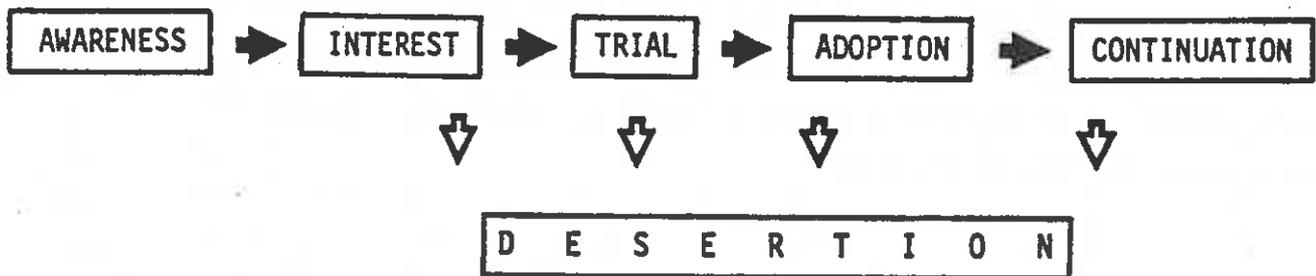


Figure A. Stages in the Development of an Individual's Interest and Involvement in Hunting: A Conceptual Model of the Process.

Decision Making and Social Action

Hunting is a social action. As such, hunting can be analyzed in the context of a social action decision-making process where it can be identified as having any one or a combination of social action components for a particular individual. Using the model illustrated in Fig. B as a starting point, we assumed that hunting participation could involve one or more of five components of social action: a family (kinship) component, an economic component, a social-fraternal component, a recreational component, or a health component. Partitioning hunting in this social action context provides a basis for understanding the social-psychological antecedents to participation in hunting by an individual. For example, for one hunter, hunting may be a combination of fraternal (70%) and recreational (30%) components, whereas for another it may be entirely related to family (100%). The unique combination of these components of social action for an individual constitutes his or her social-psychological definition of hunting, each component contributing to that definition. Each social action component is affected by one or more of ten types of social-psychological influences (Fig. C). These influences may positively or negatively influence a person's decision to hunt; the "balance" or sum of these influences determines whether or not a person decides to initiate or terminate hunting activity. This balance is constantly affected by new information which expands a person's "bank" of positive and negative influences concerning hunting.

Social Acts

- *Family and Kinship
- *Social and Fraternal
- *Recreation
- *Health
- *Economic
- Educational
- Political
- Religious
- Welfare
- Protective
- Transportation
- Communication
- Housing
- Beautification
- Planning



SOCIAL ACTION
(e.g., hunting)

* Acts relevant to this study.

Figure B. The Reeder Conceptual Model of Components of Social Action in the Decision-making Process. (Adapted from Reeder, 1973: 26.)

Influences
Which Affect
Components of
Social Action

Components
of
Social Action

Social Action

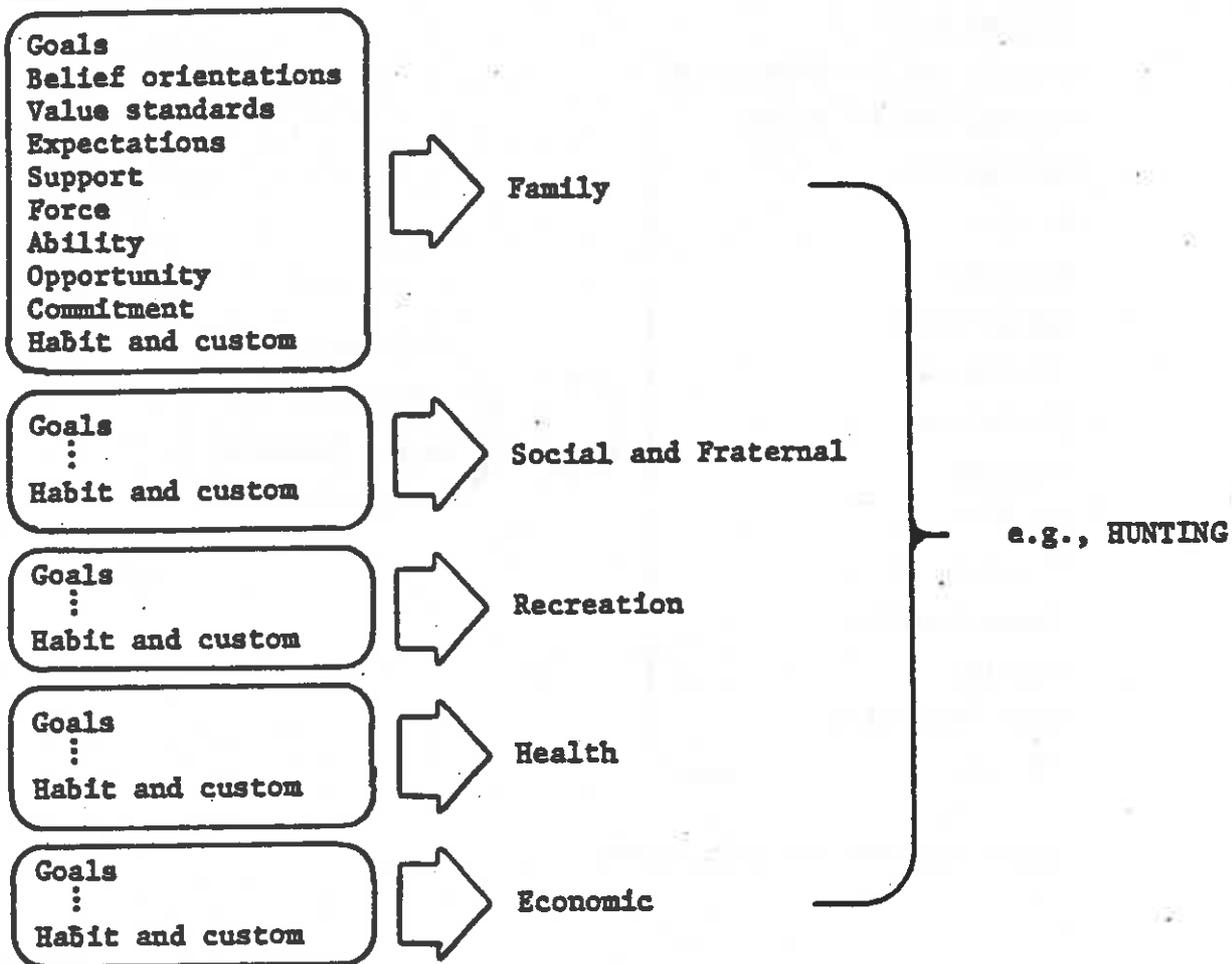


Figure C. Influences Which Affect the Components of Social Action and the Specific Social Action

Hunting Initiation, Continuation and Desertion: A Conceptual Framework

This decision-making model can be combined with the temporal model of innovation adoption to depict conceptually the process in effect (Fig. D). Thus, the decision-making process occurs when an individual moves from one temporal stage to another. When an individual is in a temporal stage, new information is received relevant to the decision to progress to the next stage. Each time new information is received, the positive influences concerning the decision are weighed against the negative, and based on this evaluation a decision is made either to regress to a previous stage, remain at the current stage, or continue to the next one.

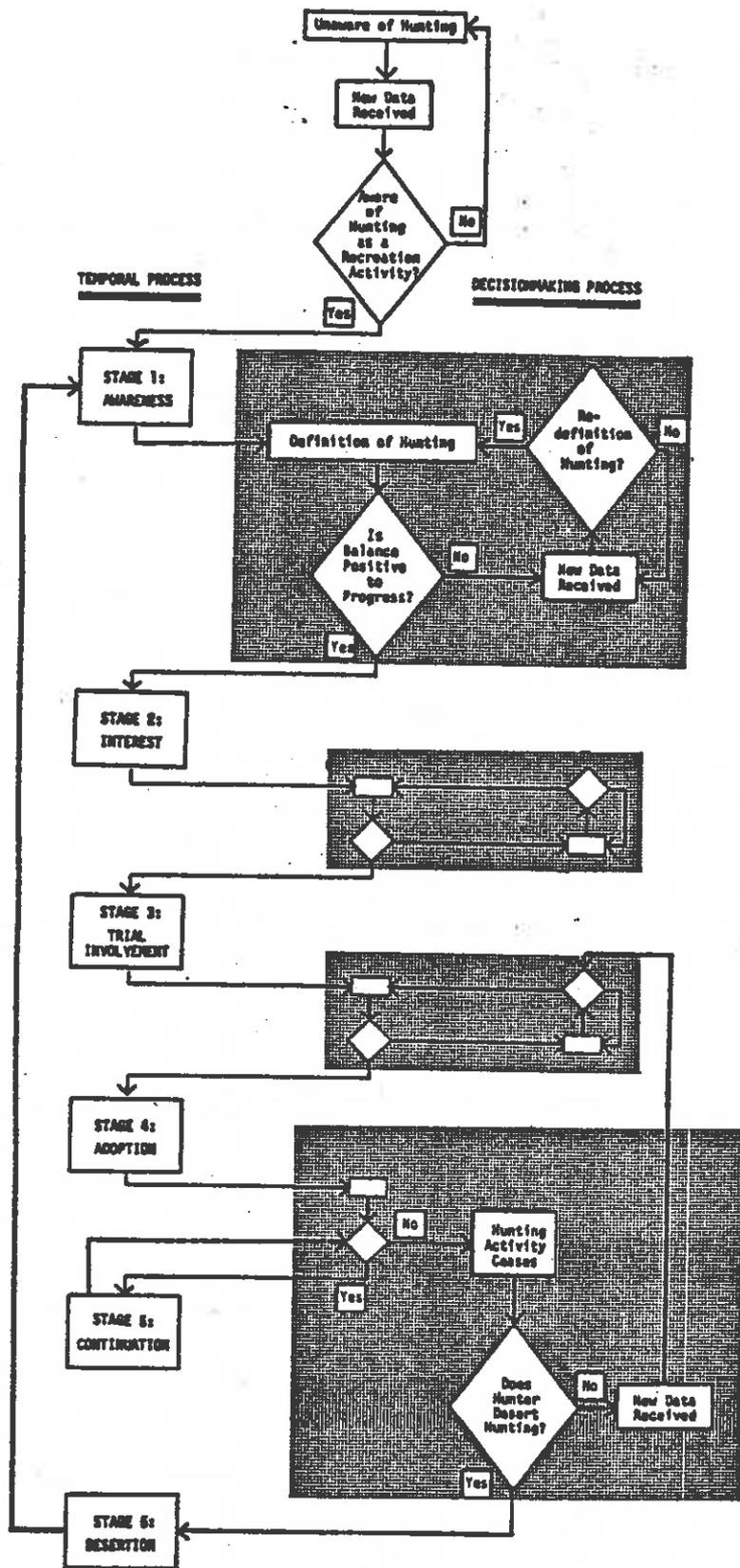
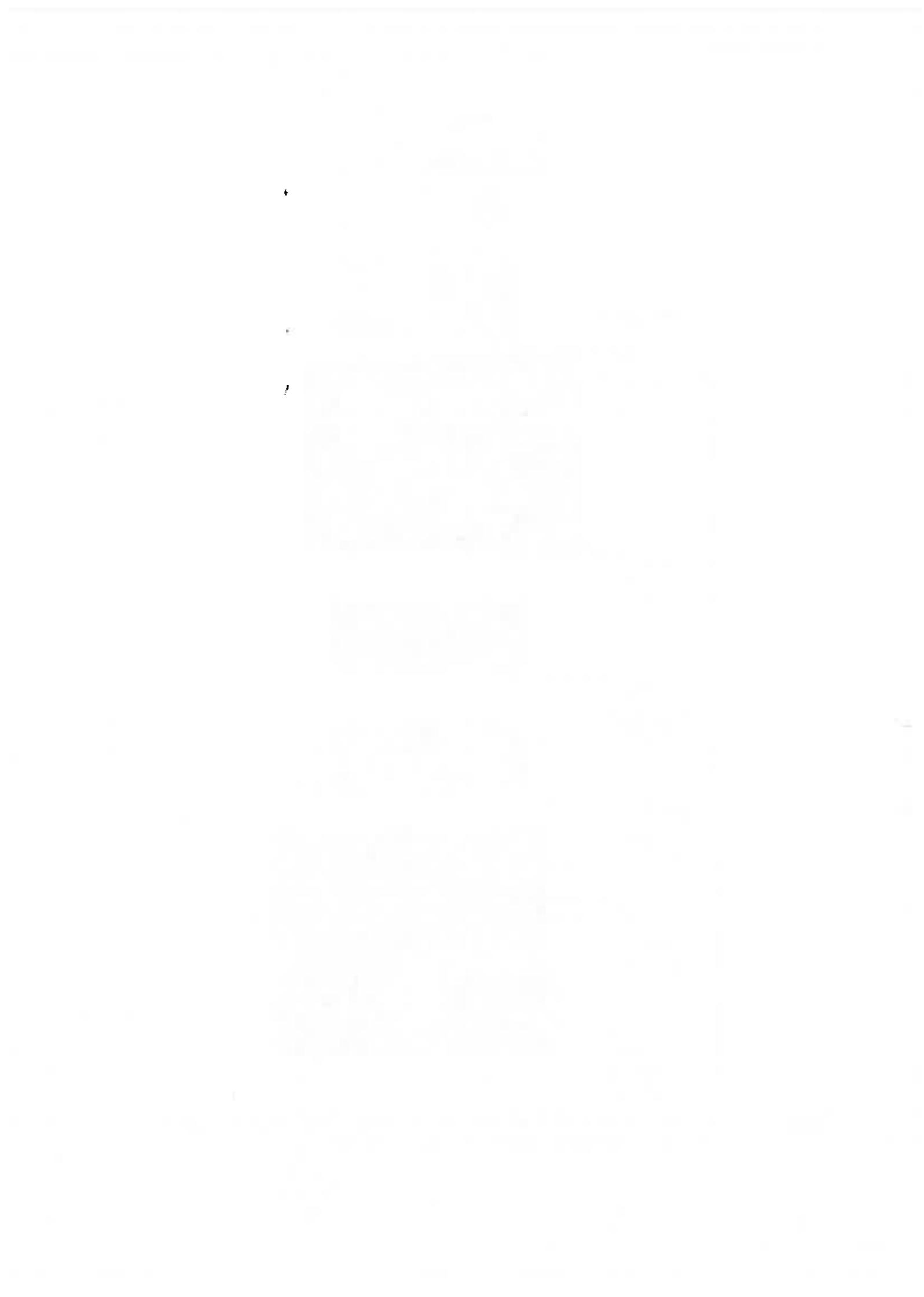


Figure D. The Conceptual Model of Hunting Interest Development, Showing Also the Process of Continuation in Hunting.



Social Learning Theory: Explaining the Framework

The conceptual model developed thus far shows participation in hunting to be the product of a temporal process, catalyzed at key points by decisionmaking processes. However, it does not address why some people weigh the various types of influences positively at the decision points, whereas others weigh the same types of influences negatively. Social learning theory provides a functional approach to explaining why people would weigh the ten types of influences differently. In brief, social learning theory states that people learn their goals, values, etc. by watching others (e.g. role modeling) and through language and written communication (i.e., vicarious processes). In accord with social learning theory, parents and friends (via role modeling) become strong forces in how an individual interprets the significance of the various influences. A more detailed explanation of social learning theory can be found in the main report (pages 22-24).

STUDY METHODS AND ANALYSES

Two sources of data were used in this study: (1) original data acquired specifically for this study, collected using in-depth telephone (transcribed) and face-to-face personal (taped) interviews; and (2) reanalysis of four survey data sets from previous Project 146-R studies of various hunter audiences. Sample sizes for the interview surveys were small: 10 preliminary in-depth semi-structured interviews during the method development process, 32 personal interviews with revised interview instrument, and 11 telephone interviews. In addition, a sample of 31 people previously identified as "potential" hunters was selected for separate analysis. Hunters contacted in this study were identified primarily from sample lists used in two previous studies because people with particular known background characteristics were sought. (See pages 26-31 in the report for more detail on study methods and analyses.)

A major aspect of the interview was the identification of an individual's distinct stages of hunting history. These are periods when the individual's definition of hunting (i.e., relative importance of the five social action components for involvement in hunting) differed substantially. The demarcation of these stages and their identification was derived through a methodological construct we called "stage structure." Transitions between stages were related to age and factors causing changes in a person's definition of hunting or involvement in hunting. Involvement was determined by the interviewee's self-rating of relative interest and participation in hunting.

Statistical testing of findings from the interviews was not appropriate because the samples were not representative. This study can best be thought of as a collection of case studies from which some potential trends and relationships can be suggested. However, the reanalyses of previous data sets from representative samples of particular hunter populations did provide the opportunity for generalization.

FINDINGS AND DISCUSSION

The presentation of findings and discussion is organized into four subsections: hunting initiation, hunting continuation, hunting desertion, and potential hunters. "Initiation" explores why some people begin hunting while others do not. "Continuation" examines the changes in interest level, participation level, and personal definition of hunting experienced by an individual. "Desertion" addresses the factors leading a person to quit hunting. "Potential hunters" examines why some people who intend to hunt ultimately do not. The analysis and discussion will be in the context of the conceptual framework developed for this study. This summary will only present the major findings and related discussion.

Hunting Initiation

Two basic types of hunters were identified relative to initiation into hunting: those who started hunting early and were exposed to hunting as part of their basic familial socialization vs. those who started hunting later, often as a result of new friendships, and had little or no previous exposure to hunting via familial contact. The differences between these groups are culturally rooted. The culture of the first type not only accepts hunting, but endorses it. Members of the second type come from a variety of backgrounds where hunting is unimportant or generally unrecognized by family members and friends as a leisure activity. The first group we will refer to as "family-supported hunters"; they come from families where hunting was a leisure activity and began hunting at age 14 or earlier. The second group we will call "family-nonsupported hunters"; they were not exposed to hunting by a family member or did not begin hunting by age 14. Analysis of previous data sets from Project W-146-R using these criteria indicates that family-nonsupported hunters outnumber family-supported hunters by about 3:2.

Comparison of Family-supported and Family-nonsupported hunters

A comparison of the stage structures in the first stage of these two types of hunters confirms expected differences. Fig. E shows that, in composite, hunting of family-supported hunters in the initial stage is defined mainly as being a combination of family and recreation components. On the other hand, the family component is not at all important to family-nonsupported hunters in this initial stage. These people define hunting primarily in terms of recreation and fraternal components.

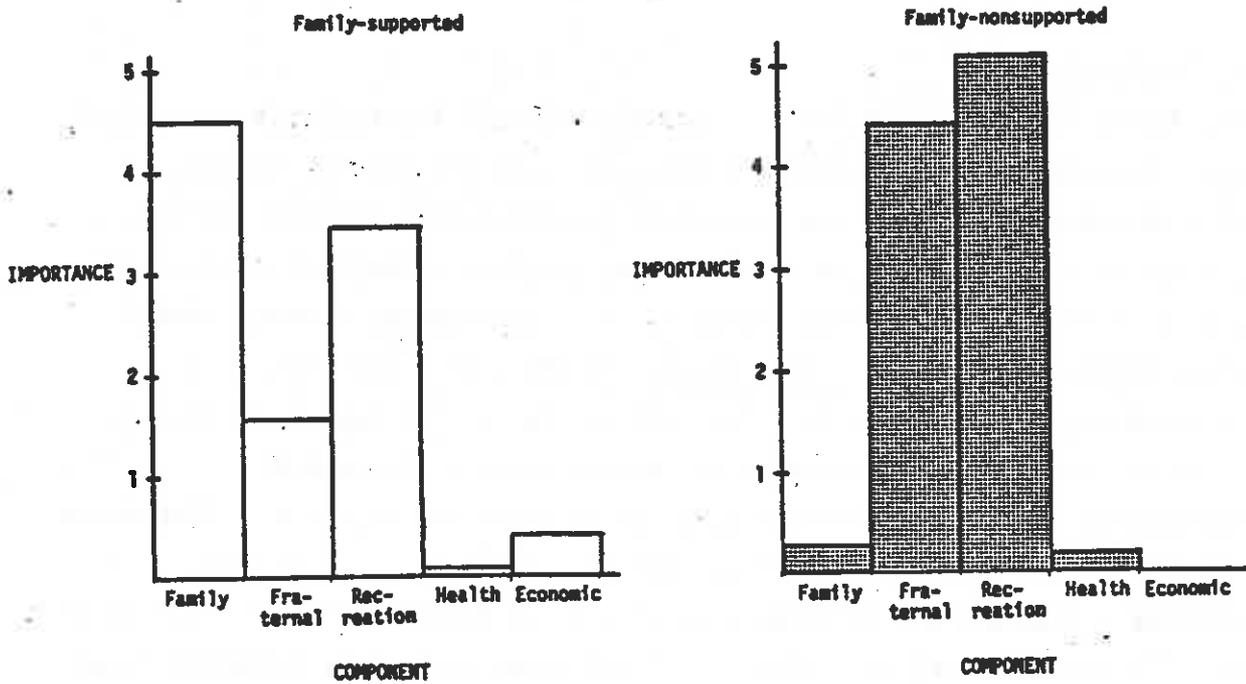


Figure E. Composite Stage Structure of Family-supported and Family-nonsupported Hunters in Initial Stage.

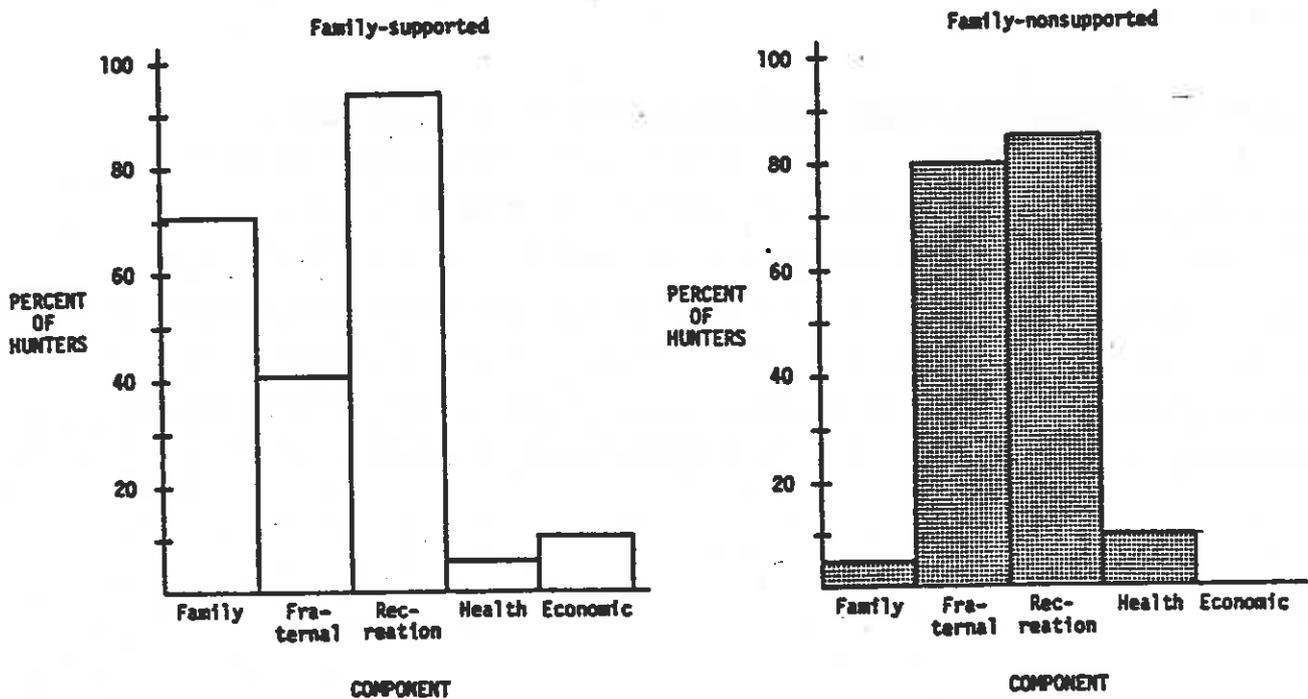


Figure F. Comparison of Family-Supported and Family-nonsupported Hunters: Percent of Hunters Who Assigned Some Importance to a Particular Component in Initial Stage.

Figure F gives the frequency with which family-supported and family-nonsupporter hunters reported each component as acting on their decision to begin hunting. Note that for both types, the recreation component is given some weight by almost all hunters. It appears to be a necessary component, if not always sufficient. Also note that nearly 30% of the family-supported hunters gave no weight to the family component. This points out that although the family may create in a youngster the awareness of hunting as a leisure activity and support the adoption of hunting as such, the family component is not always explicitly recognized in a youngster's "definition" of hunting.

Table A. Number of Social Action Components Recognized as Salient by Family-Supported and Family-Nonsupported Hunters During the First Hunting Stage When A Weapon Was Carried Afield.

<u>Hunter Type</u>	<u>Number of Special Action Components</u>					<u>Total</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
	Percent					
Family-Supported	5.8	41.2	41.2	11.8	0.0	100%
Family-Nonsupported	25.0	70.0	5.0	0.0	0.0	100%

Figures E and F and Table A indicate that for the initiation stage the diversity of components used to define hunting by family-supported hunters is greater than that of family-nonsupported hunters. The stage structures of 53% of the family-supported hunters were composed of more than two components, compared to only 5% of the family-nonsupported hunters. This finding further supports the validity of the dichotomy. Additionally, this finding implies that family-supported hunters, because they have a richer, more complex definition of hunting, are more likely to continue hunting beyond this stage. A reasonable hypothesis being that if one component should be eliminated, such individuals would be more likely to redefine hunting positively than would an individual with a less diverse definition of hunting (i.e., one or two components).

Hunting interest and participation: Analysis of family-supported and family-nonsupported hunters' self-ratings of interest and participation in the initial hunting stage show that family-supported hunters generally had a higher interest in hunting than did family-nonsupported hunters, particularly for small game hunting. Furthermore, over 70% of the family-supported hunters whose initial stage was a pre hunting or "tag along" stage rated their level of interest in small game hunting at that time as 5, the highest interest rating (Table B). The contrast, only 29% of the family-supported hunters whose initial stage was not a pre hunting stage rated their level of interest in small game hunting at that time as 5, and only 9% of the family-nonsupported hunters (among whom only one reported a pre hunting stage) reported an interest rating of 5. An implication of this finding is that taking youngsters afield is important to their development of interest in hunting but it is not necessary that a firearm be carried for interest to be high. This inference is supported by social-psychology literature, especially social learning theory.

Table B. Comparison of Family-Supported Hunters Whose Initial Stage Was A Pre hunting Stage and Other Family-Supported Hunters: Distribution of Respondents' Self Perceptions of Level of Interest in Small and Big Game Hunting.

	<u>Percent at Each Level of Interest</u>				
	1 (low)	2	3	4	5 (high)
Family-Supported Hunters with pre hunting stage:					
small game hunting	7	0	7	14	72
big game hunting	22	7	7	14	50
without pre hunting stage:					
small game hunting	29	0	42	0	29
big game hunting	29	43	14	0	14

The importance of the pre hunting stage, and the vicarious learning it affords, may take on special importance in easing into hunting initiation the youngster who is sensitive to the death of an animal (e.g., a youngster with inconsistent role modeling because one parent does not support hunting). By allowing a child to observe a parent enjoy all elements of the hunt and to participate in most, the killing of game is placed in perspective. When the youngster eventually takes to the field with firearm in hand, the kill is understood to be an incidental although indispensable part of a multi-faceted activity. Thus, the importance of identifying youngsters in the family-supported group who have vs. don't have a pre hunting stage lies in the fact that it represents different degrees of intensity of familial socialization. A youngster who grows up in a family that devotes the time and effort to take him/her afield before he/she is of age to legally carry a firearm will have more interest in hunting than a youngster who receives comparatively less family support.

The trend among family-nonsupported hunters in the initiation stage is to have a greater interest in big game hunting than small game hunting, whereas the opposite was observed for family-supported hunters (Fig. G). The explanation for this trend among family-supported hunters is probably related to opportunity. Because children in a pre hunting stage are likely to be taken mostly on small game hunts and are at least two years too young to hunt big game, their interest lies with their immediate hunting opportunity--small game hunting. This leads to the generalization, interest mirrors participation.

The close relationship between interest and participation appears valid for small game hunting, but for big game hunting, interest levels often exceed participation levels, a situation most frequently evident among family-supported hunters with a pre hunting stage and women in the family-nonsupported group. We believe this reflects the special nature of deer hunting as a sociocultural event. Our interview data indicate that those who can not fully participate (i.e., family-supported hunters in a pre hunting stage) or whose hunting is very socially oriented (i.e., family-nonsupported women hunters [to be discussed in more detail later]) share in a variety of rewards associated with deer hunting in New York (e.g., reunion of friends and family, story-telling, special meals, etc.).

These experiences may be sufficiently rewarding aspects of deer hunting that they generate high interest among people with low participation rates. For example, youngsters quickly learn that the rewards associated with a successful deer hunt far surpass those associated with most forms of small game hunting. Stated in terms of our model, the positive influences associated with deer hunting are more numerous, stronger, and further-reaching than those associated with small game hunting.

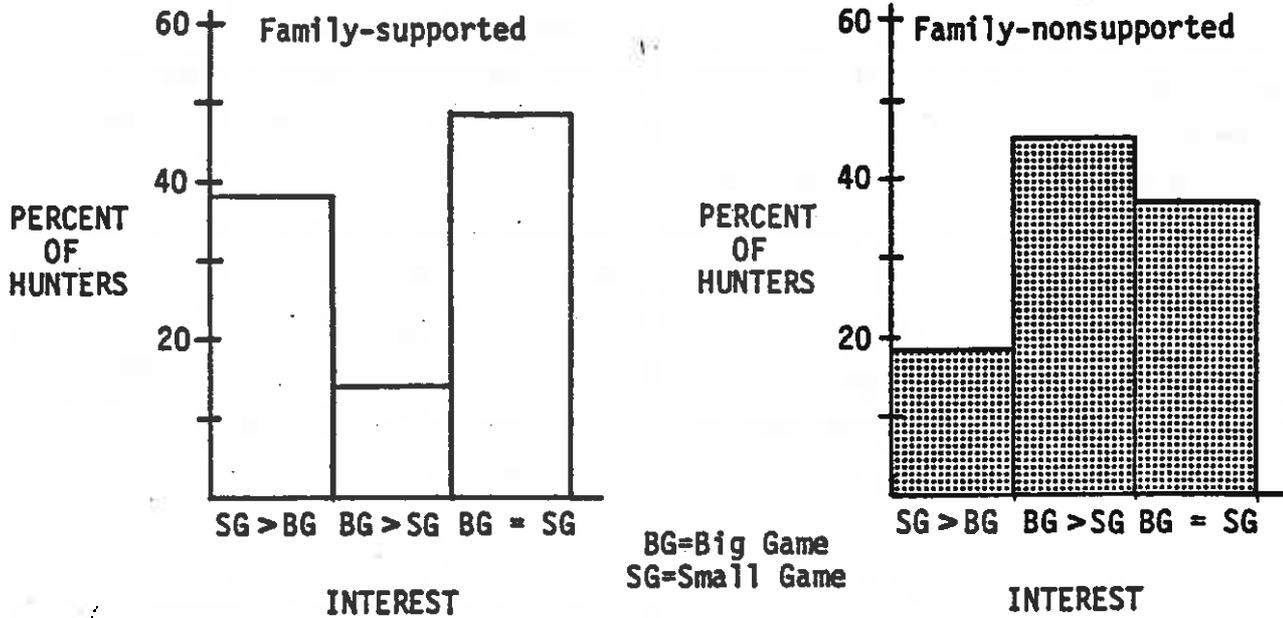


Figure G. Comparison of Family-supported and Family-nonsupported Hunters: Relative Interest in Small Game and Big Game Hunting in Initial Stage.

Social-psychological basis for initiation to hunting

Our interviews suggest that of the ten types of positive/negative influences, five appear to be most important to the decision to begin hunting: value standards and belief orientations (which taken together constitute value systems), goals, expectations and support. Ability and opportunity, two influences that intuitively seem relevant, were seldom mentioned. For family-supported hunters, opportunity seems to be linked to support as the underlying influence--opportunities are created or circumvented according to the support or lack of support of parents, an aspect of hunting involvement discussed throughout this report. In this subsection we will discuss values and motivations (i.e., goals and expectations).

Values: Personal values are critical antecedents to any individual's decision to hunt. Values are enduring beliefs that certain modes of conduct are personally and socially preferable to others. Once internalized, values become criteria for guiding our actions and for judging actions of others. People are motivated toward maintaining consistency between their values and their behavior. The importance of value systems relative to hunting is probably most pronounced for the act of killing an animal. Most other aspects of hunting are not as likely to create conflict between behavior and values. Our interview data indicate that a person's aversion to or acceptance of killing an animal is not an either/or proposition. Apparently, individuals' value systems can be located on a continuum of increasing inhibition to killing an animal. Location on the continuum is based not only on the notion of killing, but also on the species involved and situational factors. Over one-third of the interviewees reported some degree of negative feelings about killing game, and we believe this to be a underestimate of the frequency of such feelings among hunters.

In light of this, why do some (maybe many) people begin hunting despite their anticipation of at least some psychological conflict upon shooting game? The explanation, as suggested by our model, is that the positive influences associated with hunting outweigh this negative influence. Other values, attitudes, goals, support from family or friends, etc. in aggregate yield an overwhelming positive balance of influences in favor of initiating hunting activity.

From a management standpoint, the most important issue concerning value systems is understanding their development. Social learning theory provides an explanation. It assumes parents to be powerful role models. As such, parents no doubt significantly influence the development of a child's values pertaining to killing game. The three-point hypothesis below follows from social learning theory and could serve as a predictor of a youngster's feelings about killing game as affected by parental influences:

- . If neither parent anticipates or experiences conflict upon killing game, the child will not.
- . If both parents anticipate or experience conflict upon killing game, the child will have negative feelings too.
- . If one parent anticipates or experiences conflict upon killing game, and the other does not, the child could be located anywhere on a continuum of negative feelings, depending on the relative influence of each parent.

This last point recognizes the occurrence of inconsistent modeling. It is not limited to parental influences, although these are probably most salient; children exposed to conflicting standards exemplified by peer models may adopt different standards of conduct than if adults alone set the example. Cases of inconsistent modeling were uncovered in the interviews. Two implications of these ideas are: (1) hunting should be promoted as a family activity, where both parents participate along with the children and (2) group shooting sports should be promoted so youngsters develop friendships with peers sharing and reinforcing their value standards and provide consistency in peer modeling.

Regarding (1) above, hunting can be viewed in the broadest context where planning and meal preparation are parts. Thus, even nonhunting (i.e., not afield with a firearm) parents can be "participants". Also, consider the implication in a futuristic sense where promotion with youngsters of both sexes today may result in more representative participation by both sexes in the future, thereby expanding the hunting-related benefits of wildlife management.

An important observation applicable to households with inconsistent modeling is that often the hunting parent chooses to hunt alone. As a result, the child may not be taken afield while young, and the opportunity for modeling may be severely hampered. The child may be left relatively unaware of the hunting parent's thoughts (i.e., rationale) and feelings about killing game and other important aspects of hunting. In such cases, this child may be more likely to model the behavior, thoughts, and feelings expressed by the nonhunting parent. Both girls and boys are subject to this process. Value systems concerning the killing of game begin to develop at a very early age—hunting parents should realize that it is never too early to let them observe their hunting behavior. A final point about value systems is that once a value system is internalized by a child it is not readily altered. This may explain why it is relatively rare for a person to begin hunting as an adult, even if such a person develops a personal relationship with a hunter.

Motivation: Our interviews indicate that the unique combination of a person's values and goals/expectations (given sufficient support) results, generally, in that person being either achievement-oriented or affiliative-oriented in his/her motivation to begin hunting. The primary goal of achievement-oriented hunters is to maintain or improve level of performance; self-approval is contingent on success in the field. The primary goal of affiliative-oriented hunters is to establish and maintain relationships; self-approval is largely contingent on accompanying a person in the field. Because these two motives are a reflection of people's system of values, they are relatively stable.

The strength of the achievement motive changes from situation to situation depending on three variables: (a) expectation of success, (b) the value attached to success, and (c) perception of personal responsibility for success. We might expect the achievement-motivated new hunter to respond to lack of success, probably not through desertion, unless repeatedly unsuccessful, but possibly through deterioration of ethical conduct and discretion. Achievement-motivated hunters, frustrated by lack of success, may be more likely to resort to illegal means to take game, shoot protected species or inanimate objects (to display marksmanship skill), etc. In hunter training courses, achievement-motivated potential hunters should be identified beforehand and dealt with specifically to attempt to modify their expectations of success so they accurately reflect reality; unrealistically high expectations may lead to particularly frustrating experiences. Failure to meet expectations may eventually lead to desertion because strong effort that produces repeated failure weakens efficacy expectations, thereby reducing motivation to perform the activity.

In contrast, potential hunters who tend to be affiliative-motivated in their decision to hunt would be unlikely to respond to success rate (or would do so only to the extent that the people they hunt with do). They would likely respond, however, to the comraderie and sense of shared experience found in hunting. Hunter training courses should stress such benefits to these people. Fortunately, experiences that yield benefits to affiliative-motivated potential hunters may be easiest to provide because they require less resource allocation (i.e., satisfaction can be realized without harvest or extraction of game animals). Review of the cases in this study lead to the following general hypothesis: boys age 10 to 18 are the most achievement-oriented in their decision to start hunting. This is not to say that no affiliative component exists. In fact, many family-supported hunters would be included, people for whom the family component was important to their decision to begin hunting.

Barriers to participation by women: One segment of society that underparticipates in hunting and is of concern to hunter education professionals is women. This discussion will concentrate on girls who grew up in hunting families.

Girls who grow up in hunting families receive relatively little support to hunt and usually are not expected to do so--quite the opposite of boys in such families. The girl internalizes this in her value-attitude system (i.e., models her parents' support and expectations) and her goals are influenced by them. Furthermore, peer pressures undoubtedly work against girls becoming hunters, if for no other reason than few other girls in an individual's social interactions would themselves be hunters, making reinforcement difficult. Strong family support would be needed to compensate for this. For the most part, then, the reasons women from hunting families have not hunted lie with the value-attitude systems of her parents and ultimately reflect sociocultural tradition. Data from two previous Project W-146-R studies show that females are much less likely than males to be introduced to hunting by parents and the women interviewed in this study were largely family-nonsupported.

There is a good deal of evidence that women tend to be more affiliative-oriented than achievement-oriented in their goals. This being the case, women would be less likely than men to hunt if by doing so they sacrifice or damage interpersonal relationships. Not only are girls not expected to hunt, they are more sensitive to these expectations than their brothers. Another disincentive to female participation in hunting that involves gender role socialization processes concerns perceived ability. Although actual ability was not seen as a significant impediment to hunting participation for most people, perceptions of ability by individuals may be. People who expect to perform poorly in an activity tend not to engage in it. Women are likely to have low self-confidence in perceived male activities. Insofar as hunting is considered a masculine activity, women are less likely to participate in it. This process is no doubt particularly powerful, because among teenagers hunting may be considered a competition sport, with success and failure emphasized. Consequently, the degree to which the achievement aspect of hunting is emphasized or deemphasized, women's anxiety regarding participation will be heightened or lessened.

The potential for increasing women's participation in hunting in the future looks promising. Differences between men and women concerning achievement and affiliation orientations appear to be declining. And for most outdoor recreation activities the rate of adoption for females is greater than that for males—hunting being a noteworthy exception. Nevertheless, this vestige of male-dominated activities may succumb to the pervasive trend toward diminished gender role differences. Hunter education efforts could be designed to hasten this, making hunting a family activity and expanding the overall benefits received from wildlife management activities.

Hunting Continuation

A hunter typology based on goal orientation

Critiques of the hunter typologies presented by other researchers, in view of our interview data and theoretical framework, resulted in discarding them in favor of a motivation-based typology which reflects the major aspects of one theory of behavior motivation. We hypothesize that three types of principal goals motivate the decision to hunt: achievement, affiliative, and appreciative goals.

Achievement-motivated hunters hunt to meet a self-determined standard of performance. We can expect a successful hunt for the typical achievement-motivated hunter to be one where a quota of game or a particular type of animal is harvested. The goal of the hunt for an affiliative-motivated hunter is to accompany another person in the field, and thereby strengthen or reaffirm the personal relationship between them. Such a hunter carries a firearm so as to identify more closely with the hunting partner(s), but often never uses the firearm. (Note on page ES-18 that achievement-oriented and affiliative-oriented goals were explained as important factors in one's decision to start hunting.) The third type of goal orientation, appreciative, pertains most directly to continuation in hunting. Appreciative-motivated hunters want primarily to be in the field. The sense of peace, belonging, and familiarity that have become associated with the hunt cause the very act to be its own reward. Both avid and nonavid hunters may become appreciative oriented in their hunting goals. For avid hunters, hunting becomes so much a part of their lives that it at least partially defines their existence;

each time out is, in effect, a confirmation of who they are. Despite the many changes they undergo throughout their lives, the many roles they play, one role that never changes, that which allows a thread of personal history to tie year to year is the role of the hunter. The fibers of this thread are the memories and associations that cause the mere act of hunting to be its own reward. For nonavid hunters, the focus of appreciative goals is less on their roles as hunters and more on the environment itself. These individuals continue to carry a firearm into the woods out of habit and will use it if given the right circumstances, but overall they consider hunting to be a "good excuse" to go afield. Apparently, a trip to the woods for spiritual refreshment, without a definable task to attempt, is a less desirable experience (See Box A).

Box A

```
*****  
* Interviewee: I'm hard-pressed to pinpoint the reason why (I *  
* hunt) because I'm not really successful at it, *  
* and I'm one to put some value on my time and *  
* really I waste a lot of time up there. It's *  
* really a waste of time for what you get out of it, *  
* if you measure in terms of dollars per hour. So, *  
* I'm hard-pressed to tell you exactly why I hunt. *  
* I just enjoy wandering around the woods--it gives *  
* me a good excuse to do that. I guess that's one *  
* of the things I like about burning wood is that *  
* it gets me up in the woods. *  
*****
```

Most hunters are no doubt motivated by a combination of the three types of goals, although one may be dominant.

As mentioned earlier, appreciative-oriented goals do not usually pertain to initiation in hunting, but rather continuation. Certainly a simple appreciation for the role of the hunter motivates only those for whom this role has become part of a self-image and certainly people who want only to enjoy the outdoors would not take a firearm with them, except out of habit. It is implicit, then, that some hunters evolve primarily from an affiliative or achievement motivation to primarily an appreciative motivation. Support for this notion comes from Jackson and Norton (1979), who described five developmental stages of waterfowl hunting. Although these stages were meant to describe a process of psychological maturity of hunters toward their sport, they can also be considered categories of a motivation-based typology. Hunters in the first four stages of hunting—the shooter, limiting out, trophy, and method stages—are achievement motivated. Hunters in the fifth stage of hunting—the waterfowler stage—tend to be appreciative motivated. Since these stages are developmental in nature, the Jackson and Norton notion is that hunters apparently move from an achievement orientation to an appreciative orientation in their goals. Considerable evidence of this process was found in our interviews.

Despite the insights provided by Jackson and Norton's (1979) five stages of hunting development, they are not entirely satisfactory as categories for a motivation-based typology. First, in their stages no allowance is made for a very important type of hunter, the affiliative-motivated hunter. Such hunters do not care if they are not successful, nor do they have particularly strong feelings for the outdoors or the role of the hunter. They go afield only to be with someone. Second, although many hunters no doubt develop from an achievement orientation to an appreciative orientation in their hunting, this is not the only possible direction of movement. Recidivism was documented in our interviews; Box B is an excerpt from a formerly appreciative-oriented hunter who is now an affiliative-oriented hunter. Recidivism to an affiliative orientation, however, is less of a concern than recidivism to an achievement orientation. The extent to which these changes occur is not known.

Box B

```
* * * * *
* Interviewee:  Now my boys are getting up—and my daughter—to *
*               the age where they're all hunting, so I spend all *
*               my time hunting with them. *
* * * * *
* Interviewer:  Is this true of just waterfowl hunting, or hunting *
*               in general? *
* * * * *
* Interviewee:  Hunting in general. Overall I hunt mostly with *
*               the kids now. I get a big kick out of going out *
*               with them. *
* * * * *
```

Temporal changes in stage structure of family-supported and family-nonsupported hunters

Temporal changes in the stage structure (i.e., the importance placed on the five components of hunting: recreation, family, fraternal, economic, and health) were observed for both family-supported and family-nonsupported hunters (Fig. H). Among family-supported hunters, the family component is very important among preteens, drops through the teens and early twenties, then increases slightly from the late thirties to the early fifties (possibly in response to children coming of age to hunt). The importance of the fraternal component rises steadily through the teens and then remains relatively stable for most of the adult years. The concurrent fall in importance of the family component and rise in the importance of the fraternal component in the 12-20 age range reflects the normal replacement of the family by peers as the primary social influence group. The recreation component steadily rises in importance from age 8 through the early 40s, then drops quickly but remains at a moderate level; despite this drop, the recreation component appears to be of primary importance in the middle adulthood (35-55) of family-supported hunters.

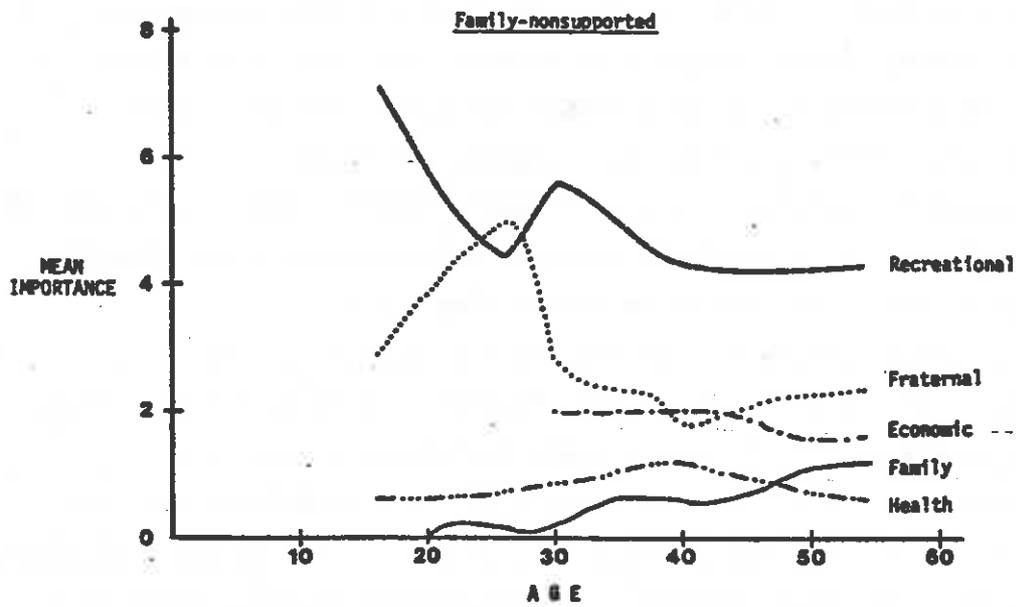
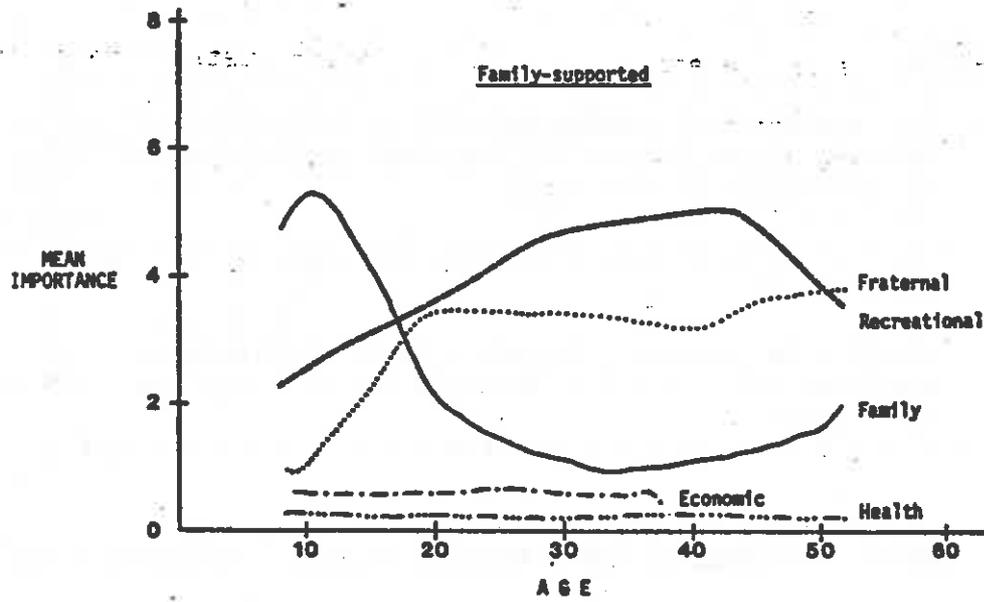


Figure H. Mean Importance of the Five Social Action Components of Active Family-supported and Family-nonsupported Hunters, by Age.

Among family-nonsupported hunters, the fraternal component experiences a marked rise in importance in the early 20s and experiences just as great a fall in the late 20s. Concurrently, the importance of the recreational component falls in the early 20s and rises in the late 20s. Thus, except in the mid 20s, the recreation component is generally far more important than the fraternal component. As with family-supported hunters, family-nonsupported hunters in middle adulthood (40-50) rated the recreation component as being especially important.

One explanation for the sharp changes in importance family-nonsupported hunters give to recreation vs. fraternal components is that some portion of these people who place much emphasis on the fraternal component begin hunting in their early 20s (i.e., they enter the population and bring their values into the analysis), and then desert before age 30. These hunters are virtually purely affiliative in their motivation to hunt. To further examine this, a subgroup of family-nonsupported hunters who began hunting in their late teens to early 20s and who dropped out by age 30 was identified. This subgroup was comprised of 6 women, each assigning great weight to the fraternal component. When these women are excluded from consideration in the aggregate analysis the trough in the recreation component and the peak in the fraternal component are greatly reduced. This indicates further the uniqueness of family-nonsupported women hunters and suggests that such hunters should be analyzed separately in future studies.

Temporal changes in interest and participation of family-supported and family-nonsupported hunters

Temporal changes occurred in family-supported and family-nonsupported hunters' self-rating of relative (i.e., compared to other hunters they know) interest and participation in both small game and big game hunting. Interest in small game hunting among family-supported hunters is highest in the preteens, declines sharply during early teens, then declines gradually thereafter (Fig. I). Interest in big game hunting also starts out quite high in the preteens and peaks at age 16-18, supporting the hypothesis proposed in "Initiation" (i.e., when given the opportunity to hunt deer, an individual's interest in such activity rises accordingly). From age 18 on,

interest in big game hunting among family-supported hunters declines gradually. Note that from age 8 to 14, interest in small game hunting is greater than that in big game hunting, but from age 16 on the reverse is true, until the lines converge at age 52.

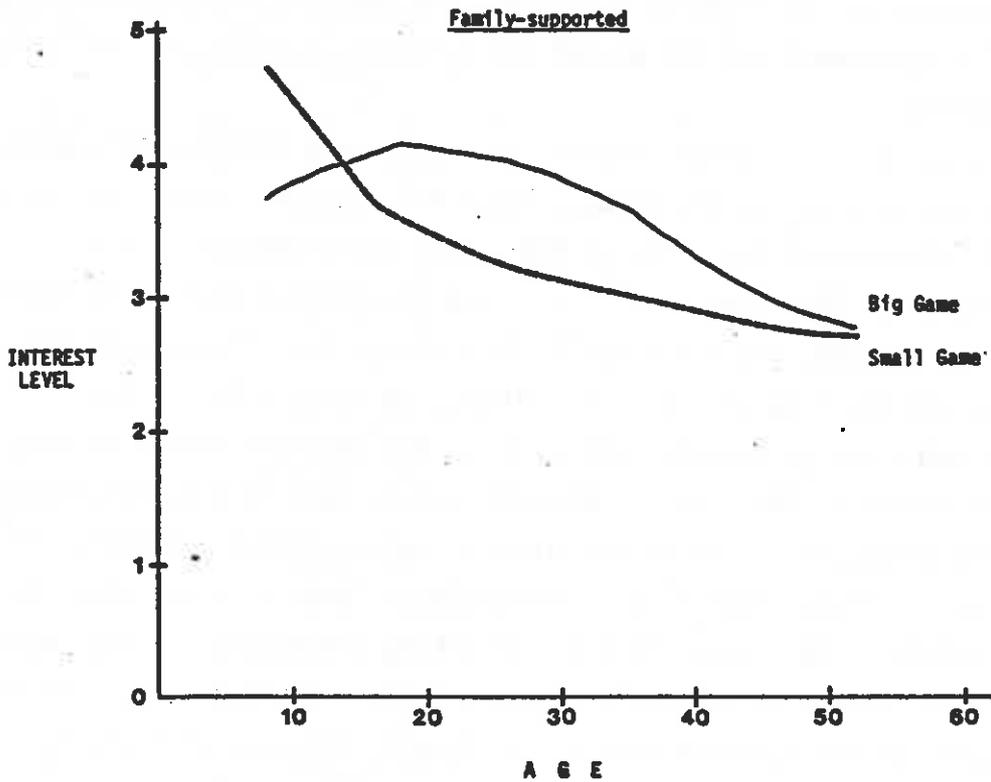


Figure I. Interest Level in Big Game, Small Game Hunting of Family-supported Hunters, by Age.

Participation of family-supported hunters in small game hunting is high in the preteens and remains so through age 30, declines sharply from age 30 to 40, then remains stable thereafter. Participation in big game hunting (with or without a firearm) is very low from age 8 to 10, rises dramatically from age 10 to 16, remains steady from 16 to 36, then drops off thereafter. As Fig. J shows, participation in small game hunting is greater than that in big game hunting from age 8 to 14, similar from age 16 to 30, and thereafter participation in big game hunting is greater.

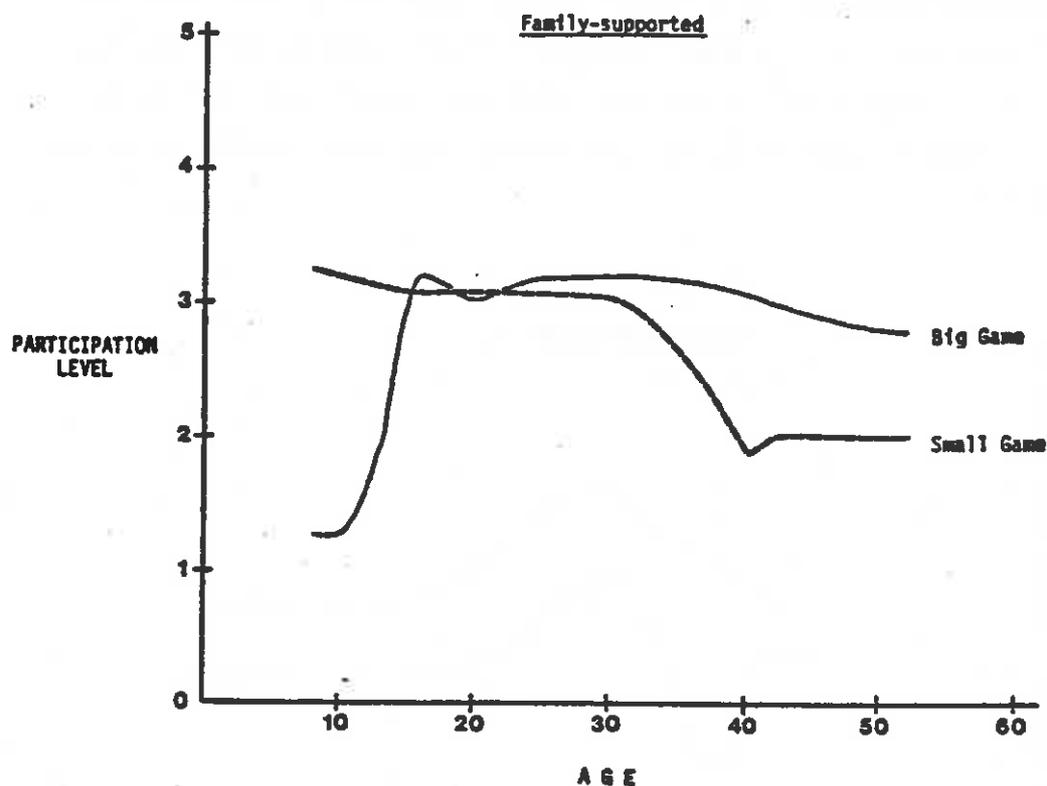


Figure J. Participation Level in Big Game and Small Game Hunting by Family-supported Hunters, by Age.

Among family-nonsupported hunters, interest in both small game and big game hunting peaks in the early 30s, although interest in small game hunting drops very low between age 22 and 26 (Fig. K). From the early 30s to mid 50s, interest in small game hunting and big game hunting decline gradually. At no age does interest in small game hunting exceed interest in big game hunting. The 6 women hunters pointed out earlier account for the decline in small game hunting interest in the early 20s. There are three mechanisms whereby highly affiliative-oriented hunters such as these women may develop a moderate to high interest in deer hunting, yet maintain a very low interest in small game hunting. First, there are affiliative rewards associated with deer hunting that are not found in small game hunting that strongly appeal to affiliative-oriented hunters. Second, since many adult men only hunt deer, it follows that if they are the object of the affiliative needs that

motivate their spouses to hunt, then their spouses also will only hunt deer, and thus have an interest only in deer hunting. Third, and similar to that just mentioned, is the case where a man may hunt both small and big game, but only encourages his spouse to go afield during big game season so he can tag another deer.

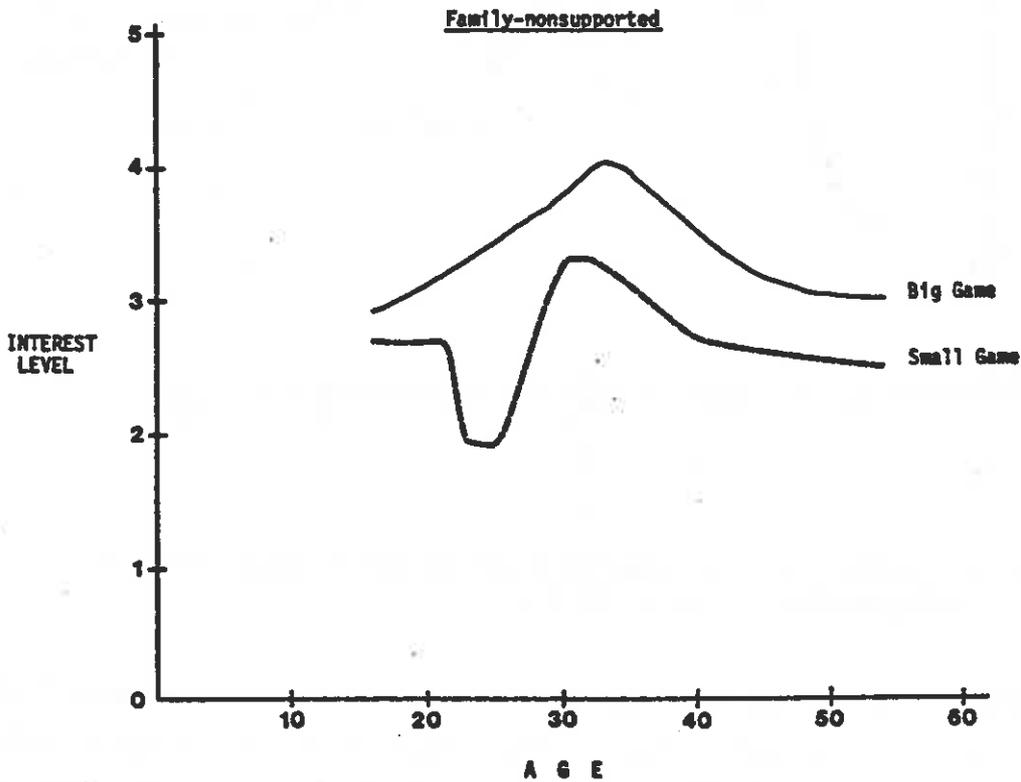


Figure K. Interest Level in Big Game, Small Game Hunting of Family-nonsupported Hunters, by Age.

Participation levels of family-nonsupported hunters fairly closely reflect interest levels (Fig. L). At each age except 16, the participation level in big game hunting exceeds that in small game hunting, and this difference is greatest from age 34 to 40.

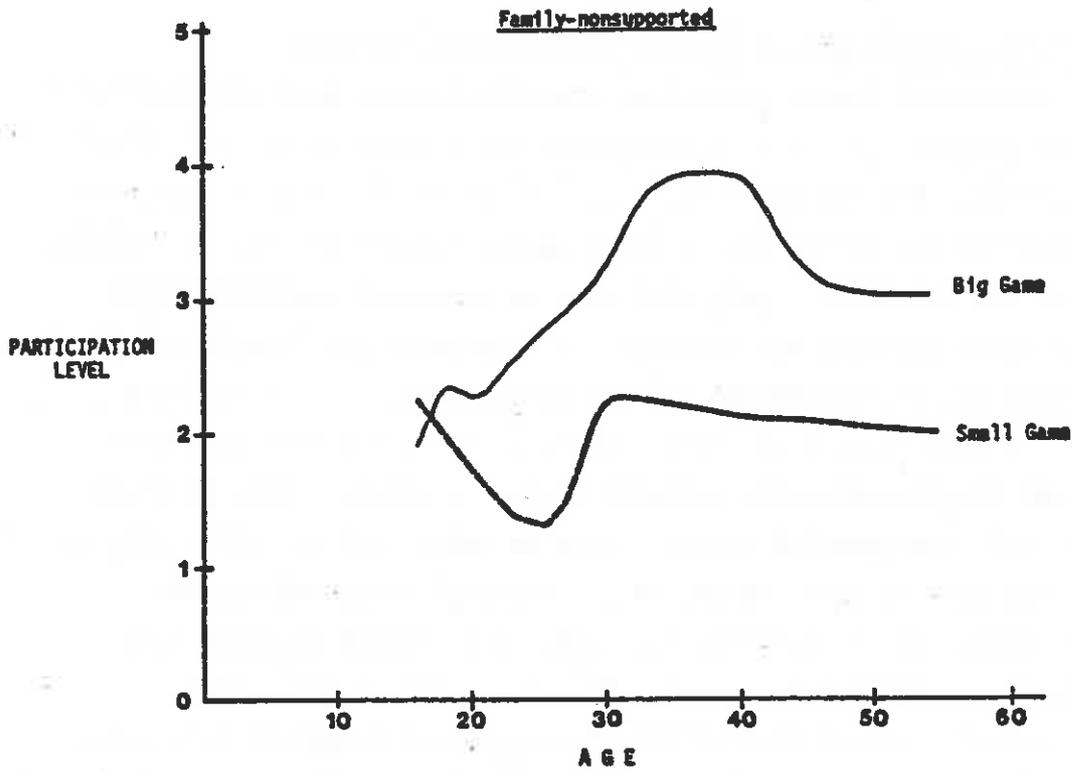


Figure L. Participation Level in Big Game, Small Game Hunting by Family-nonsupported Hunters, by Age.

Hunting Desertion

Stage structure diversity and desertion

It is our hypothesis that the more diverse the structure of a stage for a particular hunter, the less likely is the possibility that the next stage will be an inactive one. A diverse stage structure is one with multiple components of nearly equal importance. Of course, the loss of one dominant component from one's definition of hunting may disrupt the viability of others—especially if those others are of relatively little importance—so that even a person with more than one component comprising his definition of hunting might quit hunting if the others were necessary but not sufficient reasons for the individual to hunt.

Desertion of family-supported and family-nonsupported hunters

Our theory regarding family-supported and family-nonsupported hunters would lead us to predict that the former group has a much lower desertion rate than the latter. The relative desertion rates of the two groups over time are hypothesized to follow the general pattern shown in Fig. M. Among family-supported hunters some highly affiliative-oriented hunters desert soon after they leave the family; however, the dominant and long-lasting influence of familial socialization and the continuous, if increasingly irregular, contact with family members combine to suppress the desertion potential of most family-supported hunters until relatively late in life. In contrast, family-nonsupported hunters have no such central and stable a social unit as the family (i.e., relative to hunting) to maintain the incentives that affect their decision to hunt. The result is that they experience a high desertion rate relatively early. Eventually this desertion rate drops to equal that of family-supported hunters; this occurs because the more stable, committed hunters who are originally a minority in this population of family-nonsupported hunters come to comprise a majority as the less involved hunters desert in large numbers soon after initiation. In addition, it would seem likely that the desertion rates of family-supported and family-nonsupported hunters converge at some point in time (perhaps at 40-50 years of age). Analysis of data from this and one of the previous studies support this scenario.

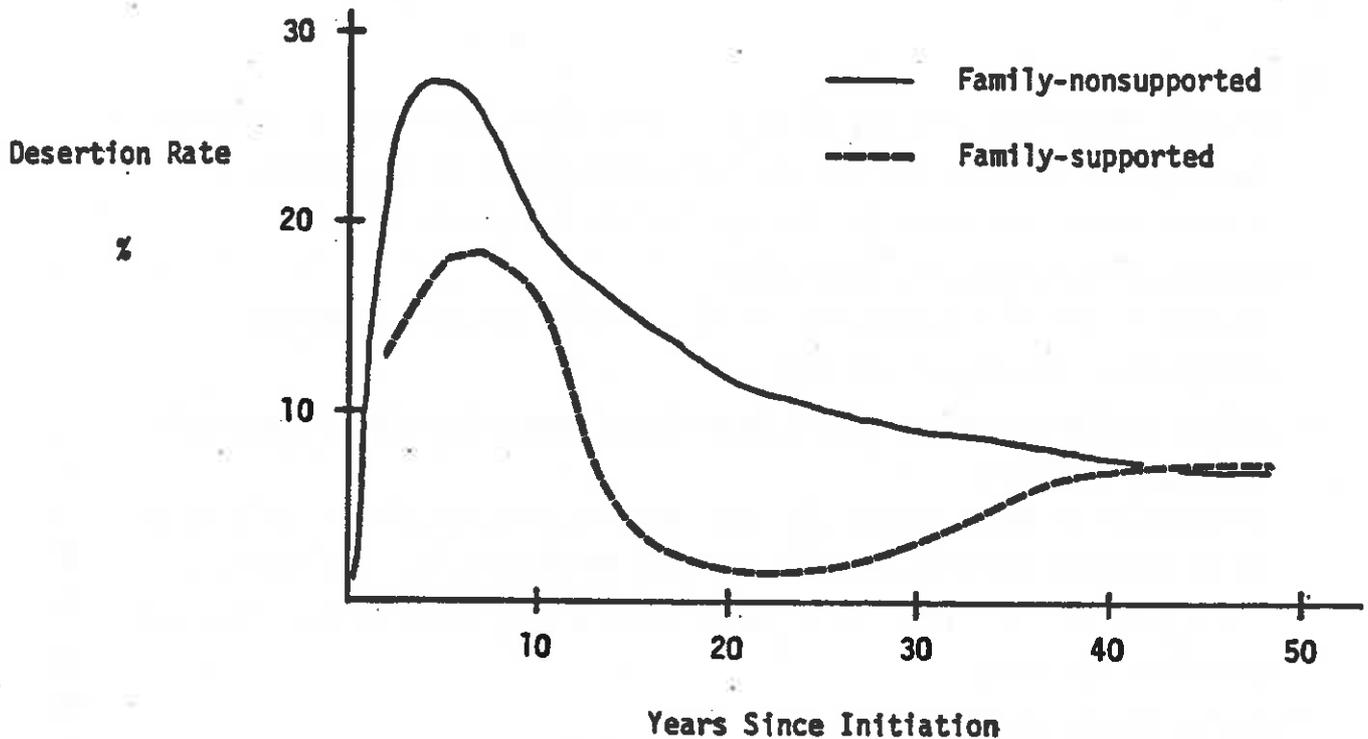


Figure M. Desertion Rate (% of Hunters Deserting) of Family-suupported and Family-nonsupported Hunters Over Time (Since initiation). (From Brown et al. 1981.)

Why people stop hunting

Based on a number of characteristics related to why people stop hunting, a review of the cases we studied indicated the existence of two types of deserters: affiliative deserters and gradual deserters. Seven variables were examined to distinguish the two types of deserters; these are summarized below:

a) Reason for Desertion:

Gradual deserters tend to give multiple and ambiguous reasons for their desertion. Essentially, their desertion is a product of gradually changing lifestyle, and they therefore have difficulty identifying or specifying their decision. Affiliative deserters, on the other hand, are quite clear about why they quit hunting; usually parenthood or the disruption of the relationship with a key hunting companion are the reasons cited.

b) Total Years Hunted:

Gradual deserters stay in hunting longer than affiliative deserters. We somewhat arbitrarily set the delimiting time at ten years; gradual deserters tend to stay active for ten years or more.

c) Participation Level at Initiation:

Initially, gradual deserters are very active hunters, whereas affiliative deserters are not.

d) Change in Participation Level from First Stage Carrying a Weapon to Last Active Stage:

As implied by their label, gradual deserters experience a decline in their hunting activity from initiation to desertion. Affiliative deserters, on the other hand, begin with a low level of activity and end with the same.

e) Number of Hunting Companions:

Overall, gradual deserters interact with a number of hunting companions and social groups throughout their hunting life. In contrast, the hunting of affiliative deserters is from start until finish focused on a single relationship with one individual or small group of individuals.

f) Whether or Not the Individual Hunted Alone:

Another indication of the importance of social interaction to the hunting of affiliative deserters is that they generally have never hunted alone. Gradual deserters do hunt alone, at least occasionally, at some point in their hunting life. That is, they do not need a companion to remain active, although they may prefer to have one.

g) Number of Hunting Stages:

The hunting activity of gradual deserters is characterized by changes in hunting companions, game pursued, level of participation, etc. These changes are indicated by numerous hunting stages (3 or more). Affiliative deserters, on the other hand, do not experience much change in their hunting activity, and so tend to have only one or two stages.

Of the above seven variables, the key variables for affiliative deserters are (c) and (e). These people have no strong desire to reap what might be considered the rewards intrinsic to hunting specifically—enjoying the outdoors, using hunting skills, and bagging game. Rather, they hunt only for the purpose of maintaining or strengthening a relationship. It might be recalled that this statement fits the description of affiliative-motivated hunters discussed earlier. In fact, affiliative deserters are purely affiliative-motivated hunters who quit hunting. (see Box C).

Box C

```
*****
* Example A
* Interviewee: I'll tell you the real reason I hunted was because it
* was a big thing—it was a very big part of my husband's
* life—if I had not become involved I would have lost out
* on a very large portion of his interest. That was the
* number one hobby that he had, therefore by going with
* him it kept me in touch with what he was doing.
*
* Example B
* Interviewee: I wouldn't think of carrying a gun and going out in the
* woods (now). I just did it to please him (an older
* friend). Let nature live...as far as I'm concerned
* there would be no animals slaughtered.
*
* Example C
* Interviewee: First time I ever got interested in hunting was when
* I started going out with a fella (current husband) who
* was a hunter.
*
* Interviewer: So when you met your husband-to-be and went hunting, did
* you go because it was important to him or because
* it was a chance to—
*
* Interviewee: Uhm, I think because it was important to him. Yeah, I
* think that was why I went in the first place.
*****
```

Affiliative deserters were not socialized into hunting; they began hunting in response to the support/expectations of a significant other person, and the affiliative orientation of their goals.

In summary, an affiliative deserter's decision to stop hunting seems to be catalyzed by one or a combination of three processes:

- a) A reversal in support/expectations to hunt on the part of the person who is the object of affiliation will cause the affiliative deserter to seek other avenues to meet affiliative goals; to do otherwise would actually block affiliative goals by causing a conflict in the relationship.
- b) A change in the personal relationship with the significant other, even while the more general unmet need for affiliation remains unchanged, can catalyze the decision to stop hunting. In this case, the unmet need for affiliation is fulfilled through different people in different activities, rather than through the same person in different activities. This process is often manifest when affiliative deserters change jobs, end romantic liaisons, geographically relocate, etc.

The following excerpt illustrates this:

Interviewee: "Friendship really got me involved. If it wasn't for Mike and John I wouldn't have gotten much into hunting up here. I mean that's why I bought the gun and equipment..."

Interviewer: What happened that changed things?

Interviewee: "Well, I left Sears, and we were still friends, but not as close. And we just kind of drifted away from being real close friends. And the only times I would see him was during hunting season three or four times a year, and...I kind of stopped hunting. They called me one time and I said, 'Nah, I'm not going to go anymore.'"

- c) A final process that may influence the decision to stop hunting involves the usurption of unmet affiliative needs by another more favored activity. As a result, no unmet needs exist, so there is no reason to hunt. For instance, if the spouse of an affiliative-oriented hunter gets a new job that allows more time for family activities, the affiliative-oriented hunter may feel less of a need to go hunting with the primary hunter of the couple.

Of the seven variables distinguishing the two types of deserters (pages 32-33), the key variables for gradual deserters are (a) and (d). Taken together, these two variables suggest the desertion of gradual deserters to be an evolutionary process that is too ambiguous and gradual of an occurrence to be attributed to a single, specific cause.

Potential Hunters

In a 1980 study of a cohort of 1978 hunter safety course participants, we identified a segment of "potential hunters", a group which had not hunted during the 2 years following their completion of the course, but had indicated intentions to begin hunting within 2 years (i.e., by the close of the 1982-83 season). Thirty-one of these potential hunters were recontacted for this study: 18 had not yet begun hunting; 7 had hunted, but dropped out; and 6 hunted the year prior to the study. Thus, only 20% of these people can be considered current hunters. Of the 18 potential hunters who had yet to hunt, 11 of them reported a 50/50 or better chance that they would begin hunting within the next 2 years, but none were certain that they would do so. For several reasons discussed below, we believe that the never-active potential hunters will not begin hunting, despite their stated intentions.

Why some potential hunters' behavioral intentions are not realized

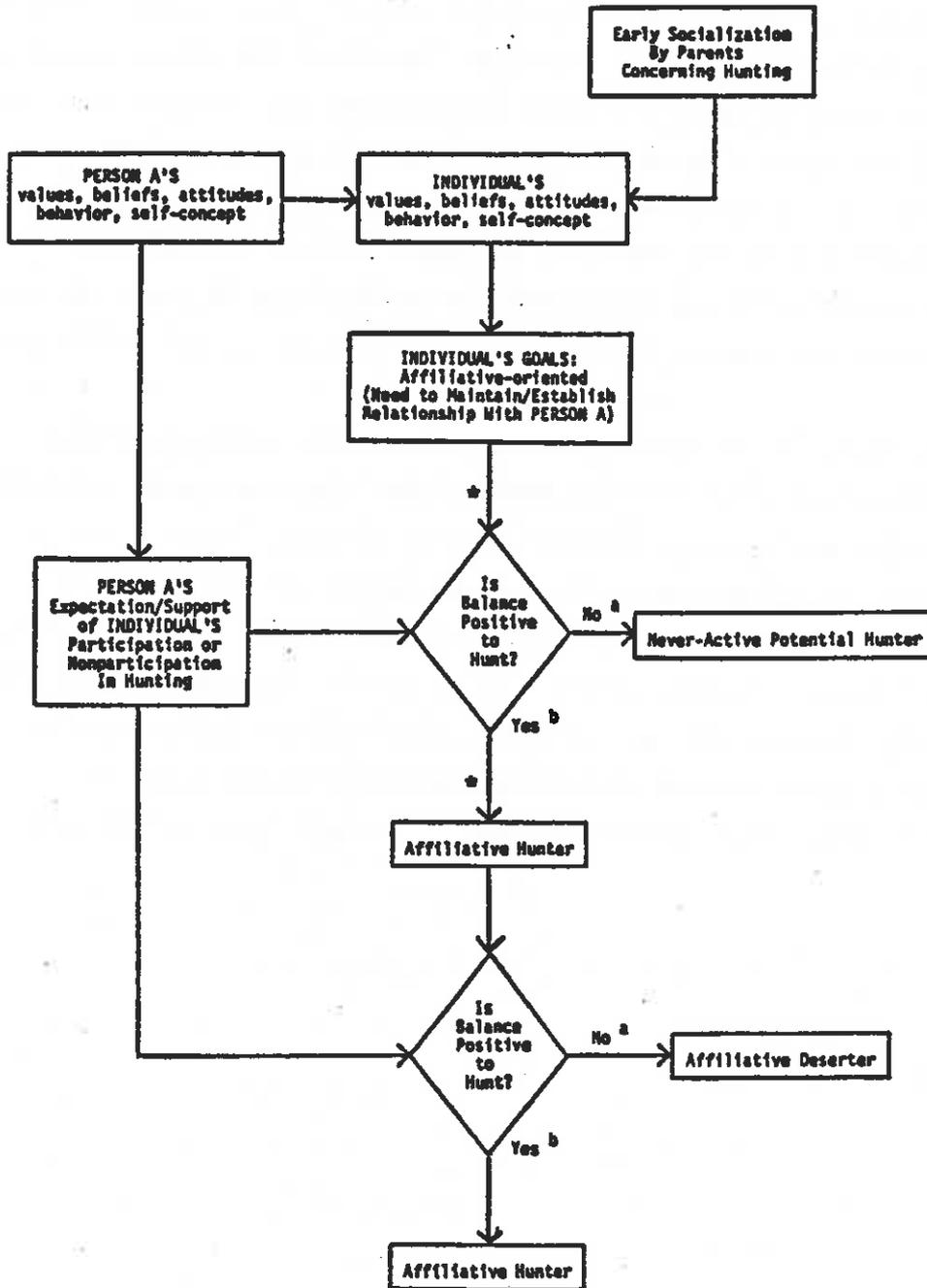
By our definition, almost all potential hunters are family-nonsupported hunters. The great majority (87% in this sample) of these individuals did not hunt before taking the hunter training course in 1978, and took the course at age 13 or older, so at the time they were contacted by the study (1980) which typed them as potential hunters, they were age 15 or older.¹ Nevertheless, the majority of them (61%) had other family members who hunted. Our data also showed that among the never-active potential hunters, those who had other family members who hunt were more likely than those with no family member who hunts (75% vs. 33%) to estimate their chance of hunting in the next 2 years as >50%. This is additional evidence of the influence

¹Recall that the criteria for classification as a family-supported hunter were: exposed to hunting by family member and began hunting by age 14.

of the family on an individual's behavioral intentions, even among those who have not hunted in the 5 years since taking the hunter training course.

Appendix 7 lists the various reasons for not hunting given by people who intended to hunt but did not, and by people who stopped hunting. Among the never-active potential hunters recontacted during this study, a variety of reasons were given for not hunting, all of which are included in this list. Many of those listed are immediate, superficial reasons. Nevertheless, based on the available data we believe that the inactivity of potential hunters can be examined in terms of the models discussed earlier in this report. Such an examination is necessary to develop insight to the social-psychological processes by which an individual decides not to hunt, despite initial intentions to do so.

In the following, two types of reasons for not hunting cited by never-active potential hunters are discussed. Other reasons may be examined in a similar fashion, but based on our sample these two appear to be the most important. The first type of reason involves changes in the support/expectations of others. For instance, one individual decided to take the course upon the urging of his co-workers, and then changed jobs soon after completion of the course. Without the support/expectations of his friends, he never began to hunt. Note that this process is similar to that diagrammed in Figure N, explaining why some affiliative deserters stop hunting. In fact, many never-active potential hunters can be considered (theoretically) to be affiliative deserters who never began hunting. That is, the changes that affect affiliative deserters soon after they begin hunting affect some never-active potential hunters between the time they complete a hunter training course and have an opportunity to hunt. This is illustrated in Figure N. As another example, one potential hunter said she never hunted because the person who encouraged her to take the course stopped hunting soon after she completed the course. Again, the only difference between affiliative deserters who lose the support of the person toward whom their affiliative needs are directed, and the potential hunter just mentioned is a temporal one. It is conceptually useful, then, to expect all three processes of desertion for affiliative deserters discussed previously to be applicable to the nonrecruitment of many never-active potential hunters.



- * Points in time when Individual may take Hunter Training Course.
- ^a Person A has a negative influence on Individual's hunting participation.
- ^b Person A has a positive influence on Individual's hunting participation.

Figure N. Lines of Influence Diagram: Process whereby Positive/Negative Influences Affect the Decision of Affiliative Deserters to Hunt.

The second type of reason many potential hunters never began hunting concerns reservations about killing animals. Seven of the 18 never-active potential hunters cited this as the main reason they did not start to hunt. Apparently, negative values/attitudes pertaining to hunting are not sufficient to preclude a decision to attend the hunter training course, but are of great importance to the decision to hunt. Simply stated, an individual with negative values pertaining to the killing of game may be persuaded to attend the course, but is likely to resist actual participation in hunting.

In essence, many of the same processes that affect deserters also affect never-active potential hunters before they begin to hunt. Although there may be subtle differences between the two groups, future research should explore the social-psychological similarities of never-active potential hunters, affiliative deserters, and affiliative-motivated hunters. The differences between these groups are more likely a product of slight differences in the balance of the same positive/negative influences at certain temporal stages, rather than of differences in the type of positive/negative influences that are affecting their decision to hunt.

PROGRAM IMPLICATIONS

This section will be organized around themes which integrate and synthesize key findings and trends. This will yield implications presented in what we hope is a meaningful and organized fashion, but risks omission of some points of potential interest to particular readers. When reviewing these implications and program suggestions, keep in mind the breadth of program possibilities for meeting these needs. DEC may not always be the most suitable sponsor. Other organizations (e.g., 4-H, shooting sports industries) may be the more appropriate program organizers or sponsors.

Influencing Initiation

I. Our findings have implications relating to a long-standing debate among hunters and hunter managers--the advisability of lowering New York's legal hunting age. Individuals experiencing a pre hunting stage, a period of apprenticeship and hunting involvement prior to carrying a firearm afield, are more likely to be family-supported hunters, to initiate hunting activity when legally of age and to remain involved for longer periods during their lives than are individuals deprived of pre hunting experiences. Therefore, it follows that lowering the legal hunting age would permit family-supported individuals to begin hunting at an earlier age, thereby increasing the size of the license-buying public. However, it should not be expected to affect the likelihood that they will initiate hunting. Much more powerful forces than opportunity are at work--these people are for the most part family-supported hunters and have internalized the values which are antecedents to hunting participation as well as having the external support mechanisms necessary to the hunting pursuits of minors. The fact that they are interested enough and an adult role model is developing that interest during the pre hunting stage is strong evidence of the atmosphere of hunting commitment in which the prospective hunter lives. In short, these people are as likely to be recruited into hunting at age 14 (current legal hunting age) as they are at any other (i.e., lower) age.

Persons not experiencing pre hunting stages, primarily family-nonsupported, will not be more likely to be recruited if the hunting age were lowered.

Their initiation is typically based on influences occurring after the current legal hunting age. They tend to begin hunting for fraternal reasons, hunting with peers or significant others when all involved are older teens or young adults (about 16 to 26).

Lowering the hunting age could have a negative backlash when hunting stages are considered. It is possible that by taking such an action, the pre hunting stage could be eliminated because ages below some lowered legal hunting age (e.g., 10 years) are too young for a child to accompany a parent or other role model afield, for basic physical development reasons. The results of obviating the pre hunting stage are unknown. It is possible that the pre hunting stage is a critical developmental period and serves an important function in firmly establishing bonds and behaviors affecting hunting commitment, prior to carrying a firearm and bearing the associated responsibilities. A program that lowers the legal hunting age but preserves the pre hunting stage/apprenticeship values we have documented may be acceptable.

?

Can't they get some apprenticeship experience while they carry a gun or not?

What is evidence from other states when hunting age lower?

II. Family-supported hunters have such strong and diverse influences in their hunting activity, it seems unlikely that external programming is required with this group to increase initiation. They are part of a self-perpetuating system of rewards and incentives where little outside influence is required to feed the system. One exception to this laissez-faire approach toward family-supported hunters is in the area of consistent role modeling. By encouraging hunting as a family activity, rather than a "man's sport", and by other attempts to broaden interest in hunting by the nonhunting parent (e.g., identifying and publicizing the child developmental benefits of hunting--responsibility, appreciation of nature and resource conservation, self-reliance, self-confidence, psychomotor skill development, reverence for life, opportunity for reinforcement of bond between child and parent or other preferred role model, etc.), hunting could be seen by the nonparticipating parent as a more desirable use of the child's leisure time, given some of the alternatives presented by society today. Supportive/participating or participating/participating parental combinations lead to

consistent role modeling. This in turn may help ensure the occurrence of a pre-hunting stage that seems so influential to continued interest in hunting. One recent societal trend that has great potential to short circuit the traditional family-support system is the large number of marital separations leaving single parent families, typically with primary child custody being with the mother. This situation begs for a program that can both convince a non-hunting parent of the benefits of hunting as a recreational pursuit and provides a surrogate role model together with ample pre-hunting opportunities. The combination of the low female involvement in hunting with the greater incidence of female-dominated single parent families may be having significant impacts on hunting recruitment.

III. The characteristics of family-nonsupported hunters present a variety of opportunities for influencing their hunting activity. They differ fundamentally from family-supported hunters in that they have fewer reasons for initiation into hunting. It is recognition of this narrow focus and the tenuousness of hunting perpetuation associated with it that points to ways of enhancing the probability of hunting initiation and continued participation. Basically, increasing the number of reasons for hunting, or components of hunting as we have referred to them in the report, will result in increasing the likelihood of both initiation and continuation. Recreation and fraternal affiliation were the most important components for family-nonsupported hunters during initiation—broadening component diversity would likely increase the motivation to hunt. This might be accomplished by promoting the largely unrecognized (i.e., by our study group) economic and health aspects of hunting. Economic arguments might be made on a comparative basis, such as the cost of hunting vs. other popular outdoor recreation activities, on a per day of opportunity basis. Health aspects of hunting could be promoted, especially the longevity of potential involvement (i.e., from teenager until physically or mentally unable to function, or nearly all of one's life) and the psychological health aspects (e.g., communing with nature). Health and economic aspects of hunting are currently little emphasized by hunting promotion literature and are largely irrelevant as reasons for hunting initiation for most hunters we studied. Increasing the

prominence of these aspects of hunting will add to hunting diversity and stability.

Family-nonsupported hunters who are teenagers, especially younger teenagers (<16), may be effectively provided pre hunting experiences, such as that enjoyed by family-supported hunters, via innovative programs. In this situation, programs that provide pre hunting role models (in essence, surrogate parents) seem most on target. Youngsters are more likely to get involved if their first experiences are positive and expose them to the diversity of benefits that can be derived from hunting. Programs that create the pre hunting, apprenticeship stage and offer exposure to a full "benefits package" may go a long way toward increasing initiation and ensuring continuation. Such programs would have to provide considerable "pre hunt youth/role model" contact--contact that should be frequent and over a period of time (e.g., two outings per month over a 5-month season). One-time events such as "kid/adult day" at a Wildlife Management Area may result in good press for the agency, but should not be expected to have much affect on the long-term involvement of most youngsters. A program of the type suggested should place the burden of identifying family-nonsupported pre hunters on other sportsmen (e.g., perhaps encouraging organized sportsman's clubs to perform this function). Besides relying on altruism, an incentive may be provided in the form of additional or special hunting opportunities for the volunteer role model and apprentice.

IV. Potential hunters decide not to hunt for one or both of two kinds of reasons: affiliative reasons and reasons related to killing game. Means of decreasing affiliative desertion and of increasing initiation of affiliative hunters discussed previously apply to potential hunters who decide not hunt for affiliative reasons. To overcome the second reason for desertion, hunter training courses should develop and use teaching aids which would ease an individual's apprehension over killing game. The "kill" should be placed in the context of the entire hunting experience--planning, talking to friends, selection of equipment, pursuit of game, the kill (maybe), then dressing, storing, preparing and consuming game, as well as recreating the event for friends.

V. Only about one-half of the individuals we studied following the hunter training course and classified as potential hunters actually will hunt, implying that communications efforts might be wasted on these individuals. Although this audience has the advantages of not being opposed to hunting, being legally able to hunt (certified) and not having overtly discounted participation, their participation is highly improbable unless they are initiated for strongly affiliative reasons. And even then, rapid desertion is likely unless some powerful intervention program is in effect to facilitate broadening their reasons for hunting to include more than the fraternal component as important aspects of hunting for them.

Enhancing Continuation

I. Among the insights to ways continuation in hunting might be enhanced emerged the idea of broadening peoples' interest in small game hunting so that it possesses, for more people, some of the same attractive dimensions our subjects attributed to big game hunting. Earlier in this report we portrayed big game hunting as being a socio-cultural event, especially attractive to affiliative hunters. We also found interest in big game hunting to be very high, which was attributed to its perception as a socio-cultural event. If the status of small game hunting could be modified so that it approached that of big game hunting, small game hunting interest might increase, resulting in many hunters being more diversified in their interest (i.e., not just big game hunters). The opportunity—i.e., areas open to hunting, season lengths and bag limits, number and variety of species—associated with small game hunting are enormous compared to big game hunting. Activity may be greatly enhanced by building the same "event phenomenon" around small game hunting as exists for big game hunting.

Of special interest here are women hunters who tend to be more affiliative oriented, have less diversity in the components of hunting, and who participate in big game hunting more than small game hunting. Because of their fraternal/affiliative orientation toward hunting, the socio-cultural characteristics of big game hunting are very attractive to these people, thus their involvement in the activity. If small game hunting were perceived to share these socio-cultural characteristics to the point where women participate in this activity to the same extent as big game hunting, their definition of hunting may broaden. For these marginally involved hunters, small game hunting may become even more appealing because of its earlier start in the fall and associated milder weather and the scenic qualities of the hunting environment.

II. A new hunter may have either achievement or affiliative motives (or a combination of these) for hunting. Highly achievement-oriented initiates may have a greater propensity for unethical hunting behavior if achievement needs are not adequately met by a degree of hunting success. And if the highly achievement-oriented hunter is repeatedly unsuccessful, to his/her satisfaction, this hunter will quit hunting. Programs to influence these hunters should have three dimensions: (1) initially (via hunter training courses, etc.) try to ensure that new hunters have a realistic view of hunting success--be sure expectations reflect reality. (2) Provide opportunities or encourage hunters to avail themselves of existing opportunities to exercise or demonstrate their hunting skills, especially shooting. Possibly all new hunters should be encouraged to join an active sportsman's club where shooting sports are pursued. Particularly for youth, involvement in the Daisy-Jaycee Shooting Education Program, National Rifle Association Junior Clubs, Boy Scout summer camps (Rifle and Shotgun Shooting Merit Badge) and the 4-H Shooting Sports Program is an excellent way to positively direct the energies of achievement-oriented young hunters, possibly accelerating their progress through the "shooter stage" of hunter development identified by Jackson and Norton in Wisconsin. (3) Try to temper the achievement motivation of highly achievement-oriented hunters by stressing the affiliative and appreciative aspects of hunting. Moving

hunters as quickly as possible to a highly appreciative orientation toward the activity is an important goal for hunter education for a variety of reasons. At the very least, diversity in orientation should be sought to increase stability of participation.

It is very likely that hunter educators could identify highly achievement-oriented new (prospective) hunters prior to hunter training course participation. Psychometric tests of this type have been developed for other discriminatory purposes. With this ability, program materials and approaches to modify orientation could be used with this group. This level of hunter education programming is considerably more sophisticated than the approach currently used. Nevertheless, as federally mandated time requirements for courses expand, opportunities for more innovative and effective intervention in participants' hunting development also expand.

III. Hunters' interest and participation levels in big game and small game hunting change over time as they move from one stage of their hunting lives to another. Furthermore, the fundamental components in their definition of hunting also change, from stage to stage. Recognizing that the most frequent changes occur between initiation and age 30 (or about 10 to 15 years hunting experience) brings into perspective the difficulty in targeting communications or specific hunting opportunity programs for the below age 30 group. After age 30, stages are fewer and changes in stage structure are less conspicuous. Consequently, communications and management programming could be more consistent. As the population structure over the next 2-3 decades tends to have an increasingly larger percentage of middle-aged people (U.S. Census predictions), many hunter programming considerations will be required to deal more specifically with this group because it will comprise a greater segment of the hunter population.

There is some evidence in support of structuring hunter education programs (e.g., hunter training courses) at two levels: for <16-year-olds and for > 16-year-olds. This suggestion stems largely from data showing a dichotomy in interest--<16-small game/>16-big game—and from basic understanding of differences in learning and teaching approaches for these age groups.

that's because
≤16's can't
do deer hunting

Averting Desertion

I. Many of the processes and implications presented thus far affect desertion. Increasing hunters' involvement (e.g., diversity of types of hunting, diversity of reasons for hunting, etc.) in hunting, as discussed previously, will diminish their propensity to desert.

II. Affiliative deserters seem to have characteristics which lead to several implications regarding maintaining their participation in hunting. Potential affiliative deserters should be encouraged to develop a partial achievement orientation in their hunting motivation, but more importantly, they should be encouraged to progress as quickly as possible to a strong appreciative orientation; this diversification should lead to stabilization in hunting commitment. Hunters who have companions who hunt largely for affiliative reasons (e.g., spouse) should continue to strengthen their support of the affiliative hunter. Affiliative hunters (potential affiliative deserters) should be encouraged to broaden their hunting affiliations (e.g., join a hunting club) so their participation is not contingent upon an affiliative relationship with just one person or one social group.

RECOMMENDATIONS FOR FUTURE RESEARCH

A variety of topics for future research emerged from this study. However, not all the avenues of inquiry identified seem to hold the same potential for meaningful program application beyond simply broadening our understanding of the hunting participation phenomenon. The difficult task in preparing this section, therefore, is not in identifying research ideas but rather in selecting among the many ideas those that we feel will provide the most meaningful insights for hunter education and management programming, in both short-term and long-term time frames. We see several of these research needs as having great potential for being addressed in detail by the two studies being planned subsequent to this one (i.e., W-146-R: VII-7 and VII-8). The topics we recommend for future research follow:

1. To improve our understanding of the nature and importance of a prehunting stage to an individual's participation in hunting.

The importance of a prehunting stage seems real, but the ways that it is important are not clear. Theoretical inferences can be made about the function of a prehunting stage, but at this time we have no empirical data regarding it. If the stage is critical, how might substitutes for it be offered by innovative agency programming?

2. Refine operational definitions of family-supported and family-nonsupported hunters.

This effort has provided evidence of the existence of the two types of hunters and that they differ fundamentally. Knowing more of their characteristics will help in educational communications in which the two groups are considered distinct audience segments. This communication consideration begins at the time of the Hunter Education Course (possibly earlier).

3. Identify the expectations and satisfactions associated with affiliative, achievement, and appreciative orientations toward hunting, as well as the frequency and characteristics of people with each orientation or combination thereof.

This area of investigation should identify and assess the advantages and disadvantages of developing a hunter population with the various orientations. The degree to which education and training programs can be designed to influence this development should be evaluated as well. This research may require developing, limited piloting, and evaluating a prototype program.

4. In relation to 1 and 2 above, describe the various types of support structures which exist for hunters, especially in the contexts of family support and of activity role modeling, including the value and effectiveness of surrogate role models.

There is ample evidence that the existence or absence of family support systems affects an individual's hunting participation, particularly for youngsters. The effects of role modeling, or lack of it, among youngsters and the substitutability of surrogate (i.e., nonparental or nonfamilial) role models is of key concern. If role modeling is important, as it would appear to be, and if surrogates can be effective in developing a youngster's interest in hunting, programs which provide surrogates and associated opportunities for hunting warrant consideration. As in 3 above, development, piloting, and assessment a prototype program may ultimately be required in this effort.

5. Investigate the effects of various family structures on hunting initiation, continuation and desertion.

Basically, this would examine the effects of the increasing number of single parent families on hunting participation by youth. This would have implications for the surrogate role model concept discussed in 4 above.

6. Determine the components of and development of wildlife-related values, including those regarding killing of wildlife.

Particular values related to wildlife may serve as incentives or impediments to hunting participation, especially between the "interest" and "trial," and the "trial" and "adoption" stages of hunting involvement. It would be very valuable to better understand these so they may be effectively addressed in hunting training courses.

7. Determine the characteristics of various types of hunting which act as incentives vs. impediments to hunting participation.

The differential attractiveness which seemingly exists between big game and small game hunting in general should be better understood so possibilities for broadening interests in hunting could be explored. Possibly a multiple-satisfactions model could be used in this investigation.

8. Monitor temporal changes and identify causal factors for (a) changes in hunting support structure, (b) changes in stage structure (i.e., social action components of hunting) hunters, (c) changes in achievement, affiliative, and appreciative motives for hunting (i.e., document the existence of a developmental process), (d) changes in attitudes toward killing game (possibly in relation to the developmental process of c above), and (e) changes in participation and interest in various types of hunting.

Essentially, this is a recommendation for a longitudinal study of the seven previous topics recommended for cross-sectional study.

These research recommendations relate to topics for further investigation; a separate study is not needed for each topic. Many topics could be investigated in one study, probably all could be examined in two cross-sectional studies and one longitudinal study.

To a large extent, these studies would be breaking new ground. Little research has been directed at these topics, and we know of no research program that has taken such a comprehensive look at the antecedents to hunting participation, from prehunting to desertion. The type of information coming out of these research efforts will benefit both hunter education training programs and general hunter management programs. We see the research planned in the current AFA under Jobs VII-7 and VII-8 as an excellent opportunity to address many of the research needs identified above. Furthermore, our experience with the social-psychological models employed in this exploratory study has demonstrated their usefulness as fundamental conceptual frameworks to guide this type of research. They are not perfect, but their application helps tremendously in making logical connections between observed phenomena and in synthesizing their meanings into what we hope are useful program implications.

psychological dimensions of hunting participation in more detail (Mattfeld et al. 1984). These agencies are now addressing more basic questions: What are the social-psychological antecedents to people's decisions to begin, continue, or terminate hunting activity? How do existing hunter education and management programs affect these decisions? And, where desirable, how might such programs be modified to influence these decisions? More importantly, how can wildlife agencies ensure that all potential and current hunters are aware of the full range of benefits associated with hunting and provide opportunities for people to receive these benefits?

Much useful research of hunter behavior has preceded the study reported herein, but it has been largely descriptive rather than explanatory. Why do hunters participate or not, and can such knowledge be used by those responsible for hunter management and education? The answers to these questions may unlock the door to a new era of hunter management and education.

Previous Research

The New York State Department of Environmental Conservation (DEC) has continually strived to improve its understanding of sociological factors affecting hunting activity. The DEC's history of interest began with studies of hunting access, which concentrated on landowners' posting as a response to hunters' behavior (Waldbauer 1966, Brown and Thompson 1976) and on hunters' behavior related to gaining access to private lands for hunting (Decker and Brown 1979). More recently, research sponsored by the DEC has attempted to identify why people start hunting and why some drop out after initially participating. These studies have dealt with three audiences--a cohort of hunter training course participants (Brown et al. 1981), hunting license holders from a particular year (Brown et al. 1978), and the general public (Brown et al. 1982). Only the first of these studies used a statewide sample; the other two were part of a pilot investigation leading to this study. The latter study was particularly important because the method employed (i.e., telephone interview of general public) permitted Project 146 staff to gain insights into hunting initiation and desertion beyond those possible using mail surveys and

* * DETAILED REPORT * *

INTRODUCTION

The Situation

Hunting is one of the more important outdoor recreational activities of Americans, a situation that has long been recognized and well documented. Trends in hunting over the period for which such data have been collected show that hunting activity has been increasing; the number of hunters has grown by 50% between 1955 and 1980 although hunters as a percent of the American population has not grown. Output measures related to this activity have been reported in terms of number of participants, dollars spent, days of activity, and harvest success (game bagged). Achievement of hunter management success has in the past been evaluated using these measures as criteria. Recently, more attention has been given to identifying the array of satisfactions associated with hunting beyond "game bagged" (Hendee 1972, Decker et al. 1980). This multiple-satisfactions approach has provided managers with a more holistic model for thinking about and planning hunter management programs, including hunter education.

One significant outcome of research related to the multiple-satisfactions approach has been recognition of the importance of the sociological and psychological dimensions of hunting. This has spurred several exploratory studies of the sociological aspects of hunting during the past 10 years. It is probably an accurate assessment to say that, with the possible exception of hunter education program staff, managers at first had some difficulty seeing the direct, practical application of much of the output from these inquiries. However, interest in understanding people's motivations for hunting has increased recently in conjunction with two phenomena: (1) changing values of American society (reflected in ecological awareness, anti-management attitudes, demographic changes of many types, etc.) and (2) static or declining hunting license sales experienced in some states in recent years. Three questions arise upon recognizing these phenomena: Are these two trends related? If so, how are they related? And, what are the implications for wildlife management as it has traditionally been practiced? Questions such as these have led a few progressive wildlife management agencies to study the sociological and

standard closed question/answer formats with a sample of hunting license holders. It became apparent that although the previous methods provided useful information, more in-depth data on the antecedents to hunting initiation and desertion were required to obtain the level of understanding of hunting initiation and desertion desired by DEC. Furthermore, it became clear that a more robust theoretical/conceptual model was needed to guide the research; simplistic approaches would not be sufficient to organize and integrate (i.e., interpret) the multivariate relationships that the pilot study suggested were operating.

Purpose

Using as a foundation the insights and experience gained through our previous research and that of others reported in the literature, this study was designed to expand our knowledge of the reasons individuals begin, continue, and terminate hunting. Specific objectives for this study center around determining the social-psychological antecedents to people's decisions whether or not to: (a) initiate hunting activity (with particular emphasis on people expressing interest in hunting; i.e., those having high potential to hunt); (b) continue hunting, once participation is initiated; and (c) desert from hunting after participation is initiated.

We will portray the dynamics of hunting participation via a social-psychological decisionmaking model. The intent of this model is to surround the multidimensional nature of the processes under examination using an approach that is both conceptually straightforward and intuitively acceptable. It should be stressed that this pilot study is not a definitive piece of research on the problems addressed. Rather, we hope that it will lay the groundwork (conceptual framework and hypothesis development) for subsequent studies scheduled under W-146-R so that these may be better focused and more valuable for DEC program planning. One additional outcome of this effort is the assessment of the practical, management utility of further research in this area; we hope the analysis will allow DEC and Project 146 staff to determine which segments of the problem hold the greatest potential for DEC program application and which are beyond influence by such programs and therefore least fruitful uses of

agency resources to affect hunting participation and associated benefits of wildlife management.

Study Strategy

Development of a conceptual framework and subsequent typology of hunters relevant to wildlife management decisions is different from a simple ad hoc classificatory system where more or less arbitrary categories are created to aid in summarizing data. Often classification systems and typologies are descriptive rather than analytical--their categories may not be linked together in ways that lead to explanatory predictive theories. This study attempts to go further than any previous efforts in developing a conceptual framework (and its accompanying typology). This allows us to create descriptive categories that can be placed within a broad structure of both explicit and assumed propositions explaining hunters' behavior.

Conceptual frameworks logically direct and organize empirical and theoretical analyses around a central problem toward which research is focused. Thus, this study builds from our previous findings and those of others in an attempt to explain hunting behavior.

The study followed these steps:

1. A wide-ranging literature review was made of outdoor recreation generally, hunting specifically, sociology, psychology, and social-psychology.
2. Preliminary open interviews were conducted with individuals knowledgeable about wildlife management and avid about hunting.
3. Preliminary research hypotheses were formulated, related to hunting behavior (in the contexts of initiation, continuation, and desertion in the activity).
4. An in-depth, partially structured interview instrument was developed, pretested, evaluated, and revised.
5. In-depth interviews were conducted with a small group of individuals.
6. Data from this exploratory research were analyzed to assess the original research hypotheses and to develop new hypotheses.
7. Data from several previous studies were reanalyzed to "test" these hypotheses and to aid in their refinement.

The rationale for this strategy stems from our belief that traditionally structured sample surveys used alone (especially if prior to conceptual framework development), and the deductive approach applied to them, may be unproductive in the initial stages of this complex realm of research. We felt that results from such an approach would be superficial and difficult to interpret accurately. Rather, we believed that an inductive approach was necessary initially. Our literature review revealed that analytic inductive methods have been neglected in much of the behavioral research on hunting participation. (Jackson and Norton's [1979] work is a notable exception.)

Stated simply, inductive research follows a logical model in which principles are developed from specific observations. Conversely, deductive research is the process of deriving specific expectations from general principles that are already established and available as bases from which to work. Of course, the development of a body of knowledge involves both the inductive and deductive processes; we believed that additional inductive research was needed in this area of inquiry.

The application of the inductive process in the initial stage of social and behavioral research on hunters is premised on the belief that the researchers must first make sufficient observations of the "real world" of hunting participation before suggesting hypotheses about it. Taking an inductive approach helps ensure that the patterns of relationships identified correspond to reality (i.e., moreso than do the hypothesized patterns of the deductive researcher who skips over the inductive steps). These advantages must be weighed against the disadvantages of not knowing that the "segment" of reality examined is typical of the general population.

In summary, the sequence of events for inductive reasoning includes observing "reality", finding a pattern, and reaching a tentative conclusion. In contrast, the sequence of events for deductive reasoning is formulating an hypothesis, observing reality, and accepting or rejecting the hypothesis. Obviously, the best analysis of a problem is to utilize both approaches sequentially. Ideally, the researcher would begin with no hypotheses, observe the situation, develop a working set of tentative hypotheses, modify them inductively, rethink their theoretical

system, reformulate the hypotheses, and seek new observations to verify or refute the hypotheses. This is precisely the procedure we have taken, within our budgetary limitations. Consequently, the principal outcomes of this study are a conceptual framework within which future research can be guided and several hypotheses awaiting assessment by sample surveys to test them specifically.

**THEORETICAL BACKGROUND AND CONCEPTUAL FRAMEWORK:
A REVIEW AND SYNTHESIS OF PERTINENT LITERATURE**

An unconventional approach was required to accomplish the goals of this study. Our evaluation was that previous research has not provided sufficient background information on the antecedents of hunting initiation, continuation, and desertion and that these aspects of hunting involvement should be considered in a social-psychological context, using a more in-depth methodology that would permit collection of detailed data. Such an orientation arose from three basic assumptions:

- (1) An individual may not readily recognize all the social-psychological influences impinging upon his or her decision to begin or terminate hunting, nor will s/he necessarily be aware of the relative importance of these influences to the decision, without the probing of an interviewer.
- (2) Resource-related factors pertinent to hunting, such as game abundance, overcrowding of hunting areas, etc., are important to hunting initiation or desertion only insofar as they affect social-psychological constructs, such as the individual's goals, beliefs, values, etc., relevant to hunting participation.
- (3) People participate in an outdoor recreation activity such as hunting for not one, but a combination of interrelated reasons; an individual may pursue an activity for health reasons, but also out of a sense of familial duty, due to peer group pressure, etc.

The treatment of hunting initiation and desertion in such a context is necessary to develop a full understanding of these actions. To meet the needs of potential hunters and prevent the desertion of active hunters, their entire situational environment must be considered, including the influences of other people and personally held beliefs, values, goals, etc. For instance, perhaps many individuals hunt only to spend time with others. To get shots at game, see more wildlife, etc. may have little importance; such activity-specific satisfactions have little influence on whether this type of hunter remains active. Only in a broad social-psychological context can it be discovered that the desire to be with someone else is the principal force keeping this type of hunter hunting.

Thus, we need a more in-depth analysis that examines the influence of a broad range of social-psychological factors and interactions on hunting initiation and desertion.

Understanding Hunting in a Social-Temporal Context: The Adoption of Innovations

Muth and Hendee (1980) discussed the process of innovation adoption--the adoption of new ideas, practices, or activities by individuals--using the classical innovation adoption model of Rogers and Shoemaker (1971). Decker et al. (1983) adapted the ideas presented in that discussion to create a social-temporal model of the adoption of hunting as a recreational activity. When trying to identify the ways in which agency programs can have an impact on an individual's hunting participation, it is useful to think about the development or progression of a person's interest and involvement in hunting. Figure 1 is a simplified illustration of the conceptual process of hunting interest development. It points out the existence of several stages in the process of adopting hunting as a recreation activity, from initial awareness of the activity, to gaining interest in it, to actually trying it, to the adoption of it as a recreational pursuit, and finally to the decision(s) to continue hunting. The model is important because it emphasizes that the decision to hunt is rarely spontaneous, but rather the product of a sequence of decisions and the resulting psychological "movement" of an individual through the process leading to the end behavior.

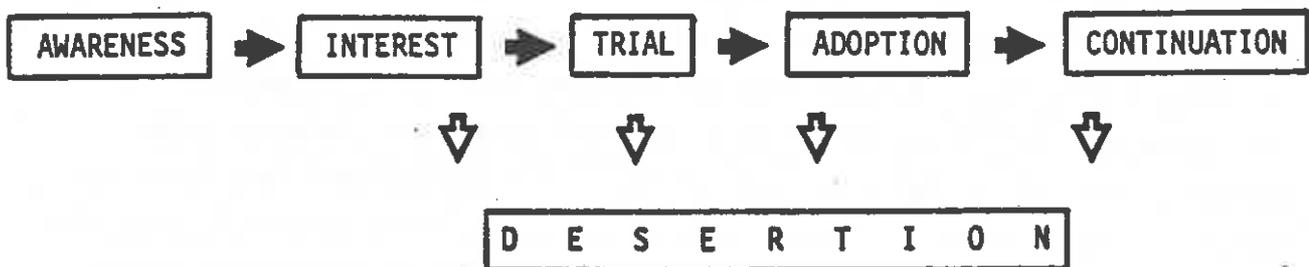


Figure 1. Stages in the Development of an Individual's Interest and Involvement in Hunting: A Simplified Conceptual Model of the Process.

In the awareness stage, individuals are first exposed to new information--in this case about the recreation activity of hunting. Exposure may be through personal contacts, or as is often the case today, through the mass-media--television, radio, newspapers, magazines, etc.

In the interest stage, the individual may seek more information about hunting, and consider if and how it applies to him or her. Again, both personal contacts and the mass media are important in this stage.

The next stage, the trial stage, is reached by some fraction of individuals from the interest stage. Trials are usually on a limited scale to test and validate the desirability of the new recreation activity. In this stage, contacts with participants and personal experience become the most important sources of information.

The adoption or rejection stage is additionally greatly influenced by personal contacts. Also important are the personal experiences of the trial stage. Rejection often follows unsatisfactory experiences in the trial stage; adoption often follows satisfactory and successful experiences. An individual can be recycled through the trial and adoption or rejection stage over time.

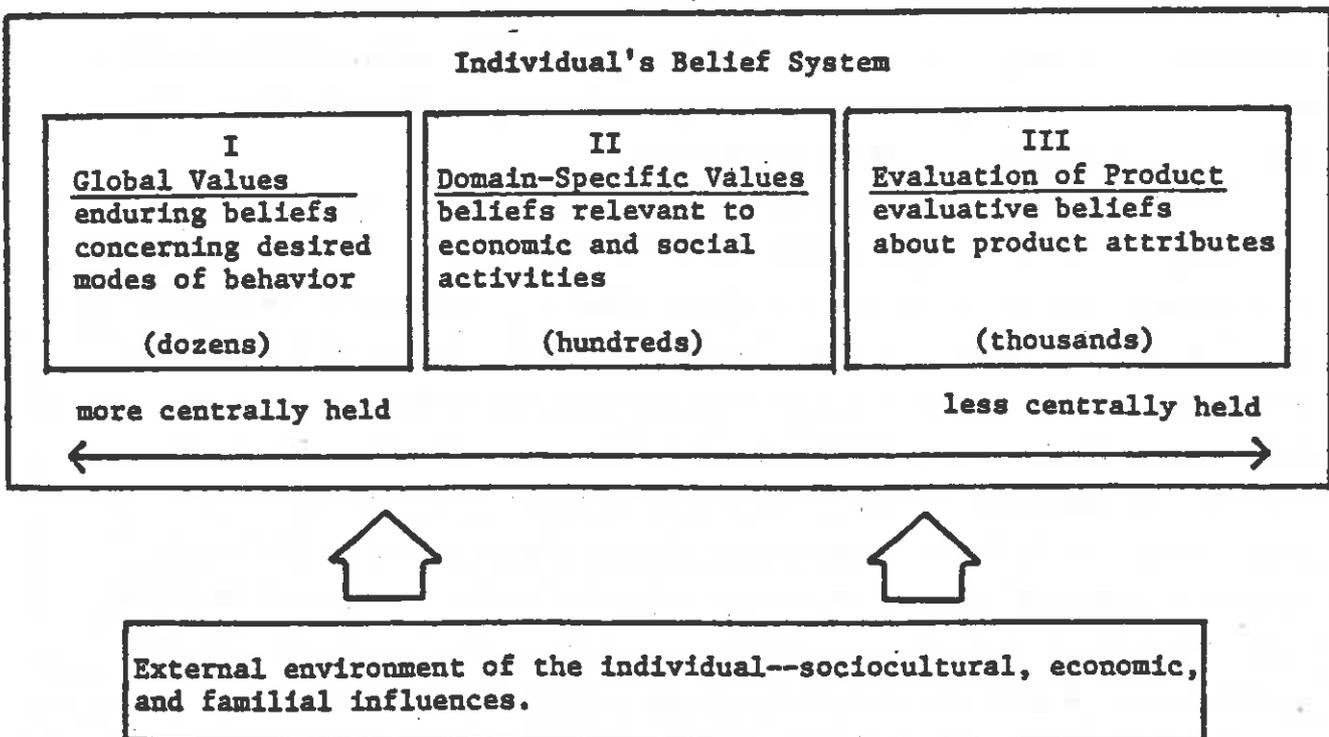
The final active stage, the continuation stage, involves the decision(s) to keep hunting. As was the case in the adoption/rejection stage, the two most important sources of information in this stage are personal contacts and personal experiences.

There are real and perceived negative and positive influences impinging on an individual's decisions leading to movement from one stage to another. The negative influences or barriers will cause "desertion" of some individuals before they reach the next higher stage of interest or involvement. The mix of positive and negative influences differs at each transition, therefore potential hunters and active hunters should be segmented accordingly so that efforts to increase their interest and involvement can be better focused to address their specific needs--to reinforce positive influences and to reduce negative influences at each stage, thereby facilitating progression into the next level of hunting involvement. A goal of this study is to identify the positive and negative influences existing for individuals at each transition from one stage to another.

Studying Hunting in a Social-Psychological Context: The Importance of Value Analysis

One can view attempts to provide wildlife management benefits via desired hunting experiences as analogous to an attempt to sell a product (i.e., hunting opportunities). To market a product successfully, research is needed to develop a marketing strategy. Evaluations of marketing strategies as they relate to values provide useful insights pertinent to our efforts.

Vinson et al. (1977) criticized standard market research because it has largely disregarded values and centered on assessing the relative importance of various product attributes. The same basic criticism holds for studies of hunting. Much work has concerned the attributes of the hunt; less has concerned the social-psychological antecedents influencing whether or not an individual decides to begin or terminate hunting. Vinson et al. (1977) argue that such social-psychological antecedents-- particularly values--should be given more attention. They present the following paradigm of values:



Regarding the third, least central category, the authors write:

"While such beliefs may be important, they are less centrally held. Among the many kinds of beliefs in this category are evaluative beliefs about the desirable attributes of product classes as well as specific brands. It is this category of values that most of the expectancy-value research has used in predicting brand appeal."

This observation regarding market research studies seems to be true also of most recreation studies; i.e., they have dealt with the most specific, peripheral part of an individual's value system. To understand why someone begins or terminates hunting, however, we believe that global and domain-specific values should be studied; evaluations such as "too many other hunters" or "lack of game" may suggest to management the problems "customers" have with the "product", but they do not uncover the broader, more central and more powerful reasons that hunters move into and out of the market.

Other comments by Vinson et al. (1977) support this type of research approach:

"Knowledge of consumer value orientation provides an efficient measurable set of variables closely related to needs which expand the marketer's knowledge beyond demographic and psychographic differences. If large market segments can be identified on the basis of value profiles, the marketing strategists could develop programs which would maximally enhance the important values of consumers in each market segment."

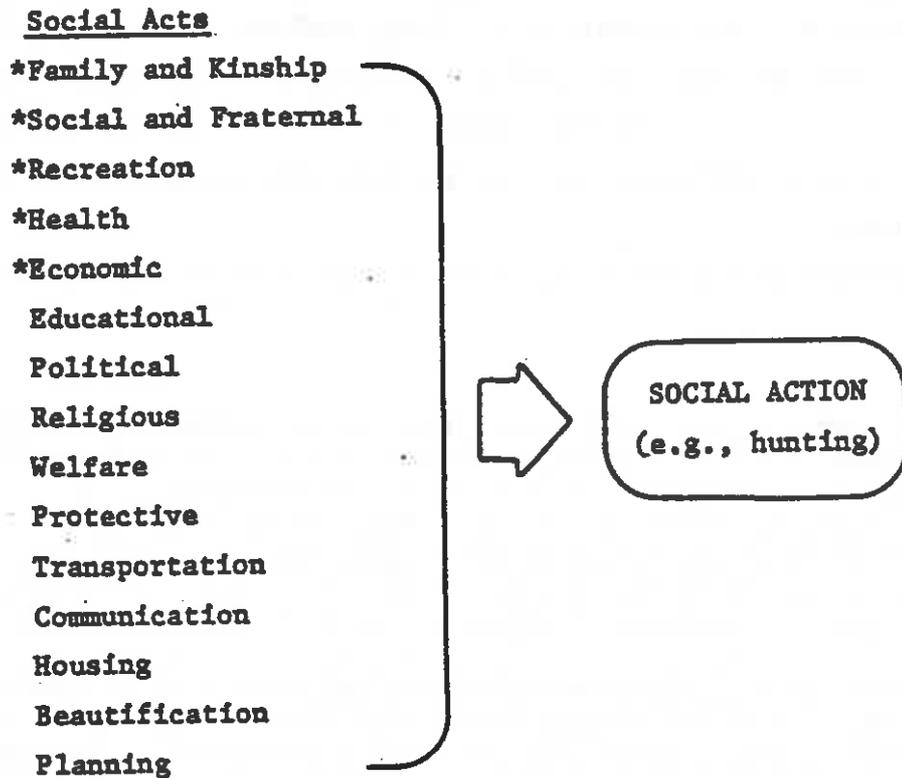
"Since 'global' and consumption values appear to be connected to the importance of product attributes and the appeal of different product classes, this suggests that a promotional strategy designed to create and reinforce a preference by appealing to centrally held values may be highly effective."

Although the Vinson et al. (1977) paradigm demonstrates satisfactorily the notion of a central-peripheral continuum in an individual's belief system, and the authors make a strong case for the need to determine the essence of the center, it should be understood that they address only a slice of the pie--values. Besides values, such

or habit?
factors as goals, commitment, support, habitat and custom, etc. influence the decision to hunt or not to hunt. The following section presents a functional conceptual framework encompassing these factors.

The Reeder Conceptual Model: Hunting as the Result of a Process of Decisionmaking

Reeder (1973) defines a social action as "any learned form of social expression." Hunting, then, is a social action. Reeder categorizes social actions into general types of acts (Figure 2).



* Acts relevant to this study.

Figure 2. The Reeder Conceptual Model of Types of Social Actions in the Decisionmaking Process. (Adapted from Reeder 1973:26.)

Thus, an individual's hunting participation could constitute one or more of five types of social acts; hunting may be classified as a family (kinship) act, an economic act, a social-fraternal act, a recreational act, a health act, or more likely, some combination of these (see Appendix A for definitions). To understand the social-psychological antecedents to participation in hunting for an individual, it is helpful to partition hunting in this social action context. Thus, for one hunter, hunting may be primarily a fraternal act (70%), but also a recreational act (30%). For another it may be entirely a family act (100%). The important point is that the combination differs from person to person, and probably even for the same person at different times. We will hereafter refer to the unique combination of these types of acts for each individual as that individual's definition of hunting. For operational purposes, each type of act that is part of an individual's definition of hunting will be considered a component of his hunting. So for the first hunter mentioned above, hunting has a fraternal and recreational component.

Reeder (1973) states that every social action is affected by one or more of ten types of social-psychological influences (Figure 3). Appendix B lists these influences and briefly describes each of them. They are discussed more completely in Reeder (1975). These influences may be either positive or negative regarding a decision to initiate or continue hunting. This is shown in Figure 3. The decisions to initiate, continue or terminate hunting depend on the relative importance of the positive versus negative influences. Quite simply, a negative balance results in a decision not to initiate or to terminate hunting activity, whereas a positive balance results in a decision to begin or to continue hunting.

Influences Which Affect Components of Social Action

Components of Social Action

Social Action

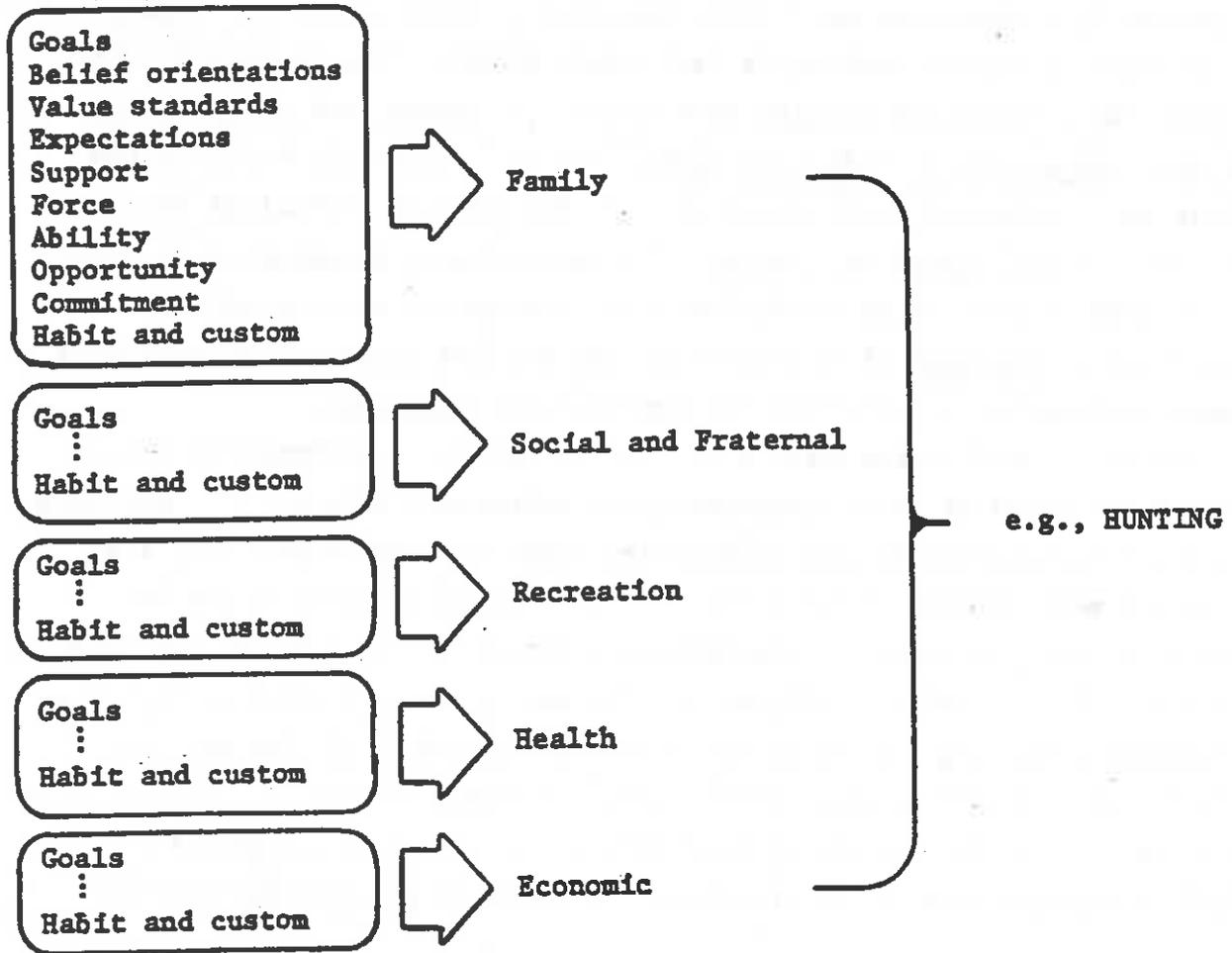


Figure 3. Influences Which Affect the Components of Social Action and The Specific Social Action.

The following is an illustrative social-psychological profile of a hypothetical hunter using the above model for analysis:

<u>Social Action: Hunting</u>		
<u>Components of the Social Action</u>	<u>Key Positive and Negative Influences Affecting Particular Components:</u>	
	<u>as stated</u>	<u>Social Action Influences Reflected by the Statement</u>
family (70%)	"It's important to me to spend time at home with my family." (neg.)	value standard
	"I'd like to spend more time hunting with my dad." (pos.)	goal
	"We always hunt together at Thanksgiving." (pos.)	habit/custom
social-fraternal (20%)	"My wife thinks I should spend more time at home." (neg.)	support
	"A lot of guys at work have been asking me to go hunting with them." (pos.)	expectation
recreational (10%)	"I enjoy spending time outdoors." (pos.)	goal
	"Hunting gives me a chance to see other wildlife." (pos.)	goal
	"I've always been a good shot and a good hunter." (pos.)	ability

The balance is in favor, of this hunter staying in the activity. However, suppose new information is received: the father dies and the mother sells the farm where family hunting has always taken place. In such a situation an individual's definition of hunting may change, and the balance of the positive and negative influences may be reevaluated. The result of this process is the decision to continue or terminate hunting, depending on the new balance of positive and negative influences.

Of course, a hunter need not experience dramatic changes in life before reevaluating participation in hunting. Undoubtedly, most hunters constantly receive new information (thus expanding what Reeder [1973] calls their "bank" of positive and negative influences) that cause the slightest shifts in their definition of hunting and in the balance of the factors influencing their decisions. Only after an accumulation of negative shifts will a hunter desert.

There are numerous advantages to using Reeder's basic model as part of a conceptual framework to guide our research. It is comprehensive, logical, and flexible in terms of applications. It does not endorse or imply any specific theories of social-psychology, yet it can be substantiated by many of them. A brief review of the relationship of this model to various social-psychological theories and research approaches demonstrates this:

- (1) Driver (1976) states that a number of antecedents determine the probability that an individual will participate in an activity: (a) psychological and physiological traits or characteristics, (b) social-economic characteristics, (c) past experiences and learning, (d) perceived attributes of recreation resources and past recreation satisfaction, and (e) home and work environmental conditions. Reeder (1973) implies that such factors go into an individual's bank of positive and negative influences, which is the foundation for decisions. Thus, both models recognize the importance of antecedent social and psychological factors. However, the intention of Driver's model is to aid managers in increasing the attractiveness of their product; consequently, it emphasizes activity-specific factors and the day-to-day process of choosing between the competing recreations in which a particular person is involved. It is necessary that our model examine in detail the social-psychological influences that determine whether an individual initiates or terminates hunting. Therefore, the focus is on the stages in Driver's sequential model (see

Appendix C) up to and including B-1: "potential recreationist with quantifiable characteristics." The remainder of Driver's model concerns the day-to-day process of choosing a recreation activity, and is less important to us. We assume that as long as the balance of influences are positive, an individual will remain a hunter, though hunting may not be the activity of choice every time an opportunity to recreate occurs.

- (2) Klessig (1970) recognizes that social-psychological factors may be more critical to initiation and desertion than activity-specific satisfactions: "two-thirds of the deserters quit hunting for social and psychological reasons, while 18 percent became physically unable, and only 15 percent quit because of resource inadequacy." However, Klessig does not look for causes for initiation/desertion within a conceptual framework. He does discuss "causes" such as social class, residence, residence mobility, and age, but these variables often interact with other variables in more complex ways than simple cause-effect relationships.

Klessig's assessment of the difference in hunting initiation between rural and urban youth appears to be incomplete. He contends that one of two possible theories explains this difference: the accessibility theory or the value theory. Within our framework, the accessibility theory can be viewed as the notion that the opportunity influence, as defined by Reeder, is all-important as the cause for initiation. On the other hand, the value theory can be viewed as the notion that the influence of value standards is all-important.¹ Klessig ultimately opts for the accessibility theory.

A weakness of Klessig's analysis is the failure to consider other possibilities, or to entertain the possibility that acceptance of one theory need not completely exclude acceptance of the other. Our framework should be sufficiently robust for us to explore all possibilities, and ultimately propose theories on initiation/desertion based on clusters of positive and negative influences surrounding hunting as a social act with multiple dimensions.

¹Note: In a later paper, Klessig (1974) apparently reduces his support for the accessibility theory:

"The predominant reasons for deserting the hunting fraternity relate to social-psychological considerations such as loss of interest or a change in attitude regarding the wholesomeness of hunting or new friends who weren't hunters or obligations to wife and family or just plain too busy...Thus, 67 percent of former hunters reported that some change in their social context was responsible for terminating their hunting behavior."

- (3) In a pilot study of hunter satisfactions, Brown et al. (1982) also recognized the importance of social-psychological "reasons" for hunter initiation/desertion:

"The five personal reasons cited most frequently for not hunting were: (1) not enough time to hunt; (2) lost interest in hunting generally; (3) no one to hunt with; (4) personal health problems; and (5) decided I don't like to kill game. These reasons for not hunting reflected attitudinal shifts, changes in life stage, and other personal experiences. Resource-related reasons were cited less frequently."

As with Klessig (1970), however, the conceptual framework needed to examine these factors in a dynamic, comprehensive fashion was not in place for the study. In an unpublished manuscript, Decker et al. (1983) reiterate Klessig's determination that although relationships exist between initiation/desertion and socio-demographic variables, the exact nature of these relationships is difficult to determine.

- (4) Rokeach (1968) discussed a theory of the mental organization of value-attitude systems that examines the hierarchical scheme of values and attitudes, and explains value-attitudes consistency through this scheme. The relevance of this approach to understanding hunting desertion can be illustrated by applying it to the analysis of the pilot study (Brown et al. 1982) conducted prior to this study. A review of the pilot study telephone interview with deserters reveals that many individuals claimed to have quit hunting because they did not like to kill game. One can assume that this reason emanates from some centrally held value. About such central values Rokeach writes:

"Since these...values are the most centrally located structures, having many connections with other parts of the system, we would expect inconsistencies which implicate such values to be emotionally upsetting and the effects of such inconsistency to dissipate slowly, to be long-remembered, to endure over time, to lead to systematic changes in the rest of the value system, to lead to systematic changes in connected attitudes and, finally, to culminate in behavior change."

This suggests that even though a person may have strong values against hunting, he or she will not necessarily quit immediately--it may take time for effects to filter down to the final stage, that of behavior. Rokeach notes that even a person with such a strong central value may be induced to engage in behavior which is inconsistent with his attitudes or values. Thus, although Rokeach concentrates on two of the ten items in Reeder's model (value standards and belief orientations), he recognizes that such factors as expectations, goals, etc. may

actually determine behavior, despite the conflict created. Value standards then eventually surface to stop the activity, or change so as to be consistent with it. In summary, Rokeach's theory can be viewed within our framework as an explanation of the interaction between value standards and belief orientations, and the influence of this interaction on initiation/desertion. It also emphasizes the weight that must be given value standards as a positive or negative influence on an individual's decision to begin or terminate hunting.

The purpose of this brief review has been two-fold. First, we wanted to point out the shortcomings of several commonly seen approaches to understanding behavior, particularly recreationist or hunter behavior, for the purposes of this study. Second, we wanted to illustrate that the approach we have taken is not inconsistent with these others, but is more comprehensive and actually surrounds the bulk of them, providing a useful theoretical basis for this investigation.

Initiation, Continuation, and Desertion in Hunting: A Conceptual Model

In the literature review just presented, we discussed an adaptation of Reeder's decision-making model which operates at decision points. Essentially, a person brings to bear a "relevant cluster" of positive and negative influences (from the ten types shown in Figure 3 and described in Appendix B) when making a decision, weighs the positive influences against the negative, and reaches a decision based on this evaluation. So in hunting, if the positive influences have greater weight than the negative influences the person hunts; if not, the person does not hunt. Even while hunting, an individual is constantly receiving new data that may or may not cause the favorable balance concerning the decision to hunt to become negative.

Although the adaptation of Reeder's decision-making model is conceptually useful in understanding the course of behavior people choose at a decision point, it fails to address the temporal developments that precede a decision point. People do not often decide to hunt in response to a creative, unique thought; they gradually reach that decision. Figure 1 presents a model of the temporal developments leading up to hunting; it was discussed in detail on pages 8-9. A person moves from awareness of hunting to interest in hunting, then to exploratory involvement in hunting, and finally to adoption of hunting.

Ideally, a conceptual model of the process of initiation, continuation, and desertion in hunting should include the decision-making process that occurs when one moves from one temporal stage (awareness, interest, trial, adoption, and continuation or desertion) to another; Figure 4 reflects this. When an individual is in a temporal stage (excluding "awareness"), new information is frequently received relevant to the decision to progress to the next stage. Each time new information is received, the positive influences concerning the decision are weighed against the negative, and based on this evaluation a decision is made to either regress to a previous stage, remain in the current stage, or continue to the next one.

A few points about this model deserve emphasis. First, when new data are received, an individual may either confirm or change his/her personal definition of hunting, but receipt of new data does not necessarily result in redefinition. For instance, if license fees increase, a person's definition of hunting probably will not change. On the other hand, if an individual who hunts only to socialize with coworkers changes jobs, that individual's definition of hunting may very well change.

Another point is that this model allows for regression. In reality, it is possible for an individual hunting today to be completely uninterested in hunting at some time in the future. The model recognizes this possibility. The only stage to which one does not revert is the pre-awareness stage; people can't become "unaware" of hunting. A special note about the process of regression is that once an individual has deserted hunting, any new forays into hunting involve a trial stage; the individual decides to give hunting "another try". On the other hand, inactive hunters who do not consider themselves deserters begin hunting again without going through a trial stage. Their temporal desertion is not concurrent with a self-perceived or psychological desertion. Whether the period of inactivity lasts weeks, months, or years, they are still hunters in their own minds.

Finally, attention should be given to the various mini-cycles within the model. The most important of these is the cycle involving individuals who continue hunting (highlighted in Figure 4). Participation in hunting is not a simple event. It is a process. No matter how long one has been

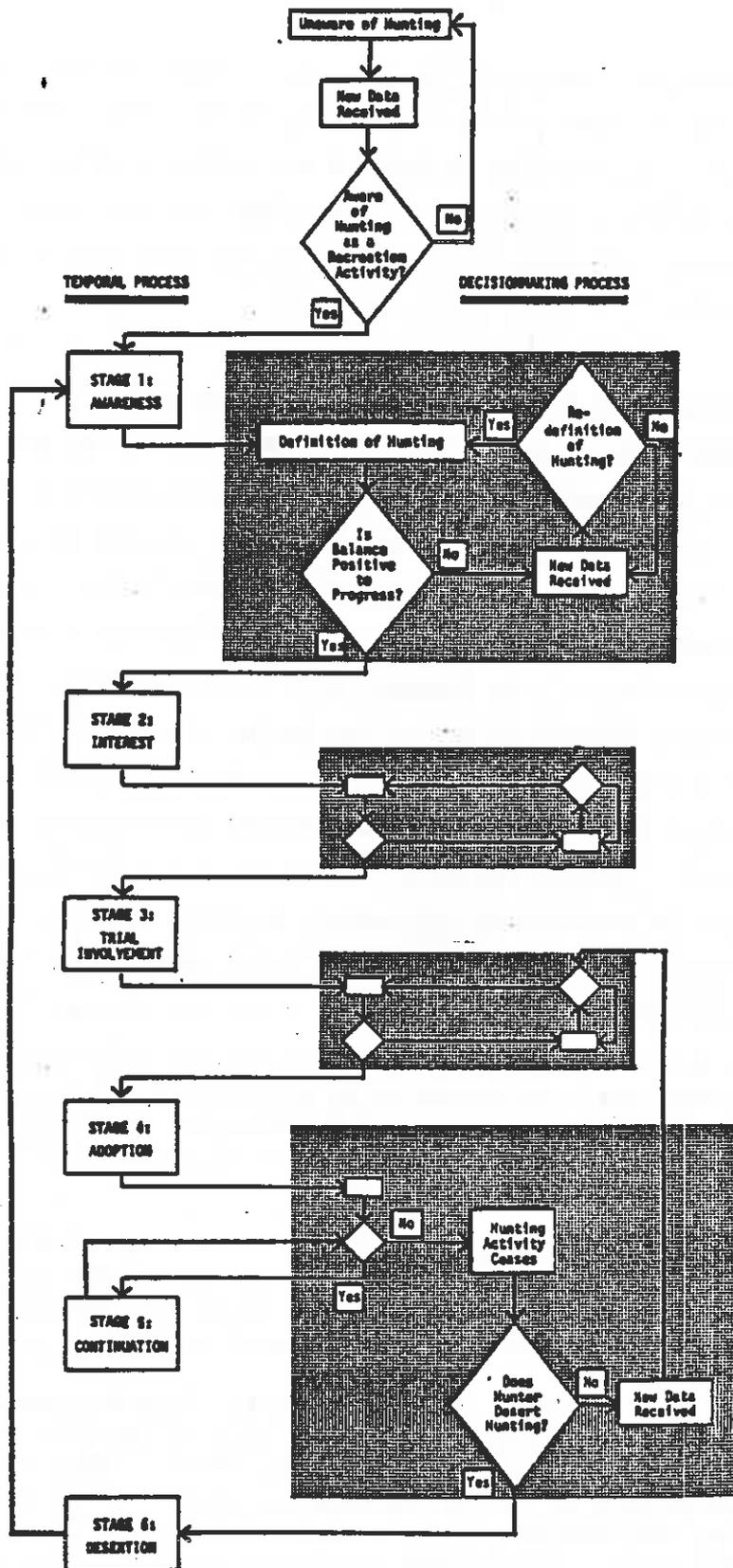


Figure 4. The Conceptual Model of Hunting Interest Development, Showing Also the Process of Continuation in Hunting.

hunting, new information concerning hunting is constantly being received, and often results in changes in the definition of hunting. For example, the process accounts for the five stages of waterfowl hunting described by Jackson and Norton (1979), where active waterfowl hunters change their definition of hunting, although they remain active throughout the developmental process.

Social Learning Theory: An Explanation of the Framework

The above model regards participation in hunting to be the product of a temporal process, catalyzed at key points by decisionmaking processes. However, it does not address why some people weigh the various types of influences positively at the decision points, whereas others weigh the same types of influences negatively. Why does one person's value standards cause repulsion at the thought of killing a rabbit, while another person's value standards raises no qualms at doing the same? Why is bagging a deer a major goal of one person, and unimportant to another? Such questions should be discussed in the context of accepted social-psychological theory. Social learning theory (Bandura 1977) provides a functional approach to explaining why people weigh the ten types of influences differently. The following is a brief summary of the tenets of the theory relevant to this discussion.

- "People are neither driven by inner forces (cognitive/humanistic model), nor are they buffeted by external stimuli (behavioristic model). Rather, psychological functioning is explained in terms of continuous reciprocal interaction of personal and environmental determinants" (Bandura 1977).
- The vast majority of human learning is rooted in observation, vicarious processes, and symbolic processes, rather than in performance. One need not walk in front of a train to understand the inevitable consequences of such an act.
- A common manifestation of observational learning among children is imitation (modeling). Children tend to imitate friendly and attentive adults (Bandura and Huston 1961). They also tend to imitate persons of power and stature (Mischel and Grusec 1966). Modeling need not be obvious; much of its significance lies in its subtleties. In a study done well before social learning theory was proposed, Escalona (1945) found that an infant's preference for orange or tomato juice apparently depended upon

the preference of the nurse that fed him, despite the fact that he was never actually told of the nurse's preference.

- "Whether or not people choose to perform what they have learned observationally is strongly influenced by the consequences of such actions" (Bandura 1977). This point is important to an explanation of socialization. For instance, in gender role socialization boys and girls observe both parents, but boys and girls are rewarded or punished for a specific action differentially, especially as they grow older. "A three year old boy may innocently dress up in his mother's clothes and make-up," Tavris and Offir (1977) note, "but if he does so at age fifteen he'll be in trouble."
- "Social environments contain numerous modeling influences which may be compatible or conflicting...the social transmission of standards is facilitated by consistency in modeling" (Bandura 1977). This notion of consistency will be discussed later in this report.
- "Children eventually come to respond to their own behavior in self-approving and self-critical ways" (Bandura 1977). In essence, this self-evaluation is the result of the internalization of the attitudes and standards of role models. Self-evaluation is necessary to the formation of goals and therefore the creation of motivational "drives" and "needs".

In essence, social learning theory states that people learn their goals, values, attitudes, etc., by watching others, and through language and written communication. Social learning theory is discussed further and applied throughout this report. For now, it should be viewed as a source of explanation for the "whys" of the evaluative aspect of decisionmaking.

Summary of Conceptual Framework: A Note on the Connection Between Concepts

This report presents the results of an exploratory study within a complex framework composed of three distinct models/theories: an adaptation of a temporal model developed by Decker et al. (1983), a decision-making model developed by Reeder (1973), and social learning theory as proposed by Bandura (1977). Figure 4 represents the relationship between the Decker and Reeder models, and will be referred to frequently throughout the paper. Unfortunately, it is impossible to include in Figure 4 the role of social learning theory within the framework without creating a visually awkward diagram. However, in

various figures throughout the report social learning theory is used to explain the organization, direction (positive vs. negative) and size of lines of influence--structural devices that connect Reeder's ten types of positive and negative influences to the decision points in Figure 4. It is in this capacity that social learning theory is diagrammatically connected to Figure 4. Figure 5 illustrates the connection. To understand the antecedents to participation in hunting fully, the reader should keep in mind that the lines-of-influence diagrams used in this report are all part of a single, larger model.

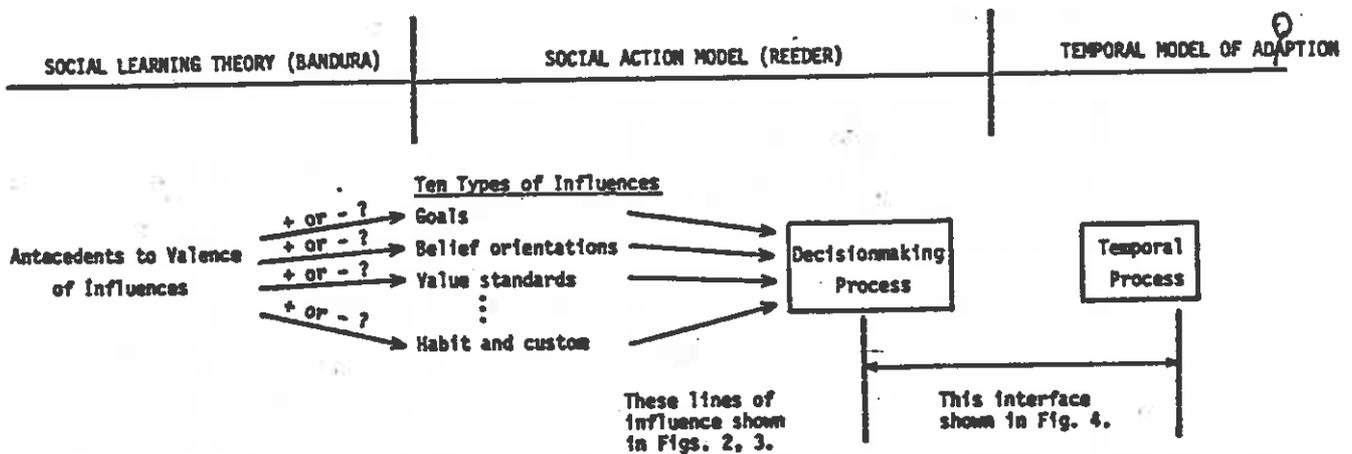


Figure 5. Composite Model Showing The Connection Between Social Learning Theory, The Social Action Model, and The Temporal Model of Adoption.

Summary

To understand why individuals begin or terminate hunting, more than the attributes of the hunt must be considered. It is also important to look at the broad set of social-psychological influences (values, goals, attitudes, etc.) that identify hunting as a social activity--be it a kinship, social-fraternal, recreational, health, or economic one, or a combination of these--and which serve as incentives and disincentives to

involvement. In so doing, DEC wildlife managers may be able to identify natural market segments with differing needs and expectations, and create or adjust programs to make them provide greater benefits to these segments. A conceptual framework based on combining three approaches to understanding human behavior was used for this study; its breadth and flexibility enhanced its usefulness in guiding the study.

The following section will discuss the survey methods, based on the framework developed in this section, to meet the objectives called for in W-146-R-8: VII-6.

STUDY METHODS AND ANALYSES

Our overall survey method and analysis closely parallels what Patton (1983) calls Mixed Form: Naturalistic Inquiry, Qualitative Measurement, Statistical Analysis. About this mixed form, Patton writes:

"As in the pure qualitative form, (subjects) are selected...on the basis of whatever criteria staff choose to apply. In-depth interviews are conducted...These data are then submitted to a panel of judges who rate them on a series of dimensions...Ratings aggregated to provide an overview..." (p. 113).

As the earlier outline of study strategy indicated, a variety of methods were employed in this research. Sources of data were of two types:

- (1) original data acquired specifically for this study, collected using telephone and face-to-face personal interviews, and
- (2) reanalysis of survey data sets from previous Project W-146-R studies of various hunter audiences.

Details of these will be discussed briefly, followed by a description of analysis techniques employed.

Interviews

Three types of interviews, conducted during March and April 1983, were used in this study. First, we conducted 10 preliminary in-depth semi-structured taped interviews as part of the method development process. Next, the interview instrument was revised and used in personal interviews with 32 hunters (Appendix D); an additional 11 hunters were interviewed over the phone because they preferred this method (Appendix E). These interviews were typically of one-hour duration and recorded on tape. Hunters contacted in this portion of the study were identified primarily from the sample lists used in the "Analysis of Satisfaction and Participation in Hunting: A Pilot Study" by Brown, Dawson, and Decker (1982) (W-146-R-7: VII-4). A sample of 31 previously identified "potential" hunters was selected from respondents in the "1978 Hunter

Training Course Participant Study" by Brown, Decker, and Hustin (1981) (W-146-R-6: VII-3). Information was collected from these people via a telephone interview. These interviews were not taped, but a system was employed in which one Project staff member conducted the interview while another took notes.

Reanalysis of Previous Survey Data

As the analysis of the interview data progressed, a variety of relationships were detected. Because only the "potential" hunter data could be considered a representative sample, relationships or trends in the data are tentative and used to formulate research hypotheses rather than presented as definitive findings. Nevertheless, some of these hypotheses could be partially tested using data from previous studies conducted under Project W-146-R. In many instances it appeared that reanalysis of these existing data would serve as an efficient and cost-effective proxy for a new survey. (Of course, not all hypotheses developed from this study could be tested in this way.) In some cases the existing data were not ideally suited to the purpose at hand or only partially addressed a problem, but allowed us to refine or modify the hypothesis of interest.

Data from the following studies were used in this analysis:

- a) "Hunter Access to Lands on Which to Hunt in New York", by Brown, Decker, Dawson, and Hustin (1978); W-146-R-4: II-4.
- b) "1978 Hunter Training course Participant Study", by Brown, Decker, and Hustin (1981); W-146-R-6: VII-3.
- c) "Analysis of Satisfaction and Participation in Hunting: A Pilot Study" by Brown, Dawson, and Decker (1982); W-146-R-7: VII-4.
(This study had two data sets: (1) mail survey data of hunting-license holders and (2) telephone interview survey data of residents.

Overview of Types and Significance of Data

To understand why someone stops hunting or has a strong propensity to continue hunting, some knowledge of that individual's hunting history must first be obtained. We also believe that hunters go through involvement stages and that knowledge of these is necessary to this understanding. On

page 21 we presented a dynamic model in which new information is constantly changing the balance of negative and positive influences associated with each social action component affecting hunter participation. Usually this new information results in undetectable changes. Occasionally, however, this new information results in noticeable and even dramatic changes in the balance of negative and positive influences surrounding some or all components, and may change the hunter's definition of hunting by reordering the importance of the various components. These major changes demarcate stages in the individual's hunting experience.

Given the above, the data collected from interviewees needed to be of sufficient scope and depth to provide the following information:

- 1) Demarcation of the individual's stages of hunting. This includes determining the number of stages and the age of the individual at the beginning of each stage.
- 2) Factors causing transitions from stage to stage.
- 3) Definition of hunting for each individual at each hunting state. We propose that an individual's definition of hunting may be illustrated through a methodological construct we have called "stage structure". A stage structure simply compares the relative importance of each of the five types of social action components identified earlier (family, fraternal, recreational, health, economic) for an individual during a particular stage. For instance, if a hunter states that for a particular stage hunting was mainly a fraternal act and secondarily a recreational act, the hunter's stage structure might be represented in the illustration presented in Figure 6.
- 4) Interest and participation in hunting at each stage. These are indicators of involvement.
- 5) Various socio-demographic characteristics.

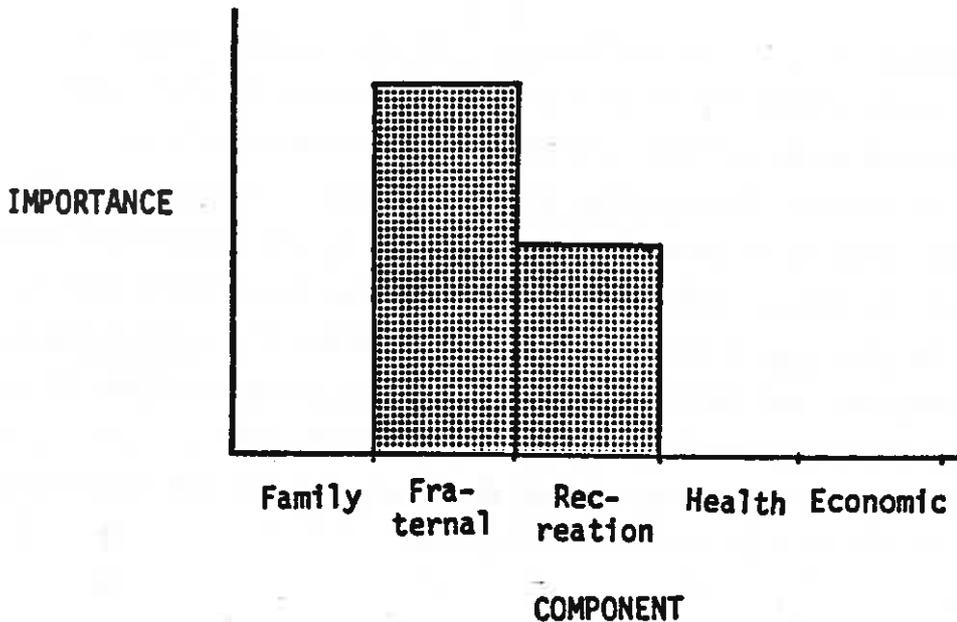


Figure 6. An Example of the Social Action Components of a Person During a Particular Hunting Stage.

Demarcation of Hunting Stages, Evaluation of the Factors Causing Hunting Stage Changes, and Determination of the Structure of Hunting Stages

The first part of each interview consisted of an open-ended discussion of the interviewee's hunting history. This provided the interviewer with the background necessary to guide the interviewee through the next step--development of a graph of the interviewee's hunting history. This process was a form of initial analysis that resulted in the following: (a) demarcation of hunting stages, (b) evaluation of the factors causing hunting stage changes, and (c) determination of the structure of each hunting stage (i.e., as discussed in 3 above). At the start of this process, the interviewer gave a brief discussion of the concepts hunting stages and social action components, in the appropriate language. The interviewer then worked with the interviewee to fill in the graph of hunting stages by identifying stages and assigning importance to social action components in each stage based on a total of 10 points. Results of this process for an anonymous hunter who identified four hunting stages are illustrated in Figure 7. Note that in the first two stages, this individual defined hunting to be primarily a family act, and

secondarily a fraternal and recreation act. In the fourth stage he deserted. The stage structure of this person's hunting history also demonstrates a point made earlier: a change in positive/negative influences may or may not precipitate a change in one's definition of hunting. In the case under consideration, at age 14 the individual could legally hunt for the first time, and this caused the transition from stage 1 to stage 2. It did not, however, cause him to alter his definition of hunting. By contrast, the influences that affected the transition from stage 2 to stage 3--less time to hunt with his family, new responsibilities, etc.--did cause him to alter his definition of hunting.

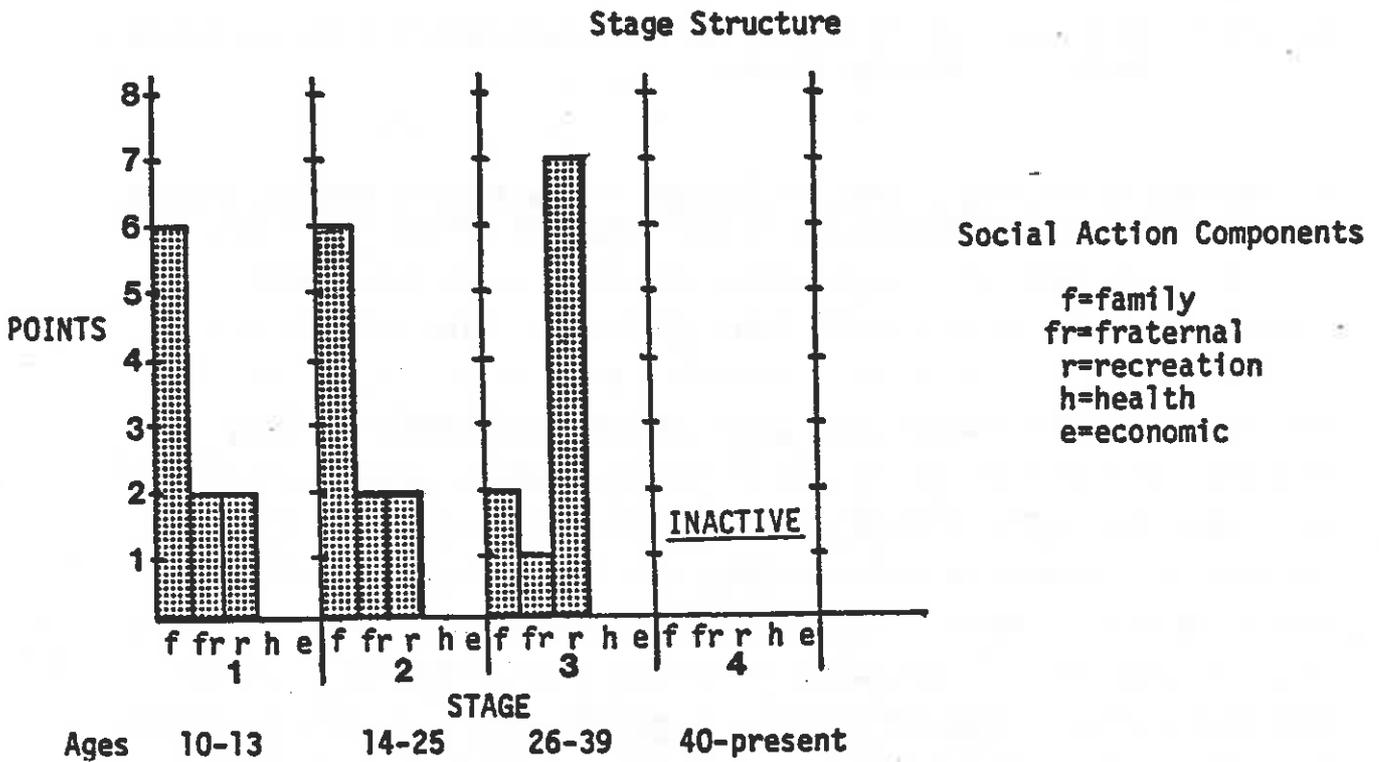


Figure 7. Example of Stage Demarcation and Stage Structure Data.

Determination of Hunter Involvement at Each Stage

Hunter involvement is an important yet difficult concept to quantify. To facilitate measurement of involvement we identified two dimensions: interest and participation. Theoretically, both dimensions of involvement could be measured by evaluating the types (positive vs. negative) and intensity of influences operating at each stage. However, it was not possible to do so in this study; further methods development is required to overcome the barriers to practical implementation of this approach. Therefore, we took a less sophisticated yet intuitively straightforward approach--we asked interviewees to rate themselves for their relative interest and participation in hunting.

FINDINGS AND DISCUSSION

Organization of Findings and Discussion

The presentation of findings and discussion is divided into four subsections, each roughly corresponding to one of the stages of hunting presented in the model shown in Figure 4. With one exception, the organization of this section parallels the conceptual flow illustrated by the model. The first subsection, initiation, concerns the trial and adoption steps of hunting. The question central to this section is "why do some people begin hunting, while others do not?" The next subsection concerns the continuation stage of hunting; it examines the changes in interest level, participation level, and personal definition of hunting experienced by an individual through his/her hunting years. The desertion subsection addresses the question, "Why do people quit hunting?" The final subsection, potential hunters, concerns the interest stage of hunting; it explores why some people who intend to hunt ultimately do not.

INITIATION

Introduction

Before beginning the interviews we hypothesized that two types of hunters (relative to initiation) could be identified: those who started hunting early and were exposed to hunting as part of their basic familial socialization vs. those who started late, often as a result of new friendships, and had little or no previous exposure to hunting via familial contact. We originally and tentatively hypothesized that the differences between these two types are culturally rooted. The culture of the first type not only accepts hunting, but endorses it; members of this type were raised in an environment where hunting was an integral part of their cultural heritage. This is closely aligned with the culture of traditional rural families. Numerous studies have pointed out the influence of family and rural environment on hunting (e.g., Klessig 1970, 1974). On the other hand, members of the second type cannot be identified with a culture per se; rather, they come from a variety of socioeconomic backgrounds where hunting is unimportant or generally unrecognized as a leisure activity.

To distinguish these two types quantitatively, three variables were examined that, when taken together, would indirectly classify respondents as traditionalists (i.e., grew up in a traditional rural, hunting household) or nontraditionalists. The variables examined were age at first hunting experience, demographic location, and family hunting activity. Respondents were classified as traditionalists if they began hunting before age 17, lived in a rural area or village of under 5,000 and had at least one older family member who hunted. Respondents who did not meet all three of these criteria were classified as nontraditionalists. The results of this analysis are given in Figure 8. Three respondents (cluster A) classified as nontraditionalists grew up in hunting families, started to hunt at an early age, but were raised in an urban area. A review of these cases strongly suggested their similarity to the cases in the traditionalist classification. We therefore decided that for our purposes the critical variables on which to base a typology should concern family influences; i.e., whether or not an individual was exposed to hunting at a young age by a family member and whether or not a positive balance in influences (process defined earlier) concerning the decision to hunt was reached while the individual was still part of the nuclear family. Hunters who came from a family where at least one older member hunted and who began hunting at age 14 or earlier, were classified as "family-supported" hunters. Those who did not meet both these criteria were classified as "family-nonsupported" hunters. Figure 9 shows the division of our sample into these two types. Twenty-one respondents were classified as family-supported hunters and 22 were classified as family-nonsupported.

The reader should be reminded, however, that we did not have a representative sample of hunters; the purpose of this study is to develop some understanding of the antecedents to participation in hunting through the examination of a small number of case studies. Data from earlier studies in Project W-146-R suggest that, in reality, family-nonsupported hunters outnumber family-supported hunters by about 3:2. Examination of a large random sample of hunters (760 cases) used in a hunter participation study conducted by Brown et al. (1982) revealed 60.5% of the sample to be family-nonsupported hunters. Analysis of a large random sample of recent

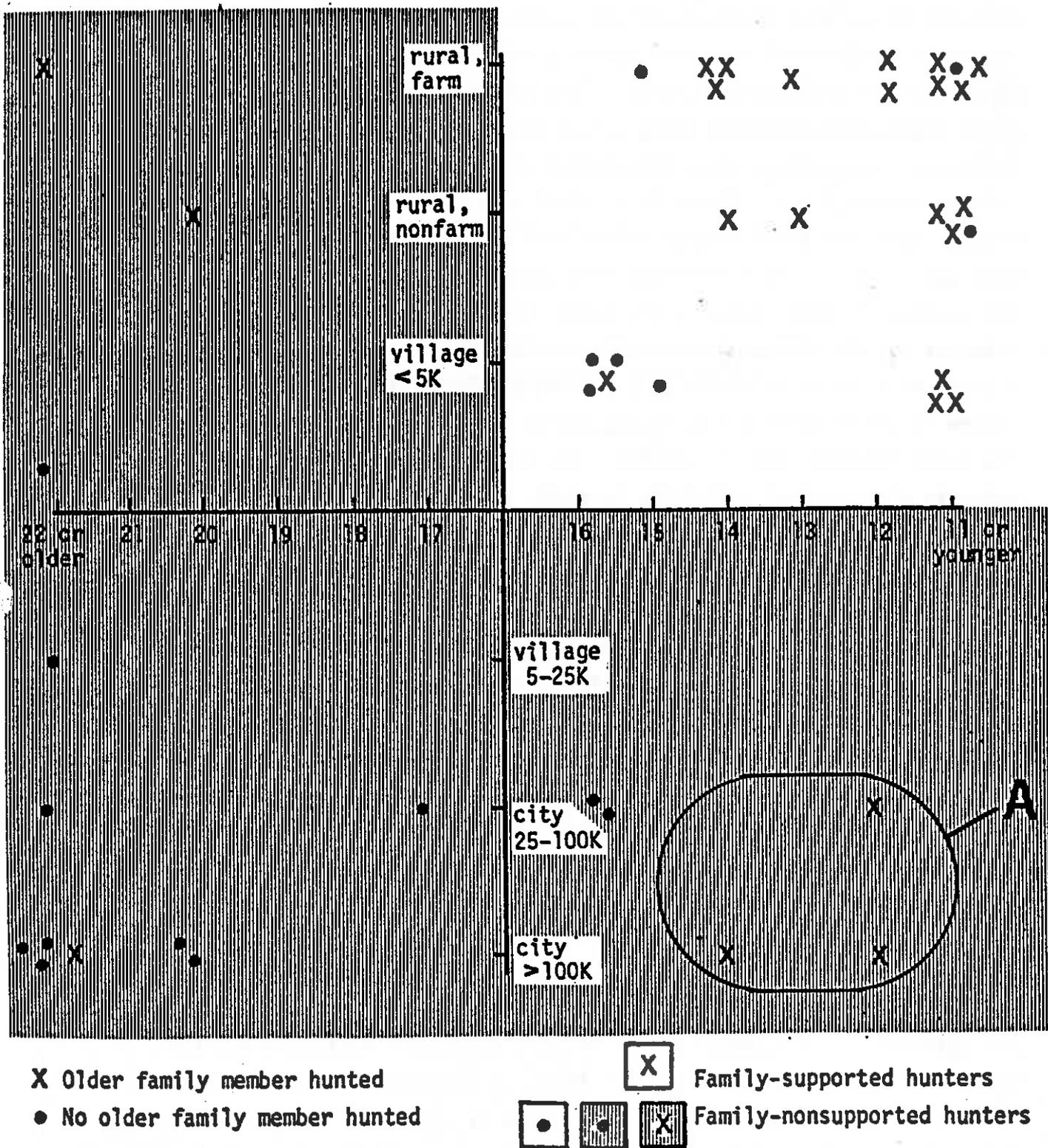


Figure 8. Analysis Used to Develop Original Hunter Typology.

hunter training course participants (787 cases) put this figure at 63.3 (data originally collected as part of the study by Brown et al. 1981).

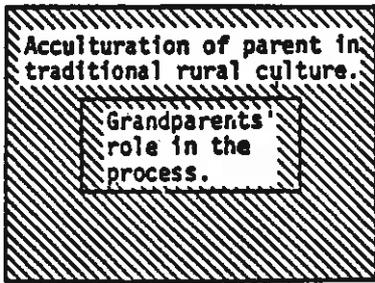
To the extent that a parent influences his/her child's socialization, the differences between family-supported and family-nonsupported hunters are culturally rooted. Figure 10 illustrates this with the type of case represented by cluster A in Figure 9. This was recognized by Klessig (1970) who noted that a father's residential origin has a strong influence on the hunting probabilities of urban-reared respondents.

A few points about this dichotomy. First, note that the age delimitation for it was lowered from age 16 in our original conceptualization to age 14. This reflects the belief that by ages 15-16 a youth's social referents for decisions regarding interests and activities moves from the family to peers (Ripple et al. 1982). Figure 8 shows that of the 8 respondents who began hunting at age 16, 7 of them came from nonhunting families. Second, note in Figure 11 that the overlap of the traditionalists of the original approach and the family-supported hunters is significant. Finally, Table 1 shows the family-supported/family-nonsupported dichotomy to be consistent in terms of the values of the defining variables. In only 6 of 43 cases was there disagreement evident in where the two variables would place a person--family-supported or family-nonsupported.

Table 1. Consistency of Agreement Between Variables that Distinguish Family-supported and Family-nonsupported Hunters.

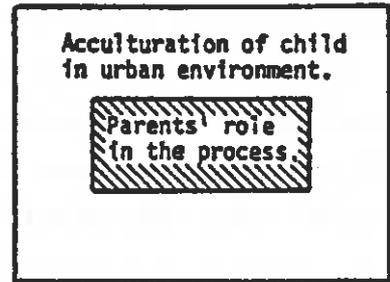
Hunter's Age <14	Older Family Member Hunted	
	Yes	No
Yes	21	2
No	4	16

Rural Environment - Rural Influence



Parent moves, taking values, beliefs, attitudes with him/her.

Urban Environment - Rural Influence



"Core" of acculturation remains rural.

Figure 10. An Example of How A Parent's Acculturation Influences A Child's Socialization.

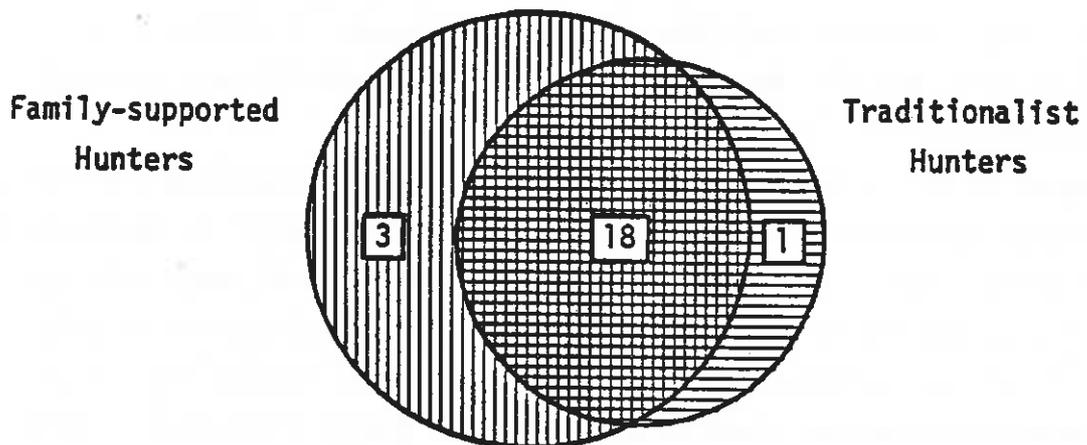


Figure 11. The Overlap of Traditionalists and Family-Supported Hunters.

Comparison of Family-Supported and Family-Nonsupported Hunters

Stage structure in initial stage: A comparison of the stage structures in the first stage of these two types confirms expected differences. Figure 12 shows that, in composite, hunting in the initial stage of family-supported hunters is defined mainly as a combination family and recreation act. On the other hand, the family component is not at all important in this initial stage to family-nonsupported hunters. This difference is to be expected, since one variable used to operationally distinguish the two types is familial influence on hunting. Family-supported hunters define hunting as primarily a recreation and fraternal act. Apparently, in the initial hunting stage the recreation act tends to play a greater role in the hunting of family-nonsupported hunters than it does in the hunting of family-supported hunters. For example, 9 of 17 family-supported hunters reported that the family component was more important than the recreation component in the initial stage; of the 11 family-supported hunters for whom both the family and recreation components were of at least some importance, 8 indicated the family component was more important than the recreation component. In contrast, only 9 of 20 family-nonsupported hunters indicated the fraternal component was more important than the recreation component in the initial stage; and of the 13 family-nonsupported hunters for whom both the fraternal and recreation components were of at least some importance, 4 indicated the fraternal component was more important, 5 indicated the recreation component was more important, and 4 indicated they were of equal importance.

Figure 13 gives the frequency with which family-supported and family-nonsupported hunters report each component as acting on their decision to begin hunting. Note that for both types, the recreation component is given some weight by almost all the hunters. It appears to be a necessary component, if not always sufficient. Also note that nearly 30% of the family-supported hunters gave no weight to the family component. This points out that although the family may create in a youngster the awareness of hunting as a leisure activity and support his/her adoption of hunting, it need not figure directly (at least not consciously) in his/her "definition" of hunting.

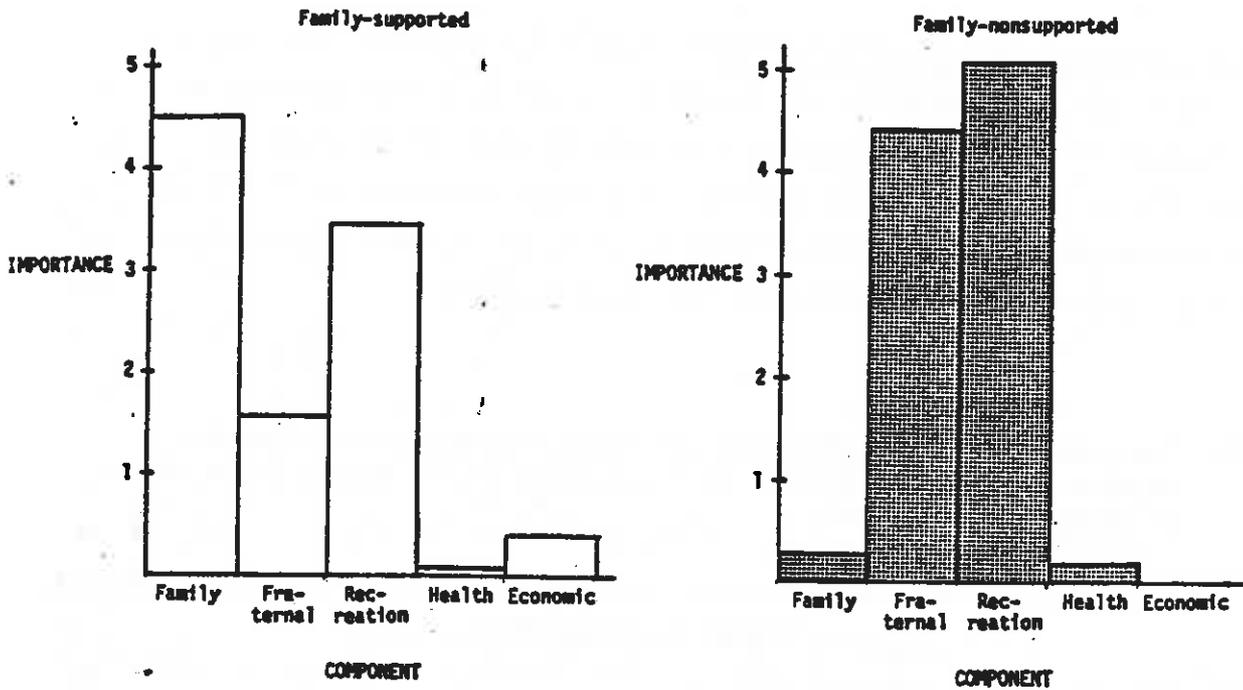


Figure 12. Composite Stage Structure of Family-Supported and Family-Nonsupported Hunters in Initial Stage.

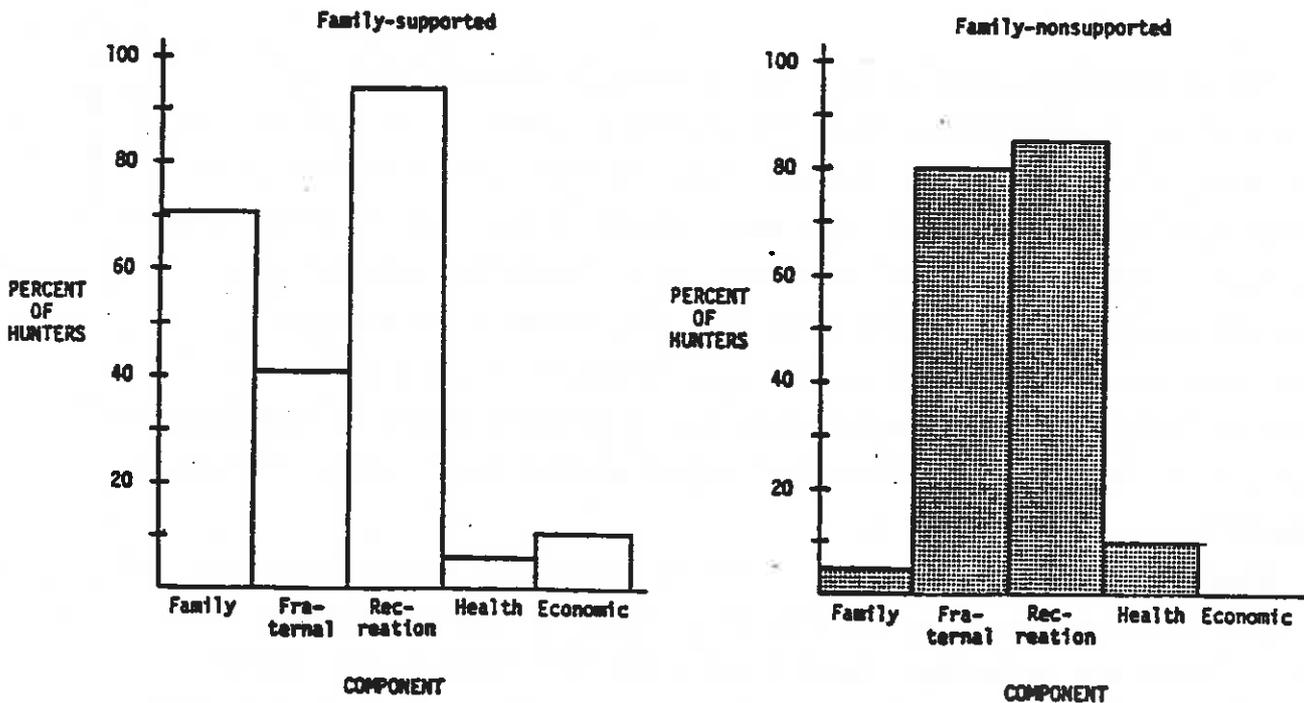


Figure 13. Comparison of Family-Supported and Family-Nonsupported Hunters: Percent of Hunters Who Assign at Least One Point to a Particular Component in Initial Stage.

The importance of stage diversity: Figure 12 suggests that for the initiation stage the diversity of components used to define hunting by family-supported hunters is greater than that of family-nonsupported hunters. Table 2 supports this notion. The stage structures of 53% of the family-supported hunters were composed of three or more components, compared to only 5% of the family-nonsupported hunters.

Table 2. Percent of Family-Supported and Family-Nonsupported Hunters Broken Down by The Number of Components in the First Stage When A Firearm Was Carried.

Hunter Type	Number of Components					Total
	1	2	3	4	5	
	Percent					
Family-Supported	5.8	41.2	42.2	11.8	0.0	100%
Family-Nonsupported	25.0	70.0	5.0	0.0	0.0	100%

One of the principles of ecology is that "diversity leads to stability" in an ecosystem. This notion has a common sense application to these data; family-supported hunters, because they have a richer, more complex definition of hunting, are more likely to continue hunting beyond this stage. Many of them not only hunt as a recreation act, but also enjoy the support of both family and friends, often in an active, affiliative sense as part of the hunting activity. If one component should be eliminated, such individuals would be more likely to redefine hunting positively than would an individual with a less diverse definition of hunting.

Overall, a comparison of the stage structures of family-supported and family-nonsupported hunters for the first stage in which a firearm is carried leads one to believe family-supported and family-nonsupported hunters are different. Their distinction as two types has validity from an analytic standpoint, and importance from a management standpoint.

Hunting Interest and Participation

Analyses of the interest and participation of family-supported and family-nonsupported hunters in the initial hunting stage suggest a number of conclusions. First, in the initial stage, family-supported hunters generally have a higher interest in hunting than do family-nonsupported hunters. Figure 14 shows family-supported hunters to have a much higher interest in small game hunting than family-nonsupported hunters, while the two types have nearly identical composites of interest level for big game hunting. This correlation between interest and age (remember all family-supported hunters are <14 at the beginning of this initial hunting stage) supports the contention that if parents want a son/daughter to develop an interest in hunting, they should take him/her hunting at a young age. This should not, however, be construed as supporting an argument to lower the hunting age. Table 3 shows that over 70% of the family-supported hunters whose initial stage was a pre hunting or "tag along" stage rated their level of interest in small game hunting at that time as 5 (on a scale of 1=low, 5=high). By contrast, only 29% of the family-supported hunters whose initial stage was not a pre hunting stage rated their level of interest in small game hunting in the initial stage as 5, and only 9% of the family-nonsupported hunters (among whom only one reported a pre hunting stage) had an interest rating of 5. This analysis is based on very small sample sizes, but the potential implication is clear: what is important to the development of a youngster's interest in hunting is that the youngster be taken afield, not necessarily that s/he carry a firearm. Support for this hypothesis is readily available in the social-psychology literature. In particular, social learning theory maintains that most human learning is rooted in observation rather than performance. In a discussion of social learning theory and its explanation of gender role socialization, Tavis and Offir (1977) note, "children can learn about the consequences of what they do by observing what happens to other people. Being the intelligent little persons that they are, they participate vicariously in the experiences of others and draw their own conclusions." The tenets of social learning theory as applied to hunter socialization are discussed more thoroughly on pages 22-23.

No evidence to support lowering the legal age hunting.

[]

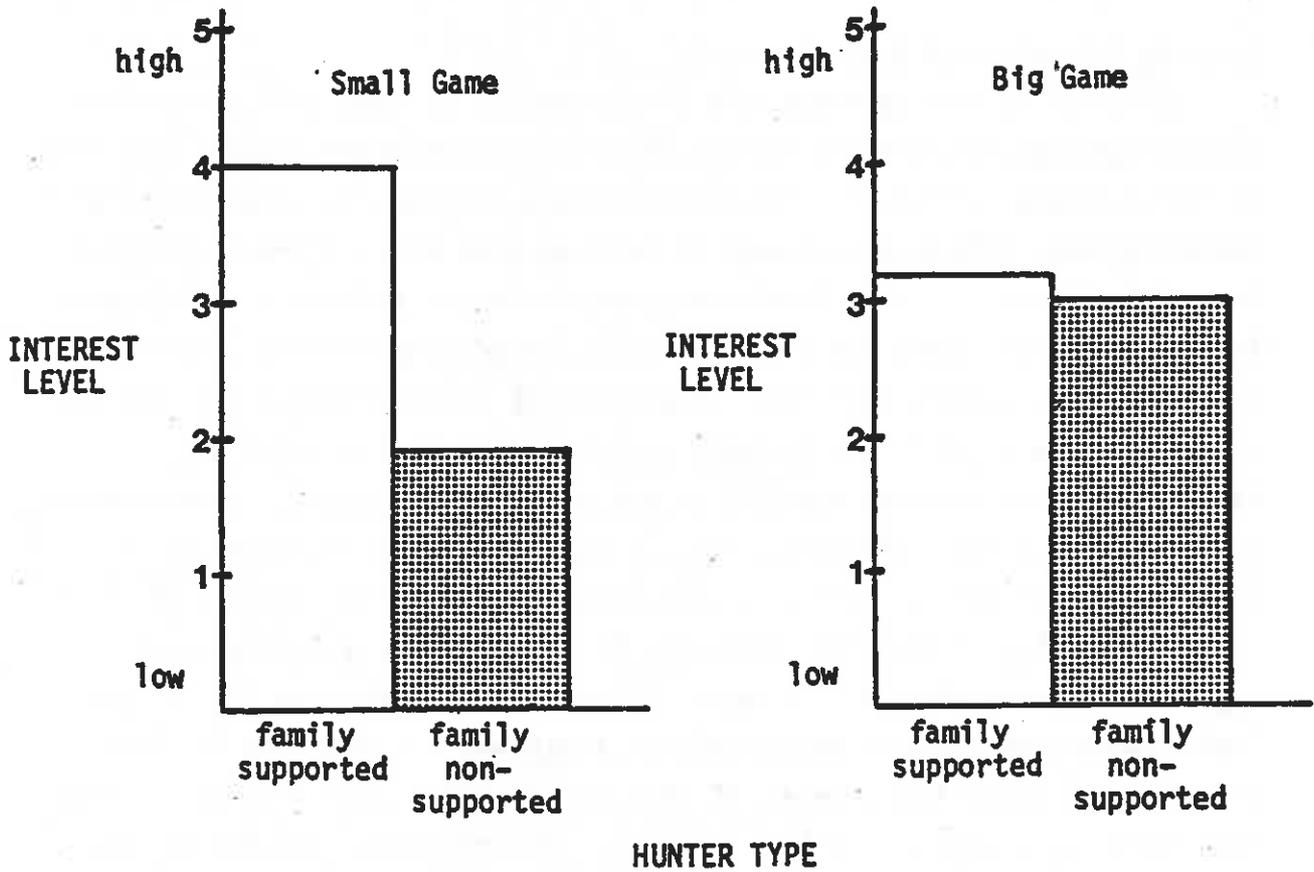


Figure 14. Comparison of Family-supported and Family-nonsupported Hunters: Composite Interest in Big and Small Game Hunting for Initial Hunting Stage.

Table 3. Comparison of Family-Supported Hunters Whose Initial Stage Was A Prehunting Stage and Other Family-Supported Hunters: Distribution of Respondents' Self Perceptions of Level of Interest in Small and Big Game Hunting.

Family-Supported Hunters	Percent at Each Level of Interest*				
	1	2	3	4	5
with a prehunting stage:					
small game hunting	7	0	7	14	72
big game hunting	22	7	7	14	50
without a prehunting stage:					
small game hunting	29	0	42	0	29
big game hunting	29	43	14	0	14

*Where 1=low and 5=high.

Perhaps in hunting, vicarious learning takes on another dimension: it may be necessary to ease the initiation into hunting of a youngster sensitive to the death of an animal. As the passage from an interview with a family-nonsupported hunter reveals (see Box 1), the death of an animal at one's own hands can be a very traumatic experience.

BOX 1

* "Let me tell you this: I hunted only once in my life, *
* and I hit a rabbit, and it squealed, tumbled, died a *
* hard death, and I decided I wanted no part of that. And *
* I never went again." *

By allowing a child to observe a parent enjoy all elements of the hunt-- the companionship, the autumn colors, the skill, the chase, the meal (and all the psychological rewards therein)--and to participate in most, the killing of game does not take place in a vacuum; a role model shows the way. The conflicts which the youngster may have concerning hunting are slowly resolved as he/she assimilated the attitudes, beliefs, and values of the hunting guardian without being psychologically burdened with responsibility for the kill. When the youngster eventually takes to the field with firearm in hand, the kill is understood to be, as Klein (1973) stated, an "incidental although indispensable" part of a multi-faceted activity s/he very much enjoys. Again, the human development literature indicates that parents are the primary influence of values assimilated by youth (Ripple et al. 1982).

The preceding discussion is not meant to explain why family-supported hunters whose initial stage was a pre hunting stage show a higher interest in hunting in the initial stage than other family-supported hunters; it simply points out a possible effect of a pre hunting stage in some cases. Certainly much of the difference in interest level between those with and without a pre hunting stage is due to a difference in the intensity of familial socialization. It should be expected that a youngster who grows up in a family that devotes the time and effort to take him/her afield

before s/he is of age to carry a firearm legally will have more interest in hunting than a youngster who receives comparatively less family support. This reasoning nevertheless supports the hypothesis implied in the previous few paragraphs: the key to a youngster's interest in hunting is family socialization. To the extent that the existence of a pre hunting stage indicates intense familial socialization, it is a predictor of a youngster's interest in hunting.

Support for this hypothesis comes from data gathered in a study of hunter training course participants (Brown et al. 1981). Table 4 shows that, although the differences were not great, family-supported hunters who had a pre hunting stage were most likely to consider themselves avid hunters, followed in order by family-supported hunters who did not have a pre hunting stage, family-supported hunters who had a pre hunting stage and, finally, family-nonsupported hunters who did not have a pre hunting stage.

Table 4. Percent of Family-Supported and Family-Nonsupported Hunters Who Did or Did Not Have a Pre hunting Stage, by Avidity.

Respondent Type	Avidity				n
	Not Avid		Avid		
	(Don't Hunt)	(Hunt Occasionally, Not Avid)	(Hunt Occasionally, Avid)	(Hunt Often, Avid)	
Percent					
<u>Family-Supported Hunters</u>					
had a pre hunting stage	29.9		70.1		147
no pre hunting stage	35.9		64.1		178
<u>Family-Nonsupported Hunters</u>					
had a pre hunting stage	46.4		53.6		295
no pre hunting stage	68.3		31.7		482

(Data Source: Brown et al. 1981.)

Another conclusion suggested by the analysis of interest and participation in hunting in the initial stage is that the trend among family-nonsupported hunters is to have a greater interest in big game hunting than in small game hunting, whereas the opposite was observed for family-supported hunters, who tend to favor small game hunting over big game hunting (Figure 15). It should be noted, however, that a sizeable

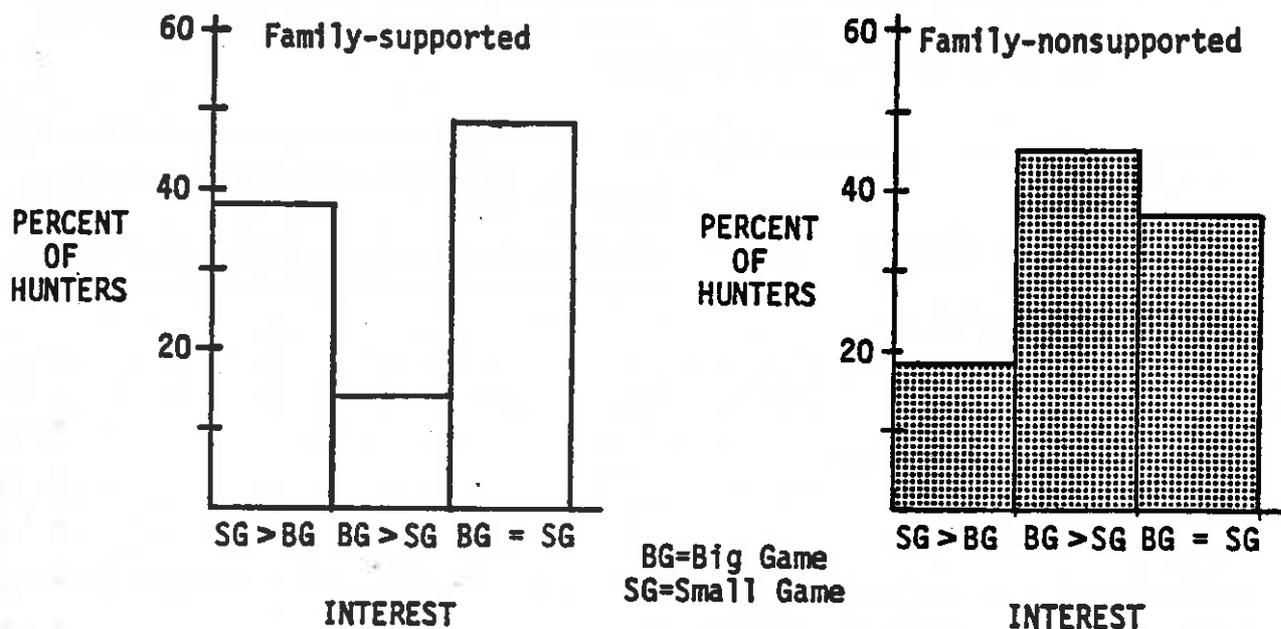


Figure 15. Comparison of Family-Supported and Family-Nonsupported Hunters: Relative Interest in Small Game and Big Game Hunting In Initial Stage.

minority of hunters in each type rated themselves as having the same level of interest in both small game hunting and big game hunting. A logical explanation for the trend found among family-supported hunters concerns opportunity. Because in a pre-hunting stage they are likely to be taken mostly on small game hunts (Table 5) and they are all at least two years away from being of age to hunt big game, their interest lies with their immediate hunting opportunity--small game hunting. Essentially, an individual is likely to express more interest in an activity in which s/he participates than in one in which s/he does not. Interest mirrors participation, shown in Table 6 where self-ratings of interest and participation seldom differed by more than two points. A hypothesis predicated on this explanation is that when given the opportunity to hunt big game at age 16, the interest of family-supported hunters in big game hunting will rise accordingly.

Table 5. Comparison of Family-Supported Hunters Whose Initial Stage Was A Prehunting Stage and Other Family-Supported Hunters: Distribution of Respondents' Self Perceptions of Level of Participation in Small and Big Game Hunting.

Family-Supported Hunters	Participation Level					
	None	Low	2	3	4	High
	0	1				5
	Percent					
With a Prehunting Stage:						
small game hunting	7	7	14	14	50	8
big game hunting	36	22	14	14	14	0
Without a Prehunting Stage:						
small game hunting	0	43	14	14	0	29
big game hunting	29	29	0	29	0	13

(Data Source: Brown et al. 1981.)

Table 6. Family-Supported Hunters' Self-Perceptions of Interest Level By Participation Level, For Both Small and Big Game Hunting (In Initial Stage).

Interest Level	Participation Level					
	None	Low	2	3	4	High
	0	1				5
	Percent					
1 (Low)	69	50	0	0	0	0
2	8	17	8	9	0	0
3	0	13	34	45	13	0
4	15	13	8	18	27	20
5 (High)	8	7	50	28	60	80
Total	100	100	100	100	100	100

(Data Source: Brown et al. 1981.)

Before discussing why family-nonsupported hunters tend to be more interested in big game hunting than in small game hunting in the initial stage, we will examine two groups of hunters that provide notable exceptions to the rule "interest mirrors participation". Of the 14 family-supported hunters whose initial hunting stage was a pre hunting stage, 6 of them rated their level of interest in big game hunting at least three points higher than their level of participation. Of the 7 women in the family-nonsupported hunter type, 3 of them also rated their level of interest in big game hunting at least three points higher than their level of participation. In comparison, only 2 of the remaining 22 hunters in the sample rated their level of interest in big game hunting at least three points higher than their level of participation, and of all 43 interviewees, only 4 rated their level of interest in small game hunting in the initial stage at least three points higher than their level of participation.

The significance of these data lies in the implication that deer hunting is not only a recreational activity, but a sociocultural event as well. Those who can not actually hunt deer (family-supported hunters in a pre hunting stage) or whose hunting is very socially oriented (family-nonsupported women hunters--see pages 66-73) watch and listen as friends and relatives assemble for the day's hunt, retell the favorite old hunting tales, and return at the end of the day, perhaps with a buck (to be photographed beside the successful hunter), and certainly with a new set of experiences to share. The presence of friends and relatives around the home may itself be a sufficiently rewarding, albeit seemingly peripheral, aspect of the deer hunt to warrant high interest among many people, particularly family-nonsupported women hunters. In addition, young hunters quickly learn that the rewards associated with a successful deer hunt far surpass those associated with, for example, a successful rabbit hunt.

Stated in terms of Reeder's model, the positive influences associated with deer hunting are more numerous, stronger, and further-reaching than those associated with small game hunting. A discussion later in this report invokes this hypothesis in an explanation of why there are more big game hunters than small game hunters in New York State and why, on the

average, interest in big game hunting is greater than interest in small game hunting. This hypothesis may also explain why family-nonsupported hunters are likely to have a higher interest in big game hunting than small game hunting in their initial stage (Figure 15, page 45). Figure 16 shows that in terms of participation, neither type of hunting is favored by a majority of family-nonsupported hunters. This apparently contradicts the rule "interest mirrors participation"; that is, if family-nonsupported hunters are likely to have a higher interest in big game hunting than small game hunting, it should follow that they would also be likely to have a higher level of participation in big game hunting than small game hunting. However, Table 7 shows that interest does mirror participation, at least in the sense that the level of interest and level of participation in small game hunting differed by no more than two points for 95% of the family-supported hunters, and the level of interest and level of participation in big game hunting differed by no more than two points for 77%. There is the tendency, also shown in Table 7, for the group to set level of interest exactly equal to level of participation for small game hunting, but to give level of interest at least one more point than level of participation for big game hunting. In other words, in both types of hunting, interest reflects participation, but much more exactly in small game hunting. This difference skews interest in big game hunting upward in comparison to interest in small game hunting. This can be attributed to reasons suggested by the hypothesis just discussed: as a sociocultural event, deer hunting has the potential to increase interest among moderate to low level participants in a way small game hunting opportunity cannot. (It should be noted that interviewees were not asked to compare participation in small game vs. big game hunting and that participation was measured on a relative scale; consequently, the vast difference in length of small game vs. big game hunting seasons is not a consideration in this comparison.)

Social-Psychological Basis for Initiation to Hunting

Influence of values concerning the killing of an animal: Values are critical antecedents to a person's decision to hunt. Before discussing the importance of value systems in this decision, we will digress from the

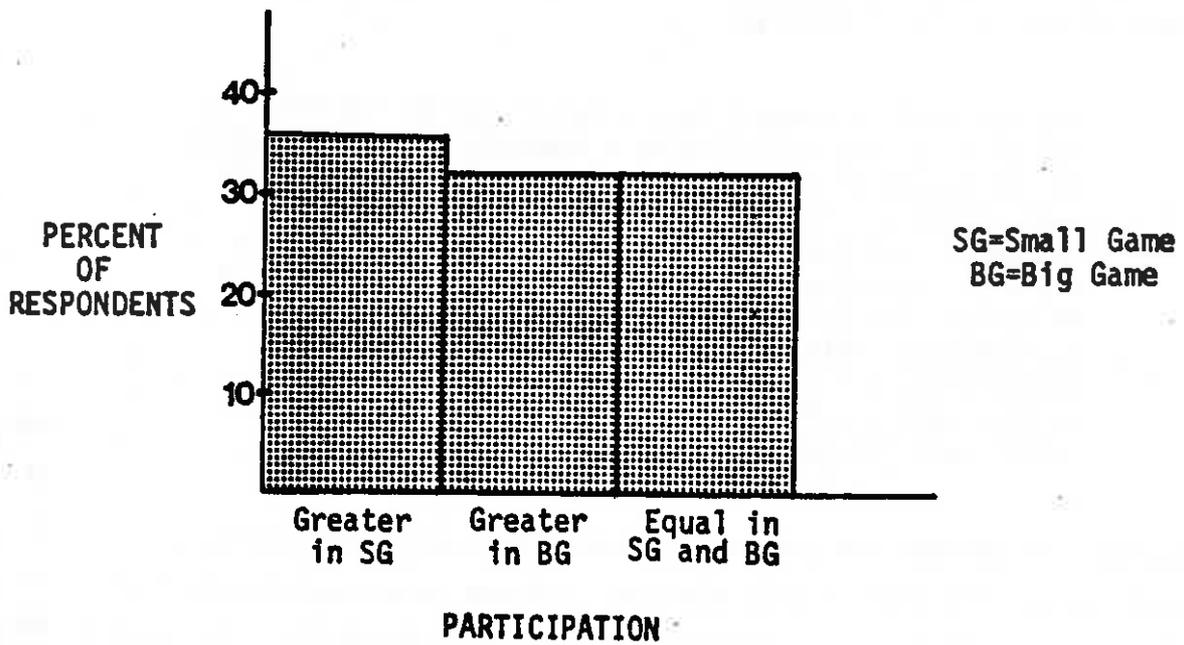


Figure 16. Relative Participation in Small Game and Big Game Hunting in the Initial Stage, for Family-Nonsupported Hunters.

Table 7. Distribution of Frequencies of Interest Level-Participation Level Differences, for Family-Nonsupported Hunters Who Hunted Small Game and Big Game.

Family-Nonsupported Hunters	Interest Level-Participation Level Differences				
	0	1	2	3	4
	Percent				
small game hunting	64	27	5	4	0
big game hunting	27	36	14	18	5

analysis to review some important concepts. Rokeach (1968) broadly defined values in the following:

"To say that a person 'has a value' is to say that he has an enduring belief that a specific mode of conduct or end state of existence is personally and socially preferable to alternative modes of conduct or end states of extreme. Once a value is internalized it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and situations, for justifying one's own and other's actions and attitudes, for morally judging self and others and for comparing oneself with others".*

He states that people are generally motivated toward maintaining consistency within their value systems. Others have also found that people strive to maintain consistency in their cognitions. The well known theory of cognitive dissonance, first proposed by Festinger (1957), assumes that inconsistencies in cognitions create psychological conflict, and people act to reduce this conflict, i.e., to reestablish consistency.

The focus of this discussion is the importance of value systems to the act of killing an animal. Most other aspects of hunting are not as likely to create conflict between behavior and values (see Box 1). As hunter-columnist Bryant (1977) notes: "I would be dissembling if I said that shooting a bird or an animal brings me pure pleasure, and many hunters experience a twinge of uneasiness at the sight of a dying or dead animal. With the hoped for culmination comes a feeling of regret, sometimes even a vague fear that something is wrong."

This statement suggests what is also implied in Rokeach's definition of value systems: to the extent that an individual's hierarchies of values differ from those of other people, and to the extent that the connections of an individual's hierarchies to attitude-belief systems differ from

*This is a more elaborate definition than used by Reeder (1973), but not contradictory.

those of other people, the magnitude of the conflict created by his shooting an animal will also differ from those of other people. In other words, it is not an either/or proposition where you are bothered by killing an animal or you are not, but rather a matter of degree. Compare the traumatic reactions upon shooting game of the individual in Box 1 with the casual tone of the interview passage in Box 2.

BOX 2

* * * * *
 * "But, I...I'm out of the hunting business, I think. I *
 * can't get worked up enough to get back into it, I don't *
 * think. It's not as if I don't want to get back into *
 * the woods, it's just that...I don't know...you change, *
 * too. A lot of people change. It doesn't really, you *
 * might say, 'turn me on' to go out and shoot fourteen *
 * squirrels. I'd rather see them out in the woods run- *
 * ning around...I'd rather watch them than go out and *
 * shoot and kill them, really." *
 * * * * *

Apparently, individuals' value systems can be located on a continuum of increasing inhibition to killing an animal. Location on the continuum is based not only on the notion of killing, but also on the species involved and situational factors. Most people experience no conflict with spraying insecticide to protect their trees from gypsy moth; some people feel uneasy sportfishing, and many more people feel uneasy rabbit hunting, and in this group there are degrees of anxiety. Lorenz (1966) states,

"The scientist who considers himself absolutely 'objective' and believes that he can free himself from the compulsion of the 'merely' subjective should try-- only in imagination, of course--to kill in succession a lettuce, a fly, a frog, a guinea pig, a cat, a dog, and finally a chimpanzee...The degree of inhibition against killing each one of these beings is a very precise measure for the considerably different values that we cannot help attributing to lower and higher forms of life."

Lorenz made this statement in arguing a biological basis for human behavior, but the point remains: it is easier for some people to kill a certain species than it is for other people, and it is easier to kill some species than it is to kill others. One of our potential hunters said he was seriously considering bird hunting, but would never deer hunt because he "would hate the sight of a big animal going down".

Hypothetically, on one end of the continuum is the system of values that allows a person to experience no conflict upon killing an animal, no matter what the species or situation. On the other end is the system of values that inhibits a person from killing an animal, again no matter what the species or situation (see Box 3).

BOX 3

* "I don't even like to kill a fly, if you want to know the *
 * truth. I just don't like to kill, because I figure in my *
 * mind God created life--that's the only guy that can *
 * really do it, the way I see it--and I don't think it's *
 * up to me to take it away because I think that little *
 * spark of life is just as important to a fly, or a rabbit, *
 * or a deer or a bear as it is to me, and it's pretty *
 * important to me!" *
 * * * * *

In our sample, 16 of 43 (37%) interviewees stated they had at least slightly negative feelings about killing game. It is difficult to judge the significance of this figure, for a few reasons. First, not all respondents were asked how they felt about killing game; only those who volunteered the information or who said they had inhibitions against killing game upon being probed are noted and not everyone was probed about it. Second, the figure of 37% may be suspect because not everyone who is bothered by killing game is likely to admit it. Numerous texts on survey methods (e.g., Warwick and Lininger 1975) point out that in an interview there is a risk that a respondent will dissemble in order to give answers

that appear "correct" and consistent, particularly if the issue is sensitive--the social desirability bias. This may be yet another explanation of why current hunters much less often claim to have negative feelings about killing game than people who quit hunting; they could feel uncomfortable doing so (a dissonant situation). It could be, then, that the frequency with which interviewees in our sample claimed to have negative feelings about killing game represents a minimum estimate, and a more accurate figure may be much higher.

In light of the above discussion, an important question is why some interviewees began hunting, despite their anticipation of at least some psychological conflict upon shooting an animal. The reason, as suggested by our model, is that the positive influences associated with hunting outweigh this negative influence. Other values, attitudes, goals, support from peers, etc., start the individual hunting (see Box 4).

BOX 4

* * * * *

* "Well, I was raised in the country, and raised on a farm, *

* and, of course, my father hunted, my brother hunted, all *

* my uncles hunted, and...it was kind of expected of us. *

* So, when we were little he used to take us out with him *

* while they were hunting--traipsing through the woods and *

* everything...until it got to the time when they were zero- *

* ing in on a deer or something, and--it made me sick! You *

* know, they'd bring the game back home and I couldn't eat *

* it. And of course they didn't think that was too kosher. *

* And so they kept after me and everything to--you know, I *

* should get into hunting. And so I tried it a couple *

* times but I never did shoot, or I'd shoot and miss on *

* purpose." *

* * * * *

It should be noted that the absence of psychological conflict upon shooting an animal is not a positive motivational force; that is, no one would go out and shoot an animal because it does not bother them to do so. At best, the complete absence of conflict can be weighted in our framework as neutral. So, concerning the killing of animals, the significance of one's value system to initiation in hunting lies not in its potential to provide impetus, but in its potential to act as a powerful negative agent.

From a management standpoint the most important issue concerning value systems is their development. At the heart of this issue seems to be the question of why killing game bothers some people tremendously, and others not at all. By understanding when and how value systems develop, and how they change, managers can anticipate consequences of their decisions concerning programs for recruitment and retention of new hunters.

Social learning theory provides a reasonable and highly functional explanation of how value systems develop. A brief summary of the tenets of the theory relevant to the discussion is found in pages 22-23. Social learning theory assumes parents to be powerful role models (Bandura 1977; Tavris and Offir 1977). As such, parents no doubt contribute significantly to the development of a child's values pertaining to the killing of game. It would be reasonable to propose, then, that children from hunting families are less likely to experience significant conflict about killing game than are children from nonhunting families. Although this hypothesis makes intuitive sense, ascertaining its validity is difficult. To the extent that involvement in hunting reflects a lack of psychological conflict about killing an animal, the hypothesis is supported; a person is much more likely to hunt if other family members hunt (Klessig 1970, 1974). However, as previously discussed, many people who do not hunt choose not to for reasons entirely unrelated to their feelings about killing game. Moreover, the significance of this hypothesis is considerably weakened when one considers the number of people from hunting families who do not hunt. Among the most interesting

cases in our sample were those in which the father was an avid hunter, but his children did not hunt.' Consequently, if this hypothesis is borne out statistically, it nevertheless has limited usefulness in predicting the development of a child's values about killing game. The following three-point hypothesis is based on social learning theory, and though not nearly so disposed to empirical testing, should serve as a better predictor of a child's feelings about killing game.

- If neither parent anticipated or experiences conflict upon killing game, the child will not.
(In our sample, both parents of three interviewees hunted. None of them noted any conflict upon killing game. All three have hunted continuously since they were introduced to hunting, and are still hunting today with 79 years experience among them. All indicated a high interest in hunting [self-rated 4 or better on a scale of 1 to 5 for big game hunting].)
- If both parents anticipate or experience conflict upon killing game, the child will have negative feelings.
- If one parent anticipates or experiences conflict upon killing game, and the other does not, the child could be located anywhere on a continuum of negative feelings, depending on the relative influence of each parent.

This portion of the hypothesis recognizes that many children whose fathers hunt nevertheless feel uncomfortable about killing game. Earlier in the discussion it was mentioned that the transmission of standards is facilitated by consistency in modeling. Bandura (1977) also notes that "children exposed to conflicting standards exemplified by adult and peer models adopt different standards of conduct than if adults alone set the example". Inconsistent modeling is manifest in the interview passages in Box 5.

BOX 5

* Inconsistent Modeling *

* Example 1 *

* Father: I tried to get my daughter interested in hunting. *

* I've taken her hunting three or four times and *

* got her to shoot at gray squirrels but she never *

* hit them. And finally I got her to shoot at *

* one, but I found out later she wasn't shooting *

* at them, see... *

* Interviewer: Why do you think your kids aren't all that *

* excited about hunting? *

* Father: Well, like my daughter didn't feel right after *

* she did shoot the one squirrel--she doesn't like *

* hunting the animals. My daughter likes shooting *

* the .22 and stuff for target practice, but I *

* don't know, she just doesn't have the--well, I *

* did talk her into shooting a raccoon once and *

* that was the end of her! And my son, I don't *

* really know why he-- *

* Mother: I just can't shoot the animals and I think the *

* kids picked that up from me! *

* Example 2 *

* [Question asked concerning wife's activity] *

* "She doesn't hunt, she doesn't like hunting, *

* especially--" *

* [Is she opposed to your hunting?] *

* "No--well, she's not opposed to my hunting, but *

* like, when we moved here--she likes where we *

* live very much, and the fact that we're back *

* in the woods,, and it's private--she has made *

* a rule with me about the deer. She would be *

* very upset if I shot a buck from the back porch, *

* so she has a rule that I don't shoot around the *

* house."

* Later in the interview: *

* "She (wife) fixes the game that I get, although *

* she doesn't really eat it...the kids, they don't *

* especially like it--I like it--the kids, they'll *

* tolerate it, but that's about it. It's got to *

* be disguised or something before they'll eat it." *

An important point applicable to households with inconsistent modeling is that often the hunting parent (usually the father) chooses to hunt alone. As a result, the child may not be taken afield while young, and the opportunity for modeling may be severely hampered. The child may be left relatively unaware of the hunting parent's thoughts and feelings about killing game. In a sense, this child models the behavior, thoughts and feelings expressed by the nonhunting parent by default. Both boys and girls are subject to this process. Maccoby and Jacklin (1974) found that when attempts were made to correlate global personality traits of parents and children, rather than specific attitudes or actions (such as social gender role behavior), children did not resemble the same sex parent more than the opposite sex parent. Rokeach (1973) notes that "traits" are actually manifestations of value systems. The significance of the findings of Macoby and Jacklin (1974), then, is that although a child learns to identify with one parent more than the other in matters of gender role socialization, in matters of basic values a child may model either parent or both of them. Nevertheless, it would not be surprising if it were found that women from hunting families are more likely to have negative feelings about killing game than men from hunting families, for the simple reason that hunting historically has been a male-dominated recreation. That is, women are generally less likely to be exposed to the values, thoughts and feelings of the father concerning the killing of game; in essence, girls are more likely than boys to be negatively influenced by inconsistent modeling. This not only helps to explain the low rate of participation in hunting by women in the past but also argues for the potential of increasing women's involvement in hunting in the future, thereby broadening the beneficiaries of game management. To

accomplish this, hunting parents, especially fathers, need to let their daughters share in the various vicarious attributes of the hunt, allowing them to assimilate a value system compatible with hunting participation. A later section of this report discusses women hunters at length.

Another point to be made about the development of value systems concerning the killing of game is that these value systems apparently begin developing at a very young age. One of the pretest respondents--a very avid hunter--recalled taking his 3-year-old son fishing for bullhead, and when he began cleaning the fish his son caught, the youngster asked of him, "do you have to do that daddy?" which prompted an explanation about the process of killing-preparing-consuming fish and game. A hunting parent should realize that as far as the development of a son's or daughter's value system is concerned, it is never too early to let them observe his/her hunting and fishing behavior.

A final point about value systems and the influence of role models is that once a value system is internalized by a child, the central structure of this system--that portion containing instrumental and terminal values--is not readily altered (Rokeach 1973). This may explain why it is relatively rare for a person to begin hunting after reaching adulthood (e.g., Applegate 1973), or even if such a person does come into contact with a hunter (and thereby accumulates incentives), the residual effect of a value system instilled in childhood provides sufficient disincentive to keep him/her from hunting.

Figure 17 summarizes the above discussion. Note that the parent's value system influences whether or not a child decides to hunt in two ways: (1) the child models the parent's value system directly, and (2) the value system influences the decision of the parent to hunt, thereby determining the direction of support, expectation, etc., a child receives. Note also that the outer (not bold) lines of influence are relatively short lived; they remain potent only as long as the parents are significant in the life of the child. The inner (bold) lines of influences are more enduring; they tend to remain potent long after direct parental influence has subsided.

Adoption of hunting as a recreation activity: Of Reeder's ten types of positive/negative influences, five appear to be the most important to

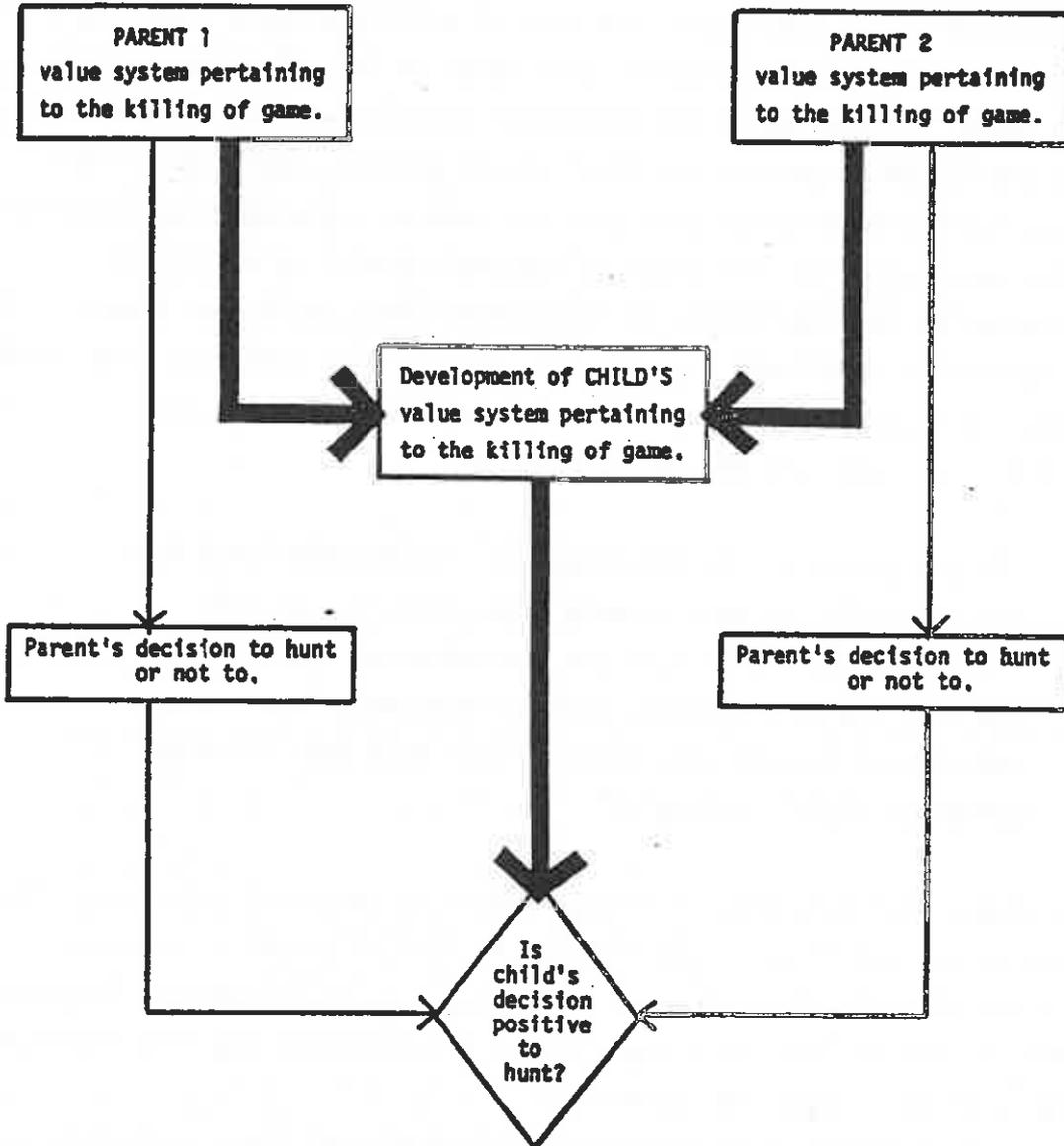


Figure 17. Lines of Influence Diagram: The Connection Between the Value Systems Concerning the Killing of Game of the Parents and the Child's Decision on Whether or Not to Hunt.

the decision of whether or not to start hunting, based on the 43 cases in this study: value standards and belief orientations (taken together, these two types are the fundamental components of an attitude-value system as proposed by Rokeach [1968]), goals, support and expectations. Ability was seldom mentioned as an influence, but may be more important than our data indicate. Its role in the decision of whether or not to start hunting is discussed later. Opportunity was mentioned occasionally as an influence, but it is difficult to assess the true weight of this type, given its strong association with other personal and social types of influences--a person who reportedly has not started hunting because of a lack of transportation to hunting areas, no equipment, etc., is quite likely making a statement about the support s/he has for the activity from family and friends, and about her/his personal goals, as well as about opportunity. Consider the following excerpt:

"We got going to the Adirondacks. He (father) had his own business, he had to work Saturdays, so we went crazy waiting for him to get out of work. Get out in the car, up to Cranberry Lake or something like that, and thrash through the woods. Come home wet and with nothing, right! [Laughs]"

The interviewee who made this statement lived in downtown Syracuse. The opportunities he had to hunt were "created" by his father's support. Another type of influence that is sometimes given weight in the decision of whether or not to hunt is force. Legal requirements for hunting (i.e., force) may act as a negative influence.

From a theoretical decisionmaking standpoint, we have determined why some people start to hunt and others do not: when some people weigh their positive and negative influences associated with hunting, the balance is negative, whereas for others it is positive. But why do people weigh the influences differently? It has already been stated that the majority of what people learn is the result of observation and symbolic processes (verbal and written communication). Role models are the best sources of nonperformance learning. Youth (and adults to a lesser extent) tend to

imitate (model the behavior, attitudes and values of others. However, youngsters quickly learn discretion in their modeling behavior in response to anticipated consequences. Bandura (1977) notes:

"Anticipatory capacities enable humans to be motivated by prospective consequences. Past experiences create expectations that certain actions will bring values benefits, that others will have no appreciable effects, and that still others will avert future trouble. By representing foreseeable outcomes symbolically, people can convert future consequences into current motivations of behavior. Most actions are thus largely under anticipatory control."

The notion that "past experiences create expectations" should be broadly interpreted to mean that experiences in one situation determine the expectations in a later, though not necessarily identical, situation. For example, if a girl is told she is not welcome to accompany her father to the ballgame because he is going with "the boys", she will know without asking where she stands as far as hunting initiation is concerned if it's always "the boys" who go hunting, too. This example emphasizes a point: systems of reward and punishment need not be intentional nor obvious to be effective.

Anticipated consequences are socially determined either directly or indirectly. They are socially determined directly in the sense that often they pertain to the responses of relevant individuals. One person may know that his decision to hunt will be met with approval and affection from his entire family. Another may know that the same decision will be met with concern or even disapproval from his family. The outer bold lines in Figure 18 show the process whereby anticipated consequences may be socially determined directly; note that such consequences involve support and expectation (examples: "he's just not going to understand" or, "he'll probably want to show he how to shoot").

Anticipated consequences are also socially determined indirectly. Youngsters not only model the values and attitudes of important others,

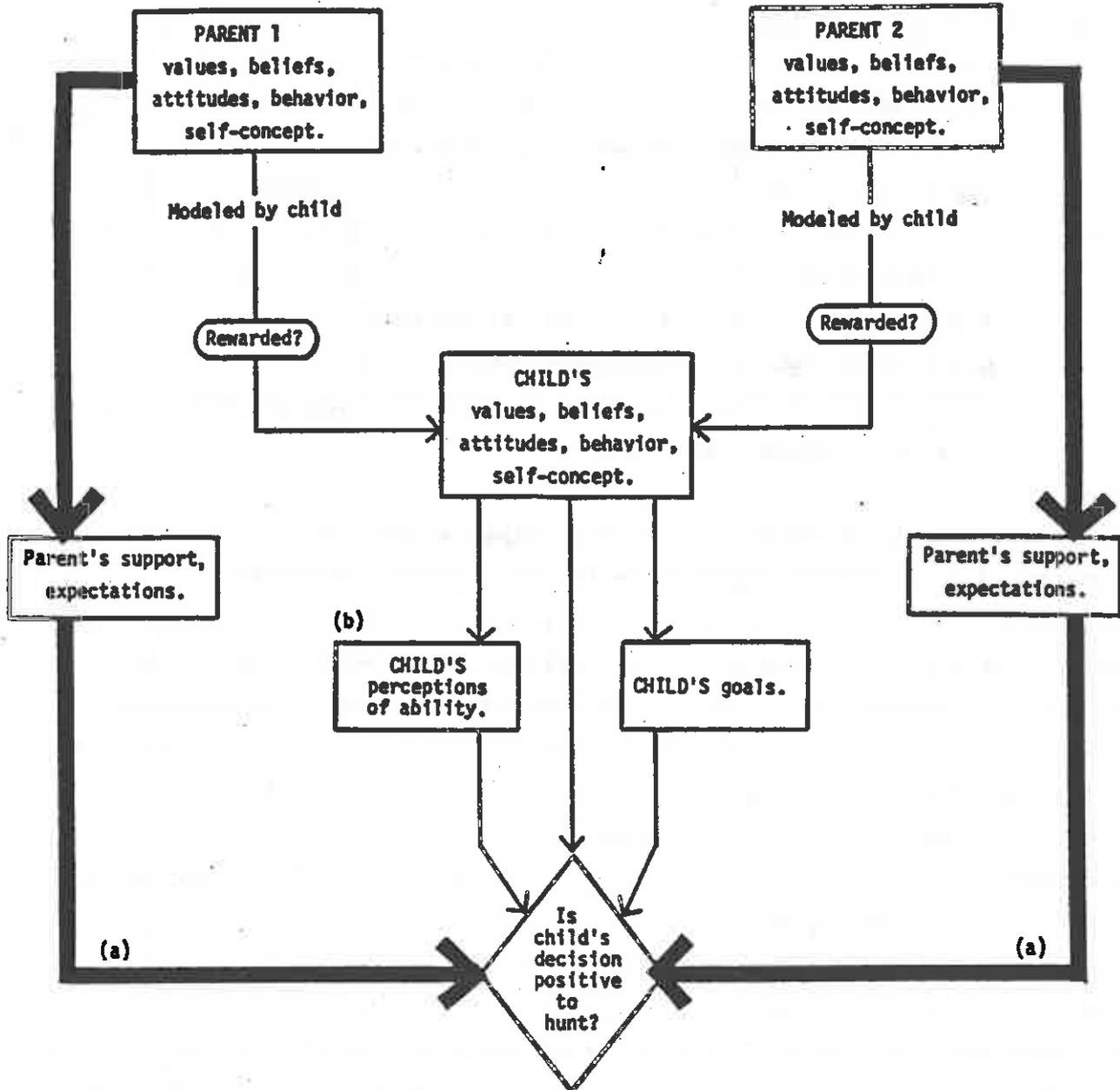


Figure 18. Lines of Influence Diagram: The Decision to Hunt as a Social Process--(a) The Effect of Two Role Models (Note: Lines of Influence may come from other significant persons, such as other relatives, siblings, peers, leaders, etc.), (b) The Effect of Incentive/Disincentive "Ability".

but they also come to internalize them and use them for self-evaluation. This internalization process accounts for the dissonance experienced when a discrepancy exists between behavior and attitudes or values. For instance, to the extent that a person learns the attitude that only drunken macho types hunt, or that every time afield one's life is on the line, he will be less likely to hunt--he avoids an expected dissonant situation. The process whereby values and attitudes are learned, and subsequently influence the decision to hunt, is shown in Figure 18. Note also in Figure 18 that the realization/thwarting of goals is another anticipated consequence of the decision to hunt which is socially determined indirectly. According to Bandura (1977), goals specify the conditional requirements for self-approval. Since self-approval is greatest upon attainment of difficult, highly-valued goals, then insofar as a person learns what to value and what to devalue, goals are also learned. The powerful influence of goals to the decision to start hunting is illustrated in the interview excerpts in Box 6.

BOX 6

* * * * *

* Influence of Goals *

* • "[Back in my teens] this was a time when I said 'I'm a *
* young man now and I can show my parents that I can put *
* food on the table if I have to.'" *

* • "I'll tell you the real reason I hunted was because it *
* was a big thing--it was a VERY BIG part of my husband's *
* life. If I had not become involved I would have lost *
* out on a very large portion of his interest. That was *
* the number one hobby that he had, therefore by going *
* with him--[it] kept me in touch with what he was doing." *

* • "He [father] had slacked off a little bit on his end *
* of the deal. But then he saw us getting into it, and *
* then it's, 'hey, those guys are having a good time! *
* They're getting out, let's get back in it again.' So *

* he dusts things off, shakes the mothballs out of his *
* gear [laughs] and got back into it again." *
* *
* • "I was more of a competitive hunter back then [teens], *
* I guess you could say. My brother was an avid hunter, *
* and the sharpshooter and all. So I was trying to just *
* gain a little bit of respectability..." *
* *
* • "I think I got interested more in deer hunting part *
* because of the—I don't know—it's more of a *
* challenge—just the challenge of hunting. Of course, *
* once I got into deer hunting, I—well, I've missed *
* [a buck] two times in sixteen years—so that's a *
* pretty good record!" *
* * * * *

The anticipated rewards that motivated the decision to hunt among interviewees in Box 6 all concerned self-approval but the criteria for approval varied. Some hunters are affiliative oriented; the primary goal in these cases is to establish and maintain relationships. Self-approval is contingent only on accompanying a person in the field. Others are achievement-oriented; the primary goal in these cases is to do better or to maintain a level of performance. Approval is contingent on success in the field. It should be emphasized again, however, that an individual's orientation is socially induced. One person may hunt primarily to be with his/her father (affiliation-oriented). Another may hunt because s/he wants to "put meat on the table" (achievement-oriented). Each understands a certain system of values and attitudes by which his/her behavior is self-evaluated, and this system determines which type of goal is the more powerful motivator of the decision to hunt. Thus, the achievement motive and the affiliative motive, considered by many social psychologists to be relatively stable characteristics of an individual (McClelland 1961), actually reflect the individual's system of values and appear stable only because his value system is relatively stable.

Zimbardo (1977) states that although the achievement motive is relatively stable, the relative strength of the motive changes from situation to situation, depending on three variables: (a) expectation of success, (b) the value attached to success, and (c) perception of personal responsibility for success. The influence of these variables on initiation in hunting has implications for managers. For instance, they can expect that potential hunters who tend to be achievement motivated in their decision to hunt would be quite likely to respond to lack of success. As explained in a later section, one hypothesis concerning this is that the response rarely takes the form of desertion except in cases of repeated lack of success. Rather, it may manifest itself in a deterioration of ethical conduct and discretion; achievement-motivated hunters frustrated by a lack of success may become more likely to use illegal means to take game, shoot protected species or inanimate objects, etc. (Jackson and Norton 1979).

In hunter training courses, achievement-motivated potential hunters should be identified beforehand and dealt with specifically to be sure their expectations of success reflect reality; unrealistically high expectations may lead to particularly frustrating experiences. Repeated failure to meet expectations may eventually lead to desertion. As Bandura (1977) notes, "When goals are set unrealistically high, most performances prove disappointing. Strong effort that produces repeated failure weakens efficacy expectations, thereby reducing motivation to perform the activity." In contrast, potential hunters who tend to be affiliative motivated in their decision to hunt would be unlikely to respond to success rate (or would do so only to the extent that the people they hunt with do). They would respond, however, to the comraderie and sense of shared experience found in hunting. Hunter training courses should stress such benefits to these people. Fortunately, experiences that yield benefits to affiliative-motivated potential hunters may be easiest to provide because they require less resource allocation.

Hunter education and management program administrators should find great value in knowing where prospective hunters fall on the continuum between achievement motivation and affiliative motivation for hunting. Review of the cases in this study lead to the following general hypotheses:

- (1) Of all hunters, boys (age 10 to 18) are the most achievement motivated in their decision to start hunting.
- (2) Men who start hunting after age 18, girls, and women are less achievement motivated in their decision to start hunting than boys.

The above generalizations should not be misinterpreted. Boys who start hunting in their teens may very well anticipate many more rewards--both achievement-oriented and affiliative-oriented--than, for instance, a woman in her 20's. Also, note that the hunters in category (1) above would include many family-supported hunters who emphasized the importance of an apparently affiliative component--the family component--in the hunting stage structure of their teens. This is not contradictory. For instance, the person from the excerpt on page 64 who began hunting to "gain...respectability" stressed in his stage structure the importance of family. He recognized hunting to be a "act of family", yet was achievement-oriented in his hunting. Basically, his family's emphasis on hunting made it the perfect vehicle by which to gain attention from other family members while meeting his need to achieve.

Why women do not hunt: About 10 times more men hunt than women (USFWS 1982) and the recruitment rate of men into hunting is over seven times that of women (Bevins et al. 1979). Table 8 shows that women who grow up in hunting families are less likely to hunt than their brothers (assuming that on the average there are as many female children as male children in hunting families). Most hunter managers and researchers of the human dimensions of wildlife management have ideas as to why this is so, but to our knowledge no explanation grounded in accepted social-psychological theory has heretofore been offered.

Table 8. Sex of Family-Supported Hunters.

Sex	Participation Study	Hunter Training Course Study
		Percent
Male	97.7	96.4
Female	2.3	3.6

(Data Sources: Brown et al. 1981, 1982).

In the previous subsection a model of hunter initiation was proposed. Basically, this model considered hunter initiation to be the product of the socially founded interaction of five types of influences: support, expectations, value standards, belief orientations, and goals. The following discussion applies this model to the question of why women do not hunt. The focus will be on women who have the apparent advantage of growing up in a hunting family.

Based on interpretations of data from this study and on research in other areas where historically strong sex differences occur, such as occupational status (Almquist 1977), a reasonable assumption is that girls who grow up in hunting families receive relatively little support to hunt and are usually not expected to do so. This is in marked contrast to the treatment of boys in these families. Not only do parents support their sons' efforts to hunt, they also expect them to. This is vividly illustrated by the interview excerpt on pages 53-54. Drawing on the model of initiation shown in Figure 18, it should be expected that if this assumption is valid, then the daughter's value-attitude system and goals also act to preclude her hunting; the same set of values and attitudes (those of the parents) that result in little support for the daughter's hunting are modeled and internalized by her. She comes to recognize these values and attitudes as her own, and they in turn influence her goals. For the most part, then, the reasons women from hunting families have not hunted lie with the value-attitude systems of her parents and other significant people in her childhood, and ultimately reflect sociocultural tradition. That this is the case is supported by Table 9, which indicates males are much more likely than females to be introduced to hunting by their parents.

Table 9. Whether or Not Parent Introduced Respondent to Hunting, by Sex.

Introduced to Hunting by Parent?	Hunter Participation Study		Hunter Training Course Study	
	Male	Female	Male	Female
Yes	49.3	25.6	49.4	38.9
No	50.7	74.4	50.6	61.1
(n)	(712)	(43)	(917)	(157)

(Data Sources: Brown et al. 1981, 1982).

The above explanation of why women do not hunt is limited to the strict application of our framework to the recreation activity of hunting. Although a valid explanation, there are benefits to be derived from offering an explanation on a broader level. In the following discussion, our framework is used to account for the lack of female participation in hunting in terms of broad gender role socialization processes. As will be seen, it is not an alternative explanation of the question at hand, but rather a supplementary and altogether congruous one.

There is a good deal of evidence that women tend to be more affiliative-oriented than achievement-oriented in their goals. Oetzel (1966) and Walberg (1969) found that women have greater affiliative needs than men. Other studies (V.J. Crandall 1963; V.C. Crandall 1964; Garai and Scheinfeld 1968; Hoffman 1972) have suggested that whereas achievement behavior in boys is motivated by the desire to master surroundings, achievement behavior in girls is motivated by affiliative needs. Bardwick (1971) states that among college students, the motivation of men is primarily achievement-oriented and secondarily affiliation-oriented. She reports the opposite to be true of college women.

Given that women are more affiliative-oriented than men in their goals, it seems logical that they would be less likely than men to hunt if by doing so they sacrifice or damage interpersonal relationships. That is, not only are girls from traditional hunting families not expected to hunt, but they are also more sensitive to these expectations than their brothers. Hoffman (1972) notes, "If achievement threatens affiliation [among women], performance may be sacrificed or anxiety may result". And Bardwick (1971) concludes, "women continue to perceive the world in interpersonal terms and personalize the objective world in a way that men do not. Notwithstanding occupational achievements, they tend to esteem themselves only insofar as they are esteemed by those they love and respect". Indeed, women hunters in our sample were usually highly affiliative-oriented in their hunting; they hunted because a significant man wanted them to. Only 3 of the 9 women hunters in our sample indicated any motivation to be successful on a hunt; 5 of the 9 hunted almost solely to be with their husbands, and 1 hunted to be with an older friend. The often heard suggestion that many husbands who are positive in their

support/expectations concerning their wife's hunting primarily want them afield so another deer can be tagged is consistent with this line of reasoning. The husband and wife both find the situation agreeable; she gets to spend time with him, and he gets to take an "extra", albeit illegal deer (fulfilling his achievement motivation). Why are women more often affiliative-oriented in their goals than men? Again, this difference can be attributed to social learning. Hoffman (1972) notes, "When little boys are expanding their mastery strivings, learning instrumental independence, developing skills in coping with their environment and confidence in this ability, little girls are learning that effectiveness--and even safety--lie in their affectional relationships."

Another disincentive to female participation in hunting that involves gender role socialization processes concerns perceived ability. There is evidence that people who expect to perform poorly in a particular activity tend not to engage in it (Weiner et al. 1971). Lenney (1977) notes, "low expectancies may not only depress performance but may also adversely affect an individual's initiative." One of the variables that seem to affect expectations of performance ability in an activity is the task's sex linkage (Lenney 1977). That is, women are likely to have low self-confidence in perceived male activities, and men are likely to have low self-confidence in perceived female activities. Figure 19 shows the implications of these findings for hunting. To the degree that hunting is considered a masculine activity, women are less likely to participate in it.

IN AN ACHIEVEMENT SETTING:

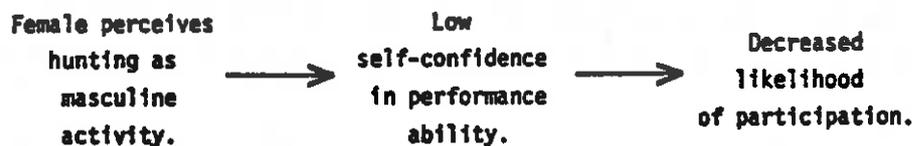


Figure 19. Process by Which Linkage of Hunting with Masculinity Negatively Affects Female Participation.

Among teenage girls the process shown in Figure 19 is no doubt particularly powerful, because at that age hunting is considered a competition sport (see Box 7), and so success and failure are emphasized. That is, the process shown in Figure 19 pertains to achievement settings, and insofar as the achievement aspect of hunting is emphasized or deemphasized, women's anxiety regarding participation will be heightened or lessened. To compound the effect, sport competition is itself identified with masculinity (Wark and Whitting 1979); this association is apparently the cause of greater sport competition anxiety among women than among men (Wark and Whittig 1979; Owie 1981).

BOX 7

* Hunting as a Competitive Sport Among Teenagers *
* That teenagers approach hunting on a competitive level is *
* suggested by a number of interview excerpts: *
* "We hunted together most of the time. We always liked *
* to hunt together and we always went together." *
* [So the idea of being with your friend has some import- *
* ance?] *
* "And there was always trying to get the most birds--" *
* [A little competition?] *
* "Yeah" [laughs] *
* "My friends were doing the same thing (hunting) at the *
* time...and we'd have a little contest on who would get *
* the most (skunks). I remember very distinctly that I *
* got twenty-two of them one night." *
* "When the woodchucks were good we'd have a contest *
* amongst the neighborhood boys to see who got the most." *

The competitive approach to hunting taken by most teenagers probably does not often manifest itself in such overt contests as depicted in Box 7. It usually lies in the sense of challenge invested in the hunt itself; it lies in attempts to fill bag limits, get a deer every year, etc.

Jackson and Norton (1979) suggest that hunters go through five stages of development in their orientation toward hunting, the second and third of which are success-oriented (limiting-out stage, trophy stage). Although the generalizability of these stages was questioned in an earlier section of this report, it does seem reasonable that hunters who start hunting at a young age move from a success orientation in their teens to an appreciation orientation in later adulthood.

The role of "ability" in the decision to hunt is shown in the shaded section of Figure 18. The underlying hypothesis, based on social learning theory, is that women learn that they have poor ability in activities dominated by men.

Despite the low level of participation of women in hunting, there is reason to believe this situation may change. Lunneberg and Rosenwood (1972) cite evidence that the differences between men and women concerning achievement and affiliation orientations are declining. Anderson and Stone (1981) conclude that between 1960 and 1975 differences between men and women in types of sports participation declined. Even more convincing, Bevins et al. (1979) note that for most outdoor recreation activities the rate of adoption for females is greater than that for males. Apparently the general trend among families raising children is greater even-handedness in socialization of boys and girls. Nevertheless, the rise in female participation in most outdoor recreation activities has not been matched by a similar rise in their hunting participation. Two supplementary hypotheses are offered to explain this discrepancy. First, it could be that hunting families are generally slower than other families to accept the social changes the women's movement has catalyzed. It has been demonstrated that traditional rural families tend to be more conservative in their values and beliefs than suburban and urban families (Lawson 1978). Dunne (1980) notes, "the young rural woman appears to be in an unenviable situation. Like her male peers, she faces the constraints which come with rural origins. Like metro females, she must struggle with the social factors which affect women in the United States. Finally, she must come to terms with the traditional expectations associated with rural culture, expectations which place particular limitations on women."

A supplementary hypothesis is that the parents in many hunting families are raising their daughters more equitably in terms of most issues raised by the women's movement, but not in terms of values/attitudes specific to hunting. In a sense, hunting in these cases remains a vestige of traditional masculine roles. This hypothesis is supported by the interview excerpts in Box 8. In the first excerpt, the respondent is attempting to relate how in certain situations she could in fact kill an animal. The message actually received, however, is that she is competitive and achievement-oriented. The second excerpt shows that despite her desire to prove herself, she is ambivalent about killing animals.

BOX 8

* "A woodchuck was going crazy in the backyard, and so we *
* called a conservation officer, and he said 'sounds like *
* you have a diseased woodchuck, so shoot it.' So she *
* (sister) wouldn't let me shoot it--she let somebody *
* else shoot it. Which, though she says she's not sexist *
* I think that was the sole reason. She let her boy- *
* friend shoot it, who grew up on Long Island and took *
* some kind of course and shot 500 rounds. You know, *
* like, big deal!" *
* Later: *
* "I don't have any strong feelings about people hunt- *
* ing. It doesn't bother me if people hunt, but I don't *
* have any strong desires to hunt myself...I don't know *
* what I would do in a situation where I got a chance to *
* kill something." *

Evidence that either or both of these hypotheses may be operating is found in Table 10, which indicates integration of women into hunting is greater among family-nonsupported hunters than family-supported hunters.

Table 10. Family-Supported and Family-Nonsupported Hunters, by Sex.

<u>Sex</u>	<u>Hunter Training Course Study</u>		<u>Participation Study</u>	
	<u>Family-Sup.</u>	<u>Family-Nonsup.</u>	<u>Family-Sup.</u>	<u>Family-Nonsup.</u>
	Percent			
Male	96.4	80.5	97.7	92.0
Female	3.6	19.5	2.3	8.0
(n)	(333)	(747)	(300)	(460)

(Data Sources: Brown et al. 1981, 1982).

CONTINUATION

A Hunter Typology Based on Goal Orientation

Various hunter typologies based on motivation for hunting have been proposed by outdoor recreation researchers. Two in particular that are often cited in the literature are those proposed by Kellert and by Jackson and Norton. The typology proposed by Kellert (1980) originated from a broad study concerning people's attitudes towards animals. The five developmental stages of hunting-orientation proposed by Jackson and Norton (1979), though not purported to be a motivation-based typology, can be considered to be so. In the following discussion, both of these typologies are examined in light of the findings and theoretical framework of this study, and a typology developed from this study is presented.

Kellert's hunter typology is based on three categories: meat hunters, sport hunters, and nature hunters. Each roughly corresponds to a type of attitude about wildlife: utilitarian, dominionistic, and naturalistic, respectively^{1/}. Although it is an excellent typology of hunter attitudes, it is a weak typology of hunter motivations.

One problem with this typology is that it is based on a single close-ended question. Hunters were classified as meat hunters if their response to the question "What was your most important reason for hunting in the past two years?", was "for the meat." Such a simple typology misrepresents the complexity of motivational behavior. For instance, a person who hunts "to obtain meat" may be motivated more by the meat's symbolic value as a measure of success (i.e., a "trophy", although respondents would not have described it as such).

Kellert supports his findings by noting that the utilitarian attitude is most strongly associated with meat hunters, the dominionistic attitude is most strongly associated with sport hunters, and the naturalistic

^{1/}Utilitarian attitude - primary concern is with the practical and material value of animals.

Dominionistic attitude - primary concern is with mastering and controlling animals.

Naturalistic attitude - primary interest and affection are for wildlife and the outdoors.

attitude is most strongly associated with nature hunters. The implication is that these attitudes motivate the decision to hunt; at one point they are referred to as "attitudinal motivations". Again, however, there is reason on a theoretical level to question the role of attitudes as motivations for behavior. There is no question that most hunters with predominantly utilitarian attitudes will not hunt that which they cannot consume; however, the utilitarian or any other attitude does not motivate the decision to hunt, it simply sets the parameters for what will be hunted and the approach that will be taken to hunting. As mentioned previously, motivation is a response to the setting of goals. Insofar as one's goals are a product of one's learned values and attitudes then certain attitudes can affect the decision to hunt, but it is unlikely that a single attitude motivates the decision to hunt.

In this vein, it could be argued that the frequency distribution of responses indicated in Table 11 is a reflection of attitudes, not goals. Therefore, given that among hunters a strong association exists between the utilitarian attitude and the expression that their most important reason for hunting was to obtain meat, it may be that these respondents are simply stating when they think hunting is defensible and justified, rather than what actually motivates them to hunt.

Table 11. Most Important Reason for Hunting in the Past Two Years.^a

Response ^b	Absolute Frequency	Percent Hunters
For the Meat	135	42.7
To Be With Family and Friends	29	9.2
For the Sport and Recreation	118	37.3
To Be Close to Nature	34	10.8

^aSource: Kellert (1976).

^bIn Kellert's analysis, respondents who answered "for the meat" were typed meat hunters; those who answered "for the sport and recreation" were typed sport hunters; those who answered "to be close to nature" were typed nature hunters.

A more useful motivation-based typology should concern the orientation of one's goals associated with hunting. Although there is no doubt that the principal goal of some hunters is economic in nature, such a goal seems to be peripheral for most people. Only one respondent in our study seemed motivated to hunt primarily by economic goals--as a boy he shot skunks and sold the hides to earn a few dollars per week. Based on this study, we hypothesize that three types of principal goals motivate the decision to hunt: achievement, affiliative, and appreciative goals. These form the basis for a hunter typology used in the following discussion.

Achievement-motivated hunters hunt to meet a self-determined standard of performance. We can expect a successful hunt for the typical achievement-motivated hunter to be one where a quota of game or a particular type of animal is harvested.

The goal of the hunt for an affiliative-motivated hunter is to accompany another person in the field, and thereby strengthen or reaffirm their personal relationship. Such a hunter carries a firearm so as to identify more closely with his/her hunting partner(s), but will often never use the firearm. Note that in the previous subsection achievement-oriented and affiliative-oriented goals were explained as important factors in one's decision to start hunting. The third type of goal orientation, appreciative, pertains only to continuation in hunting.

Appreciative-motivated hunters want only to be in the field. The sense of peace, belonging, and familiarity that have become associated with the hunt cause the very act to be its own reward. Both avid and nonavid hunters may become appreciative oriented in their hunting goals. For avid hunters, hunting becomes so much a part of their lives that it at least partially defines their existence; each time out is, in effect, a confirmation of who they are. Despite the many changes they undergo throughout their lives, the many roles they play, one role that never changes, that which allows a thread of personal history to tie year to year is the role of the hunter. The fibers of this thread are the memories and associations that cause the mere act of hunting to be its own reward. For nonavid hunters, the focus of appreciative goals is less on their roles as hunters and more on the environment itself. These

individuals continue to carry a firearm into the woods out of habit and will use it if given the right circumstances, but overall they consider hunting to be a "good excuse" to get into the woods. Apparently, a trip to the woods for spiritual refreshment only, without a defineable task to attempt, is a less desirable experience (see Box 9).

BOX 9

* Interviewee: I'm hard-pressed to pinpoint the reason why *
* (I hunt) because I'm not really successful *
* at it, and I'm one to put some value on my *
* time and really I waste a lot of time up *
* there. It's really a waste of time for what *
* you get out of it, if you measure in terms *
* of dollars per hour. So I'm hard-pressed *
* to tell you exactly why I hunt. I just *
* enjoy wandering around the woods—it gives *
* me a good excuse to do that. I guess that's *
* one of the things I like about burning wood *
* is that it gets me up in the woods... *

The previous description of the three types of hunters pertains to individuals who are purely one type of hunter or another. Most hunters are no doubt motivated by a combination of the three types of goals, although one may be dominant. The following excerpts demonstrate this:

BOX 10

* Interviewee: Like I say, I had my boys to keep me going *
* all the while. In fact, if I had them *
* around here now I'd probably go out a lot *
* more. When they're around, they like to *
* tease me...well, like we went out here with *
* my youngest son. I taught him how to hunt, *

* and now he more or less has to watch over me, *

* or so he thinks he's watching me [laughs]. But *

* we went out here rabbit hunting just last year, *

* and I got more than he did! *

If Aff = affiliative oriented, Ach = achievement-oriented, and App = appreciation-oriented, this hunter might be characterized by the symbols Aff-Aff-Ach. That is, two types of goals are being fulfilled, but one more than the other. Of course, based on a single excerpt, it is difficult to characterize a respondent by these goal types. Excerpts from some other interviews illustrate the types of goal combinations existing among hunters:

BOX 11

* "My philosophy is that, oh...I don't really care *

* if I...well, I'd like to get something, but I *

* don't go hunting to kill game. I don't feel *

* disappointed if I don't get anything. If I see *

* something, well I figure that's good enough. If *

* I get something, that's icing on the cake." *

This hunter is primarily appreciative in his hunting, based on this excerpt and other comments, and secondarily achievement motivated: App-Ach.

BOX 12

* Interviewee: Then when I came back home (from the war), *

* that's when I started getting acquainted with *

* my wife's relatives, who lived in the Cat- *

* skills...and then it was a new set of family, *

* if you will, and so then it was hunting to be *

BOX 13

* Interviewee: "In fact, then the next cycle would be where *
* I enjoyed seeing the deer more than shooting *
* at them. Many, many times I'd see deer in the *
* woods and never fire at them. That's when I *
* really started to change: 'Nah, I don't want *
* to shoot' [laughs]."
* Interviewer: Was there a period when you really did go out *
* to-- *
* Interviewee: "When you first start deer hunting, and you're *
* young, and you go deer hunting and you recog- *
* nize the challenge of you against the deer-- *
* they got the edge on you!--you stumble around *
* two or three days and when you see one you're *
* ready to shoot! And so you do go through *
* that period. Not that I did a lot of it then, *
* either, but yes, the desire was, 'boy if I *
* can get one I'm going to bring it home, I'm *
* going to get it.' So yes, you go through *
* that. And then as you keep it up, as I say *
* then I kind of turned around and I enjoyed *
* seeing them. Not to shoot at them, just to *
* see them. And if you saw some deer during *
* the day your day was complete; it wasn't a *
* wasted day."

Despite the insights provided by Jackson and Norton's (1979) five stages of hunting development, they are not entirely satisfactory as categories for a motivation-based typology. First, in their stages no allowance is made for a very important type of hunter, the affiliative-motivated hunter. Such hunters care little if they are unsuccessful, nor do they have particularly strong feelings for the outdoors or the role of the hunter. They go afield primarily to be with

someone. Second, although many hunters no doubt develop from an achievement orientation to an appreciative orientation in their hunting, this is not the only possible direction of movement. Recidivism is possible. Box 14 is an excerpt from a formerly appreciative-oriented hunter who is now an affiliative-oriented hunter, thus documenting that recidivism occurs, although the degree to which it occurs is not known.

BOX 14

* Interviewee: Now my boys are getting up--and my daughter-- *

* to the age where they're all hunting, so I *

* spend all my time hunting with them. *

* Interviewer: Is this true of just waterfowl hunting, or *

* hunting in general? *

* Interviewee: Hunting in general. Overall I hunt mostly *

* with the kids now. I get a big kick out of *

* going out with them. *

Finally, even among hunters who generally move from an achievement to an appreciative orientation in their hunting goals, specific stages of development as proposed by Jackson and Norton (1979) are not always evident. Nevertheless, the concept of change in motivations, attitudes about, and behavior of the individual hunter indicated by all these studies is important for hunter education and management.

Temporal Changes in Stage Structure of Family-Supported and Family-Nonsupported Hunters

The significance of the weights assigned the five social action components that define hunting at various ages for hunters in our sample will be discussed in this subsection. Although we caution against interpretations of these data as being representative of the general hunter population (i.e., relative frequencies of sample closely reflecting actual percentages in population), the analyses of observed trends in the data, or explanations of participation, provide useful insights into antecedents of participatory behaviors.

Figures 20 and 21 show the mean importance (in points) assigned to each of the five types of social action components (i.e., family, fraternal, recreation, health and economic) at even years of age, by family-supported and family-nonsupported hunters, respectively. Analysis is presented only for those ages with a minimum of four cases available. Although the analysis of stage structure can serve to explain hunter behavior, it should be emphasized that in this study sample sizes were small, so all conclusions are tentative.

Among family-supported hunters, the mean importance assigned to the family component is very high among preteens, and then drops precipitously through the teens and early twenties. It increases slightly in the 38 to 52 age range, possibly in response to the initiation into hunting of sons and daughters of some of these hunters. The mean importance of the fraternal component of family-supported hunters rises steadily through the teens, and then remains relatively stable throughout most of the adult years. The concurrent fall in the importance assigned the family component and rise in the importance of the fraternal component in the 12-20 age range reflects the normal replacement of the family (i.e., parents) by peers as the primary social group.

The recreation component of family-supported hunters steadily rises in importance from age 8 through the early 40s, and then drops quickly. Due to small sample size, it is difficult to judge the significance of this drop. It appears to be caused by a renewed emphasis on the family component, and steadily increasing emphasis on the fraternal component. Nevertheless, Figure 22 shows that the percent of respondents in the 44-50 age range who assigned the recreation component at least three points remained fairly high. In addition, Figure 23 shows that at ages 40 and 50 the majority of family-supported hunters assigned more weight to the recreation component than to the fraternal component. So despite the drop in importance assigned it in the late 40's, the recreational component appears to be of primary importance in the middle adulthood (35-55) of family-supported hunters. The fraternal component tends to be of secondary importance, though it no doubt influences the continuation of activity of many family-supported hunters.

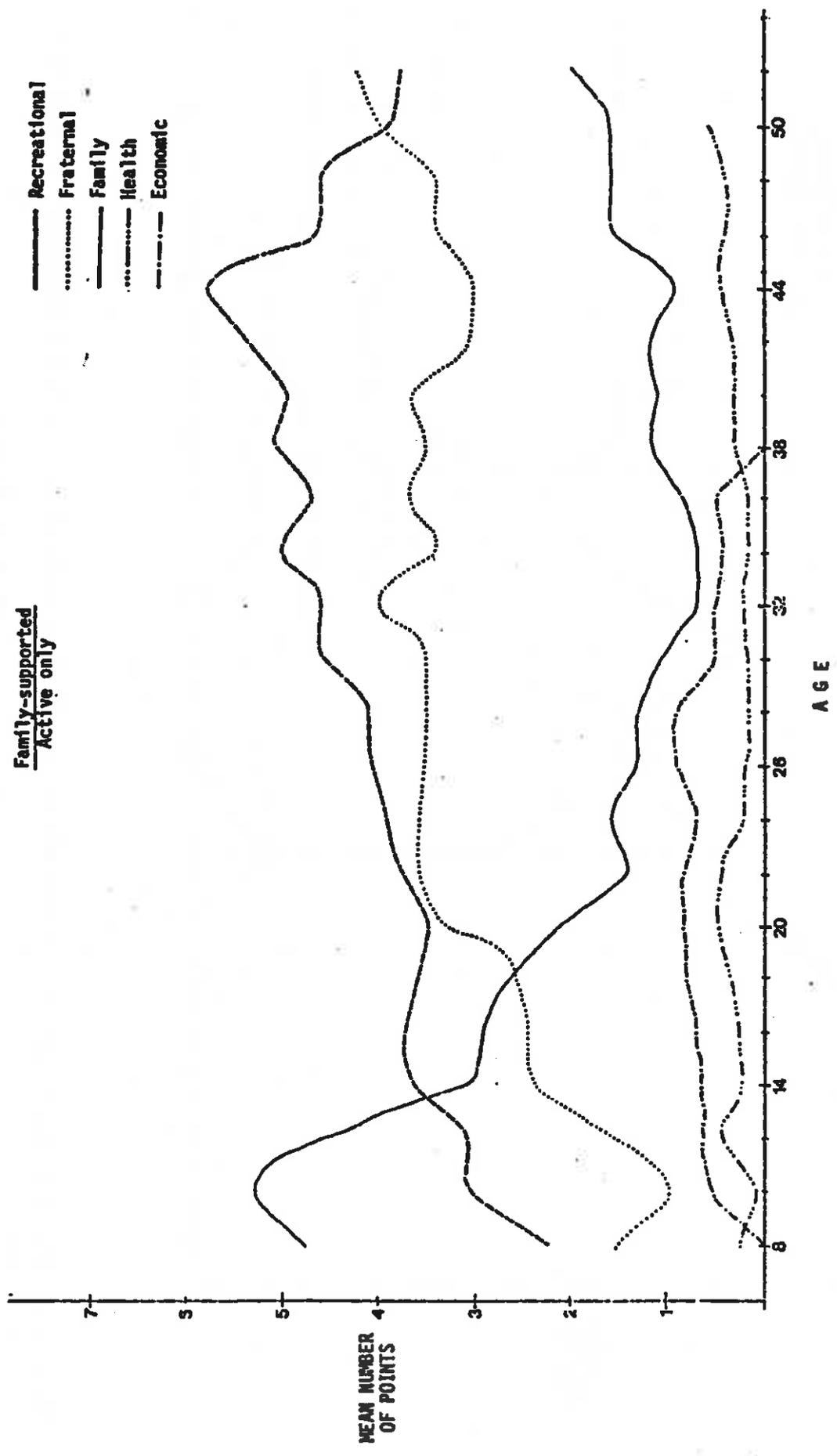


Figure 20. The Mean Importance of the Five Social Action Components of Active Family-Supported Hunters by Age.

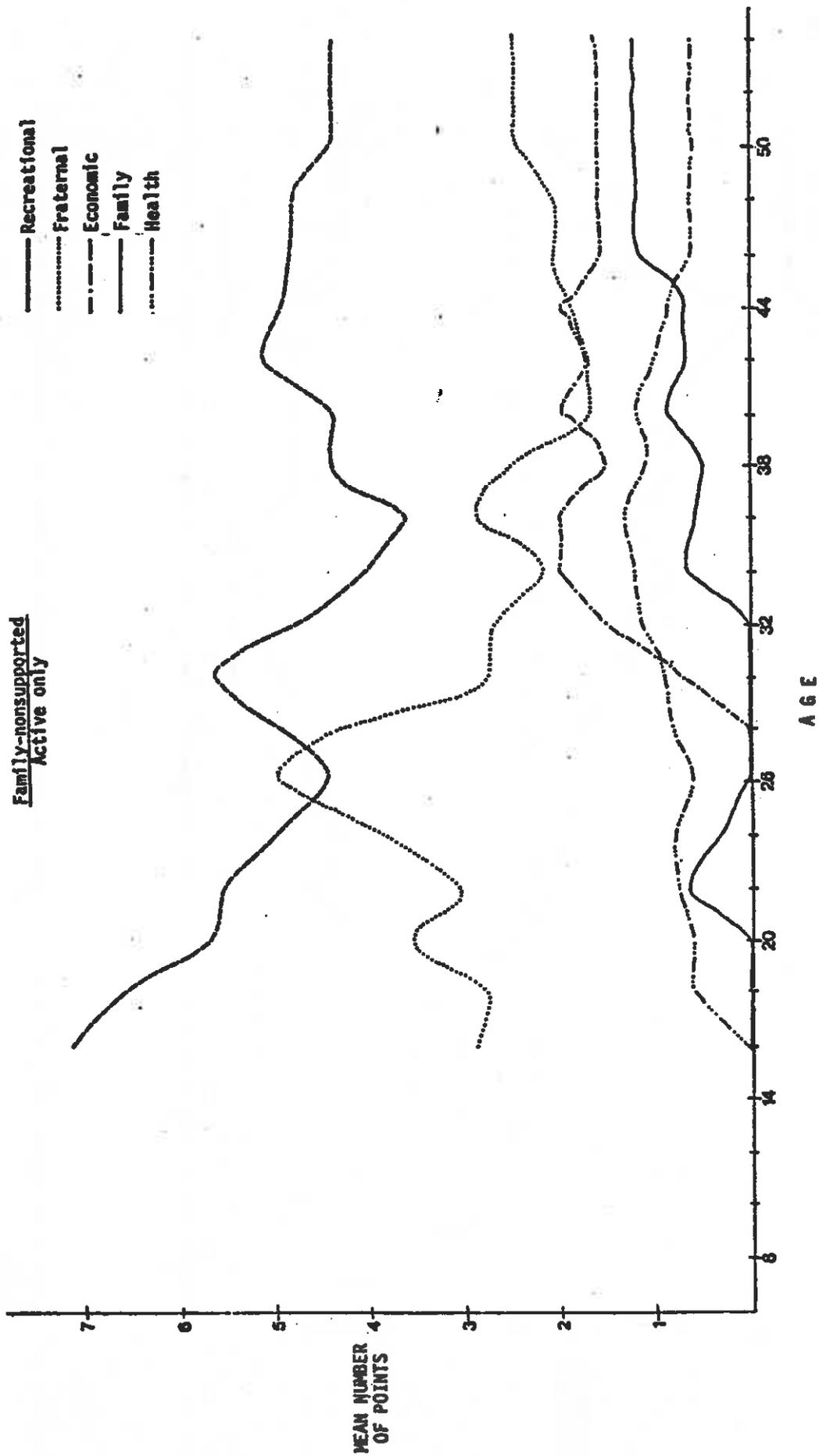


Figure 21. The Mean Importance of the Five Social Action Components of Active Family-Nonsupported Hunters by Age.

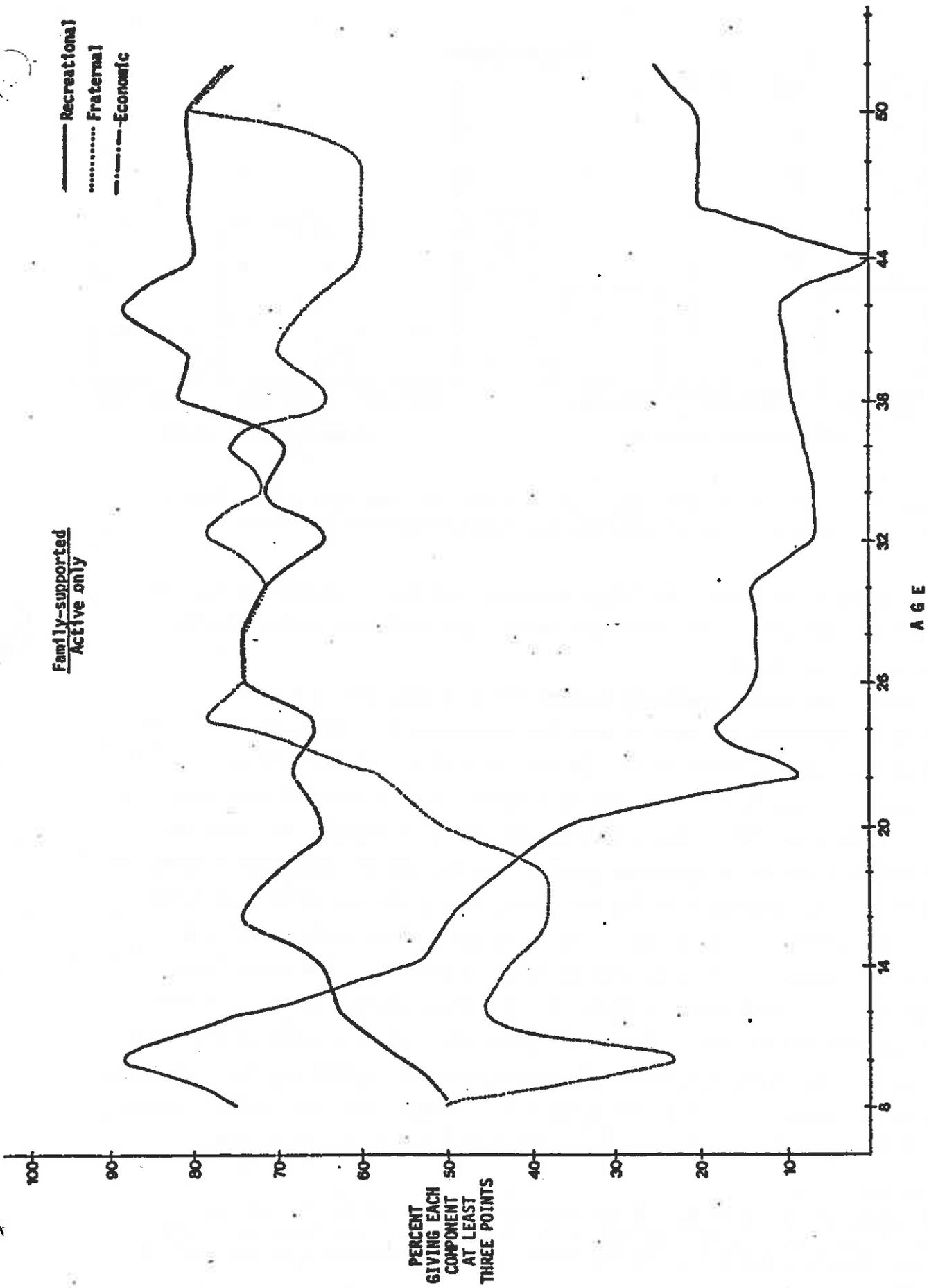


Figure 22: The Percent Giving Each Component at Least Three Points for Active Family-Supported Hunters by Age.

Family-supported

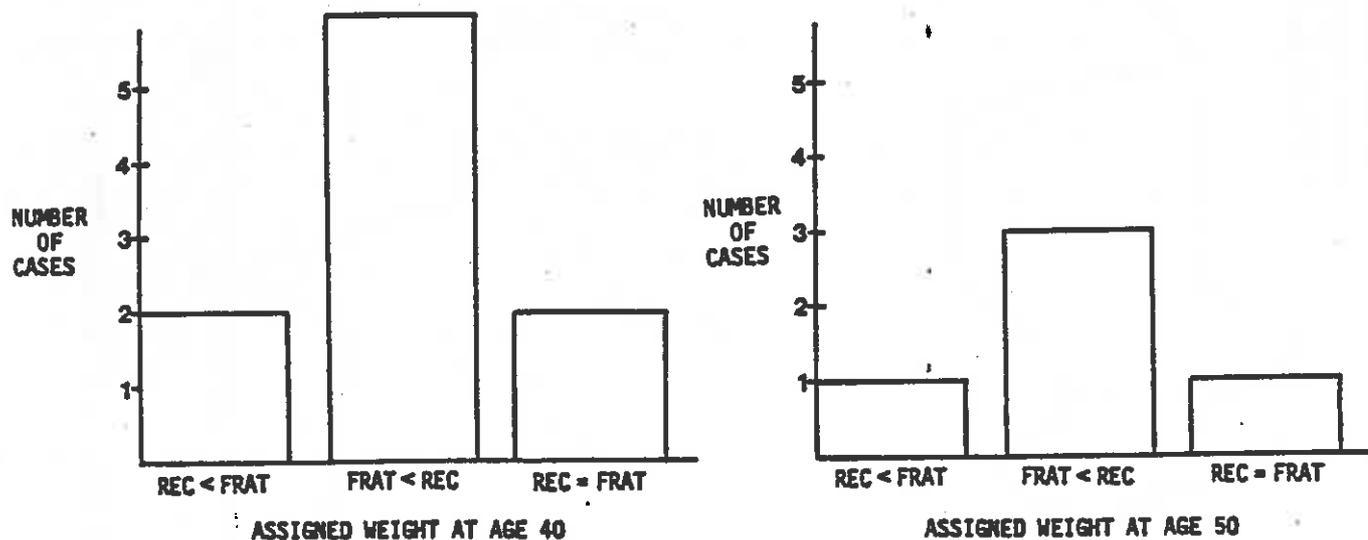


Figure 23. Relative Weight Assigned to Fraternal and Recreation Components At Ages 40 and 50, for Family-Supported Hunters.

A final point about the stage structure of family-supported hunters is that the importance assigned the health and economic components is quite low at all ages.

Among family-nonsupported hunters (Figure 21), the fraternal component experiences a marked rise in importance in the early 20's, and experiences just as great a fall in the late 20's. Concurrently, the importance of the recreation component falls in the early to mid 20's, and rises in the late 20's. As a result, age 26 is the only time that the fraternal component is assigned greater average weight than the recreation component. One explanation for the sharp trends in the 20-30 age range is that some family-nonsupported hunters who place much emphasis on the fraternal component begin hunting in their early 20's, and then desert before age 30. Such hunters could be considered purely affiliative in their motivation to hunt. Figure 24 shows this to be precisely the case. A group of six women hunters, each assigning great weight to the fraternal component, begin hunting in the late teens to mid 20's, and desert before age 30.¹ When these women are excluded from consideration in the

¹One woman hunted from age 18 to 26; another from 20 to 21, another from 20 to 28, another from 23 to 28, and the last two from 24 to 28. Stage structure data for one of these two was obtained only for age 26 to 28.

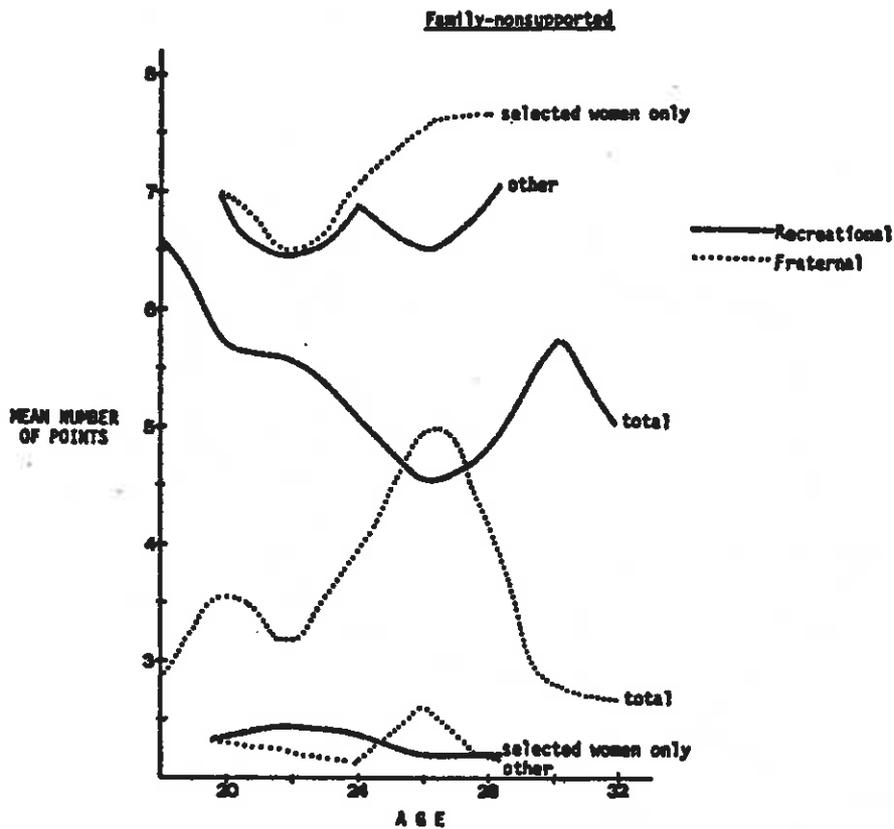


Figure 24. Difference Between Age for Male and Female Family-Nonsupported Hunters in the Weight Assigned Fraternal and Recreation Components for Ages 20-28. (Lines are from the 18-32 age group segment of Fig. 21)

aggregate analysis the trough in the recreation component and the peak in the fraternal component are greatly reduced. In future studies, there may be good reason to consider three types of hunters when analyzing stage structure: family-supported hunters, family-nonsupported women hunters who hunt for several years during their late teens to early twenties, and other family-nonsupported hunters.

Figure 21 suggests that except in the mid 20's, the recreation component is generally far more important than the fraternal component among family-nonsupported hunters. Figure 25 shows this to be especially true in the 40 to 50 age range; between 2.5 and 4.0 times as many hunters give the recreation component at least three points than give the fraternal component at least three points. In addition, Figure 26 shows that most family-nonsupported hunters assigned more weight to the recreation component than to the fraternal component at ages 40 to 50.

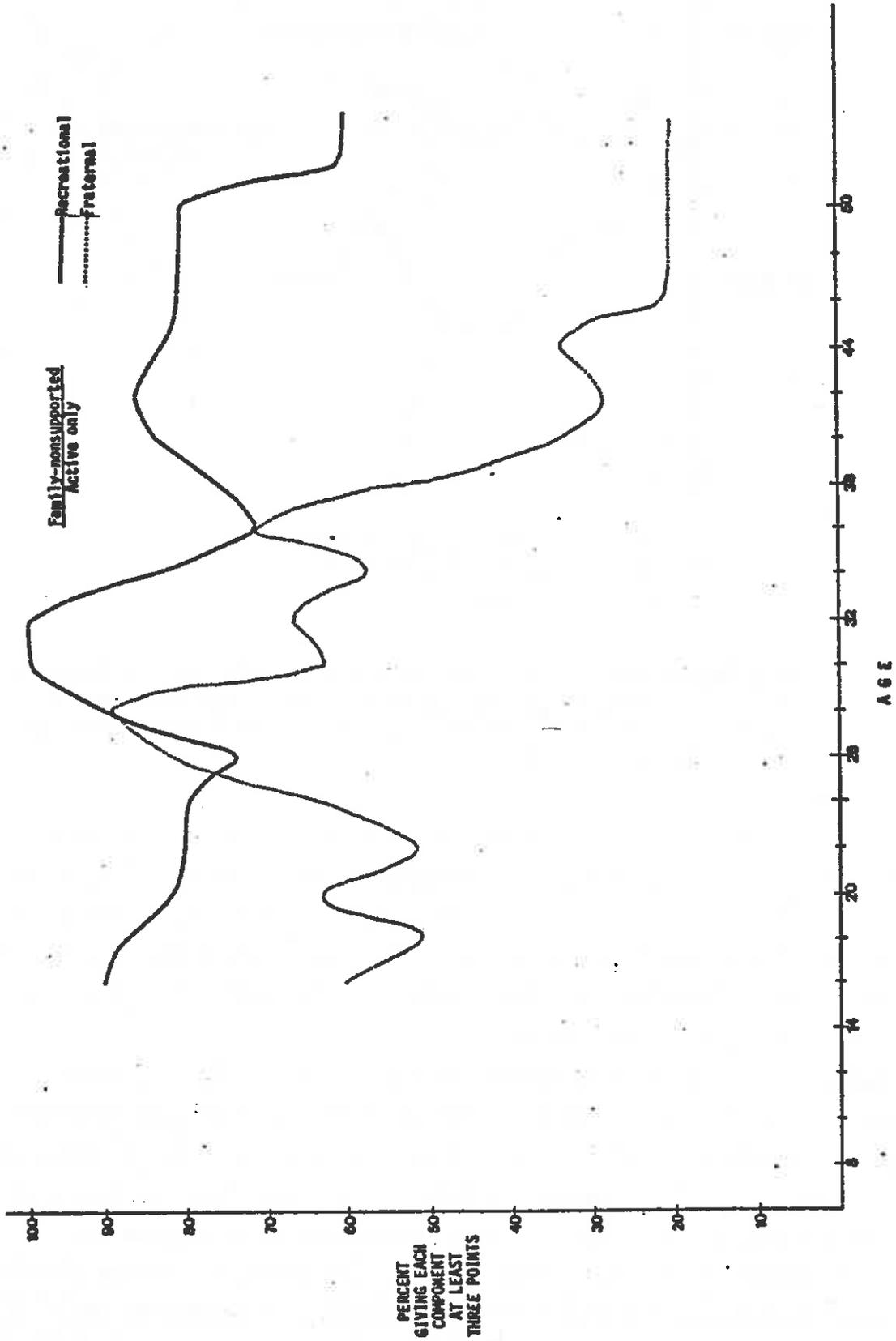


Figure 25. The Percent Giving Each Component at Least Three Points for Active Family-Nonsupported Hunters by Age.

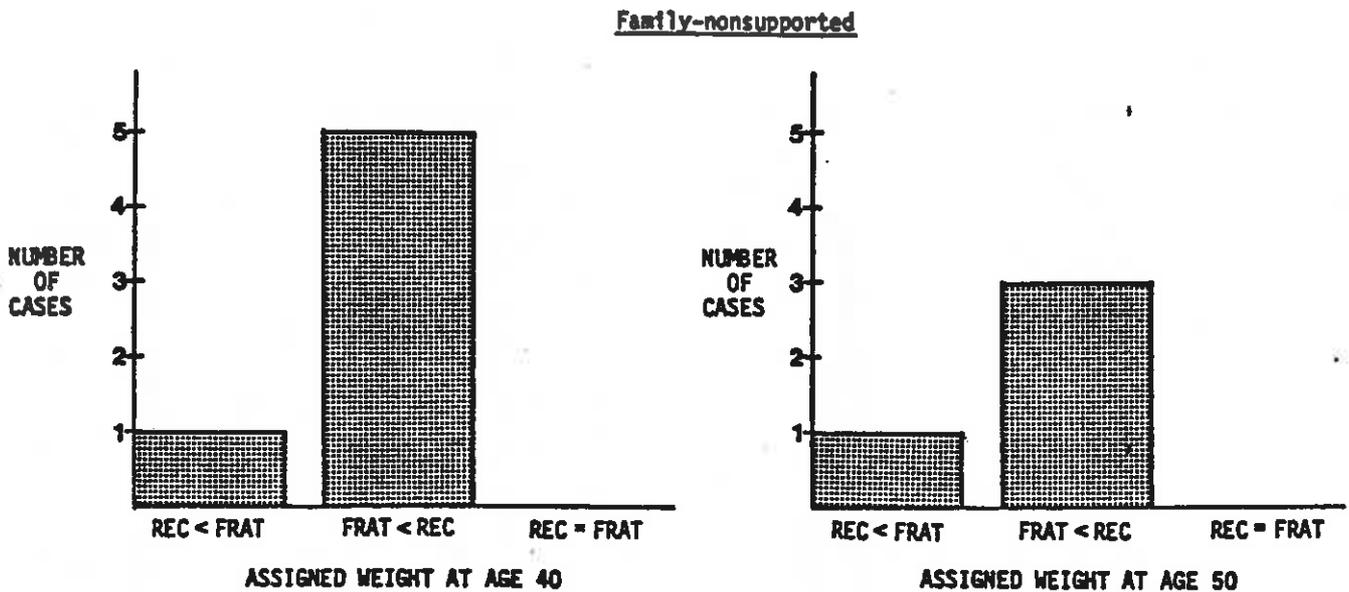


Figure 26. Relative Weight Assigned to Fraternal and Recreation Components at Ages 40 and 50, for Family-Nonsupported Hunters.

So, as was suggested to be the case among family-supported hunters, among family-nonsupported hunters the recreational aspects of hunting also seem to be of primary importance in middle adulthood.

And finally, among family-nonsupported hunters the family, health and economic components are generally of little importance.

Interest and Participation in Hunting of Family-Supported and Family-Nonsupported Hunters

Figure 27 shows the trends in the interest level of family-supported hunters in small and big game hunting. Interest in small game hunting is highest in the preteens, declines sharply during early teens, then declines gradually thereafter. Interest in big game hunting also starts out quite high in the preteens and peaks at age 16-18. In fact, at the 14 to 16 age interval big game interest rises at a higher rate (.6 pts./interval) than at any other two-year interval. This supports the hypothesis proposed in the "Initiation" section: when given the opportunity to hunt deer, an individual's interest in such activity rises accordingly. From age 18 to age 52, interest in big game hunting among family-supported hunters declines gradually. Note that from age 8 to age

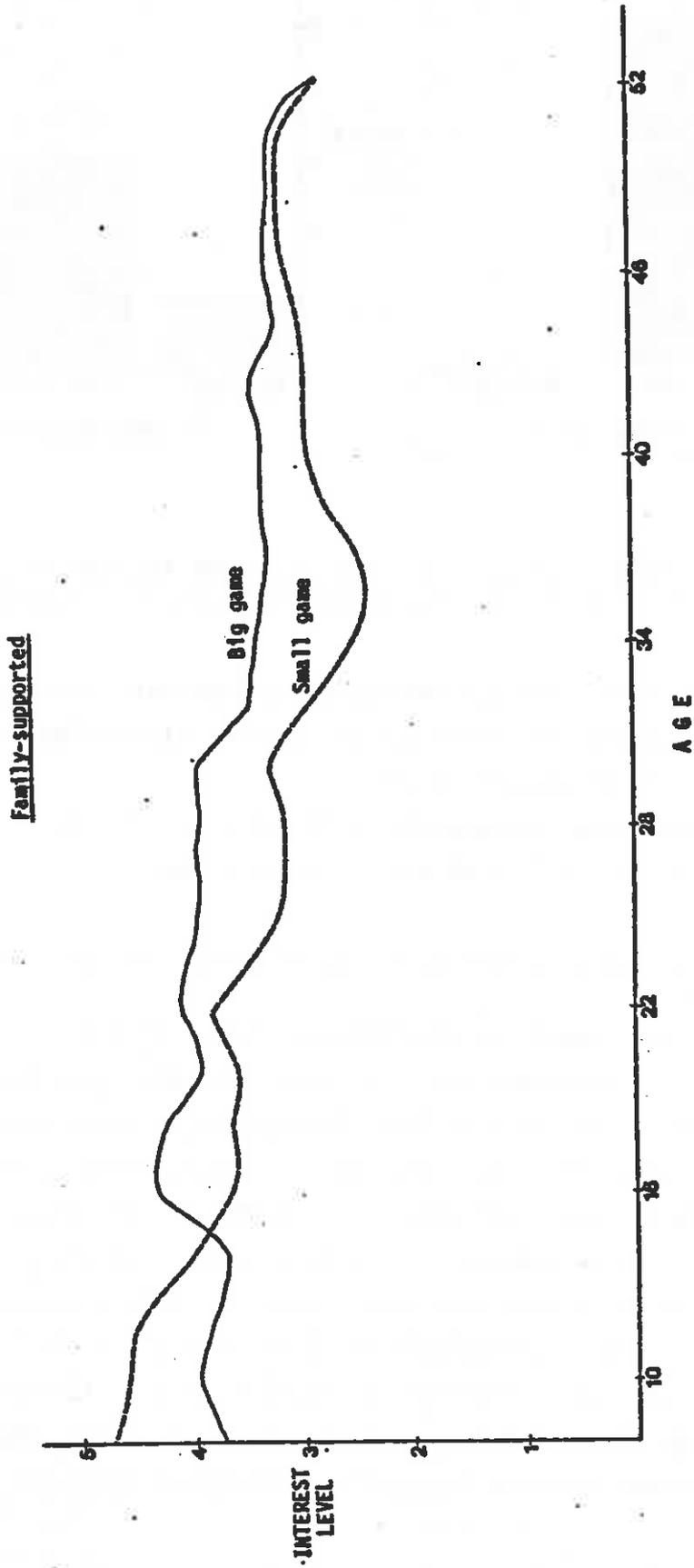


Figure 27. Interest Level in Big Game and Small Game Hunting of Family-Supported Hunters by Age.

14 interest in small game hunting is greater than that in big game hunting; from age 16 on the reverse is true, until the lines converge at age 52.

Figure 28 shows the participation levels¹ of family-supported hunters for small and big game hunting. The basic trends in this figure resemble those of Figure 27, lending support to the view that interest and participation levels tend to reflect one another. Similar to the case with interest in small game hunting, participation in small game hunting is high in the preteens and gradually declines through the 14 to 30 age period, declines sharply from age 30 to 40, then remains stable thereafter. Participation in big game hunting (with or without a firearm) is very low from age 8 to age 10, and rises dramatically from age 10 to age 16. From age 16 to age 36 the big game hunting participation level remains steady, and from age 36 on it drops off slightly. Figure 28 reveals that among family-supported hunters participation in small game hunting is greater than that in big game hunting from age 8 to age 14, participation levels are roughly equal from age 16 to age 30, and thereafter participation in big game hunting is greater.

Figure 29 presents the interest level of family-nonsupported hunters in small and big game hunting. Note that interest in small game hunting actually drops between age 22 and age 26 (for no age range, for either family-supported or family-nonsupported hunters, and for either type of hunting is interest level lower), and then quickly rises to peak at age 30. Interest in big game hunting, on the other hand, rises steadily from age 16 to also peak in the early 30's. As highly affiliative-motivated hunters, the 6 women hunters described earlier, who began hunting in their late teens to mid-twenties and deserted before age 30, account for this result (see Figure 30).

¹It should be reiterated that a higher participation level in one type of hunting does not necessarily mean more time was spent in that type of hunting. Rather, it means, for instance, that an individual ranks himself higher in terms of time spent afield big game hunting compared to other big game hunters than he does in terms of time spent afield small game hunting compared to other small game hunters.

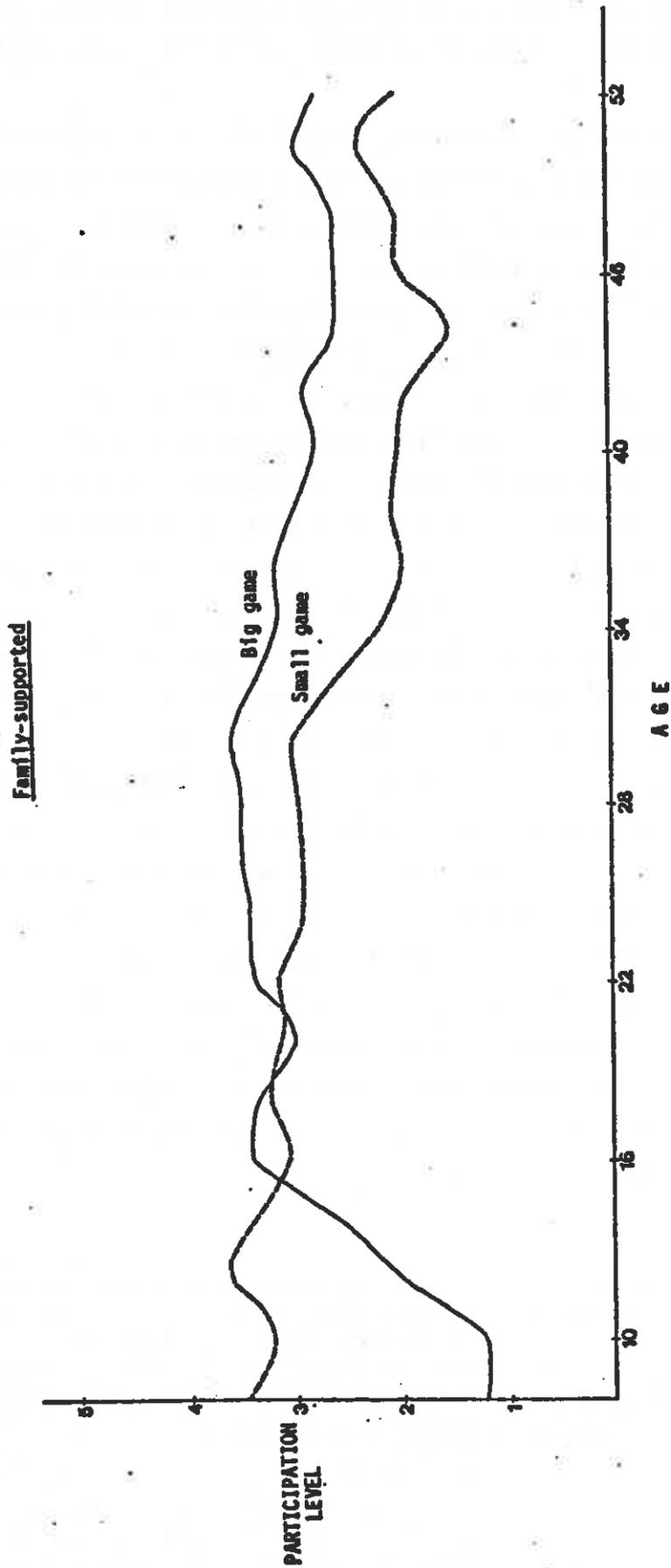


Figure 28. Participation Level in Big Game and Small Game Hunting of Family-Supported Hunters by Age.

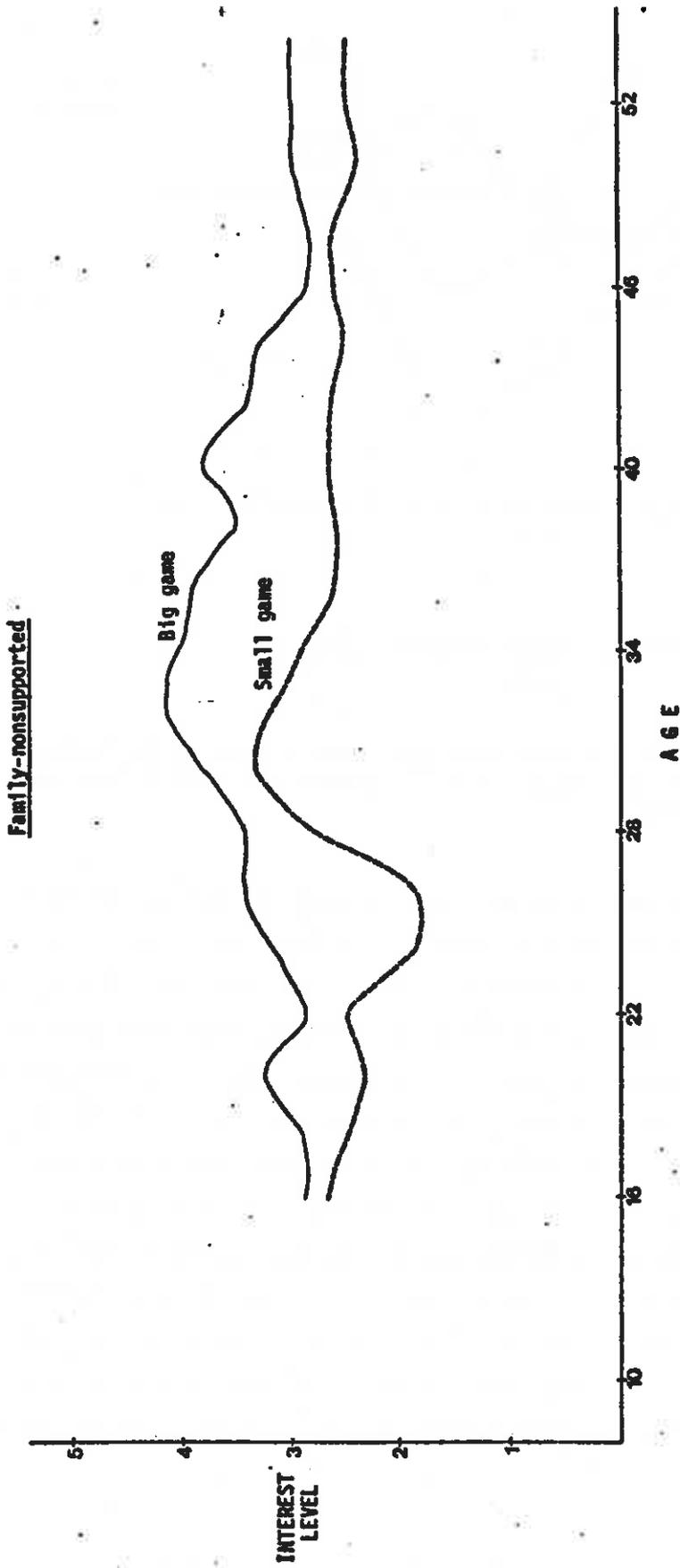


Figure 29. Interest Level in Big Game and Small Game Hunting of Family-Nonsupported Hunters by Age.

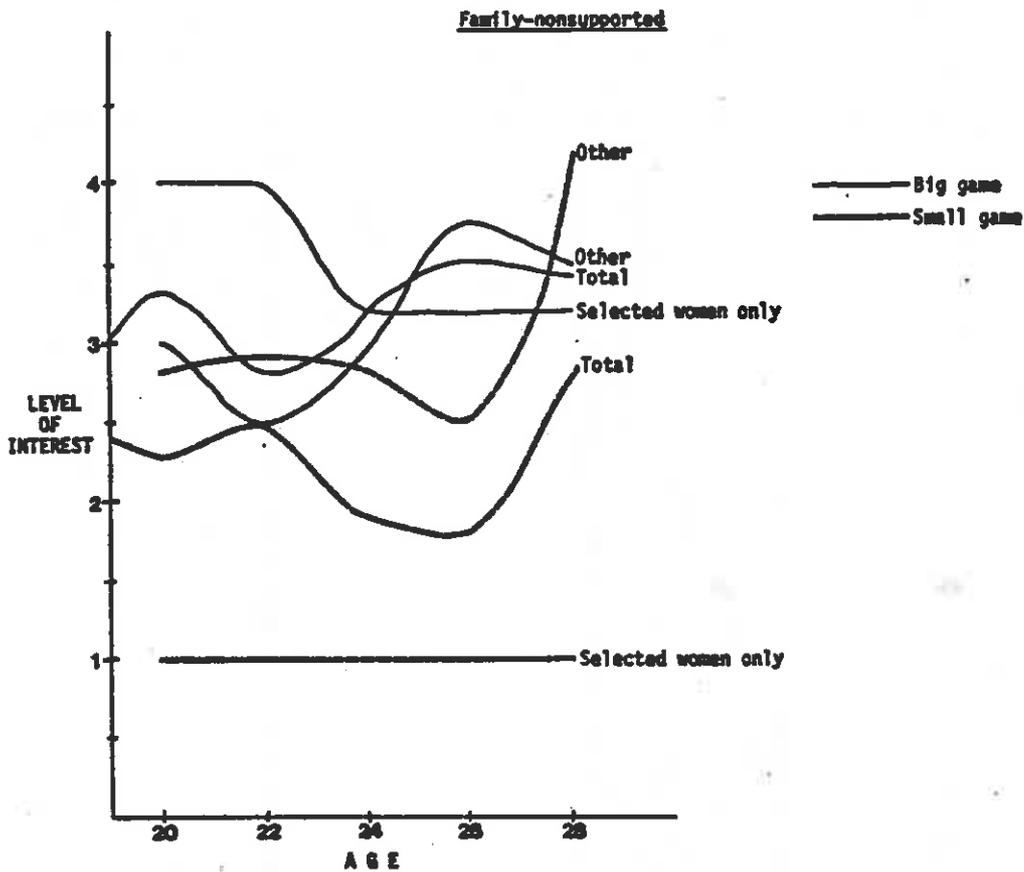


Figure 30. Difference Between Male and Female Family-Nonsupported Hunters for Level of Interest in Big Game and Small Game Hunting, for Ages 20-28.

There are three possible mechanisms whereby highly affiliative-oriented hunters may develop a moderate to high interest in deer hunting, yet maintain a very low interest in small game hunting. First, as discussed earlier, there are rewards associated with deer hunting that are not found in small game hunting that strongly appeal to affiliative-oriented hunters. For instance, it often brings together friends and relatives in a holiday atmosphere. A second mechanism is a consequence of a process, discussed later (page 98), by which many slightly affiliative-oriented to nonaffiliative-oriented hunters eventually only hunt deer because of time constraints. When this process affects adult men, who have decreased hunting time because of both family and work responsibilities, it follows that if they are the object of the affiliative needs that motivate their spouses to hunt, then their spouses

will also only hunt deer, and thus the result is that these highly affiliative-oriented women hunters have an interest only in deer hunting. A third mechanism operates in a fashion similar to the one just mentioned; however, in this case the man may hunt both small and big game, but only encourages his spouse to go afield during big game season so he can tag another deer.

Which of the above mechanisms is in effect for an individual affiliative-oriented hunter is suggested by a comparison of interest and participation levels. Table 12 shows the interest and participation levels in small and big game hunting for two of the 6 women being discussed. The first woman has low participation and interest levels in small game hunting, but low participation and high interest levels in big game hunting. She reported being influenced by a situation reflecting the first mechanism mentioned above, whereby the peripheral rewards associated with deer hunting result in high interest level, regardless of actual participation level. The second woman has low participation and interest levels in small game hunting. She is influenced by the second mechanism. Her husband hunted deer only, so she did too; her interest level simply reflects this. If she had reported that her husband hunted both small game and deer, one might assume the third mechanism to be in effect.

Table 12. Interest and Participation Levels in Big and Small Game Hunting for Two Women Respondents in Last Active Stage.

<u>Type of Hunting/ Interest and Participation</u>	<u>Woman #1</u>	<u>Woman #2</u>
Small Game Hunting:		
Interest	Low	Low
Participation	Low	Low
Big Game Hunting:		
Interest	Hi	Mod
Participation	Low	Mod

From the early 30's to age 54, interest in small game hunting and big game hunting decline gradually among family-nonsupported hunters.' At no age does interest in small game hunting exceed interest in big game hunting.

Figure 31 shows the participation level in small and big game hunting for family-nonsupported hunters. Again, participation fairly reflects interest (see Figure 30). At each age except 16, the participation level in big game hunting is higher than that in small game hunting, and this difference is greatest from age 34 to age 40.

Deer Hunting as a Sociocultural Event

On an intuitive and subjective level, it seems reasonable to hypothesize that the rewards associated with deer hunting are more numerous and stronger than those associated with small game hunting. As suggested earlier, deer hunting can be considered a sociocultural event among various segments of society. This hypothesis is supported by our interviews (see Box 15).

BOX 15

* "Like the first day of deer season was a ritual...My *
* uncle would come over--the whole house got keyed up *
* towards the first day of deer season. You had to do all *
* the chores--all the things that you wanted to get done *
* had to be done before the first day of deer season. *
* Everybody pitched in, and the night before my uncle *
* would come over, and next morning mom would be up get- *
* ting breakfast for us and she'd be waiting for us at dark *
* when we came home. And she'd have a huge meal waiting, *
* like Thanksgiving meal; it was a real holiday!" *

This hypothesis is also supported by the quantitative evidence gathered from this and other studies. As already discussed, Figures 27 and 29 show that for both family-supported and family-nonsupported

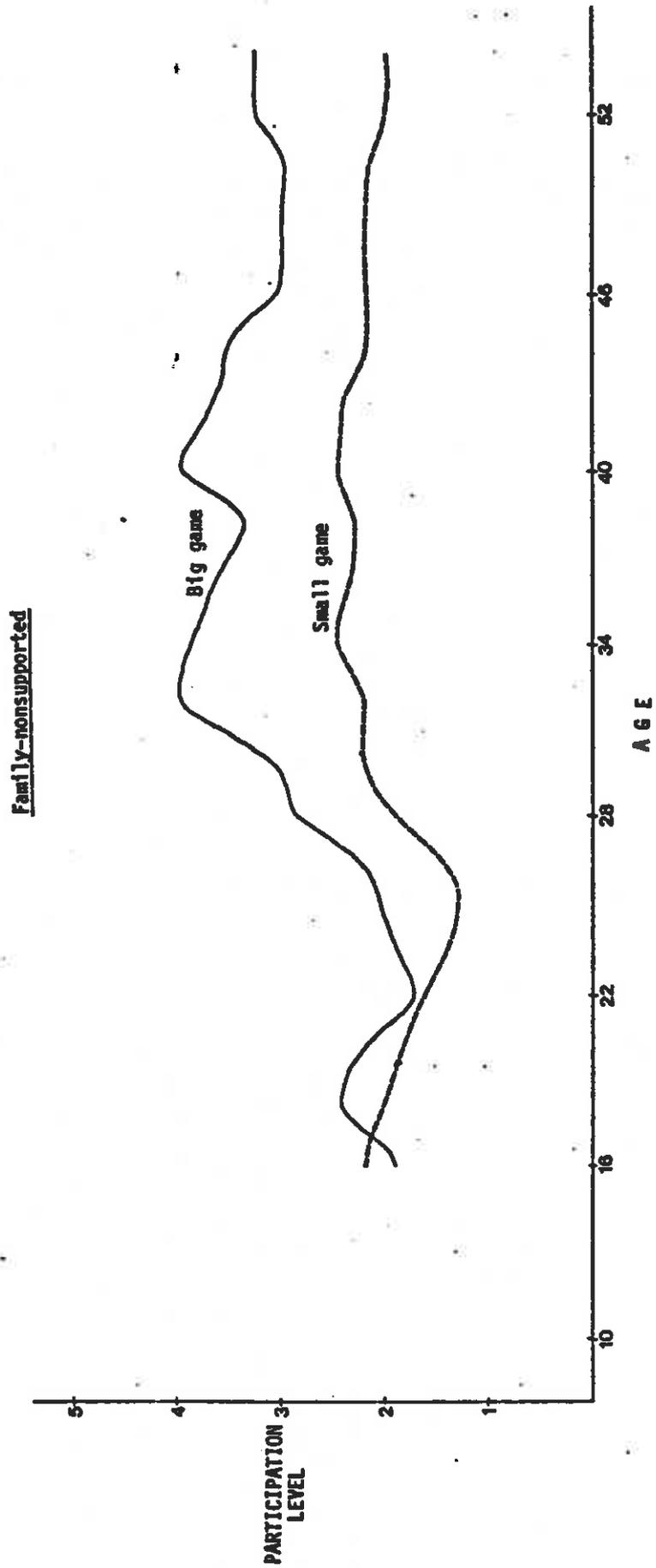


Figure 31. Participation Levels in Big Game and Small Game Hunting of Family-Nonsupported Hunters by Age.

hunters, interest in big game hunting exceeds interest in small game hunting from age 16 on. Figure 32 shows that the greatest discrepancy between interest and participation levels occurs among family-supported preteens, for big game hunting. Apparently, although these youngsters cannot hunt deer, they nevertheless respond to the strong and numerous rewards associated with the activity. Finally, the results from various studies show there are more big game hunters than small game hunters in New York State. A national survey conducted by the U.S. Fish and Wildlife Service (1980) found that among adults of at least 16 years of age in New York State, there are considerably more big game hunters than small game hunters. Data from other studies (Brown et al. 1978, 1981) corroborate this. Figure 33 proposes the relationship between the greater rewards associated with deer hunting, and the greater number of deer hunters. Note that the cycle operates to favor deer hunting in two ways:

(1) Because there are more rewards associated with deer hunting, when opportunity to hunt decreases, small game hunting is more likely than deer hunting to be sacrificed. This point is illustrated by the following excerpt:

BOX 16

* * * * *
* Interviewee: I dropped off the small game [hunting] the *
* last couple of years. It's further to drive *
* now, since we've lived here in Endicott. *
* And I've only got Saturdays to go because *
* I work all day. I spend as much time with *
* the kids as I can--you know, the family. *
* But during deer season, you know, that's my *
* time. The family is...[laugh, makes a *
* motion with his hands to show the family is *
* 'pushed back'].. *
* * * * *

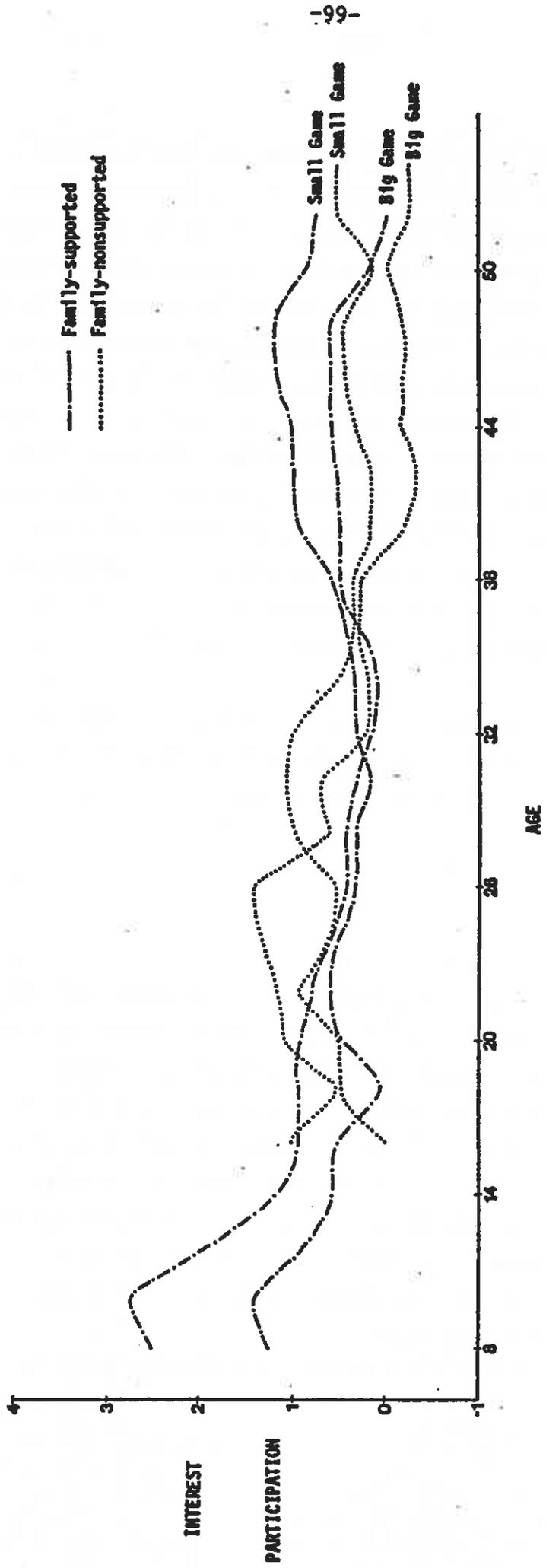


Figure 32. Interest-Participation Scale for Big and Small Game Hunting by Type of Family Support and Age.

(2) Because more people hunt deer, a new recruit is more likely to come into contact with an avid deer hunter, and thus hunt deer only (this generalization is valid only for recruits over the age of 15; also, note that the influence of role modeling is implied.

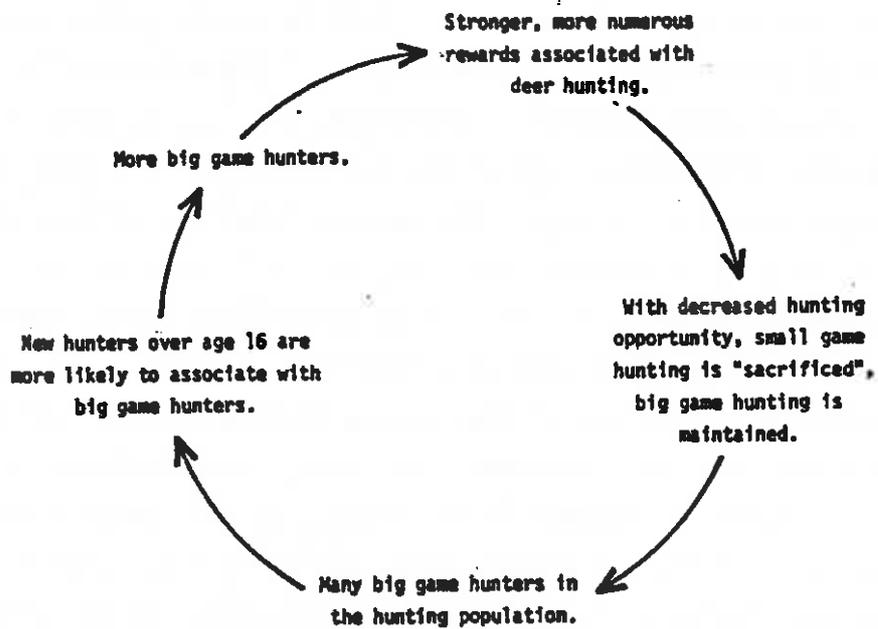


Figure 33. The Hypothesized Cyclical Nature of the Social Process That Maintains the Current Status of Deer Hunting as a Socio-cultural Event.

DESERTION

The Relationship Between Stage Structure Diversity and Desertion

Earlier (page 40) it was suggested that the more diverse the structure of a stage for a particular hunter, the less likely the possibility that the next stage would be an inactive one. As defined here, diversity is a function of the number of social action components that comprise one's definition of hunting, and the relative importance of those components. A diverse stage structure is one with multiple components of nearly equal importance. This is based quite simply on the decision-making model shown in Figure 4 of the "Introduction". If new information causes an individual to redefine hunting, so that a component is lost from the definition, only those hunters with more than one component might continue to hunt. Of course, the loss of one component from one's definition of hunting may disrupt the viability of others--especially if those others are of relatively little importance--so that even a person with more than one component comprising his definition of hunting might quit hunting if the others were necessary but not sufficient reasons for the individual to hunt. Nevertheless, it still would seem that "more is better" when discussing the relationship between number of significant social action components and continuation in hunting. Indeed, Table 13 supports this hypothesis. In this comparison of the last active stage of deserters and the latest stage of currently active hunters, deserters have on the average fewer components in the stage. Also, for those deserters with two or three components, there is usually an overwhelmingly dominant component (examples include an 8-point component and a 2-point component, or a 9-point component and a 1-point component). On the other hand, continuing hunters with two or three components usually weigh them fairly evenly.

Desertion of Family-Supported and Family-Nonsupported Hunters

Based on the discussion and theory presented thus far, one would expect the annual desertion rate of family-supported hunters to be lower than that of family-nonsupported hunters, since a larger proportion of family-supported hunters are subject to intense positive familial socialization concerning hunting. The data gathered in a study conducted by Brown et al. (1981) supports this expectation. Of the family-supported

Table 13. Comparison of Stage Structure of Last Active Stage of Deserters and Latest Stage of Current Hunters.

Number of Components and Difference Between Component Wts. ¹	Type	
	Deserter	Hunter
	number/percent	
<u>1</u>	8/33.3	0/0.0
<u>2:</u>	<u>11/45.9</u>	<u>4/21.1</u>
0 pts	1	1
2 pts	1	2
4 pts	2	1
6 pts	6	0
8 pts	1	0
<u>3:</u>	<u>5/20.8</u>	<u>7/36.8</u>
1 pt	0	4
2 pts	1	0
3 pts	2	1
4 pts	0	1
5 pts	0	1
6 pts	2	0
<u>4</u>	0/0.0	8/42.1

¹Difference between component given most weight and component given least weight.

and family-nonsupported hunters who bought a license in 1977-78, 11.9% of family-nonsupported hunters did not buy a license in 1979-80 (n=436) compared to 6.1% for family-supported hunters (n=295).

The relative desertion rates of family-supported and family-nonsupported hunters over time are hypothesized to follow the general pattern shown in Figure 34. Among family-supported hunters some highly affiliative-oriented hunters desert soon after they leave the family; however, the dominating and long-lasting influence of familial socialization and the continuous, if increasingly irregular, contact with family members combine to suppress the desertion potential of most family-supported hunters until relatively late in life. Even then the desertion rate (excluding desertion for health reasons) is fairly low.

By contrast, family-nonsupported hunters have no such central and stable an institution as the family to maintain the incentives that affect their decision to hunt. The probable result is that they experience a high desertion rate relatively early (Figure 34). Eventually this desertion rate drops to equal that of family-supported hunters; this occurs because the more stable, committed hunters who are originally a minority in this population come to comprise an ever increasing majority as the less involved hunters desert in large numbers soon after initiation.

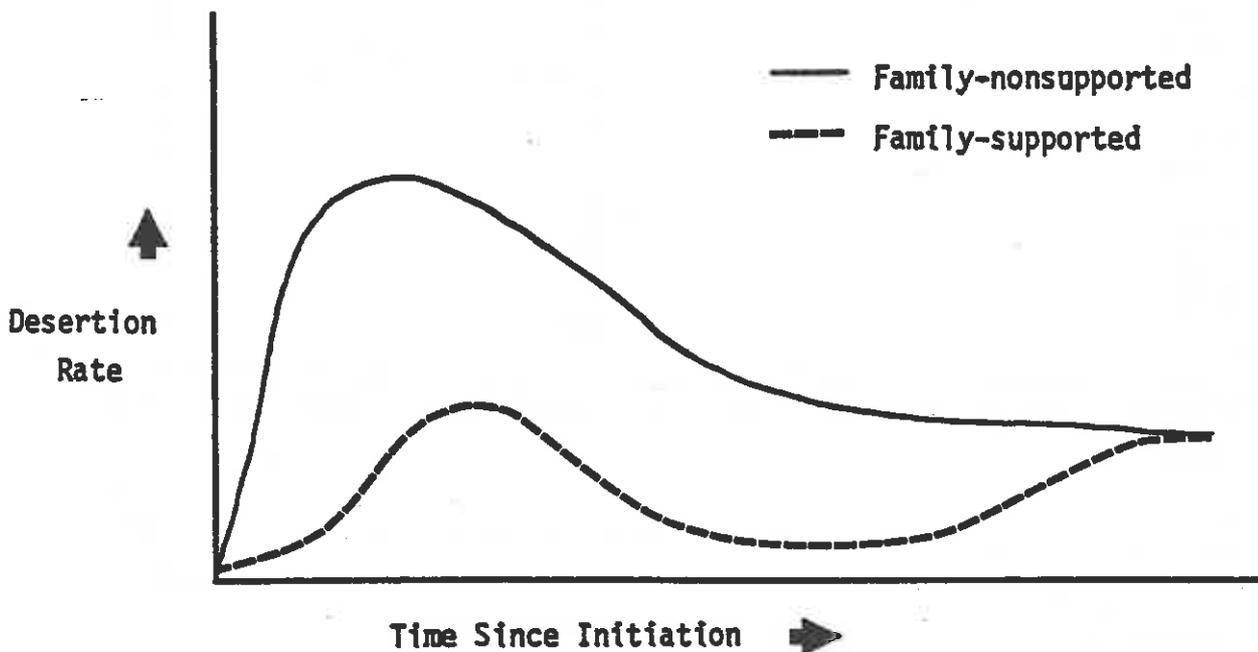


Figure 34. Hypothesized Desertion Rates of Family-Supported and Family-Nonsupported Hunters.

This hypothesis apparently suggests that at some point in time (40-50 years of age, perhaps), the two types of hunters converge in terms of attitudes and behaviors most often expressed to yield a single type. Convergence of these two types is also the theme of a discussion on interest and participation levels found later in this section.

Support for the hypothesis illustrated in Figure 34 comes from an examination of data from this and another study. Table 14 shows the results of desertion rate analysis for this study. Although few data points are available, the results seem to support the hypothesis, even on this small scale. Figure 35 shows the results of desertion rate analysis for data gathered in a study conducted by Brown et al. (1981). It, too, lends support to the hypothesis.

Table 14. Desertion Rates of Family-supported and Family-nonsupported Hunters.

Type of Hunter	Desertion Rate		
	Within the 1st 10 years of activity	Within 11-20 years of activity Percent	After 20 years of activity
Family-supported	10	5	39
Family-nonsupported	48	40	14

Why People Stop Hunting

Based on a number of characteristics related to why people stop hunting, a review of the cases in this study indicated that there are two types of deserters. These we will label affiliative deserters and gradual deserters. We attempted to divide deserters into these two types using quantitative and qualitative variables. The result is consistent with subjective impressions. The following is a brief summary of the seven variables examined and how the two deserter types differ for each one:

a) Reason for Desertion:

Gradual deserters tend to give multiple and ambiguous reasons for their desertion. Essentially, their desertion is a product of gradually changing lifestyle, and they therefore have difficulty identifying or specifying their decision.

Affiliative deserters, on the other hand, are quite clear about why they quit hunting; usually parenthood or the disruption of the relationship with a key hunting companion are the reasons cited.

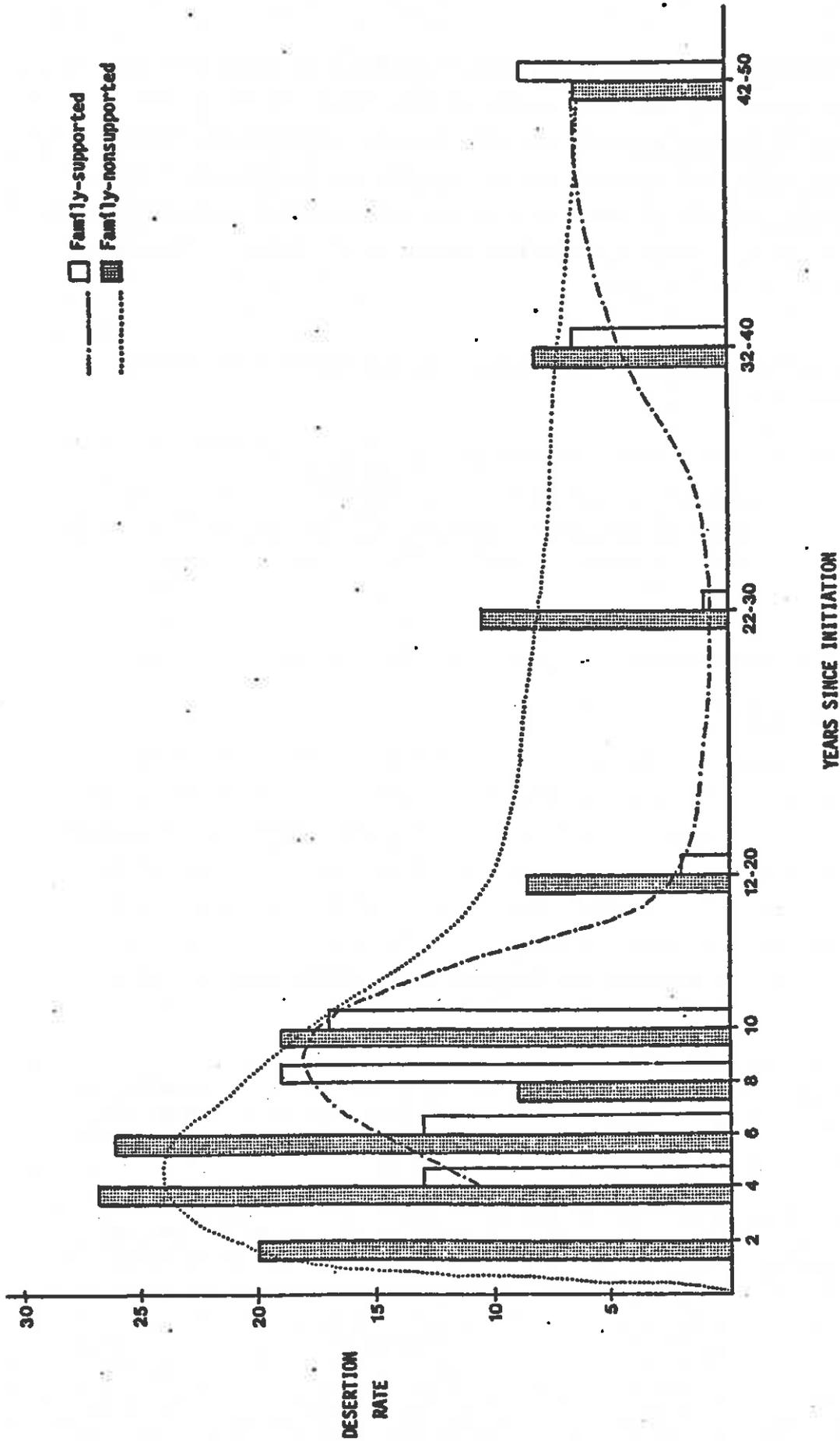


Figure 35. Desertion Rate (Deserters in a Given Time Period/Hunters in a Given Time Period) of Family-Supported and Family-Nonsupported Hunters (From Brown et al. 1981).

b) Total Years Hunted:

Gradual deserters stay in hunting longer than affiliative deserters. We somewhat arbitrarily set the delimiting time at ten years; gradual deserters tend to stay active for ten years or more.

c) Participation Level at Initiation:

Initially, gradual deserters are very active hunters, whereas affiliative deserters are not.

d) Change in Participation Level from First Stage Carrying a Weapon to Last Active Stage:

As implied by their label, gradual deserters experience a decline in their hunting activity from initiation to desertion. Affiliative deserters, on the other hand, begin with a low level of activity and end with the same.

e) Number of Hunting Companions:

Overall, gradual deserters interact with a number of hunting companions and social groups throughout their hunting life. In contrast, the hunting of affiliative deserters is from start until finish focused on a single relationship with one individual or small group of individuals.

f) Whether or Not the Individual Hunted Alone:

Another indication of the importance of social interaction to the hunting of affiliative deserters is that they generally have never hunted alone. Gradual deserters do hunt alone, at least occasionally, at some point in their hunting life. That is, they don't need a companion to remain active, although they may prefer to have one.

g) Number of Hunting Stages:

The hunting activity of gradual deserters is characterized by changes in hunting companions, game pursued, level of participation, etc. These changes are indicated by numerous hunting stages (3 or more). Affiliative deserters, on the other hand, do not experience much change in their hunting activity, and so tend to have only one or two stages.

Of the above seven variables, the key variables for affiliative deserters are (c) and (e). These people have no strong desire to reap what might be considered the rewards intrinsic to hunting specifically--enjoying the outdoors, using hunting skills, and bagging game. Rather, they hunt only for the purpose of maintaining or strengthening a

relationship. It might be recalled that this statement fits the description of affiliative motivated hunters discussed earlier. In fact, affiliative deserters are purely affiliative motivated hunters who quit hunting (see Box 17).

BOX 17

* Interviewee: I'll tell you the real reason I hunted was *
* because it was a big thing--it was a very *
* big part of my husband's life--if I had not *
* become involved I would have lost out on a *
* very large portion of his interest. That *
* was the number one hobby that he had, *
* therefore by going with him it kept me in *
* touch with what he was doing. *
* *
* Interviewee: I wouldn't think of carrying a gun and *
* going out in the woods (now). I just did *
* it to please him (an older friend). Let *
* nature live...as far as I'm concerned *
* there would be no animals slaughtered. *
* *
* Interviewee: First time I ever got interested in hunt- *
* ing was when I started going out with a *
* fella (current husband) who was a hunter. *
* Interviewer: So when you met your husband-to-be and went *
* hunting, did you go because it was important *
* to him or because it was a chance to-- *
* Interviewee: Uhm, I think because it was important to *
* him. Yeah, I think that was why I went in *
* the first place. *

The interviewee from the first excerpt in Box 17 stopped hunting when her husband died; the second interviewee stopped hunting when her

relationship with her friend diminished in intensity; and the third interviewee stopped hunting upon motherhood.

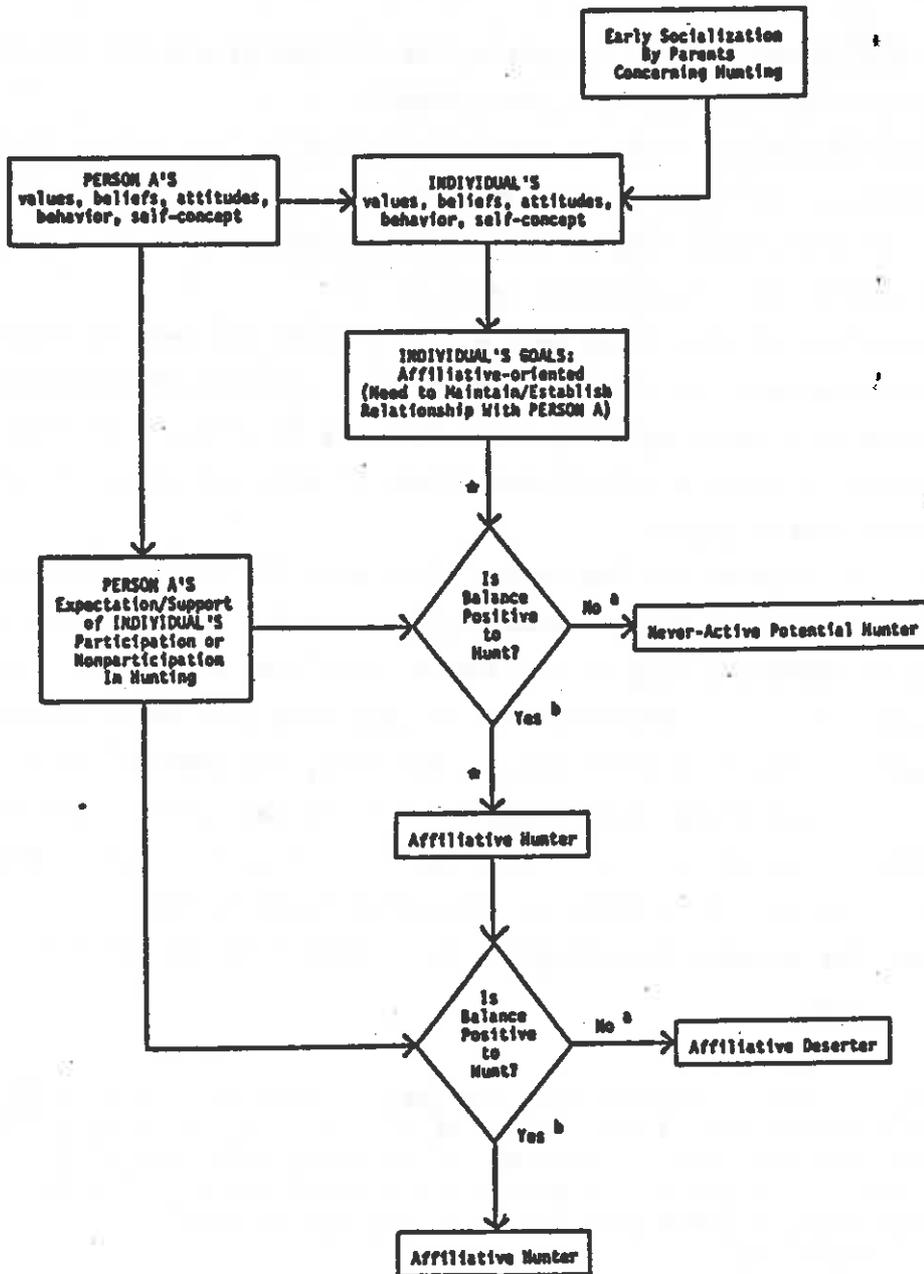
Although the above examples are interesting in that they present specific cases of the interrelationship of reasons for initiation and desertion, it is perhaps more instructive to examine this interrelationship on a theoretical level.

Figure 36 is an adaptation of Figure 18 (page 62) used to show why people start hunting. It should be noted that affiliative deserters were not socialized into hunting; they began hunting in response to the support/expectations of a significant other person, and the affiliative orientation of their goals.

Knopf (1972) makes the important point that although people have absolute states of need for achievement, affiliation, etc., these serve as motivations of behavior only to the extent that they are unmet. So, for instance, an affiliative motivated hunter may have less of a general need for affiliation than many other people who hunt, but because this need is unmet in other ways (especially toward one other particular individual) it motivates the decision to hunt. Returning to the discussion of why affiliative deserters stop hunting, the above excerpts and input from other interviews suggest desertion to be catalyzed by one or a combination of three processes:

- a) A reversal in support/expectations to hunt on the part of the person who is the object of affiliation will cause the affiliative deserter to seek other avenues to meet his affiliative goals; to do otherwise would actually block affiliative goals by causing a conflict in the relationship.
- b) A change in the relationship with the significant other, even while the more general unmet need for affiliation remains unchanged, can catalyze the decision to stop hunting. In this case, the unmet need for affiliation is fulfilled through different people in different activities, rather than through the same person in different activities. This process is often manifest when affiliative deserters change jobs, end romantic liaisons, geographically relocate, etc.

The following excerpt illustrates this:



- * Points in time when Individual may take Hunter Training Course.
- ^a Person A has a negative influence on Individual's hunting participation.
- ^b Person A has a positive influence on Individual's hunting participation.

Figure 36. Lines of Influence Diagram: Process Whereby Positive/Negative Influences Affect the Decision of Affiliative Deserters to Hunt.

* Interviewee: "Friendship really got me involved. If it *
* wasn't for Mike and John I wouldn't have *
* gotten much into hunting up here. I mean *
* that's why I bought the gun and equip- *
* ment..." *
* Interviewer: What happened that changed things? *
* Interviewee: "Well, I left Sears, and we were still *
* friends, but not as close. And we just *
* kind of drifted away from being real close *
* friends. And the only times I would see *
* him was during hunting season three or four *
* times a year, and...I kind of stopped hunt- *
* ing. They called me one time and I said, *
* 'Nah, I'm not going to go anywhere.'" *

- c) A final process that may influence the decision to stop hunting involves the usurption of unmet affiliative needs by another more favored activity. As a result, no unmet needs exist, so there is no reason to hunt. For instance, if the spouse of an affiliative-oriented hunter gets a new job that allows him/her more time for family activities, the affiliative-oriented hunter may feel less of a need to go hunting with the primary hunter of the couple.

Of the seven variables distinguishing the two types of deserters, the key variables for gradual deserters are (a) and (d). Taken together, these two variables suggest that desertion of gradual deserters to be an evolutionary process too ambiguous in its occurrence to be attributed to a single, specific cause. The interview excerpts in Box 18 are attempts by gradual deserters to explain why they stopped hunting.

BOX 18

* * * * *

* A. *

* Interviewer: Was there a point when your hunting started *
* to slack off? *

* Interviewee: "Probably more so after we got the four *
* kids. So probably more so when we had more *
* kids around the house and spent more time *
* monkeying around with them. As they got *
* older I'd stay home." *

* Interviewer: Sort of a gradual thing. It was not so much *
* hunting itself as it was-- *

* Interviewee: "No one thing like we came home and said, *
* 'To hell with it, let's burn the bats'. It *
* just sort of, you know: 'Well, let's not go *
* next week, let's stay home and do this or *
* that...' or, 'Well, I've got to fix this *
* on the house or that on the house and I *
* can't go this week, guys...' You know how *
* that would go--slow but sure you'd get away *
* from the rest of the group, and there you *
* are, with four kids, fixing your house or *
* car or whatever comes along..." *

* B. *

* Interviewer: So you got out of college, and your level of *
* activity was quite a bit lower--any parti- *
* cular reason? *

* Interviewee: "Well, other interests, other responsibil- *
* ities. You know, marriage came along, *
* family, that sort of thing--they took *
* preference over my hunting. My recreation- *
* al interests changed...I moved from the *
* country to the city. Although I was still *
* close (to the country), still, It wasn't *
* that convenient." *

* (later): "It was a slow process [his desertion]. I *
* didn't dwell on why I was hunting or not *
* hunting. I went through a period of going *
* through the motions--you know, getting a *
* license and that sort of thing. And now I *
* don't even get a license anymore." *
* Interviewer: So there was a period of time when you were *
* getting a hunting license and weren't-- *

* Interviewee: "I would get a hunting license and wouldn't *
* hunt. I had it and I might go out with a *
* group, but even then I was not interested... *
* There was no one point in time when I said, *
* 'I no longer want to do this.'" *

As is illustrated quite clearly by these excerpts, gradual deserters are noticeably different from affiliative deserters. Unlike affiliative deserters, activity in hunting for gradual deserters is the result of intensive, positive socialization concerning hunting. Gradual deserters have strong, positive values, beliefs, etc. related specifically to hunting. Change comes at the centrally held value-attitude system of the individual. Such was not the case for affiliative deserters. To the extent that this value-attitude system is relatively stable, whereas specific goals and support/expectation structures are less so, it should be expected that the decline in hunting participation of gradual deserters would proceed more slowly and prove more final than for affiliative deserters. Indeed, in sharp contrast to the desertion process of affiliative deserters, the desertion process of gradual deserters may be considered the product of general socialization processes that effect changes in lifestyle and personal development.

Given the above, one might expect family-supported hunters who desert usually to be gradual deserters, and family-nonsupported hunters who desert usually to be affiliative deserters. To the extent that the length of time one hunts before deserting distinguishes affiliative deserters from gradual deserters (this is one of seven variables distinguishing the

two), Figure 37 does not support this hypothesis. For both family-supported and family-nonsupported hunters, about 50% of the deserters are affiliative deserters and 50% are gradual deserters. However, a few points concerning this observation should be made. First, it should not be misinterpreted as indicating that in the first ten years of hunting the desertion rates of the two groups are similar; in fact, the data suggest that in the first ten years of hunting the desertion rate of family-nonsupported hunters is about two times that for family-supported hunters. Second, the reader is cautioned against assuming all family-supported hunters form the positive values and attitudes about hunting characteristics that result in their being long-term hunters. Certainly some of them do not, and hunt in response to affiliative needs, and stop hunting once they leave the strong influence of the family. This explanation is supported by Figure 38, which shows that most family-supported hunters who desert are between the ages of 18 and 24, a period of separation from the nuclear family.

Figure 38 also supports two more points to be made about the desertion distribution of family-supported hunters shown in Figure 37. First, although we assumed that gradual deserters slowly drop out of hunting because their desertion is a function of changes that occur in their relatively stable value-attitude system, it is possible that when many family-supported hunters leave home they are exposed to tremendous socialization pressures (e.g., university environment) that speed up this process. So perhaps many of the family-supported hunters who are shown in Figure 37 to quit before they have hunted ten years are otherwise similar to gradual deserters, but are exposed to this set of circumstances. Finally, perhaps many of the family-supported hunters who desert before hunting ten years have not deserted (i.e., psychologically) at all, but rather joined the Armed Services. This possibility is strongly supported by Figure 38, which shows peak desertion for family-supported hunters to occur at ages 20-22. We found this was frequently the case in our study. Almost invariably these individuals began hunting again upon their return to civilian life.

In summary, there appears to be a notable percent of affiliative deserters among family-supported hunters. However, the actual proportion

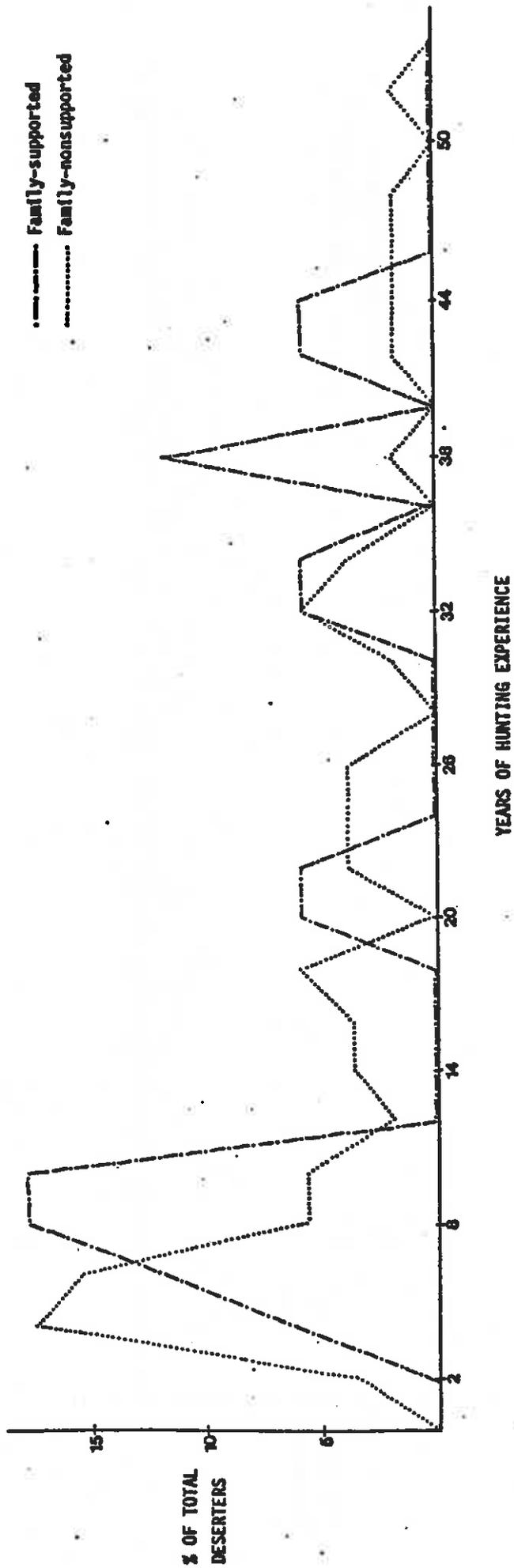


Figure 37. The Percent of Family-Supported and Family-Nonsupported Deserters by the Number of Years They Hunted (from Brown et al. 1981).

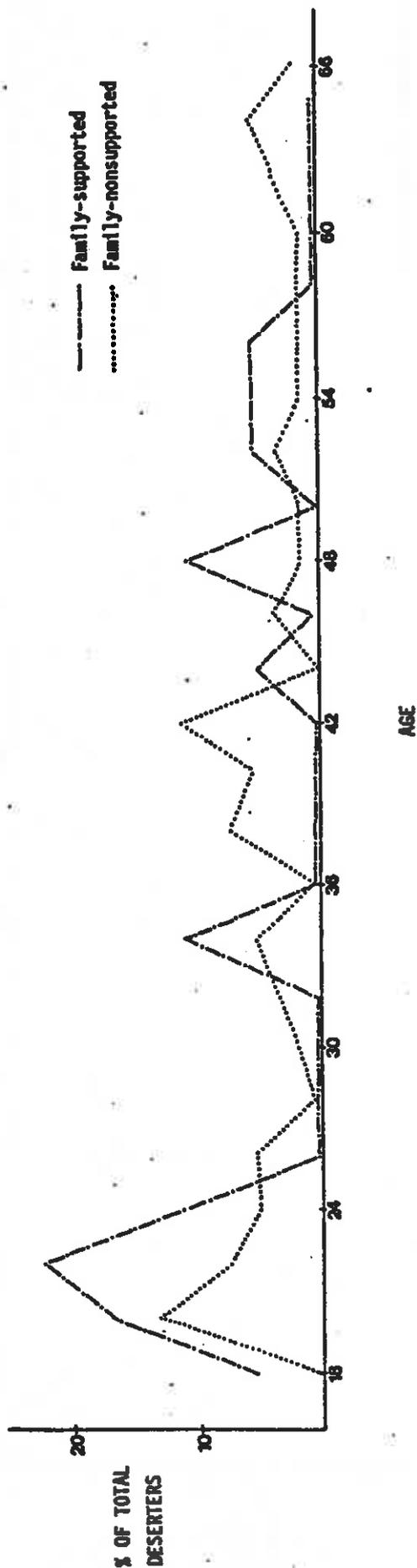


Figure 38. The Percent of Family-Supported and Family-Nonsupported Deserters by Age (from Brown et al. 1981).

of the two deserter types within the two hunter types cannot be determined without further study.

In the following section, the validity of our deserter typology is demonstrated in an explanation of why interest and participation levels of family-supported and family-nonsupported hunters converge.

Influence of Deserter Types on The Convergence in Interest and Participation Levels of Family-Supported and Family-Nonsupported Hunters

There is an apparent tendency for the level of interest in both small and big game hunting of family-supported hunters to converge with those of family-nonsupported hunters after age 30 (Figure 39). Before age 30, the tendency is for family-supported hunters to have higher interest levels than family-nonsupported hunters. Participation in both small game and big game hunting is greater for family-supported than for family-nonsupported hunters before age 34, then is greater for family-nonsupported hunters until age 50 when levels of participation for the two converge (Figure 40).

Three types of mechanisms that operate to affect interest and participation levels might account for the fluctuations mentioned above. One involves changes in the participation and interest levels of hunters who have been in the hunter population (carry-over population). For instance, perhaps at age 30 interest and participation levels of family-nonsupported hunters (or a subgroup thereof) increase for some reason, while the interest and participation levels of family-supported hunters decrease or stay the same. Another type of mechanism involves the recruitment of new hunters into the hunting population. For instance, perhaps the family-nonsupported hunting type experiences an infusion of hunters in the age 30 category who have high interest and participation. A third type of mechanism involves the desertion of a particular subgroup from one of the types. For instance, the desertion of a subgroup of family-nonsupported hunters with low participation and interest levels at about age 30 would leave the higher participation and interest levels of the remaining population to be reflected.

The data suggest that two of these mechanisms account for the fluctuations shown in Figures 39 and 40. In the 26 to 28 age range a

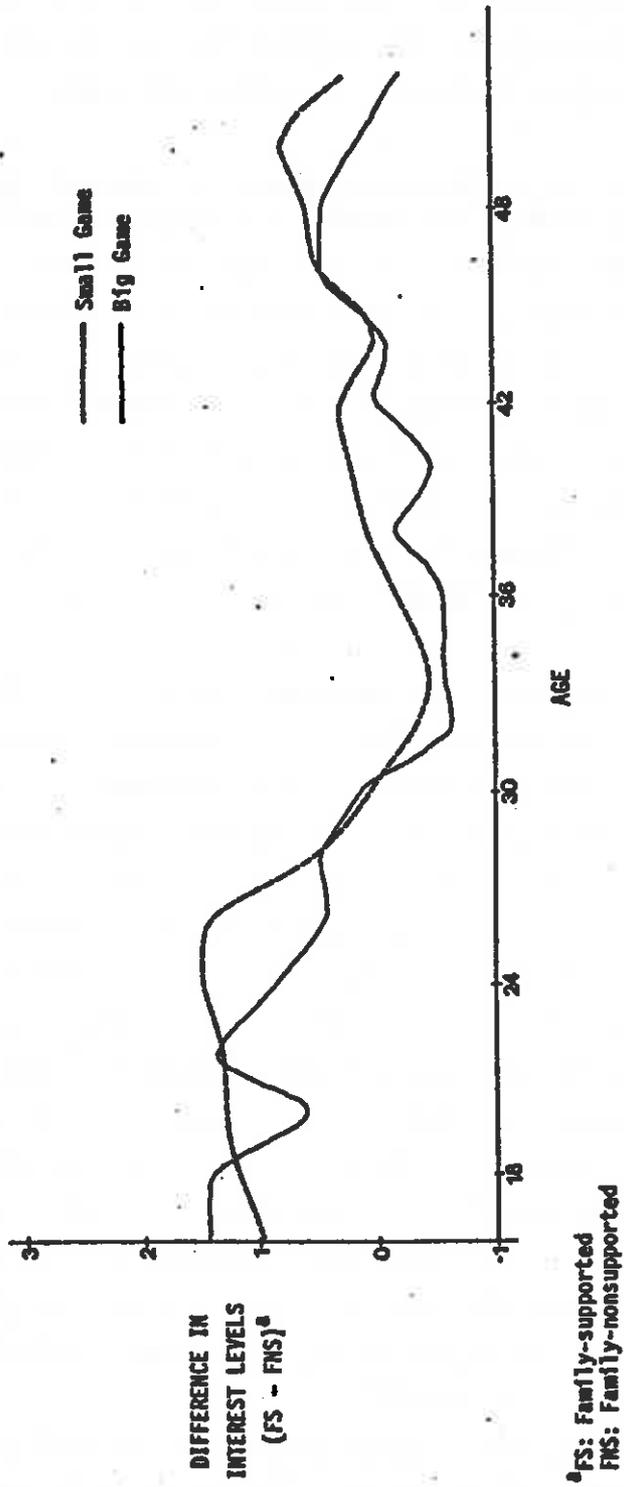


Figure 39. Difference in Interest Level Between Family-Supported and Family-Nonsupported Hunters for Big Game and Small Game by Age.

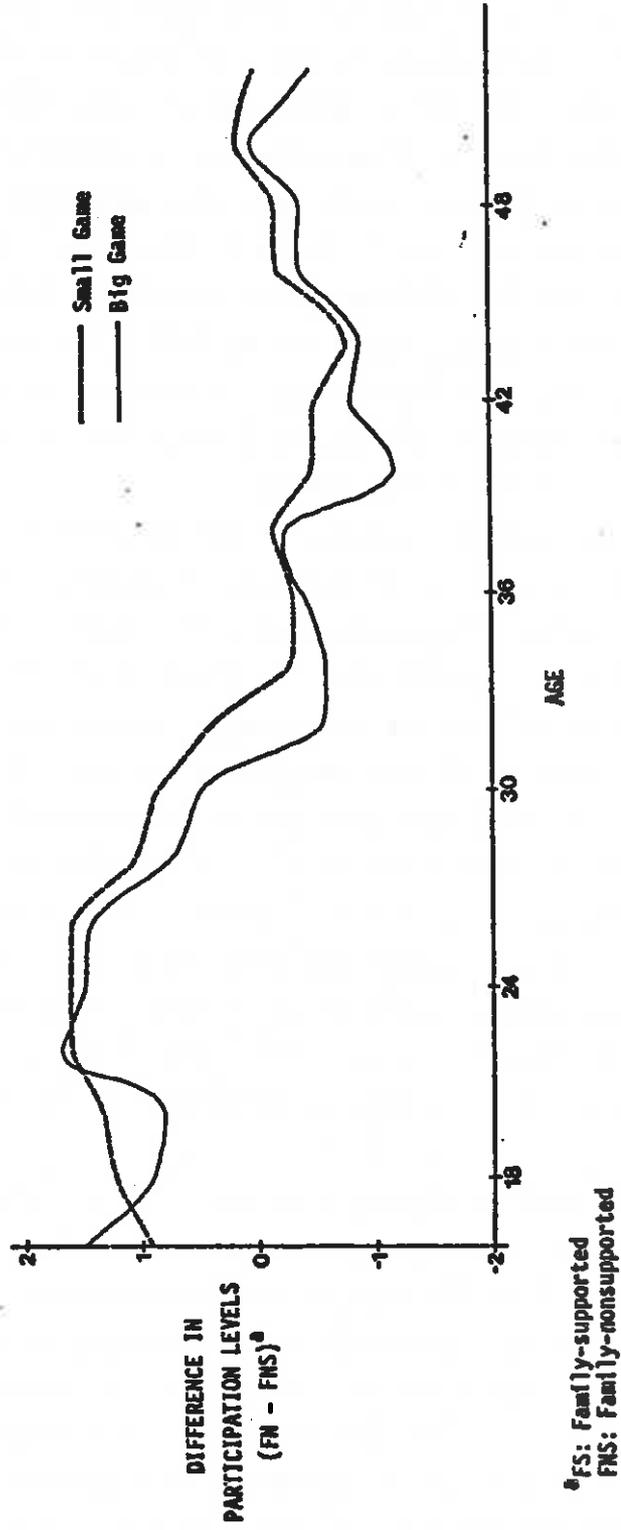


Figure 40. Difference in Participation Level Between Family-Supported and Family-Nonsupported Hunters for Big Game and Small Game by Age.

subgroup of family-nonsupported hunters--6 affiliative deserters--leave the population. These individuals had lower interest and participation levels, especially in small game hunting, than other family-nonsupported hunters (Figures 41-44). Consequently, their removal from the population could be expected to allow the higher participation and interest levels of other family-nonsupported hunters to be evident. A comparison of the information represented in Figures 41-44 with that presented in Figures 39 and 40 suggests this to be the case. Figure 41 shows that between the ages of 28 and 30, interest in small game hunting among "other" family-nonsupported hunters rises (from 2.8 to 3.3). The explanation for this: affiliative deserters were depressing the average interest level so that upon their removal from the population an increase in average interest level of the remaining group results.

Almost simultaneous with the removal of affiliative deserters from the population of family-nonsupported hunters, the effect of which is to increase the interest and participation levels for this type, a subgroup of family supported hunters experiences a decrease in their participation and interest levels, thereby serving to decrease these levels for this type. This subgroup consists of five gradual deserters. Unlike affiliative deserters, gradual deserters begin hunting with high levels of interest and participation that eventually and gradually decline. Figures 45-48 show this decline to begin at about age 30. Hypothetically, the extent to which affiliative deserters are most often from the family-nonsupported hunter population, and gradual deserters are from the family-supported hunter population, the fluctuations shown in Figures 39 and 40 can be attributed to the different behaviors of two types of deserters.

Figures 49 and 50 seem to support this hypothesis. Apparently, the removal of these deserter subgroups does decrease the differences in interest and participation levels between family-supported and family-nonsupported hunters. This decrease is measured in Table 15. Only in terms of big game interest does the removal of consideration of the two deserter types not result in a substantially smaller average difference between hunter types. Apparently the behavior of deserters influences the relative levels of interest and participation of family-supported and

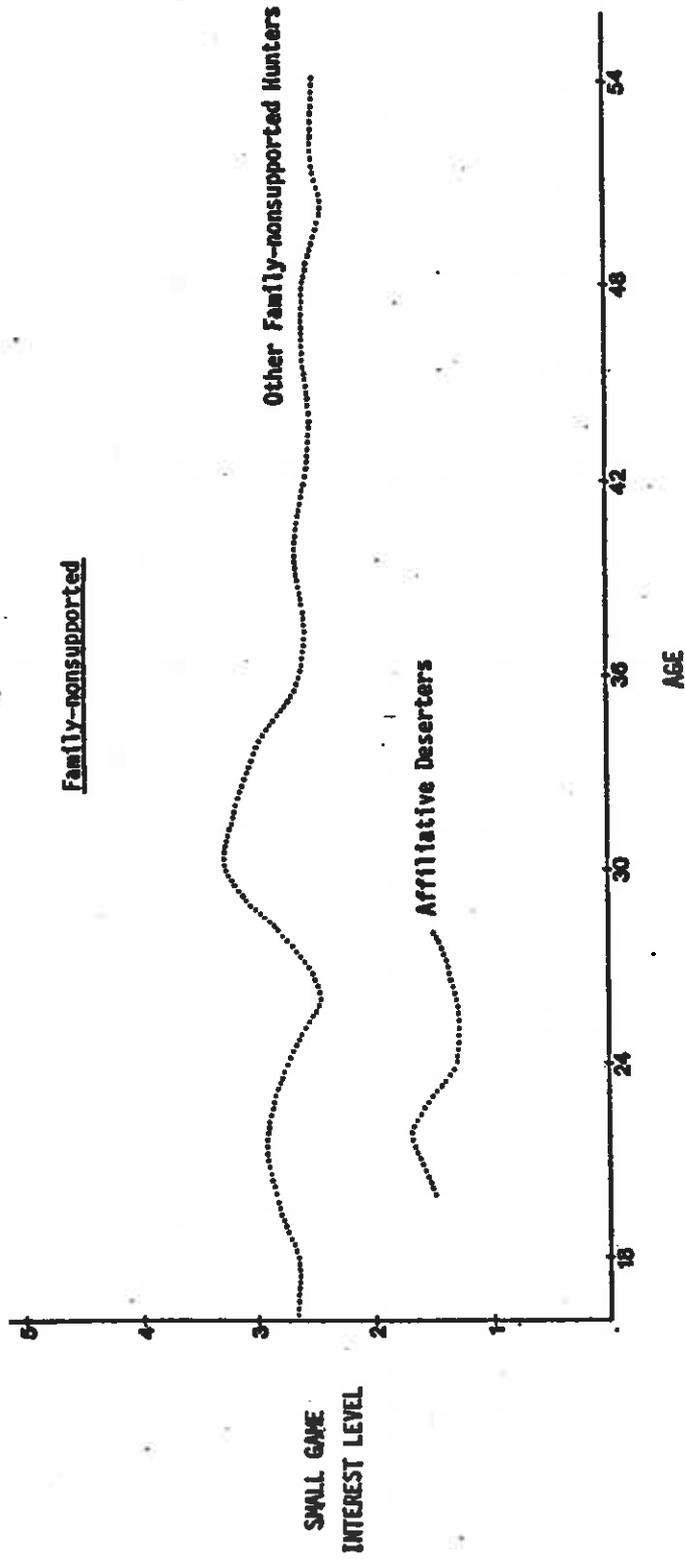


Figure 41. Interest Level in Small Game Hunting for Affiliative Deserters and Other Family-Nonsupported Hunters by Age.

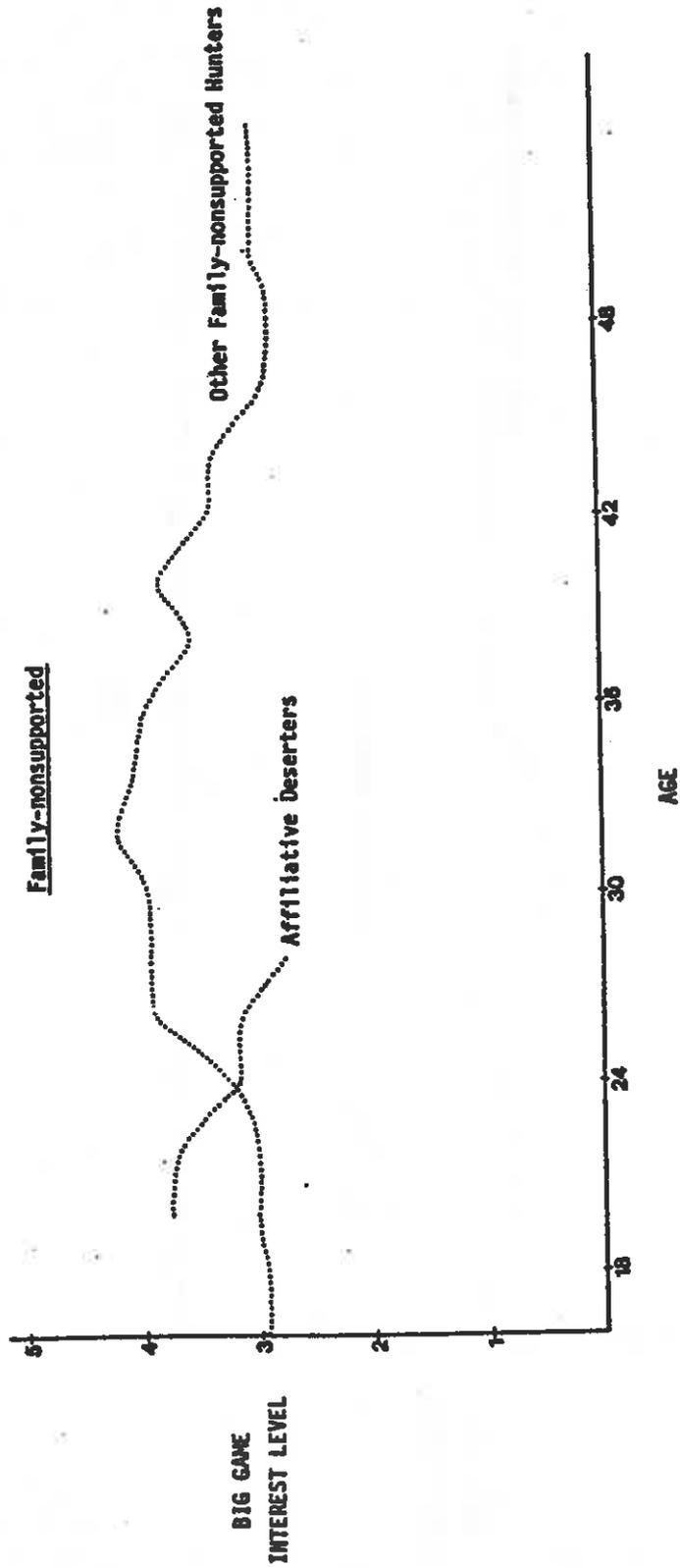


Figure 42. Interest Level in Big Game Hunting for Affiliative Deserters and Other Family-Nonsupported Hunters by Age.

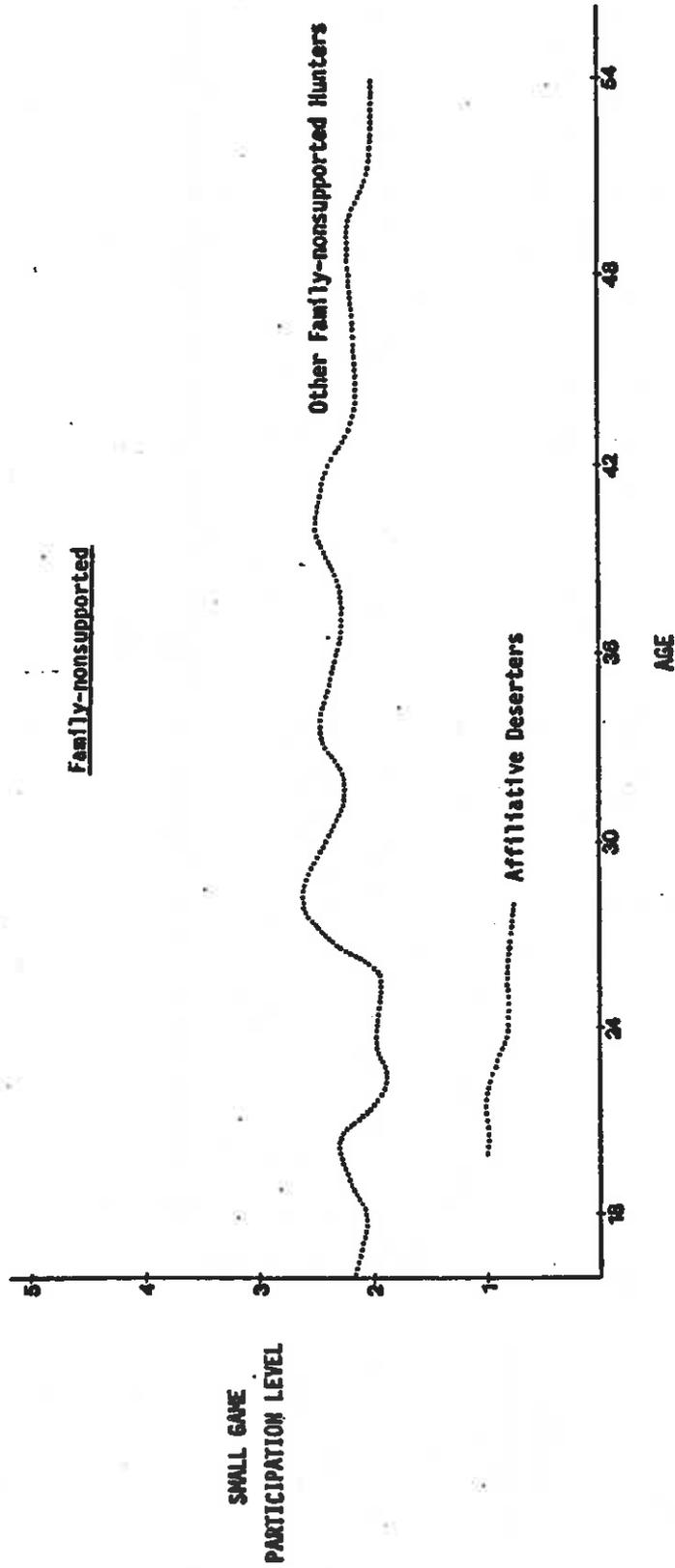


Figure 43. Participation Level in Small Game Hunting for Affiliative Deserters and Other Family-Nonsupported Hunters by Age.

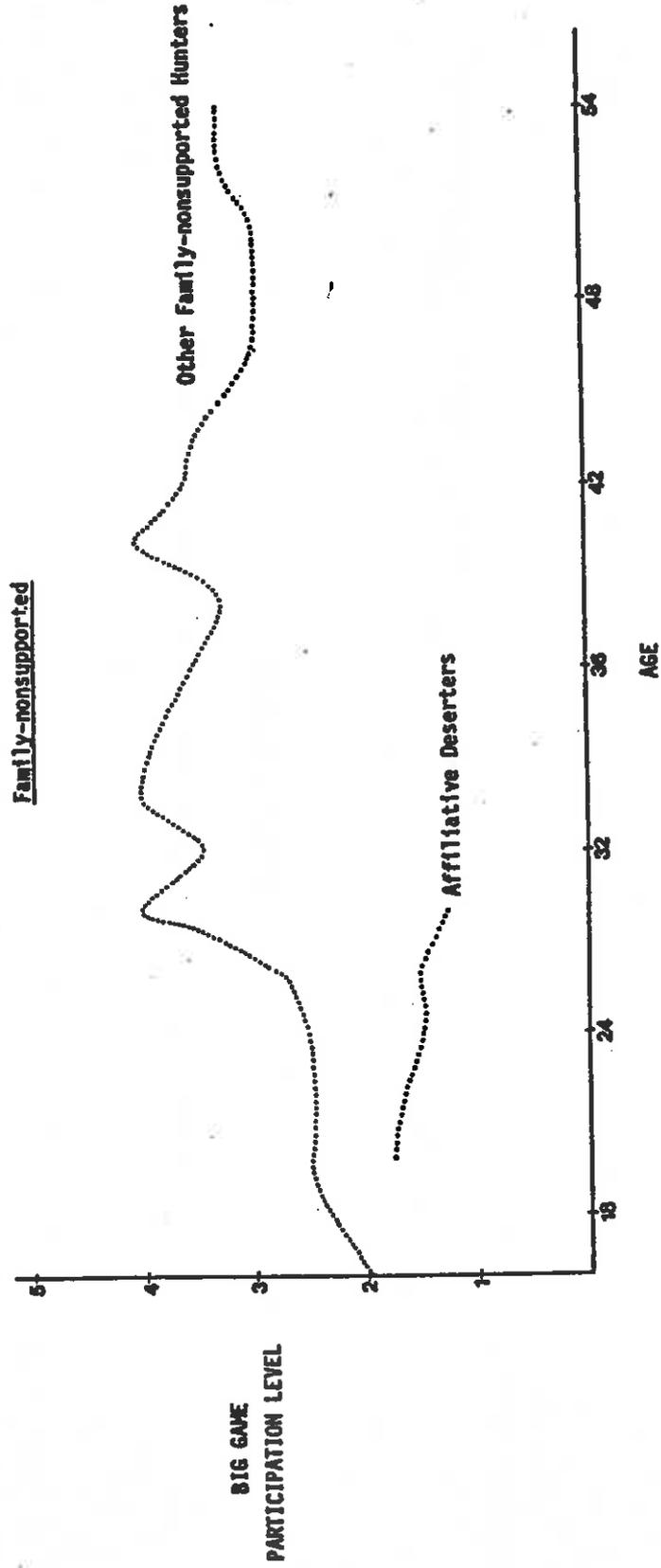


Figure 44. Participation Level in Big Game Hunting for Affiliative Deserters and Other Family-Nonsupported Hunters by Age.

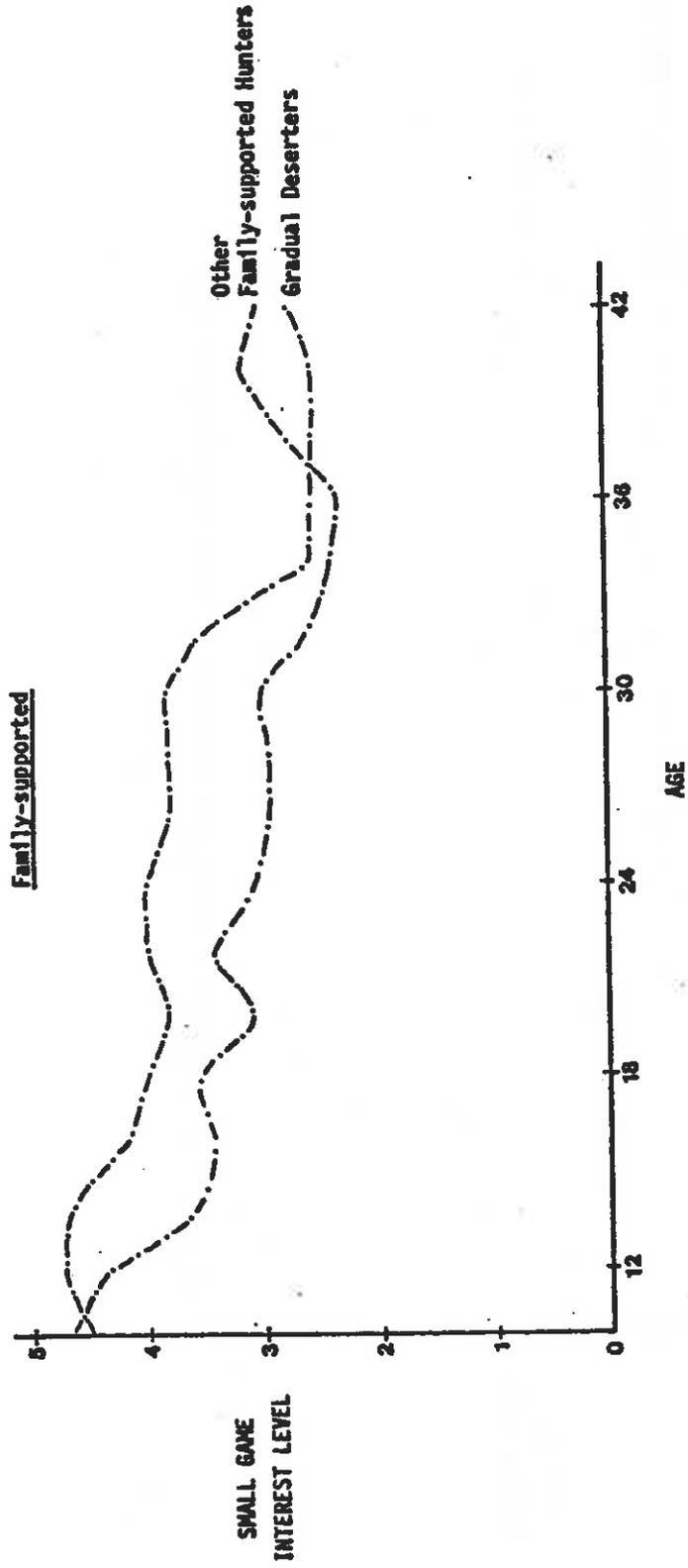


Figure 45. Interest Level in Small Game Hunting for Gradual Deserters and Other Family-Supported Hunters by Age.

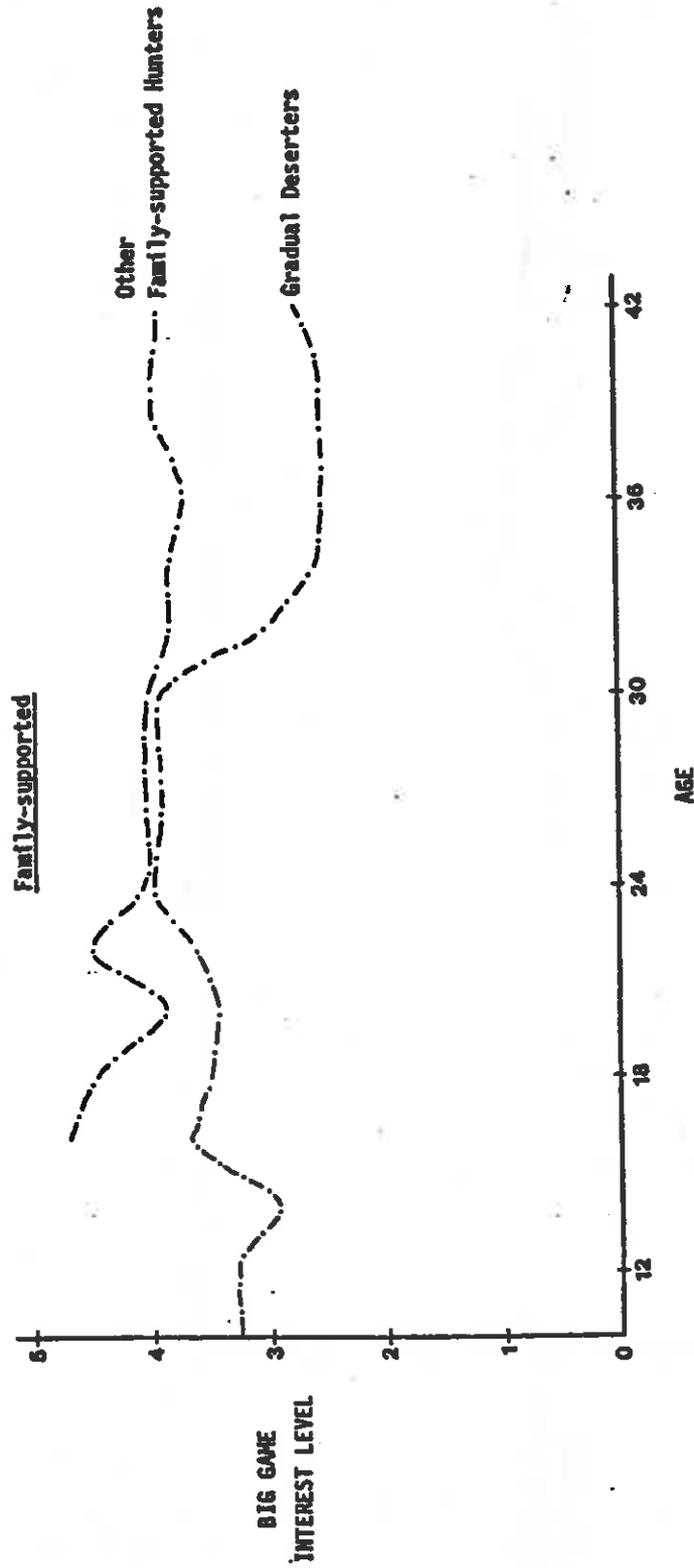


Figure 46. Interest Level in Big Game Hunting for Gradual Deserters and Other Family-Supported Hunters by Age.

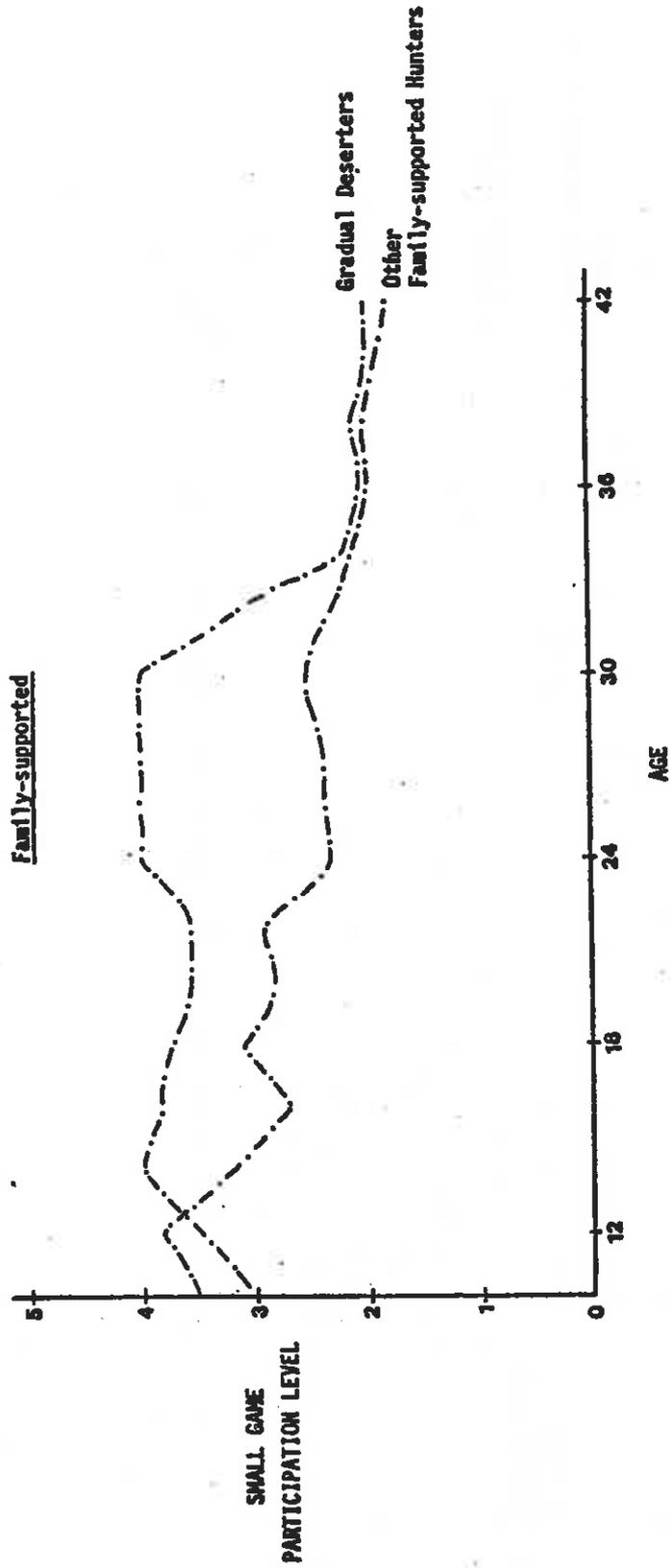


Figure 47. Participation Level in Small Game Hunting for Gradual Deserters and Other Family-Supported Hunters by Age.

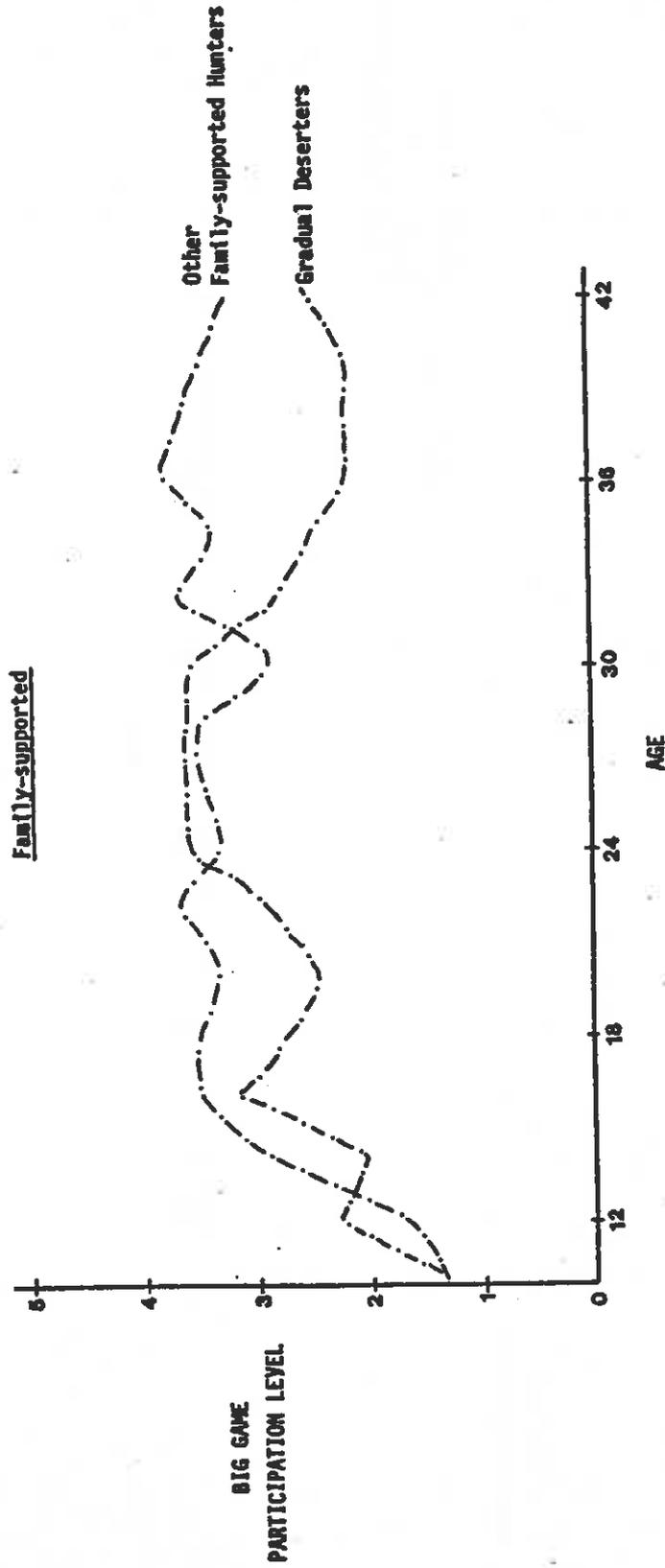
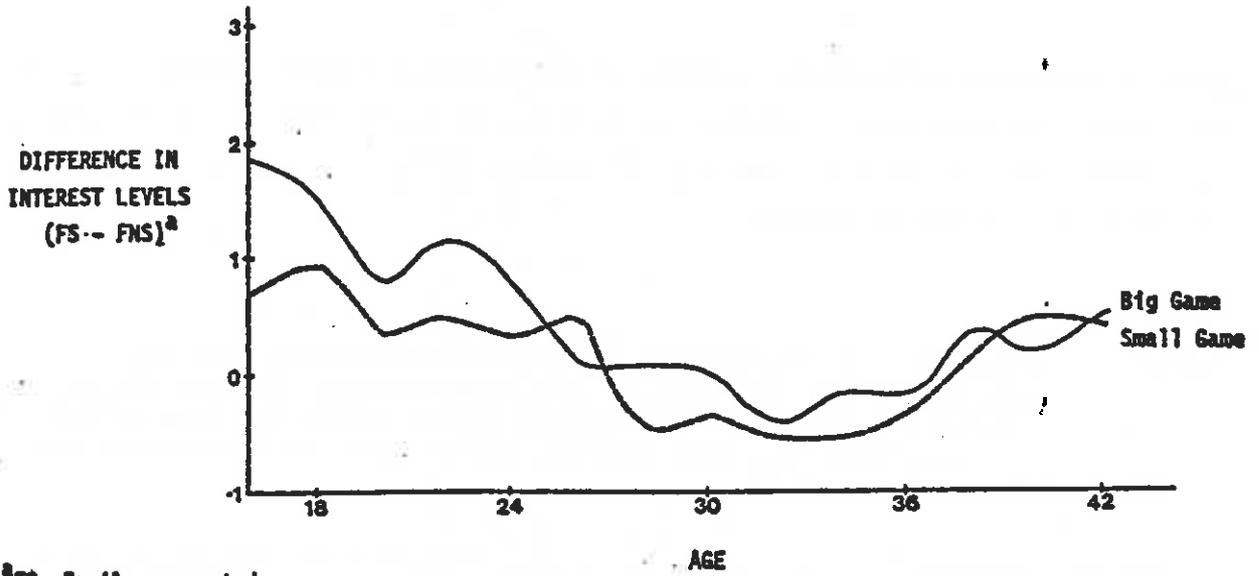
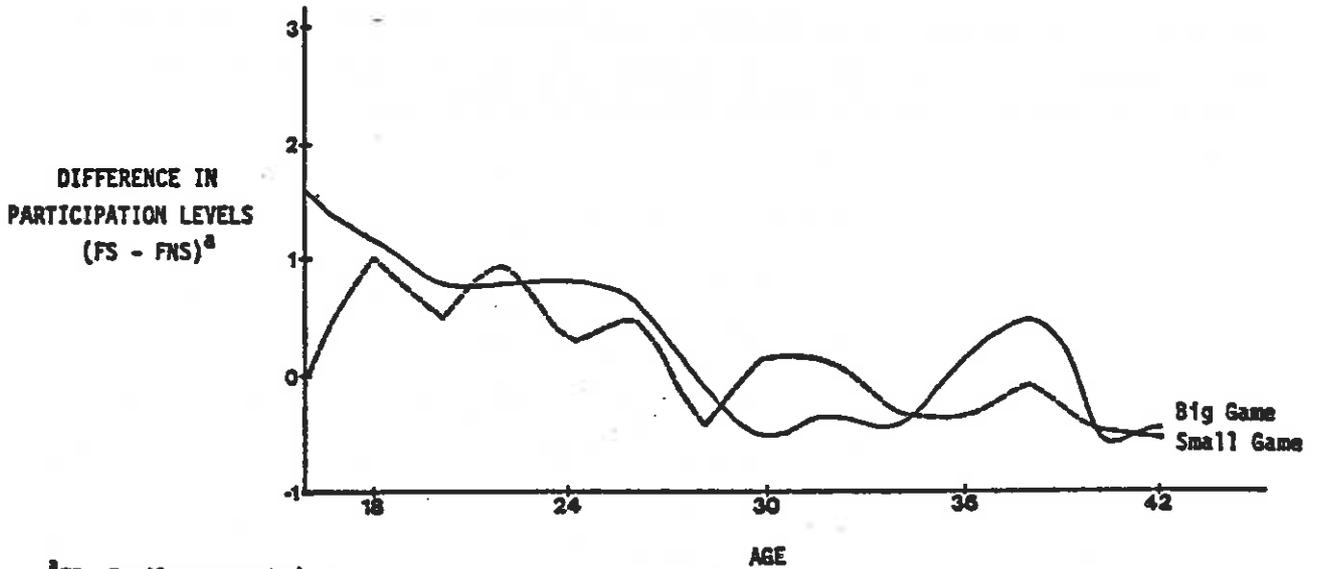


Figure 48. Participation Level in Big Game Hunting for Gradual Deserters and Other Family-Supported Hunters by Age.



^aFS: Family-supported
FNS: Family-nonsupported

Figure 49. Difference in Interest Level Between Family-Supported and Family-Nonsupported Hunters (After Removing Deserters) for Big and Small Game, by Age.



^aFS: Family-supported
FNS: Family-nonsupported

Figure 50. Difference in Participation Level Between Family-Supported and Family-Nonsupported Hunters (After Removing Deserters) for Big and Small Game, by Age.

family-nonsupported hunters, leading to the hypothesis that family-supported and family-nonsupported hunters who do not desert by age 50 can be considered one and the same type of hunter, at least in terms of level of interest and participation.

Table 15. Comparison of the Average Difference in Participation and Interest Levels in Small and Big Game Hunting, Between Family-Supported and Family-Nonsupported Hunters When All Respondents are Considered vs. When Deserter Subgroups* are Eliminated, for the Age Range 16-42.

Average Difference in points Between Family-supported and Family-nonsupported Hunters When:	Interest		Participation	
	Small Game	Big Game	Small Game	Big Game
	(avg pt difference/year)			
All Respondents Included	.700	.650	.839	.932
Deserter Subgroups Eliminated	.500	.661	.414	.775
<u>All Respondents Included</u> <u>Deserter Subgroups Eliminated</u>	= 1.40	0.98	2.03	1.20

*6 affiliative deserters from the Family-nonsupported Hunter type, and 5 gradual deserters from the Family-supported Hunter type.

POTENTIAL HUNTERS

Introduction

In a study completed in 1980, Brown et al. (1981) examined participatory and attitudinal characteristics pertaining to hunting of individuals who took the New York State Hunter Training Course in 1978. As part of the analysis, individuals were typed based on their involvement in hunting. One category of this typology was "potential hunters". Potential hunters were individuals who had not purchased a hunting license during the two years since taking the course (1978-79 and 1979-80 hunting seasons), yet indicated their intention to do so in one or both of the following two years (1980-81, 1981-82 seasons). Thirty-one of these potential hunters were recontacted in the spring of 1983 as part of this study. The following discussion reports the current involvement and interest in hunting of these individuals and offers an explanation for the failure of many potential hunters to begin hunting.

Current Status of Individuals Evaluated as Potential Hunters in 1980

Of the 31 potential hunters recontacted in this study, 18 had not yet begun hunting as of the Spring of 1983, 7 had hunted some time in the intervening years between initial contact and recontact but not during the 1982-83 hunting season, and 6 hunted during the 1982-83 season. Consequently, only 20% of these potential hunters can be classified as current hunters. Nevertheless, of the 18 potential hunters who had yet to hunt, 11 of them (61%) stated there was a 50/50 or better chance that they would begin hunting sometime in the next two years (Table 16), but none were certain that they would begin hunting. In addition, all 7 of the potential hunters who had hunted but are currently inactive said there was a 50/50 or better chance that they would hunt sometime in the next two years.

Table 17 shows the change in interest level of potential hunters from the time they took the course to the time they were recontacted. Of the 18 who never began to hunt, 8 stated their interest level had not changed in the five years, and 2 stated it had increased.

The logical, simplistic interpretation of these data is that most of the individuals evaluated as potential hunters in 1980 will begin to hunt

Table 16. Self Estimate of Percent Chance of Hunting Within the Next Two Years, for Three Categories of Potential Hunters.

% Chance of Hunting within next 2 years	Type of Potential Hunter		
	Never Active	Formerly Active, Currently Inactive	
		Currently Active	
	Number of respondents		
0	5	0	0
1-49	2	0	0
50	8	3	2
51-99	3	2	0
100	<u>0</u>	<u>2</u>	<u>4</u>
	18	7	6

Table 17. Self Estimate of Change in Interest in Hunting From When the Hunter Training Course was Taken to the Present, For Three Types of Potential Hunters.

Change in Interest Level	Type of Potential Hunter		
	Never Active	Formerly Active, Currently Inactive	
		Currently Active	
	Number of Respondents		
Increased	2	0	0
No Change	8	3	4
Decreased	<u>8</u>	<u>2</u>	<u>2</u>
	18	5	6

in the near future, despite the finding that 58% have yet to hunt and 23% began but have now stopped hunting. This conclusion appears to be overly optimistic. Our doubts can be attributed at least in part to the perceived tendency of individuals to respond in a manner that is consistent with past responses (i.e., these individuals indicated in 1980 that they planned to hunt) and perceived to be "desirable". For these same reasons, it is difficult to evaluate the social-psychological antecedents to the inactivity of most potential hunters. For instance, one respondent stated he had not yet begun to hunt for gun safety reasons; he did not want to "go out half-cocked". This is certainly an acceptable reason on the surface but it is difficult to believe that an apprenticeship of five years is necessary to handle a firearm safely. Recognizing such apparent discrepancies between behavioral intentions and past or present behavior, the following section examines more closely the social situation of potential hunters and the reasons given by never-active potential hunters for not hunting. Based on these reasons (and the models developed earlier to explain hunter initiation and desertion), it then describes two processes that may occur to prevent the initiation of a potential hunter.

Why Potential Hunters Don't Hunt

By definition, almost all potential hunters are family-nonsupported hunters. The great majority (87% in this sample) of these individuals did not hunt before taking the hunter training course in 1978 and took the course at age 13 or older, so at the time they were contacted by the study (1980) which typed them as potential hunters, they were age 15 or older. Nevertheless, the majority of them (61%) had other family members who hunted. Our data also showed that among the never-active potential hunters, those who had other family members who hunt were more likely to estimate their chance of hunting in the next two years as > 50% than were those with no family member who hunts (75% vs. 33%). This is additional evidence of the influence of the family on an individual's behavioral intentions, even among those who have not hunted in the five years since taking the hunter training course.

Appendix F lists the various reasons for not hunting given by people who intended to hunt but did not, and people who stopped hunting. Among the never-active potential hunters recontacted by this study, a variety of reasons were given for not hunting, all of which are included in this list. Many of those listed are immediate, superficial reasons. Nevertheless, based on the available data we believe that the inactivity of potential hunters can be examined in terms of the models developed earlier in this study. Such an examination is necessary to develop insight to the social-psychological processes by which an individual decides not to hunt, despite initial intentions to do so.

In the following, two types of reasons for not hunting cited by never-active potential hunters are discussed. Other reasons may be examined in a similar fashion, but based on this sample these two appear to be the most important. The first type of reason, mentioned by 3 of 18 respondents, involves changes in the support/expectations of others. For instance, one individual decided to take the course upon the urging of his co-workers, and then changed jobs soon after completion of the course. Without the support/expectations of his friends, he never began to hunt. Note that this process is similar to that diagrammed in Figure 36, explaining why some affiliative deserters stop hunting. In fact, many never-active potential hunters can be considered (theoretically) to be affiliative deserters who never began hunting. The changes that affect affiliative deserters soon after they begin hunting affect some never-active potential hunters between the time they complete a hunter training course and have a chance to hunt. This is illustrated in Figure 36. As another example, one potential hunter said she never hunted because the person who encouraged her to take the course stopped hunting soon after she completed the course. Again, the only difference between affiliative deserters subjected to the process shown in Figure 36 and the potential hunter just mentioned is a temporal one. It is conceptually useful, then, to expect all three processes of desertion for affiliative deserters discussed previously to be applicable to the "desertion" of many never-active potential hunters.

The second type of reason many potential hunters never began hunting concerns reservations about killing animals. Seven of the 18 never-active

potential hunters cited this as the main reason they did not start to hunt. Apparently, negative values/attitudes pertaining to hunting are of relatively little importance to the decision to attend the hunter training course, but are of great importance to the decision to hunt. Simply stated, if an individual has negative values pertaining to the killing of game he may be pressured into attending the course, but he is likely to resist actual participation in hunting because it is the act of hunting which conflicts most sharply and strongly with these values.

In essence, many of the same processes that affect deserters also affect never-active potential hunters before they begin to hunt. Although there may be subtle differences between the two groups, future research should focus on the social-psychological similarities of never-active potential hunters, affiliative deserters, and affiliative-motivated hunters. The differences between these groups are more likely a product of slight differences in the positive/negative balance of the same influences at certain temporal stages, rather than of differences in the type of influences that are affecting the decision to hunt.

PROGRAM IMPLICATIONS

This section will be organized around themes which integrate and synthesize key findings and trends. This will yield implications presented in what we hope is a meaningful and organized fashion, but risks omission of some points of potential interest to particular readers. When reviewing these implications and program suggestions, keep in mind the breadth of program possibilities for meeting these needs. DEC may not always be the most suitable sponsor. Other organizations (e.g., 4-H, shooting sports industries) may be the more appropriate program organizers or sponsors.

Influencing Initiation

I. Our findings have implications relating to a long-standing debate among hunters and hunter managers--the advisability of lowering New York's legal hunting age. Individuals experiencing a pre hunting stage, a period of apprenticeship and hunting involvement prior to carrying a firearm afield, are more likely to be family-supported hunters, to initiate hunting activity when legally of age and to remain involved for longer periods during their lives than are individuals deprived of pre hunting experiences. Therefore, it follows that lowering the legal hunting age would permit family-supported individuals to begin hunting at an earlier age, thereby increasing the size of the license-buying public. However, it should not be expected to affect the likelihood that they will initiate hunting. Much more powerful forces than opportunity are at work--these people are for the most part family-supported hunters and have internalized the values which are antecedents to hunting participation as well as having the external support mechanisms necessary to the hunting pursuits of minors. The fact that they are interested enough and an adult role model is developing that interest during the pre hunting stage is strong evidence of the atmosphere of hunting commitment in which the prospective hunter lives. In short, these people are as likely to be recruited into hunting at age 14 (current legal hunting age) as they are at any other (i.e., lower) age.

Persons not experiencing pre hunting stages, primarily family-nonsupported, will not be more likely to be recruited if the hunting age were lowered. Their initiation is typically based on influences occurring after the current legal hunting age. They tend to begin hunting for fraternal reasons, hunting with peers or significant others when all involved are older teens or young adults (about 16 to 26).

Lowering the hunting age could have a negative backlash when hunting stages are considered. It is possible that by taking such an action, the pre hunting stage could be eliminated because ages below some lowered legal hunting age (e.g., 10 years) are too young for a child to accompany a parent or other role model afield, for basic physical development reasons. The results of obviating the pre hunting stage are unknown. It is possible that the pre hunting stage is a critical development period and serves an important function in firmly establishing bonds and behaviors affecting hunting commitment, prior to carrying a firearm and bearing the associated responsibilities. A program that lowers the legal hunting age but preserves the pre hunting stage/apprenticeship values we have documented may be acceptable.

II. Family-supported hunters have such strong and diverse influences in their hunting activity, it seems unlikely that external programming is required with this group to increase initiation. They are part of a self-perpetuating system of rewards and incentives where little outside influence is required to feed the system. One exception to this laissez-faire approach toward family-supported hunters is in the area of consistent role modeling. By encouraging hunting as a family activity, rather than a "man's sport", and by other attempts to broaden interest in hunting by the non hunting parent (e.g., identifying and publicizing the child developmental benefits of hunting--responsibility, appreciation of nature and resource conservation, self-reliance, self-confidence, psychomotor skill development, reverence for life, opportunity for reinforcement of bond between child and parent or other preferred role model, etc.), hunting could be seen by the nonparticipating parent as a more desirable use of the child's leisure time, given some of the alternatives presented by society today. Supportive/participating or

participating/participating parental combinations lead to consistent role modeling. This in turn may help ensure the occurrence of a pre-hunting stage that seems so influential to continued interest in hunting. One recent societal trend that has great potential to short circuit the traditional family-support system is the large number of marital separations leaving single parent families, typically with primary child custody being with the mother. This situation begs for a program that can both convince a non-hunting parent of the benefits of hunting as a recreational pursuit and provides a surrogate role model together with ample pre-hunting opportunities. The combination of the low female involvement in hunting with the greater incidence of female-dominated single parent families may be having significant impacts on hunting recruitment.

III. The characteristics of family-nonsupported hunters present a variety of opportunities for influencing their hunting activity. They differ fundamentally from family-supported hunters in that they have fewer reasons for initiation into hunting. It is recognition of this narrow focus and the tenuousness of hunting perpetuation associated with it that points to ways of enhancing the probability of hunting initiation and continued participation. Basically, increasing the number of reasons for hunting, or components of hunting as we have referred to them in the report, will result in increasing the likelihood of both initiation and continuation. Recreation and fraternal affiliation were the most important components for family-nonsupported hunters during initiation--broadening component diversity would likely increase the motivation to hunt. This might be accomplished by promoting the largely unrecognized (i.e., by our study group) economic and health aspects of hunting. Economic arguments might be made on a comparative basis, such as the cost of hunting vs. other popular outdoor recreation activities, on a per day of opportunity basis. Health aspects of hunting could be promoted, especially the longevity of potential involvement (i.e., from teenager until physically or mentally unable to function, or nearly all of one's life) and the psychological health aspects (e.g., communing with nature). Health and economic aspects of hunting are currently little

emphasized by hunting promotion literature and are largely irrelevant as reasons for hunting initiation for most hunters we studied. Increasing the prominence of these aspects of hunting will add to hunting diversity and stability.

Family-nonsupported hunters who are teenagers, especially younger teenagers (<16), may be effectively provided pre hunting experiences, such as that enjoyed by family-supported hunters, via innovative programs. In this situation, programs that provide pre hunting role models (in essence, surrogate parents) seem most on target. Youngsters are more likely to get involved if their first experiences are positive and expose them to the diversity of benefits that can be derived from hunting. Programs that create the pre hunting, apprenticeship stage and offer exposure to a full "benefits package" may go a long way toward increasing initiation and ensuring continuation. Such programs would have to provide considerable "pre hunt youth/role model" contact--contact that should be frequent and over a period of time (e.g., two outings per month over a 5-month season). One-time events such as "kid/adult day" at a Wildlife Management Area may result in good press for the agency, but should not be expected to have much affect on the long-term involvement of most youngsters. A program of the type suggested should place the burden of identifying family-nonsupported pre hunters on other sportsmen (e.g., perhaps encouraging organized sportsman's clubs to perform this function). Besides relying on altruism, an incentive may be provided in the form of additional or special hunting opportunities for the volunteer role model and apprentice.

IV. Potential hunters decide not to hunt for one or both of two kinds of reasons: affiliative reasons and reasons related to killing game. Means of decreasing affiliative desertion and of increasing initiation of affiliative hunters discussed previously apply to potential hunters who decide not to hunt for affiliative reasons. To overcome the second reason for desertion, hunter training courses should develop and use teaching aids which would ease an individual's apprehension over killing game. The "kill" should be placed in the context of the entire hunting experience-- planning, talking to friends, selection of equipment, pursuit of game, the kill (maybe), then dressing, storing, preparing and consuming game, as well as recreating the event for friends.

V. Only about one-half of the individuals we studied following the hunter training course and classified as potential hunters actually will hunt, implying that communications efforts might be wasted on these individuals. Although this audience has the advantages of not being opposed to hunting, being legally able to hunt (certified) and not having overtly discounted participation, their participation is highly improbable unless they are initiated for strongly affiliative reasons. And even then, rapid desertion is likely unless some powerful intervention program is in effect to facilitate broadening their reasons for hunting to include more than the fraternal component as important aspects of hunting for them.

Enhancing Continuation

I. Among the insights to ways continuation in hunting might be enhanced emerged the idea of broadening peoples' interest in small game hunting so that it possesses, for more people, some of the same attractive dimensions our subjects attributed to big game hunting. Earlier in this report we portrayed big game hunting as being a socio-cultural event, especially attractive to affiliative hunters. We also found interest in big game hunting to be very high, which was attributed to its perception as a socio-cultural event. If the status of small game hunting could be modified so that it approached that of big game hunting, small game hunting interest might increase, resulting in many hunters being more diversified in their interest (i.e., not just big game hunters). The opportunity--i.e., areas open to hunting, season lengths and bag limits, number and variety of species--associated with small game hunting are enormous compared to big game hunting. Activity may be greatly enhanced by building the same "event phenomenon" around small game hunting as exists for big game hunting.

Of special interest here are women hunters who tend to be more affiliative oriented, have less diversity in the components of hunting, and who participate in big game hunting more than small game hunting. Because of their fraternal/affiliative orientation toward hunting, the socio-cultural characteristics of big game hunting are very attractive to these people, thus their involvement in the activity. If small game

hunting were perceived to share these socio-cultural characteristics to the point where women participate in this activity to the same extent as big game hunting, their definition of hunting may broaden. For these marginally involved hunters, small game hunting may become even more appealing because of its earlier start in the fall and associated milder weather and the scenic qualities of the hunting environment.

II. A new hunter may have either achievement or affiliative motives (or a combination of these) for hunting. Highly achievement-oriented initiates may have a greater propensity for unethical hunting behavior if achievement needs are not adequately met by a degree of hunting success. And if the highly achievement-oriented hunter is repeatedly unsuccessful, to his/her satisfaction, this hunter will quit hunting. Programs to influence these hunters should have three dimensions: (1) initially (via hunter training courses, etc.) try to ensure that new hunters have a realistic view of hunting success--be sure expectations reflect reality. (2) Provide opportunities or encourage hunters to avail themselves of existing opportunities to exercise or demonstrate their hunting skills, especially shooting. Possibly all new hunters should be encouraged to join an active sportsman's club where shooting sports are pursued. Particularly for youth, involvement in the Daisy-Jaycee Shooting Education Program, National Rifle Association Junior Clubs, Boy Scout summer camps (Rifle and Shotgun Shooting Merit Badge) and the 4-H Shooting Sports Program is an excellent way to positively direct the energies of achievement-oriented young hunters, possibly accelerating their progress through the "shooter stage" of hunter development identified by Jackson and Norton in Wisconsin. (3) Try to temper the achievement motivation of highly achievement-oriented hunters by stressing the affiliative and appreciative aspects of hunting. Moving hunters as quickly as possible to a highly appreciative orientation toward the activity is an important goal for hunter education for a variety of reasons. At the very least, diversity in orientation should be sought to increase stability of participation.

It is very likely that hunter educators could identify highly achievement-oriented new (prospective) hunters prior to hunter training

course participation. Psychometric tests of this type have been developed for other discriminatory purposes. With this ability, program materials and approaches to modify orientation could be used with this group. This level of hunter education programming is considerably more sophisticated than the approach currently used. Nevertheless, as federally mandated time requirements for courses expand, opportunities for more innovative and effective intervention in participants' hunting development also expand.

III. Hunters' interest and participation levels in big game and small game hunting change over time as they move from one stage of their hunting lives to another. Furthermore, the fundamental components in their definition of hunting also change, from stage to stage. Recognizing that the most frequent changes occur between initiation and age 30 (or about 10 to 15 years hunting experience) brings into perspective the difficulty in targeting communications or specific hunting opportunity programs for the below age 30 group. After age 30, stages are fewer and changes in stage structure are less conspicuous. Consequently, communications and management programming could be more consistent. As the population structure over the next 2-3 decades tends to have an increasingly larger percentage of middle-aged people (U.S. Census predictions), many hunter programming considerations will be required to deal more specifically with this group because it will comprise a greater segment of the hunter population.

There is some evidence in support of structuring hunter education programs (e.g., hunter training courses) at two levels: for <16-year-olds and for >16-year-olds. This suggestion stems largely from data showing a dichotomy in interest--<16-small game/>16-big game--and from basic understanding of differences in learning and teaching approaches for these age groups.

Averting Desertion

I. Many of the processes and implications presented thus far affect desertion. Increasing hunters' involvement (e.g., diversity of types of hunting, diversity of reasons for hunting, etc.) in hunting, as discussed previously, will diminish their propensity to desert.

II. Affiliative deserters seem to have characteristics which lead to several implications regarding maintaining their participation in hunting. Potential affiliative deserters should be encouraged to develop a partial achievement orientation in their hunting motivation, but more importantly, they should be encouraged to progress as quickly as possible to a strong appreciative orientation; this diversification should lead to stabilization in hunting commitment. Hunters who have companions who hunt largely for affiliative reasons (e.g., spouse) should continue to strengthen their support of the affiliative hunters. Affiliative hunters (potential affiliative deserters) should be encouraged to broaden their hunting affiliations (e.g., join a hunting club) so their participation is not contingent upon an affiliative relationship with just one person or one social group.

RECOMMENDATIONS FOR FUTURE RESEARCH

A variety of topics for future research emerged from this study. However, not all the avenues of inquiry identified seem to hold the same potential for meaningful program application beyond simply broadening our understanding of the hunting participation phenomenon. The difficult task in preparing this section, therefore, is not in identifying research ideas but rather in selecting among the many ideas those that we feel will provide the most meaningful insights for hunter education and management programming, in both short-term and long-term time frames. We see several of these research needs as having great potential for being addressed in detail by the two studies being planned subsequent to this one (i.e., W-146-R: VII-7 and VII-8). The topics we recommend for future research follow:

1. To improve our understanding of the nature and importance of a pre hunting stage to an individual's participation in hunting.

The importance of a pre hunting stage seems real, but the ways that it is important are not clear. Theoretical inferences can be made about the function of a pre hunting stage, but at this time we have no empirical data regarding it. If the stage is critical, how might substitutes for it be offered by innovative agency programming?

2. Refine operational definitions of family-supported and family-nonsupported hunters.

This effort has provided evidence of the existence of the two types of hunters and that they differ fundamentally. Knowing more of their characteristics will help in educational communications in which the two groups are considered distinct audience segments. This communication consideration begins at the time of the Hunter Education Course (possibly earlier).

3. Identify the expectations and satisfactions associated with affiliative, achievement, and appreciative orientations toward hunting, as well as the frequency and characteristics of people with each orientation or combination thereof.

This area of investigation should identify and assess the advantages and disadvantages of developing a hunter population with the various orientations. The degree to which education and training programs can be designed to influence this development should be evaluated as well. This research may require developing, limited piloting, and evaluating a prototype program.

4. In relation to 1 and 2 above, describe the various types of support structures which exist for hunters, especially in the contexts of family support and of activity role modeling, including the value and effectiveness of surrogate role models.

There is ample evidence that the existence or absence of family support systems affects an individual's hunting participation, particularly for youngsters. The effects of role modeling, or lack of it, among youngsters and the substitutability of surrogate (i.e., nonparental and nonfamilial) role models is of key concern. If role modeling is important, as it would appear to be, and if surrogates can be effective in developing a youngster's interest in hunting, programs which provide surrogates and associated opportunities for hunting warrant consideration. As in 3 above, development, piloting, and assessment of a prototype program may ultimately be required in this effort.

5. Investigate the effects of various family structures on hunting initiation, continuation and desertion.

Basically, this would examine the effects of the increasing number of single parent families on hunting participation by youth. This would have implications for the surrogate role model concept discussed in 4 above.

6. Determine the components of and development of wildlife-related values, including those regarding killing of wildlife.

Particular values related to wildlife may serve as incentives or impediments to hunting participation, especially between the "interest" and "trial," and the "trial" and "adoption" stages of hunting involvement. It would be very valuable to better understand these so they may be effectively addressed in hunting training courses.

7. Determine the characteristics of various types of hunting which act as incentives vs. impediments to hunting participation.

The differential attractiveness which seemingly exists between big game and small game hunting in general should be better understood so possibilities for broadening interests in hunting could be explored. Possibly a multiple-satisfactions model could be used in this investigation.

8. Monitor temporal changes and identify causal factors for (a) changes in hunting support structure, (b) changes in stage structure (i.e., social action components of hunting), (c) changes in achievement, affiliative, and appreciative motives for hunting (i.e., document the existence of a developmental process), (d) changes in attitudes toward killing game (possibly in relation to the developmental process of c above), and (e) changes in participation and interest in various types of hunting.

Essentially, this is a recommendation for a longitudinal study of the seven previous topics recommended for cross-sectional study.

These research recommendations relate to topics for further investigation; a separate study is not needed for each topic. Many topics could be investigated in one study, probably all could be examined in two cross-sectional studies and one longitudinal study.

To a large extent, these studies would be breaking new ground. Little research has been directed at these topics, and we know of no research program that has taken such a comprehensive look at the antecedents to hunting participation, from prehunting to desertion. The type of information coming out of these research efforts will benefit both hunter education training programs and general hunter management programs. We see the research planned in the current AFA under Jobs VII-7 and VII-8 as an excellent opportunity to address many of the research needs identified above. Furthermore, our experience with the social-psychological models employed in this exploratory study has demonstrated their usefulness as fundamental conceptual frameworks to guide this type of research. They are not perfect, but their application helps tremendously in making logical connections between observed phenomena and in synthesizing their meanings into what we hope are useful program implications.

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APPENDICES

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APPENDIX A:

DEFINITIONS OF FIVE SOCIAL ACTS PERTINENT TO HUNTING

- Economic Act - one performed to realize economic (financial) gain
keywords/phrases: "need the meat", "feed the family"
 - Health Act - one performed to attain/maintain a desired state of fitness
keywords/phrases: "good exercise", "health", "get some fresh air"
 - Recreation Act - one performed for refreshment (of spirit) or enjoyment
keywords/phrases: "challenge", "use skills", "enjoy the outdoors",
etc.
 - Kinship Act - one performed to establish, maintain or improve the quality or
state of consanguineous ties
keywords/phrases: "family outing", "spend time with dad", "family
tradition"
 - Fraternal - one performed to establish, maintain or express friendship and
comraderie
keywords/phrases: "good time with the guys"
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Additional Thoughts and Comments

1. It is questionable whether anyone hunts small game as an economic act. Although the important implied criterion to this definition is perceived opportunity for financial gain, it seems few people would consider small game hunting economically beneficial.
2. Hunting can never be a health act alone. An individual can get as much exercise walking through the woods with a baseball bat in his hands.
3. Hunting can be a solely recreational act, but when such is the case some aspect of this act must be hunting-specific. To demonstrate why this must be so, consider two people, one a hunter, the other a backpacker. Both claim "to enjoy the outdoors" to be the reason they participate in their activity. If this were the only reason, they should both be in the simpler, less extravagant activity of day hiking. There must be something specific to hunting to make the former individual hunt, and something specific to backpacking to make the latter individual backpack.

APPENDIX B:

TEN INFLUENCES OF SOCIAL ACTION

1. Goals	Physiological consistency, preservation of self, safety-security, love, belongingness, recognition-esteem, autonomous self satisfying activities, self actualization and service, N-achievement, knowledge, beauty and esthetics.
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2. Belief Orientations	Beliefs about: the existence or non-existence of a referent, the reference category characteristics of a referent, the beliefs and past actions of a referent, the real or potential relationships of a referent to other referents and those things that belong together and those that are independent of each other.
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3. Value Standards	Achievement, efficiency, practicality, progress, material comfort, leadership ability, self confidence, understanding, faith in science, belief in democracy, belief in equality, belief in freedom or liberty, belief in God or a Supreme Being, honesty, sexual morality, sobriety, cleanliness, loyalty, keeping of confidences, conformity, ability to get along with others.
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4. Habit and Custom	Ways of thinking, ways of dealing with problems, ways of meeting frustrations, cognitions regarding appropriate response for all those situations in which a single response is automatically considered the appropriate one for the situations.
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5. Expectations Norms	Station expectations, status expectations, position expectations, role expectations, norm expectations, situational expectations, reference category expectations, and self expectations based on cognitions of the relevance of various referents to the actor.
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6. Self-Commitments	Contracts, written agreements, verbal agreements, commitments that go with the acceptance of an office, commitments that are part of group membership, commitments based on actions such as voting, statements of opinions, role playing and commitments deriving from various types of participation.
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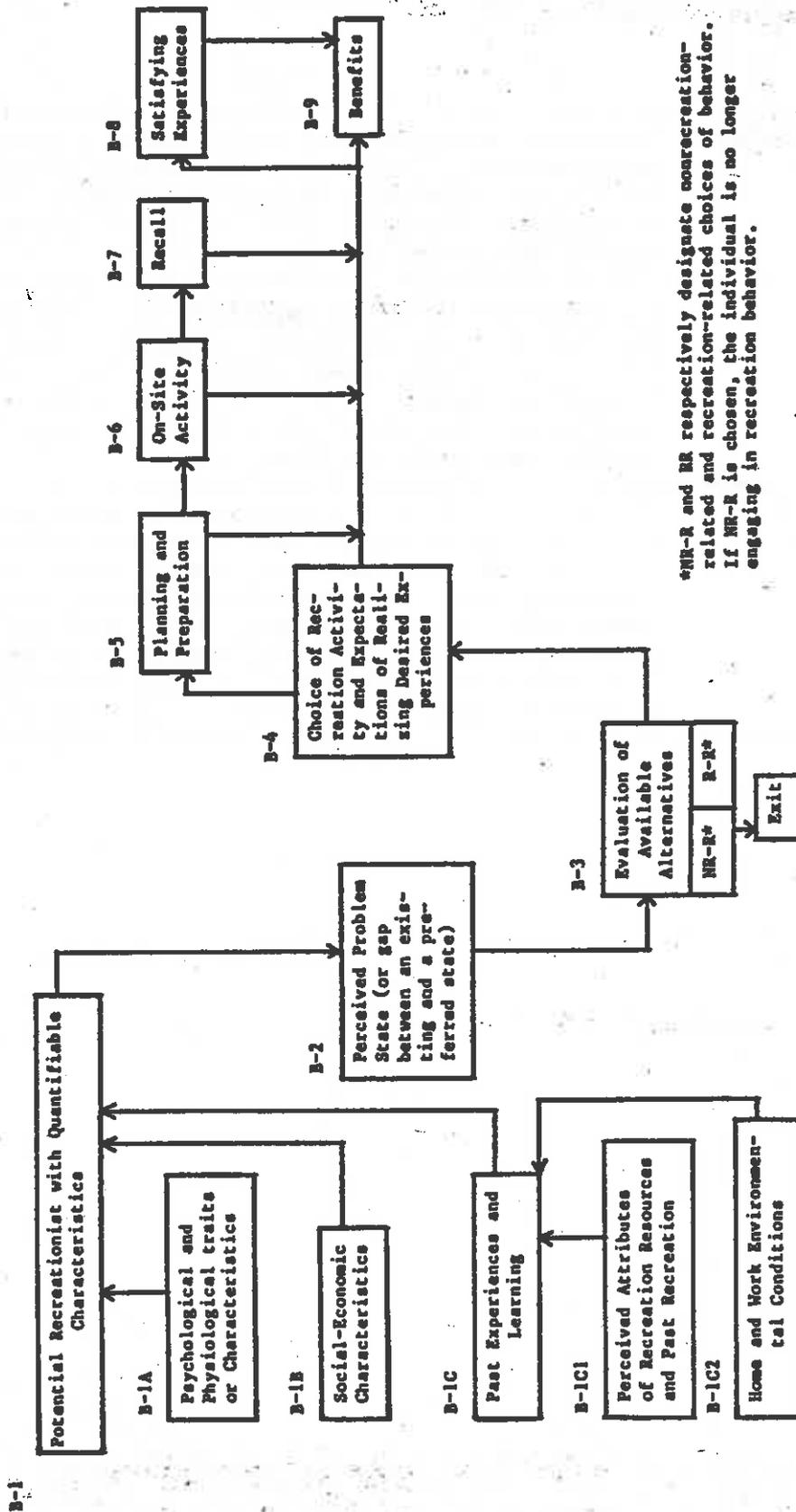
7. Force	Physical, military, police law, rules, economics, public opinion, threat to livelihood, threat of violence or danger, disability, illness, circumstances, and acts of nature such as floods, hail, drought, etc.
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Appendix B (continued)

8. Opportunity	Perceived requirements of the various alternatives in the situation—rank authority, power, money, resources, facilities, knowledge, skills, eligibility, manpower, convenience, awareness, size, strength, intelligence, health, endurance, and time.
9. Ability	Conceived and perceived capabilities of the actor to cope with the alternatives in the situation, which he may potentially face: rank, power, authority, money, resources, facilities, knowledge, skills, eligibility, manpower, convenience, awareness, size, strength, intelligence, health, endurance, and time.
10. Support, Opposition	The amount of help or opposition the actor perceives or conceives others can and will give in relation to actual or potential alternatives: rank, power, authority, money, resources, facilities, knowledge, skills, eligibility, manpower, convenience, awareness, size, strength, health, endurance, time, recognition, guarantee of profit or maximum loss, rationale, goal and value reinforcement, the creation of special supportive climates and conformity.

APPENDIX C:

QUANTIFIABLE ACTS OF VARIABLES WITHIN A SEQUENTIAL MODEL OF RETENTION BEHAVIOR (DRIVER 1976)



*NR-R and R-R respectively designate nonrecreation-related and recreation-related choices of behavior. If NR-R is chosen, the individual is no longer engaging in recreation behavior.

APPENDIX D:

PERSONAL INTERVIEW FORMS

Persons interviewed were selected from those respondents to the study of 1978 Hunter Training Course participants who were categorized as potential hunters. When they were contacted in 1983 they were grouped into three categories (hunters, potentials, deserters), which described their current hunting status. The interview forms were modified slightly to provide three versions best fitting each of the three categories of hunters.

POTENTIAL-HUNTERS

Ever hunted? YES

Hunted last year? YES

How old are you now?

Did you take the course alone, or with someone else? Who?

You took the course in 1978. In what years have you hunted since then?

<u> </u> 1978	<u> </u> years old
<u> </u> 1979	<u> </u>
<u> </u> 1980	<u> </u>
<u> </u> 1981	<u> </u>
<u> </u> 1982	<u> </u>

Did you hunt at all before taking the course? When?

In the years that you hunted, why did you? (PROBE)

Before you actually hunted yourself, did you tag along with anyone who was hunting? Who? When was this?

In the years that you hunted, who did you hunt with? (if not already mentioned: Did you ever go out alone? Does anyone in your immediate family hunt? Who?)

In the years that you hunted, what did you hunt? Were you successful?

POTENTIAL-HUNTERS (cont.)

(If applicable...Why didn't you hunt in ____? (PROBE...ask about killing game if necessary)).

On a percentile basis, what chance is there that you will hunt in the next two years?

Interest in hunting when you took the course	1	2	3	4	5
Interest in hunting now	1	2	3	4	5

(Give stage structure explanation, then determine structure for past season)

Background information

POTENTIAL-POTENTIAL

Ever hunted? NO

How old are you now?

Why did you take the course?

Did you take the course alone, or with someone else? Who?

Did you ever tag along with anyone who was hunting? Who? When was this?

(If not already mentioned: Who in your immediate family hunts?)

Why haven't you hunted? (PROBE...priorities, killing game, etc.)

What is it that made you plan to hunt?

On a percentile basis, what chance is there that you will hunt in the next two years?

Interest in hunting when you took the course	1	2	3	4	5
Interest in hunting now	1	2	3	4	5

(Give stage structure explanation, then determine stage structure for the coming years for people with a better than 0% chance of hunting)

Background information

POTENTIAL-DESERTERS

Ever hunted? YES

Hunted last year? NO

How old are you now?

Why did you take the course?

Did you take the course alone, or with someone else? Who?

You took the course in 1978. In what years have you hunted since then?

___ 1978 ___ years old

___ 1979 ___

___ 1980 ___

___ 1981 ___

___ 1982 ___

Did you hunt at all before taking the course? When?

In the years that you hunted, why did you? (PROBE)

Before you actually hunted yourself, did you tag along with anyone who was hunting? Who? When was this?

In the years that you hunted, who did you hunt with? (if not already mentioned: Did you ever go out alone? Does anyone in your immediate family hunt? Who?)

In the years that you hunted, what did you hunt? Were you successful?

POTENTIAL-DESERTER (cont.)

Why didn't you hunt last year? (PROBE...ask about killing game if necessary)

On a percentile basis, what chance is there that you will hunt in the next two years?

Interest in hunting when you took the course 1 2 3 4 5

Interest in hunting now 1 2 3 4 5

(Give stage structure explanation, then determine structure at last year the person hunted)

Background information

PREINTERVIEW EVALUATION FORM FOR DESERTERS AND POTENTIAL HUNTERS

Why did you not obtain a hunting license in the past hunting season (82-83)?
(Check all that apply)

Resource-related Reasons:

- travel distance to hunting areas too great
- not enough game to keep me interested in hunting
- hunting areas too crowded
- hunting has become too dangerous
- not enough places to hunt
- did not have enough successful hunts

Personal Reasons:

- lost interest in hunting generally
- not enough time to hunt/busy with job and family
- personal health problems/older age
- decided I don't like to kill game
- no one to hunt with
- equipment, ammunition, etc. too costly/not available
- bad hunting experience that made me quit
- decided I don't like to eat game
- dissatisfaction with hunting laws and regulations
- licensed too costly
- miscellaneous reasons

Please circle the most important reason of those you checked.

HUNTER INTEREST FORM
(Small Game)

For each stage, rate your level of interest in hunting small game. Circle the most appropriate number for that particular stage.

	very low		moderate		very high
Stage 1	1	2	3	4	5
Stage 2	1	2	3	4	5
Stage 3	1	2	3	4	5
Stage 4	1	2	3	4	5
Stage 5	1	2	3	4	5
Stage 6	1	2	3	4	5
Stage 7	1	2	3	4	5
Stage 8	1	2	3	4	5

HUNTER INTEREST FORM
(Big Game)

For each stage, rate your level of interest in hunting big game. Circle the most appropriate number for that particular stage.

	very low		moderate		very high
Stage 1	1	2	3	4	5
Stage 2	1	2	3	4	5
Stage 3	1	2	3	4	5
Stage 4	1	2	3	4	5
Stage 5	1	2	3	4	5
Stage 6	1	2	3	4	5
Stage 7	1	2	3	4	5
Stage 8	1	2	3	4	5

**HUNTER PARTICIPATION FORM
(Small Game)**

For each stage, estimate the amount of time you spent afield hunting small game compared to other small game hunters you know. Circle the most appropriate number for the particular stage.

	spent a lot less time than most other hunters			spent a lot more time than most other hunters	
Stage 1	1	2	3	4	5
Stage 2	1	2	3	4	5
Stage 3	1	2	3	4	5
Stage 4	1	2	3	4	5
Stage 5	1	2	3	4	5
Stage 6	1	2	3	4	5
Stage 7	1	2	3	4	5
Stage 8	1	2	3	4	5

**HUNTER PARTICIPATION FORM
(Big Game)**

For each stage, estimate the amount of time you spent afield hunting big game compared to other big game hunters you know. Circle the most appropriate number for the particular stage.

	spent a lot less time than most other hunters			spent a lot more time than most other hunters	
Stage 1	1	2	3	4	5
Stage 2	1	2	3	4	5
Stage 3	1	2	3	4	5
Stage 4	1	2	3	4	5
Stage 5	1	2	3	4	5
Stage 6	1	2	3	4	5
Stage 7	1	2	3	4	5
Stage 8	1	2	3	4	5

BACKGROUND INFORMATION

The following questions are intended to give us information about people we are surveying and are needed to help us identify groups of individuals who share common concerns or interests about hunting.

NONE OF THIS INFORMATION IS EVER REPORTED OR RELEASED TO ANY GROUP OR ORGANIZATION AS INDIVIDUAL DATA. YOUR NAME IS NEVER ASSOCIATED WITH THE INFORMATION YOU PROVIDE.

1. Which of the following best describes the population of the area: (a) where you lived most of the time when you were between the ages of 6 and 16? (b) where you currently live?

<u>Residence Area</u>	<u>(a) Residence between ages of 6-16</u>	<u>(b) Current residence</u>
Rural (on a farm)	_____	_____
Rural (not on a farm)	_____	_____
Village of under 5,000	_____	_____
Village or small city of 5,000 to 24,999	_____	_____
City of 25,000 to 99,999	_____	_____
City of 100,000 or more	_____	_____

2. What is your occupation? (If retired, college student, high school student, or unemployed, please so indicate.)
-

3. In what year were you born? year: _____

4. What is your marital status?

___ single

___ married

5. Please circle the highest grade or year in school you have completed.

<u>Elementary School</u>	-	1	2	3	4	5	6	7	8
<u>High School</u>	-	9	10	11	12				
<u>College</u>	-	1	2	3	4	5	6	or more	

DETAIL SHEET FOR STAGE STRUCTURE ANALYSIS

Stage	Major Change(s) Associated with New Stage	Importance: positive - + unknown - - negative - - - unknown	+ - ++ -- +++ ---	Importance of Influence
1.				
2.				
3.				
4.				
5.				
6.				
7.				

APPENDIX E:

TELEPHONE INTERVIEW FORM

Some individuals found it more convenient to be interviewed over the telephone. If it was apparent that this was our only sure way of getting data, we conceded to a telephone interview rather than personal interview. The flow of the interview is indicated on the following form. The stage structure graph and detail sheets in Appendix D were used, as were the background questions, in addition to the form that follows.

TELEPHONE INTERVIEW

Hello, this is _____ from Cornell University. I called you a few weeks ago about our hunting study. At the time you said it would be OK if I contacted you over the phone and asked you a few questions. Are you free to answer questions for 10-15 minutes?

Good. My first question is:

Do you hunt now?

Did you hunt in the past?

How old are you now?

How old were you when you started to hunt?

How old were you when you stopped hunting?

Why did you start hunting?

(Carry on conversation in typical open format. End with:)

Why did you stop hunting?

or

Why do you hunt now?

While you were hunting, did you ever shoot anything? (ask only if no mention made)

Back when you were hunting, how did you feel about shooting game?

How do you feel about it today?

The way we're looking at hunting, people who hunt go through stages, based on changes in their reasons for hunting, level of activity, who they hunt with, etc. Now you said you began hunting at age _____. Would you say your hunting has been one continuous stage, or would you break it up? How?

(put down ages, reasons for stage changes)

So your last stage in which you hunted was from age _____ to _____.

[go through stage structure analysis]

- which were important
- the rank
- the weight

f fr r h e

Now we have a few questions about your interest and participation in hunting through the years. [fill out forms]

Finally, we have a few questions for general background.

APPENDIX F:

**REASONS GIVEN BY INTERVIEWEES FOR DESERTION
AND OTHER VARIABLES ASSOCIATED WITH DESERTION**

Reason for Desertion	Age at Start	Age at Desertion	Total yrs Hunted	Participation at Start	Participation at end	Change in Participation	Who Accompanied on Hunt	Hunt Alone	Number of Stages
Didn't like killing--hunted only to keep father company	21	23	2	2	2	0	Father only <u>focused</u>	?	1
Marriage, work, went back to school, other recreational interests	12	22	10	5	3	-2	Family: father, brothers, uncle; and friends at work <u>unfocused</u>	?	3
Stopped because she, "got tired of it"	24	28	4	3	3	0	Husband <u>focused</u>	No	1
Various reasons--lack of game, sons stopped hunting	16	55	30	5	3	0	Father, work friends, some <u>unfocused</u>	?	4
Not enough time, too many people, new hobbies	11	27	11	1	3	+2	Friends in neighborhood, friends at work, brother <u>unfocused</u>	?	4
Market demand for skunk hides dropped, got new work	8	15	7	4	4	0	Neighborhood friends ?	?	1
Moved out of country, to downtown	22	30	8	3	3	0	Few neighbors <u>focused</u>	No	1
Friend moved away	35	39	4	3	3	0	A friend at work <u>focused</u>	No	1
New job in the city, had other things to do (not that she preferred to do them)	12	35	13	3	4	+1	Hunted alone	Yes	2
Motherhood	24	28	4	4	4	0	Husband <u>focused</u>	No	2
No real reason--dwindling enthusiasm for shooting sports	9	43	22	4	4	-1	Relatives, father, friends <u>unfocused</u>	?	3
Kids' school activities, new job & therefore less time	10	45	35	5	3	-2	Brother, friends <u>unfocused</u>	Yes	4

Appendix F (cont.)

Reason for Desertion	Age at Start	Age at Desertion	Total yrs Hunted	Participation at Start	Participation at end	Change in Participation	Who Accompanied on Hunt	Hunt Alone	Number of Stages
Other interests, other responsibilities, marriage, family	8	55	45	5	1	-4	Relatives, friends unfocused	?	6
Unknown (father-in-law died, or at least faded back as a "significant other")	23	28	5	1	1	0	Father-in-law focused	No	1
Motherhood	21	22	1	4	4	0	Husband only focused	No	1
Friend moved away/then unknown	27	38	4	4	3	-1	Friend focused	Yes	2
Husband died	17	27	10	3	3	0	Husband only focused	No	2
Couldn't stand shooting game; hunted only because this was "kasher thing to do"	14	18	4	1	1	0	Family members only focused	No	1
Family activities, new priorities	15	30	10	5	3	-2	Hunted alone	Yes	2
Motherhood	20	28	8	5	5	0	Husband focused	No	1
Very ambiguous-changing priorities	14	41	25	5	1	-4	Family, neighbors, work friends unfocused	?	4