

"THE DYNAMICS OF RECREATION PARTICIPATION: SKI TOURING IN MINNESOTA"

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ABSTRACT:

A realistic model or framework for the analysis of recreation behavior must be both comprehensive and dynamic. Most attempts to explain recreation behavior are static in that they do not allow for changes in the character of an activity or the evolution of a participant's involvement. Even predictive models tend to assume that relationships remain constant over time. A dynamic model is especially critical in the analysis of new, rapidly evolving forms of recreation.

The recent, rapid growth of ski touring in Minnesota provides an ideal opportunity to document and analyze the dynamics of participation. The parallel growth of snowmobiling is a basis for comparison and the chance to examine the effect of alternative forms of recreation on participation.

Questionnaire responses from a random sample of Minnesota ski tourers (1978) provided data used to examine two important aspects of internal dynamics. First, as the dominant image of ski touring changes we can expect a corresponding change in the motivations of persons taking up the activity. Second, as skiers increase in skill and experience they will seek more challenging situations and a greater variety of opportunities. These hypotheses were tested by comparing recent adherents to more experienced skiers.

Newer adherents were more likely to be female and less likely to be college graduates. Comparisons of age and residency were inconclusive. Participation in other forms of winter recreation relate to ski touring in a variety of ways. A growing percentage of those taking up ski touring have participated in snowmobiling. The pursuit of exercise and the outdoor environment have consistently been primary reasons for taking up the sport. The influence of friends appears to be an increasing factor. While self-rated skill level is directly correlated with years of experience, there is only a slight tendency for new skiers to prefer well groomed and marked trails, and a tendency to label longer trails and remote areas undesirable.

INTRODUCTION

A good deal of research effort has been directed toward predicting trends in the rate of participation in various recreational activities. To a large extent these have relied on extrapolations or empirically derived cor-

relations between participation rates and the socio-economic characteristics of a population. We are now beginning to take the next step, i.e., the identification of mechanisms which explain changes.

Several individuals, including Christy (1970) and Meyersohn (1957), have described what they feel are the important determinants of "mass" recreation or "fads". More recently West (1977) developed an innovative "status group dynamic approach to predicting participation rates". While the latter goes a long way toward explaining and quantifying change, it relies heavily on the validity of the status concept and the symbolic function of recreation activities.

Motivational research has contributed a great deal to our understanding of why people participate in various activities. In particular the recent models and scales developed by Driver and Brown (Driver 1977); (Driver and Brown 1975) have brought this approach to a high level of sophistication. Tinsley (1977; 1978) has also contributed a great deal to an understanding of motivations and need satisfaction. However, many of the concepts in motivational research are somewhat static in that they seldom allow for changes within the individual or in the character of the activity.

There is an obvious need for a comprehensive, dynamic framework which identifies factors and relationships effecting changes in recreation participation. We can begin by making unstructured, but detailed, observations of specific activities over time. Once a skeleton framework has been developed we can fill it in with statistical analyses of the linkages and mechanisms operating within the framework.

The recent, rapid growth in the popularity of ski touring in Minnesota provides an excellent opportunity for the approach outlined above. Although ancient in origin, the activity is relatively new in terms of mass participation in the United States. Some indication of the significance of this development can be ascertained by comparing the 1977-78 season Minnesota Department of Natural Resources (MDNR) estimate of 500,000 participants based on a statewide, random survey, with the few hundred to a thousand ski tourers present in 1965. Current figures show an annual growth rate of from 20 to 30 percent (Ballman, 1979).

We will begin by describing the various mechanisms believed to be operating in the evolution of ski touring in Minnesota. Many of these mechanisms can be abstracted in the sense that they probably operate to a greater or lesser extent in the history of any recreational activity. As far as is possible these mechanisms will be systematically linked within a comprehensive framework.

Next we will utilize recent data from a statewide survey of ski touring participants

in Minnesota to test some of the mechanisms suggested in the first part. No data set can completely encompass the complexities of recreation participation. It is critical that any statistical analysis be preceded by the development of a comprehensive framework so that the data can be kept in perspective and we can avoid the temptation to adopt narrow, self-contained explanations of behavior.

A FRAMEWORK FOR ANALYSIS

This framework is derived from unstructured and structured observation, the contributions of previous research, and an intuitive notion of recreation behavior. The framework consists of the various mechanisms which can influence recreation participation and the patterns of change over time. The growth and evolution of ski touring in Minnesota will be used to illustrate the framework. In this initial discussion no attempt will be made to quantify the effect of any specific factor, this will be left to an analysis of survey data. Some difficulties will be encountered where the same factor can influence different persons in dramatically opposite ways.

Defining Participation

Before we can begin to describe the factors influencing participation we must deal with the meaning of the term participation. Participation has both quality and quantity dimensions. The latter can be expressed in terms of numbers of individuals, man-hours, visitor days, or miles skied. These measures must be defined still further to be operationalized. If we are concerned with numbers it is necessary to list the criteria for inclusion; e.g., who do we consider a ski tourer? Anyone who has ever skied, or those who have skied a minimum number of miles in the past season. For some purposes "dollars invested" may be an appropriate criteria.

Man-hours also requires a more explicit definition. Do we include travel or resort time, or only the hours on the trail? A visitor day has been standardized by the U.S. Forest Service and the National Park Service as an expression of occupancy. Although "visitor day" is a practical measure for making some crude comparisons, it is generally insensitive to subtle changes in the character of participation.

The quality dimension pertains to both the nature of the activity and the environment in which it takes place. Racing is a far different experience than casual touring or winter camping--all of which can take place in the same area. An urban park and a remote wilderness each provide a distinctly

different experience even where the physical motions are the same.

We will not elaborate further on a definition of participation. The importance of explicit definitions will become more obvious as the discussion proceeds. Suffice it to say that any definition must be appropriate for the change or comparison which is being described and the purpose to which the analysis will be applied.

Inherent Appeal

Any analysis of participation dynamics must begin with a thorough familiarity with the inherent appeal of the activity(s) in question. There are three primary characteristics to consider: novelty, variation, and efficiency. Novelty is a function of "newness" or contrast with other pastimes. Our example, ski touring, has characteristics in common with a number of other forms of recreation. It can provide some of the thrills of downhill skiing; it allows access to many of the same environments as does snowmobiling; it can offer health benefits similar to running. In part the "uniqueness" of ski touring probably lies in the combination of benefits it can furnish.

But, in addition, ski touring has some subtle attributes which are revealed only by a more intimate acquaintance with the activity. Ski touring is a form of exercise that can be performed with "grace" and "dignity". By comparison, jogging is often associated with smelly sweat clothes and an ungainly shuffle. Another alternative, the bicycle, still has connotations of a child's toy for many adults. Ski touring provides the means to ease gently into an exercise routine; the transition from a leisurely stroll to a strenuous workout is gradual and without the distinct change of gait which separates walking from running. These, and other characteristics which are not obvious to a casual observer, may be important determinants of the activity's appeal.

Variation refers to the range of experiences possible within the scope of an activity. Ski touring can vary from a leisurely stroll to strenuous competitive racing. Access to different environments also contributes to variation. Ski touring, because it is relatively unobtrusive, is tolerated in residential areas and fragile wilderness areas. A ski tourer can choose between solitude and the mayhem of a mass start tour-race. Complementary facilities also add to variety. Lodging may consist of a hole in a snow drift or a luxury resort.

Efficiency is simply the net result of a

tally of costs and benefits. Costs may include monetary investment, time, energy, inconvenience, negative image or stigma, and possible loss of social relationships. Variation contributes the most to the benefit side of the ledger. The value of a specific benefit, however, will depend on individual and collective needs.

Inherent appeal is most easily comprehended relative to alternative forms of recreation. All in all, ski touring probably rates quite high compared to the major winter outdoor alternatives currently available.

Sources of New Participants and Dropouts

Participation in ski touring is often thought of in terms of the number of individuals who have skied during the current season. Generally, numbers fluctuate for one of two reasons: 1) individuals enter or leave segments of the population with varying rates of participation, or 2) individuals are attracted to or repelled by the activity due to changes, real or perceived, in its character.

The character of an activity is the product of opportunities (facilities and natural conditions), the commercial impetus and the behavior of those participating.

The first mechanism can be understood fairly easily by examining the correlation of participation with traditional socioeconomic cohorts. For example, certain individuals will begin to participate at a minimum age and drop out when they consider themselves to old. Position in the family or career cycle also affects participation in somewhat predictable ways. Although these mechanisms are always operating, they can be used to explain or predict change only when an activity has stabilized in respect to the kinds of opportunities available and the image it presents; this is definitely not the case with ski touring during its recent evolution.

Ski touring began as a relatively obscure form of recreation often confused with downhill skiing. It was, and to some extent still is, perceived as the blind men described an elephant. Some thought it was cross-country racing; others viewed it as bushwacking through remote, untracked wilderness. Few people understood the full range of opportunities the activity could provide.

At the same time real changes were occurring. The sport grew more visible--via word of mouth, popularized articles and deliberate promotions on the part of organizations such as the United States Ski Association and local ski touring clubs. Later the

commercial establishment joined the efforts to promote ski touring. While all segments of the population are affected by the increase in visibility, we cannot expect the effect to be equal in magnitude across the population. The better informed individuals are the first to become aware of any new opportunity. As an activity becomes generally well known other segments of the population may account for an increasing portion of new participants.

Opportunities in the form of areas and physical facilities have also changed. Marked and groomed trails became more plentiful. Beginning in the early 1970's "citizens' tour races" were organized and promoted. Increases in trails and areas did not keep pace with growing numbers; consequently skiers confronted crowds which weren't experienced by their predecessors. The image of ski touring as a social event became more pronounced.

Ski touring equipment has also evolved. Tough, easily maintained fiber-glass skis became generally available in the mid to late 1970's. Waxless skis appealed to the casual participant. Lightweight poles and bindings added to the array of choices. For some the refinements in equipment make the activity easier; for others the equipment itself may be an attraction.

All of these changes meant that ski touring was not the same activity it was during the earlier stages of its development. Some would find the activity more appealing because large numbers of participants had demonstrated that it is "acceptable" and beneficial. The enthusiasm of others may have waned because it is no longer as exclusive and uncrowded trails are more difficult to find. The net effect has obviously been positive. In spite of any dominant image, the full range of experiences is still available.

External Factors

Recreation behavior does not exist in a vacuum. Independent changes occurring in society can act to discourage or encourage participation. These include economic trends, value sets, the environmental setting and alternative forms of recreation.

An affluent society can afford more expensive playthings; conversely, hard times may stimulate interest in less costly activities. Ski touring requires a smaller monetary investment than some of the competing outdoor winter recreation activities and therefore may be relatively favored by a general reduction in per capita buying power.

Participants often cite low cost as a motivating factor. It is interesting to note that ski touring experienced an earlier resurgence during the depression years.

Value trends affect the image associated with a form of recreation. To the extent that people are really concerned about the environment, the energy crisis and the consumption of resources they may adopt forms of recreation which they perceive as consistent with their beliefs. The choice of recreation may be in part a genuine effort, and in part a symbolic gesture. Ski touring is considered to have a relatively low impact on the environment and a beneficial effect on health; thus the magnitude of these trends can be expected to influence participation.

Ski touring may also be considered consistent with current efforts on the part of some to become independent of complex, interdependent socio-economic systems. Some feel less vulnerable if their recreation does not depend on foreign oil and highly technical machines.

There is considerable evidence that the environmental setting of the home and workplace has an influence on the selection of a recreational activity (Knopp, 1972). Deficiencies in these settings might be expected to create needs; compensation may be sought in the recreation experience. It is difficult to document this influence because it is almost impossible to control for visibility and means which may mask its effect.

The growth in ski touring may be associated with a growth in confinement and restraints imposed by urbanization and winter itself. Ski touring provides access to a vast resource of open space, nature, and freedom.

Alternative forms of recreation may complement and reinforce participation, or they may compete for time and other resources. The latter can occur in two ways: first, a direct competition for participants; and second, they can preempt space and resources, thus reducing opportunities. No discussion of ski touring would be complete without reference to the parallel growth in snowmobiling.

In a practical sense, snowmobiling made its appearance a few years before ski touring (major growth took place in the late 1960's). For this reason the activity gained a large number of adherents who may have chosen ski touring if that alternative had been equally visible. Furthermore, large areas of land and financial resources were allocated to snowmobiling, thus affecting the opportunities

for ski touring experiences. Another possible relationship is that the confidence and skills learned from snowmobiling provided a pool of winter acclimated persons who could easily transfer into ski touring. The extent of these effects may be impossible to measure, but the example does serve to illustrate the importance of timing and the sequence of exposure to alternative forms of recreation.

Other forms of recreation have had a less dramatic relationship. Downhill skiing also competes for participants and their time; at the same time it also furnishes new adherents who convert entirely or partially to ski touring because of cost, crowded lift lines or threat of physical injury. The popularity of running contributes to a population which is physically better able to enjoy ski touring and is likely to seek a winter supplement to their training program. On the other hand, heavily committed runners may be reluctant to devote any effort to an activity which doesn't directly benefit their running ability.

We have discussed only a few of the most obviously related alternatives. Every other form of recreation will have some effect on participation. To cite one more example. Television may be considered a direct competitor--and yet, some have argued that coverage of the winter olympics stimulated many to take up ski touring.

Internal Dynamics

So far we have focused on factors which determine whether an individual participates in a given form of recreation. Profound changes also occur after an individual joins the ranks of participants. Some of these changes occur independently of participation and were included in our reference to sources of new participants and dropouts resulting from transfer from one socio-economic segment of the population to another. Here we will point out changes brought about by participation itself.

One change is an increase in skill, knowledge and confidence. Ski tourers, for example, might be expected to seek more demanding experiences or to increase the rate at which they utilize trails and areas. A closely correlated effect of increased experience may be a demand for variation, either in terms of the activity or new and different environments. Ski tourers who begin on the local golf course may end up in competitive racing or wilderness trekking. Increased specialization or an intensified interest in a narrow segment of an activity is typical of the individual's involvement in any form of recreation. Changes in the

behavior of those already participating can bring about significant shifts in demand.

Experience can affect some participants very differently. These individuals will become "saturated" with the opportunities provided by an activity and drop out altogether in order to seek an even more contrasting experience. A similar, but quicker, response can be expected from those who simply discover after a trial period that the activity is not to their liking. The net effect of these countervailing responses is dependent on the inherent appeal and variation within an activity.

When an individual elects to take up an activity he or she is making an investment in dollars, time, energy, and social alliances. These investments will tend to perpetuate involvement. In some instances the social benefits or obligations may become the primary motivation for continuing the activity. The same can be said, of course, for competing alternatives. Many of those who became involved in snowmobiling before they were aware of ski touring will have a difficult time switching to ski touring, even if they perceived the activity itself as more desirable.

The accumulative effect of internal changes may be more important than changes in total numbers of participants. In a rapidly evolving activity, such as ski touring, this effect is probably even more significant. It may be a mistake to predict demand on the basis of current preferences when a future ski touring population will be much more experienced and skilled.

The Role of the Commercial Sector

It is probably safe to assume that there is no perceived human need that someone won't attempt to "capture" in the economic sense. Recreational benefits vary tremendously in their susceptibility to capture. Ski touring, relative to its main rivals snowmobiling and downhill skiing, is more difficult to package. The equipment is relatively less expensive and the activity is not as restricted to specially developed facilities. For these reasons ski touring was largely ignored by the commercial sector during its early years of evolution in the United States. In fact, the downhill ski industry may have deliberately tried to subdue the public's exposure to a competing activity (Fishman, 1978).

Ski touring (running provides a similar parallel) continued to grow because of its inherent appeal. The commercial sector joined the "bandwagon" and has since devel-

oped innovative ways to package and sell the ski touring experience. The primary approach has been an effort to convince skiers that they need more refined, and often more expensive, equipment in order to fully enjoy the potentials of the sport. Gadgets also proliferate as any activity becomes popular. Appeals to the fashion conscious are prevalent. Resorts are providing groomed trails and elaborate lodging facilities. Organized tours to exotic environments are being made available.

There is little doubt that the commercial sector has added tremendously to the array of opportunities within the sport of ski touring and thus has helped to perpetuate interest in the activity. The success of these innovations is probably assured by the much broader range of persons now participating in ski touring. Whereas the early "pioneers" often prided themselves in their resourcefulness and spartan demands, the broader spectrum of recent adherents are more likely to include those seeking comfort and convenience. This is not to say that the old hands won't also take advantage of the new opportunities provided!

Rate of Change and Cycles

It is relatively easy to predict the direction of change; somewhat more difficult to predict the ultimate potential; and nearly impossible to predict the rate of change in participation in a recreation activity. Ski touring grew slowly during its initial stages because it lacked a strong commercial impetus. The flow of information was largely dependent on word of mouth, organizations, and magazine articles. Television and billboard exposure was minimal.

Inherent characteristics would indicate a potential for rapid growth once the visibility barrier was overcome. The sport requires a relatively small investment in money and time to learn special skills; therefore a person can quickly become a participant.

For simplicity's sake our discussion has implied a linear, one-way pattern of change. The same mechanisms, and others yet unidentified, may bring about short or long term cycles. For example, an individual may tire of ski touring, drop out temporarily and join again at a later time. When this mechanism affects a large number of persons at the same time we can expect larger cycles in the total number of participants. Even shorter, day to day or minute to minute, cycles are probably operating--although these are less important in a discussion of long term trends. The seasonal cycle brought

about by the climatic requirements of ski touring may serve to prolong interest over the long term by forestalling saturation.

Summary of Framework

One is tempted to describe the changes in participation as "phases" in a predictable pattern of change. First, there is a pioneer phase led by a small cadre of individuals willing to explore and risk disappointment. These people may seek out, or even develop, a form of recreation which fulfills well defined needs. In Stanley Plog's (1974) terms these are the "alocentrics," while those who follow can be labeled "psychocentrics". Second, others, with similar motivations, take up the activity as it becomes more generally visible. In the third phase, followers join when there is an ample demonstration of acceptability and benefits. During the fourth phase the activity stabilizes when it is generally well known to the total population and there are few changes in the nature of the opportunities available. A fifth phase may or may not occur. This last phase is a decline in participation because of external factors or simply because the novelty of the experience wears off. Other events may disrupt a long period of stability. For example, a major breakthrough in equipment may make participation easier or more enjoyable. Stynes (1980) and others, have postulated a "product life cycle" concept which implies a predictable decline in participation. It is hazardous to impose a standard pattern on all recreation participation phenomena. Although this sort of description can help to organize our thinking, it is no substitute for an understanding of the specific mechanisms at work.

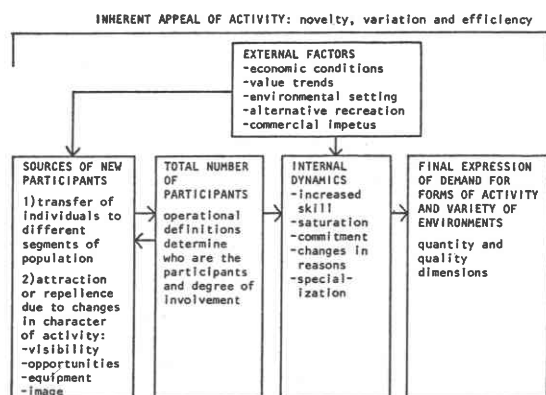


Figure 1. A schematic representation of the factors which influence the quantity and quality of participation. Short term and longer cycles may occur within the context of this framework.

Figure 1 provides a graphic summary of the mechanisms and patterns described earlier. As is true of any attempt to organize reality it is somewhat arbitrary and simplistic. It

does serve the purpose of aiding researchers in their efforts to systematically deal with the complexities of participation dynamics. Modifications and refinements can occur as our knowledge and experience increases.

The ultimate output of any analysis conducted within the context of this framework is a better estimate of the demand for experiences, both the quantity and quality dimensions.

A PARTIAL TEST OF THE FRAMEWORK

Methods

A statewide, random telephone survey of Minnesota residents conducted by the Minnesota Department of Natural Resources in 1978 provided a representative sample of state ski tourists. Anyone over 14 years of age who had "cross-country skied sometime during their life" was included in the sample. Our study utilized a four page questionnaire mailed to the sample. A 75 percent response rate produced a sample of 597 completed questionnaires. The survey instrument solicited four categories of information: 1) patterns of participation; 2) reasons or motivations for participation; 3) environmental preferences; and 4) demographic characteristics. Although the questionnaire was not designed primarily to study the dynamics of participation, one question, "In which season did you first go cross-country skiing?", enables us to examine the changes over time.

For the purposes of this report several variables were cross-tabulated with the year an individual first took up the activity. While this sort of data does not lend itself well to statistical tests it does allow us to look for patterns of change and to speculate on the mechanisms at work.

Two broad questions will be addressed: 1) Are recent adherents motivated differently than those who took up the sport early in its development? and 2) Do more experienced skiers prefer more challenging areas and/or more variation in opportunities?

Changes Over Time in the Characteristics and Motivations of New Adherents

Tables 1 through 6 show some of the characteristics of participants according to the year they first took up the sport. In examining these tables it is critical to remember that the first category contains all of those who had skied prior to the 1972-73 season. This could include some elderly individuals who had skied early in the century

but very little since. Given the rapid rate of increase in participation during the past 10 to 12 years the latter probably account for a very small portion of the sample.

Table 1: Level of education and first season of cross-country skiing

First Season	YEARS OF EDUCATION, RELATIVE FREQUENCY (PERCENT)				(N) %
	1-8	9-12	13-16	17+	
prior to 1972-73	(2) 3	(10) 17	(25) 42	(23) 39	(60) 100
1972-73	(1) 2	(9) 22	(17) 42	(14) 34	(41) 100
1973-74	(0) 0	(17) 28	(36) 59	(8) 13	(61) 100
1974-75	(0) 0	(29) 41	(25) 35	(17) 24	(71) 100
1975-76	(1) 1	(29) 31	(41) 43	(24) 25	(95) 100
1976-77	(3) 3	(39) 40	(43) 44	(13) 13	(98) 100
1977-78	(0) 0	(51) 39	(64) 48	(17) 13	(132) 100

The most pronounced changes have occurred in the level of education and the sex of participants (Tables 1 and 2). College graduates have become a smaller percent of new adherents while the proportion of those with some high school education has increased. This is consistent with West's notion of "status group diffusion". The change can also be accounted for by increased visibility and the role of the media.

Table 2: Sex distribution and first season of cross-country skiing

First Season	RELATIVE FREQUENCY (PERCENT)		(N) %
	FEMALES	MALES	
prior to 1972-73	(25) 42	(35) 58	(60) 100
1972-73	(18) 45	(22) 55	(40) 100
1973-74	(28) 47	(32) 53	(60) 100
1974-75	(47) 66	(23) 34	(70) 100
1975-76	(62) 65	(33) 35	(95) 100
1976-77	(49) 50	(49) 50	(98) 100
1977-78	(86) 64	(48) 36	(134) 100

Females are increasing their involvement in many forms of recreation once considered primarily for men. Changes in the image of ski touring from a very demanding, physical type of sport to a more casual, social pastime with complementary facilities may also have contributed to the increased participation by women.

Changes in age structure (Table 3) are more difficult to interpret. There is an apparent decrease in the percentage of "older" (40-54 and 55+) skiers and an increase in the 25-39 category; although the latter accounts for a large percent of those who took up ski

touring prior to 1972. At least some of the change is an artifact of the tabulation itself, i.e., younger persons are less likely to have taken up ski touring at an earlier date.

Table 3: Age distribution of participants and first season of cross-country skiing

First Season	AGE CATEGORIES, RELATIVE FREQUENCY (PERCENT)				(N) %
	15-24	25-39	40-54	55+	
prior to 1972-73	(4) 7	(26) 45	(14) 24	(14) 24	(58) 100
1972-73	(17) 42	(11) 28	(10) 25	(2) 5	(40) 100
1973-74	(27) 45	(17) 28	(13) 22	(3) 5	(60) 100
1974-75	(23) 34	(31) 45	(12) 18	(2) 3	(68) 100
1975-76	(40) 43	(37) 40	(13) 14	(3) 3	(93) 100
1976-77	(39) 41	(41) 43	(12) 12	(4) 4	(96) 100
1977-78	(56) 43	(52) 40	(19) 15	(3) 2	(132) 100

Responses to the question of residency (Table 4) are also difficult to analyze. We can't be sure what an individual thought was meant by "rural area," nor can we be certain whether a suburbanite would consider himself or herself a resident of a suburb or the Twin Cities Metro Area. It is probably safest to lump both ends of the spectrum for the basis of comparison. Still, at least a few of those who think of their residence as "rural" probably live on the fringe of the metro area and have a more urban lifestyle. This interpretation may help to reconcile our data with the results a statewide Department of Natural Resources survey (1979) conducted in 1978 which provided an estimate of the number of persons who had cross-country skied during that season. Sixty-three percent of the skiers were from the seven-county metro area.

Table 4: Distribution of residency and first season of cross-country skiing

First Season	DISTRIBUTION OF RESIDENCY, RELATIVE FREQUENCY (PERCENT)					(N) %
	over 250,000	25,000-250,000	10,000-25,000	less than 10,000	rural	
prior to 1972-73	(10) 17	(8) 13	(10) 17	(14) 24	(17) 29	(59) 100
1972-73	(5) 12	(9) 22	(8) 19+	(8) 19+	(11) 27	(41) 100
1973-74	(12) 20	(12) 20	(9) 15	(11) 18	(16) 27	(61) 100
1974-75	(11) 15	(14) 20	(17) 24	(10) 14	(19) 27	(71) 100
1975-76	(16) 17	(14) 14	(19) 20	(23) 24	(24) 25	(96) 100
1976-77	(16) 16	(23) 24	(12) 12	(21) 22	(25) 26	(97) 100
1977-78	(22) 17	(21) 16	(26) 20	(23) 17	(39) 30	(131) 100

Residency is an important factor is that it allows us to monitor the diffusion of ski touring from the urban areas (where the current resurgence has been most pronounced) to the

more rural areas. The relative stability in our data may indicate that differences in visibility weren't as great as suspected. Another possibility is that snowmobiling has had a secure hold on the rural population and individuals are reluctant to give up an investment with known benefits for a (to them) new activity.

In speculating on the growth of an activity it may be valuable to know to what extent participants in similar activities are providing a reservoir of potential adherents. Table 5 shows the extent to which cross-country skiers have participated in other forms of winter recreation.

Table 5: Participation in other winter activities and first season of cross-country skiing

First Season	DISTRIBUTION OF PARTICIPATION IN OTHER WINTER ACTIVITIES					(N) %
	snowshoeing	downhill skiing	snowmobiling	winter camping	no other	
prior to 1972-73	(30) 50	(36) 60	(38) 63	(22) 37	(8) 13	(60) 100
1972-73	(20) 49	(26) 63	(25) 61	(12) 29	(2) 5	(41) 100
1973-74	(30) 49	(43) 70	(44) 72	(16) 26	(4) 6	(61) 100
1974-75	(30) 42	(46) 65	(51) 72	(14) 20	(6) 8	(71) 100
1975-76	(31) 33	(71) 75	(67) 70	(18) 19	(4) 4	(95) 100
1976-77	(34) 35	(65) 66	(73) 74	(18) 18	(7) 7	(98) 100
1977-78	(36) 27	(77) 58	(99) 74	(26) 20	(14) 10	(133) 100

Earlier participants were more likely to have engaged in snowshoeing. Changes in relative visibility may explain some of this trend, i.e., snowshoeing probably had nearly the same level of visibility during the early stages of the growth of ski touring. The trend is also consistent with the idea that earlier adherents were more likely to be "pioneers" who were exploring a number of different forms of recreation.

Downhill skiing is a natural complement to cross-country skiing. On the other hand it is common for individuals to state that they have switched to touring because of increased costs, crowding or concern for possible injuries. Our data is inconclusive in that it is also possible for a person to begin as a cross-country skier and switch to downhill as they gain confidence and seek a wider range of experiences.

There has been a great deal of speculation about the relationship between snowmobiling and cross-country skiing. Our data show a slight increase in the number of new skiers who have participated in snowmobiling. We can expect that as the number of ski tourers increase it will draw upon a large existing population of snowmobilers. The gradual decline in snowmobiling since 1976 (as indicated by the registration of machines)

reinforces the probability that some snowmobilers are turning to ski touring as an alternative form of winter recreation; it also tends to reduce the probability of an alternative explanation, i.e., that a greater percentage of new skiers are taking up snowmobiling simultaneously.

Winter camping is more complementary than competitive in its relation to ski touring and appears to be related to experience. It seems reasonable to assume (and the data lend some support) that a cross-country skier needs to acquire a certain level of skill and confidence in the winter environment before he or she becomes involved in winter camping.

We have inferred something of the motivations of cross-country skiers from behavioral patterns and demographic characteristics. Table 6 provides a more direct measure of the reasons skiers took up the sport. The responses were given to an open ended question and more than one reason may have been offered.

Table 6: Original reason participants thought they might enjoy cross-country skiing and first season of cross-country skiing

RELATIVE FREQUENCY (PERCENT) OF REASONS GIVEN													
First Season	exercise	fresh air	outdoors	scenery	peace/tranquility	friends liked	with friends family	fun	easy	inexpensive	liked downhill	(N)	%
prior to 1972-73	(41) 67	(4) 7	(18) 30	(3) 5	(6) 10	(8) 13	(3) 5	(4) 7	(2) 3	(5) 8	(3) 5	(61)	
1972-73	(21) 51	(2) 5	(11) 27	(6) 15	(4) 10	(4) 10	(1) 2	(3) 7	(1) 2	(2) 5	(3) 7	(41)	
1973-74	(20) 33	(2) 3	(25) 41	(5) 8	(6) 10	(5) 8	(4) 7	(3) 5	(3) 5	(2) 3	(7) 12	(61)	
1974-75	(22) 31	(1) 1	(25) 35	(7) 10	(5) 12	(9) 13	(0) 0	(2) 3	(5) 7	(5) 7	(7) 10	(71)	
1975-76	(22) 23	(2) 2	(34) 35	(5) 5	(12) 12	(11) 11	(9) 9	(3) 3	(6) 6	(6) 6	(9) 9	(96)	
1976-77	(41) 41	(10) 10	(30) 30	(7) 7	(8) 8	(16) 16	(5) 5	(11) 11	(5) 5	(7) 7	(6) 6	(99)	
1977-78	(43) 32	(8) 6	(45) 34	(12) 9	(13) 10	(27) 20	(8) 6	(8) 6	(7) 5	(11) 8	(8) 6	(134)	

Exercise and access to the outdoor environment have always been important motivations. The importance of exercise appears to be somewhat less than during the early years. The early association may have resulted from the dominant image of cross-country skiing as a physically demanding activity.

Our data show little change during the past five years in the importance of the "outdoors" as an attractor to cross-country skiing. This may reflect a stability in our society's attitudes toward the natural environment and the need to complement daily routines associated with the urban setting.

The influence of friends and relatives shows an interesting pattern; a slight decline from its importance prior to 1972 and then an increase during the past few years. The early

importance of peer influence may be an indication of the type of visibility cross-country skiing had at the time. There was little media exposure and most persons heard about ski touring from people they knew. Currently, given the high level of visibility ski touring is experiencing, peer influence becomes more of a factor as participants are drawn from the marginally interested population and the "psychocentrics" or followers.

The Effect of Experience on the Individual's Demand for Opportunities

Our data is not ideally suited to test this relationship. Nevertheless it can provide some insights.

There is a clear relationship between years of experience and self-rated skill level as shown in Table 7. We might expect a similar correlation with the demand for more challenging types of opportunities. Table 8 presents relative preferences for specific environmental characteristics, some of which may indicate a desire for more demanding opportunities.

Table 7: Distribution of self-rated skill level and first season of cross-country skiing

First Season	SELF-RATED SKILL LEVEL, RELATIVE FREQUENCY (PERCENT)						(N)	%
	novice	advanced novice	intermediate	advanced intermediate	advanced	expert		
prior to 1972-73	(9) 15	(11) 19	(18) 31	(14) 24	(5) 9	(1) 2	(58)	100
1972-73	(9) 22	(7) 17	(14) 35	(9) 22	(1) 2	(1) 2	(40)	100
1973-74	(14) 23	(11) 18	(23) 38	(9) 15	(4) 6	(0) 0	(61)	100
1974-75	(19) 27	(20) 28	(21) 30	(10) 14	(1) 1	(0) 0	(71)	100
1975-76	(18) 19	(37) 39	(27) 28	(10) 11	(3) 3	(0) 0	(95)	100
1976-77	(38) 39	(29) 29	(23) 23	(7) 7	(2) 2	(0) 0	(99)	100
1977-78	(71) 53	(35) 26	(22) 16	(3) 2	(1) 1	(2) 2	(134)	100

There appears to be a slight tendency for the newer skiers to have a higher preference for groomed, well marked trails. They are also more likely to find longer trails and remote areas undesirable. On the other hand they don't appear to be too much different in their attitudes toward breaking trail (i.e., making tracks in new, unpacked snow) or trails requiring a high level of skill. Perception of difficulty is, of course, quite subjective. We might expect some consistency with self-rated skill level however.

Our data is inconclusive on the question of how experience affects the desire for challenging opportunities. A number of other factors are probably involved. For example, groomed, well marked trails are much more prevalent now than in the past; thus newer skiers have been conditioned to accept these characteristics as "standard" and a dominant aspect of their image of cross-country skiing.

Table 8: Preferences for selected environmental characteristics and first season of cross-country skiing

FREQUENCY DISTRIBUTION (PERCENT) OF PREFERENCES FOR ENVIRONMENTAL CHARACTERISTICS

First Season		groomed trails	unbroken trails	signs	connecting trails	25 mile trails	remote, hard to reach	high skill required	encounter nobody
prior to 1972-73 (N=61)									
undesirable		9	22	0	7	29	27	36	11
neutral		42	25	33	44	55	40	34	39
desirable		49	53	67	49	16	33	30	50
1972-73 (N=41)									
undesirable		15	30	5	12	34	32	44	20
neutral		27	20	18	34	37	36	39	34
desirable		58	50	77	54	29	32	17	46
1973-74 (N=61)									
undesirable		6	17	10	17	27	25	22	20
neutral		35	37	37	41	43	34	52	49
desirable		59	46	53	42	30	41	26	31
1974-75 (N=71)									
undesirable		7	29	7	13	46	43	41	13
neutral		27	20	29	46	37	30	39	49
desirable		66	51	64	41	17	27	20	38
1975-76 (N=96)									
undesirable		8	24	6	11	39	40	39	18
neutral		30	30	23	44	40	26	37	28
desirable		62	46	71	45	21	34	24	54
1976-77 (N=99)									
undesirable		4	17	6	11	32	41	37	24
neutral		39	41	19	48	51	33	33	54
desirable		57	42	75	41	17	26	30	22
1977-78 (N=134)									
undesirable		7	19	5	12	32	45	42	22
neutral		24	39	20	44	45	29	43	51
desirable		69	42	75	44	23	26	15	27

Those seeking greater challenges may be attracted to the increasingly popular "citizens tour races". These are all comers events where everyone competes against the clock or simply attempt to go the distance. The growth in the number of scheduled events and the number of entrants is ample evidence for the appeal of this kind of challenge. This trend is not reflected in the items contained in our survey.

The best approach to determining changes which have occurred within individual participants may be by means of in-depth interviews. This process would document their life history within the activity and the linkages between changes in attitudes and behavior. For the future we may be able to establish "panel" type studies which follow the development of individual participation. In any case it is difficult to separate internal, self-initiated changes brought about by actual participation from those imposed by changes in the image of the activity as a whole.

SOME ADDITIONAL COMMENTS AND CONCLUSIONS

It should be quite obvious that there is no substitute for a thorough familiarity with the activity(s) under consideration. An understanding of participation dynamics does not lend itself to simplistic formula or fit a standardized pattern of change. Survey instruments can be designed to answer specific questions within a comprehensive framework. Valid inferences are impossible if the researcher is not aware of the numerous variables which cannot be incorporated into the questionnaire or interview schedule.

Often we can supplement our internal analysis with a comparison to other times and places. Norway, a country similar in size, population, and climate to Minnesota, has a well established tradition of cross-country skiing. The history of skiing in Norway provides some hints as to its potential in the United States. A 1970 analysis of outdoor recreation, sports, and exercise in Norway showed that during that (1969-70) season 52 percent of the population took shorter ski trips, 29 percent took daylong trips in forests and fields and 28 percent took daylong trips in the mountains (these are not exclusive categories). With these rates as a benchmark we can proceed to qualify for the conditions in Minnesota. Minnesota does not have the traditions of Norway. Minnesota does have a well established competitor for the individual's attention, namely snowmobiling. A lot may depend on how actively public agencies develop opportunities and promote the sport. In Norway the promotion of physically demanding forms of recreation is an important part of public policy. Motorized activities, such as snowmobiling, are subject to more restrictions than in the United States.

Prediction is always a risky undertaking -- there are many "ifs" in the equation. A fundamental question is how actively we want to become involved in creating the conditions which effect change. As risky as it is, someone must take the responsibility to make a judgement.

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