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## Longitudinal Participant Outcomes Associated with Outward Bound and National Outdoor Leadership School: A Means-End Investigation

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Goldenberg et al.: Longitudinal Participant Outcomes Associated with Outward Bound  
**LONGITUDINAL PARTICIPANT OUTCOMES ASSOCIATED WITH OUTWARD BOUND AND  
NATIONAL OUTDOOR LEADERSHIP SCHOOL:  
A MEANS-END INVESTIGATION**

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Means-end theory was used to analyze differences in outcomes from original and follow-up interviews occurring over the three subsequent years after Outward Bound (OB) and National Outdoor Leadership School (NOLS) course participation. In 2006, a semi-structured, in-person interview was conducted after participants (N=510) completed their course. In 2007, 2008, and 2009, semi-structured telephone interviews were conducted with a convenience sample of original participants. Results of this study show how OB and NOLS programs continue to increase participant self-respect, self-esteem, and self-confidence, provide a sense of accomplishment, and impart transferable lessons and skills three years after course participation. Understanding such participant outcomes allows program managers to effectively market programs, comprehend relationships between program attributes and participant outcomes, and design programs for specific outcomes.

*Keywords:* means-end theory, adventure programs, longitudinal outcomes

### **Introduction**

This study employed means-end theory to examine subjects' links between course components (the means) and the values they received from the course (the ends) to understand how participation in wilderness adventure programs affects participants lives. Data collection for this study originated in the summer of 2006 at three Outward Bound (OB) program sites in the Rocky Mountain Region of Colorado and at one National Outdoor Leadership School (NOLS) program site in the Wind River Mountains of Wyoming. Research continued over the next three years as follow-up phone interviews were conducted with the original study participants during the spring and summer of 2007, 2008, and 2009. The longitudinal nature of the study allowed researchers to examine how participant course outcomes changed over time. Limiting the sampling frame to wilderness adventure courses offered by OB and NOLS allowed researchers to investigate two different programs offering similar experiences in terms of geographic region, course length, and course activities. It is noted by the researchers that while the programs are different, they have similar philosophies. The large number of potential subjects at each base camp, and the similarities between different program locations factored into the creation of the sampling frame.

### **Purpose Statement**

The purpose of this study was to gain a better understanding of the outcomes that individuals experienced from participation in a wilderness adventure program and the effects these outcomes have on participants' lives. The study addressed the following questions:

1. What are the attributes, consequences, and values associated with participation in OB and NOLS adventure education courses?
2. How do outcomes associated with participation in OB and NOLS courses change over time between the initial end-of-course collection and the following 3 years?

### **Need for the Study**

A literature review provided the foundation for investigation into wilderness adventure program outcomes. A number of studies recommended additional research to deepen the understanding of the

relationship between program elements and specific program outcomes (Ewert, 1983; Ewert & McAvoy, 2000; Hattie, Marsh, Neill, & Richards, 1997; McKenzie, 2000; McKenzie, 2003; Priest, 1999; Sibthorp, Paisley, & Gookin, 2007). Sibthorp et al. found that “many adventure programs continue to rely on anecdotal evidence and the assumption that simple participation leads to participant development without the ability to articulate the specific mechanisms through which change may occur” (p. 1). Researchers have also cited the need for a longitudinal study that tracks wilderness adventure program outcomes over time (Ewert & McAvoy, 2000; Sibthorp, 2003; Sibthorp, Paisley, & Furman, 2008). Few studies have documented the long-term outcomes associated with such programs (Goldenberg, McAvoy, & Klenosky, 2005; Sibthorp et al., 2008).

### **Literature Review**

Prior means-end research in the outdoor field provided examples of data collection methods and lists of attributes, consequences, and values for consideration in this study. The results of previous studies of OB and NOLS outcomes also provided reference points for the selection of content codes.

#### **Adventure Based Programming**

Ewert and McAvoy (2000) investigated the benefits of wilderness adventure programs and found that since the early 1970’s wilderness was being used extensively to help individuals and groups to grow. Ewert and McAvoy also concluded that a pattern had developed showing positive and beneficial change (i.e., self-concept, self-esteem, and self-confidence) for individuals resulting from participation in wilderness adventure programs. In a separate study, Outward Bound programs were found to be an effective intervention for enhancing multiple dimensions of self-concept and an internal locus of control (Marsh, Richards, & Barnes, 1986). Outward Bound programs were also found to have positive effects on participants’ interpersonal skills, leadership skills, sense of empowerment, self-control, independence, assertiveness, decision making skills, and self-esteem (Hattie et al., 1997). Propst and Koessler (1998) found that self-efficacy improved for participants in a NOLS wilderness adventure program immediately after the program and one year later. Kellert (1999) found increased interest in learning, physical and mental fitness, positive behavioral changes, and a stronger commitment to conservation in participants from courses offered by OB, NOLS, and the Student Conservation Association.

Research examining issues related to group dynamics and development in wilderness adventure programs found that these programs had positive effects on both group dynamics and development (Ewert & McAvoy, 2000; Fielding & Hogg, 1997). Group development was found to have been strengthened due to participation in an Outward Bound course (Ewert & Heywood, 1991). Oakes, Haslam, Morrison, and Grace (1995) reported that an OB group that did not previously know each other perceived each other as more alike than different as they progressed through their course. Group characteristics such as reciprocity, cohesion, and trust were found to contribute to overall group effectiveness (McKenzie, 2003).

Several researchers have noted that additional research is needed to deepen the understanding concerning how and why program elements contribute to specific program outcomes (Ewert & McAvoy, 2000; Hattie et al., 1997; McKenzie, 2000; McKenzie, 2003). Priest (1999) stated that more research is needed to demonstrate the effectiveness of wilderness adventure programs and to establish credibility in the larger disciplines of academia, and recommended future studies investigate “what transfers, how much of it, for how long, and because of what program elements or barriers” (p. 315).

#### **Longitudinal Studies**

Long-term and follow-up studies are important for better understanding the transference of outcomes and benefits to participants over time (Ewert & McAvoy, 2000; Goldenberg et al., 2005; Hattie et al., 1997; Priest, 1999). Longitudinal studies involve multiple data collections from the same participants on the same research topics to track changes over time (Ware, 1985). Conclusions can then be drawn about long-term impacts of the issue being studied.

The main benefit of longitudinal studies is their ability to document results over time without the need to

make speculative models for predicting future behavior (Diggle, Liang, & Zeger, 1994). Utilizing a longitudinal study, service providers can follow-up with clients and understand the impact of their services throughout the duration of the study. This helps researchers understand how subjects' responses evolve over months or years following their experience and allows researchers to track changes.

One of the drawbacks of longitudinal studies is the extensive amount of time, financial, and personnel resources involved in conducting them. For longer studies, accuracy can also be compromised by replacement of research personnel. Another concern is maintaining contact information and involvement from participants. Management of contact information is critical to maintaining a large-enough sample size (Ware, 1985). Losing contact with some participants is inevitable as many factors in the subjects' lives can influence loss of contact including age, career status, marital status, military service, or death (Diggle et al., 1994).

Within the field of outdoor research, a longitudinal study was conducted on the effects of ropes course participation on group cohesion (Meyer & Wenger, 1998). Ten separate Outward Bound Australia courses were found to be effective interventions for enhancing multiple dimensions of self-concept (Marsh et al., 1986). Marsh et al. concluded that an internal locus of control for program participants and these changes were maintained eighteen months after the program. Propst and Koessler (1998) found significant improvements in participants' self-efficacy scores regarding wilderness skills competence in month-long NOLS courses at the end of the course and one year after course completion.

## **Values**

Revealing the highly abstract values of the sample participants in this study was a key to understanding whether these participants learned the lessons, experiences, and skills from the adventure program and whether they transferred this knowledge into their lives. Understanding prior social classifications of values was important to understanding how to categorize sample participants' statements into specific values. Rokeach (1973) defines a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 5).

Nine core values were identified and are referred to as the List of Values (LOV), developed to better understand how people used values to adapt in their social environments, how people used values to equilibrate themselves with the pressures they faced, and how people with different values fared in life (Kahle, 1983). The List of Values (LOV) includes: sense of belonging, excitement, warm relationships with others, self-fulfillment, being well respected, fun and enjoyment of life, security, self-respect, and sense of accomplishment.

## **Means-End Studies**

Early means-end studies investigated brand management and advertising strategy development (Gutman, 1982; Olson & Reynolds, 1983; Reynolds & Gutman, 1988). The use of the theory was expanded to examine consumer choice in broader social marketing issues such as recycling behavior (Bagozzi & Dabholkar, 1994), health care policy (Roth, 1994), weight loss goals (Pieters, Baumgartner & Allen, 1995), and presidential elections (Bagozzi & Dabholkar, 2000). Means-end theory first appeared in the field of outdoor recreation with a study of ski destination choices (Klenosky, Gengler, & Mulvey, 1993). Other recreation based means-end studies include consumer selection of tennis rackets (Mulvey, Olson, Celsi, & Walker, 1994), tourist selection of interpretive state park programs (Klenosky, Frauman, Norman, & Gengler, 1998), greenway trail usage benefits and values (Frauman & Cunningham, 2001), push and pull factors in spring break travel decision making for undergraduate students (Klenosky, 2002), and examining values associated with spiritual backcountry adventure experiences (Marsh, 2007).

## **Means-End Theory and Wilderness Adventure Program Outcomes**

Goldenberg, Klenosky, O'Leary, and Templin (2000) were the first to use means-ends theory to investigate participation outcomes in outdoor education activity, specifically in a ropes course program. The relationships found among the highly abstract values suggested that the ropes course programs helped

participants learn how to work together to accomplish given tasks, which in turn helped them to feel fulfilled and happy about themselves.

The means-end approach was used to identify and compare links among participants' attributes, consequences, and values to determine if there was a measurable difference in meaningful involvement between the Challenge by Choice and Inviting Optimum Participation approaches to ropes course program design and delivery (Haras, 2003). Haras findings indicated that ropes course program design and delivery could be manipulated to provide selected benefits and facilitate participant experiences of meaningful involvement.

Means-end theory was utilized to examine outcomes associated with participation in an Outward Bound program and differences in five key program elements: rock climbing, interactions with others, expeditioning, camp craft skills, and the solo experience (Goldenberg et al., 2005). Researchers found that personal values were strengthened through participation and were perceived to positively impact participant's lives after the experience was over.

The means-end approach was also applied to an examination of the outcomes associated with participation in an integrated wilderness adventure program, which combined participants with disabilities and those without (McAvoy, Holman, Goldenberg, & Klenosky, 2006). Results showed that persons with disabilities received and used a range of benefits from the adventure program and the outcomes had a lasting effect on their lives.

### **Theoretical Framework**

Means-end theory was developed by Gutman (1982) as a method of analyzing the factors driving consumer purchasing behavior. The theory views consumers as goal-oriented decision makers who are motivated to choose behaviors that will lead to specific desirable outcomes (Costa, Dekker, & Jongen, 2004). Gutman (1982) added that the theory sought to better understand how consumers or participants felt about a particular product or service. According to Reynolds and Gutman (1988) the theory focused on the interrelationship among product and meaning at three cognitive levels of abstraction that were hierarchical in nature: (a) attributes, (b) consequences, and (c) values. In this theory, the attributes represented the "means" by which consumers obtained desired consequences or benefits, as well as avoided undesired consequences or costs, and achieved important personal values or "ends."

Attributes (the means) can be a physical object, service, or experience, such as rock climbing or camp craft. Consequences directly result from an attribute, such as interacting with others, and may be perceived as either positive or negative. Negative consequences are referred to as costs or risks, positive consequences are frequently referred to as benefits. Some examples of positive consequences from outdoor education experiences could include participants developing technical skills or interpersonal skills. Some possible negative consequences could include injury or feeling homesick. Values (the ends) are the desired end-state of mind resulting from the attributes and consequences, such as self-awareness. As desired end-states of being, values are perceived to be positive.

The sequence of relationships that links attributes to consequences and consequences to values is summarized by a means-end chain, a simple model of associated meanings. Each link in the means-end chain describes how a participant's thoughts have progressed from either an attribute to consequence or from a consequence to value. In this way, a reader can clearly follow the thought process from start to finish. For example, a means-end chain for an outdoor education experience could include the attribute "first aid training." This attribute could then be linked to the consequence "interactions," which could be linked to the value "sense of belonging." In other words, this participant has indicated that first aid training facilitated interactions between group members that led to experiencing the sense of belonging among this particular group of people.

Limitations inherent to means-end studies require thoughtful planning and careful execution of interviews and data analysis. Laddering interview techniques may produce irrelevant attributes or irrelevant

ladders and can be time-consuming or tiresome; these limitations may be mitigated by use of soft-laddering techniques, which allow researchers to better steer the interview (Costa, Dekker, & Jongen, 2004). While content analysis is often considered the core of means-end theory, it is subjective and a prolonged process (Gengler & Reynolds, 2001). To alleviate some concerns of subjectivism, Gengler and Reynolds (2001) recommend following basic analysis steps and employing a computer software program.

The application of means-end theory to the field of outdoor recreation began with a study of ski destination choices (Klenosky, Gengler, & Mulvey, 1993) and appeared in wilderness adventure education research seven years later as an investigation of the outcomes in a ropes course program (Goldenberg, Klenosky, O'Leary, & Templin, 2000). Means-end theory provides insight into adventure program participants' experiences and the personal values that underlie their behavior. Understanding participants' meanings and motivations aids researchers in drawing inferences about why and how participants experience certain values or outcomes.

### Methods

Original data collection occurred during the summer of 2006, with follow-up interviews conducted in 2007, 2008, and 2009. The sampling frame was limited to a convenience sample of participants who completed OB courses in Colorado's Rocky Mountains or NOLS courses in Wyoming's Wind River Mountains. In all, 510 students participated in the study (OB = 162; NOLS = 348). OB participants came from 15 courses, eight from Leadville, CO, three from Silverton, CO, and four from Marble, CO. NOLS participants came from a collection of 40 courses that gathered at a program site near Lander, Wyoming. All courses sampled were fourteen days or longer and were made up of male and female participants, who were 14 years of age and older.

This study was limited to wilderness adventure courses offered by OB and NOLS as these organizations pioneered the field of wilderness-based education and are highly respected within the field today. Researchers investigated the two programs as they offer similar experiences; in terms of geographic region, course length, and course activities. Although many courses shared activities such as expeditioning, orienteering, rock climbing, and Leave No Trace instruction, each course offered a unique combination of activities, experiences, and instruction.

For the original data collection, subjects were selected using a convenience sampling method. Semi-structured interviews were conducted with participants on a voluntary basis during the last two days of their course. Researchers wrote participant responses on a pre-printed interview script. The first section of the script identified participant descriptive statistics, including age, gender, ethnicity, and previous OB or NOLS involvement. The next section asked for information about the subject's experiences on course, including duration of the course and course activities. The last section of the interview focused on collection of means-end data. Subjects were asked to identify three to four of their favorite course components. Once subjects assembled their list of components, they were asked a series of questions for each stated component using the laddering technique.

Laddering involves asking a series of open-ended questions that first asked the respondent to identify the attributes of a product. Each ladder represents a participant's thought progression from the attribute (course component) to its associated consequences and values. The respondent is then asked why that attribute is important. After the participants respond, interviewers ask again, "why is that important?" This process of asking, "Why is that important?" continues for each response given until the respondent can no longer provide a meaningful answer (e.g., the response is "I don't know," or "It just is..."). The process forces respondents up the "ladder of abstraction," to bridge relatively concrete concepts with more abstract concepts or values (Reynolds & Gutman, 1988). Laddering was repeated for each of the components a subject identified in an interview.

For follow-up data collection, subjects participated in phone interviews that were completed based on the convenience of the participants. All participants were called each year but some participants were

unreachable. All follow-up participants were interviewed at least twice during the study. In 2007, 184 participants completed interviews, 82 from OB and 102 from NOLS. In 2008, 197 interviews were completed, 90 from OB and 107 from NOLS participants. In 2009, 200 interviews were completed, 79 from OB and 121 from NOLS participants. The follow-up data collection utilized a single interview script similar to the one used in the initial data collection. The first section of the script asked participants to remember three or four of the most meaningful components or experiences from their course. Once the participants assembled their short list of meaningful components or experiences, they were asked a series of questions using the laddering technique for each stated component or experience. The last section of the script identified current participant descriptive statistics, including age, email, occupation, and whether they would recommend an OB or NOLS program to people they know.

Collected data was transcribed into LadderMap, a software package used to analyze means-end data (Gengler & Reynolds, 1995). Researchers reviewed data and developed content codes for attributes, consequences, and values based on phrases and key words that emerged from the data. The content codes were then tested in a blind review by an independent coder to determine intercoder reliability. In 2006, there was 87.3% agreement between researchers and the independent coder. In 2007, there was 77.95% agreement. In 2008, there was 80.25% agreement. In 2009, there was 77.3% agreement. Coded data was used to develop an implication matrix, which summarized the number of times a concept was associated with another concept to identify dominate connections between attributes, consequences, and values. These connections were then used to create hierarchical value maps (HVMs), which illustrate the relationships and links between the attributes, consequences, and values (Reynolds & Gutman, 1988).

## Results

The objectives of this study were to determine the attributes, consequences, and values associated with participation in OB and NOLS programs and to compare outcomes associated with participation in OB and NOLS courses between initial end-of-course collection and the following 3 years. Forty-one content codes were developed from the data, including 16 attributes, 16 consequences, and 8 values. These codes appear in alphabetical order in Table 1.

Table 1  
*Content Codes*

Attribute	Consequence	Value
Away From Home	Being Challenged	Fun & Enjoyment of Life
Camp Craft	Environmental Appreciation	Self-Awareness
Climbing	Fear/Anxiety	Self-Fulfillment
Expeditioning	Fun/Excitement	Self-Respect/Esteem/Confidence
First Aid	Hard Skill Development	Sense of Accomplishment
Fishing	Independence	Sense of Belonging
Group	Interactions	Transference
Illness/Injury	Leadership	Warm Relationships with Others
Independent Activities	Motivation/Inspiration	
Instruction	New Experience/Opportunity	
Leadership Activities	New Perspective	
Overall Course	Perseverance	
Small Group Expedition	Personal Growth	
Solo	Reflection	
Water Activities	Resourcefulness	
Wilderness	Stress Relief/Relaxation	







HVMs should contain enough data to display the majority of the associations but not so much data that they become difficult to understand (Gengler & Reynolds, 1995). Attributes are positioned at the bottom of the HVM and illustrated as white circles. Consequences are positioned near the middle of the map and represented by gray circles. Values are positioned at the top of the map and represented by black circles. The circle size is proportional to the number of times a concept was mentioned by participants. The larger the circle, the more frequently it was mentioned. Line thickness is proportional to the number of times that link appeared in the data. The thicker the line, the more often participants linked those concepts together.

The HVM generated from all participants ( $N = 510$ ) in the 2006 original data collected appears as Figure 1. A cutoff value of 8 (77.4% of the data) was used to create this HVM. The most frequently mentioned attributes included: expeditioning ( $n = 252$ ), group ( $n = 231$ ), and climbing ( $n = 151$ ). The most frequently mentioned consequences included: interactions ( $n = 297$ ), being challenged ( $n = 211$ ), and new experience/opportunity ( $n = 199$ ). The most frequently mentioned values included: transference ( $n = 284$ ), sense of accomplishment ( $n = 209$ ), and self-respect/esteem/confidence ( $n = 198$ ).

The HVM generated from the 2007 follow-up data ( $N = 184$ ) appears as Figure 2. A cutoff value of 2 (91% of the data) was used to create this HVM. The most frequently mentioned attributes included: group ( $n = 64$ ), expeditioning ( $n = 54$ ), and overall course ( $n = 51$ ). The most frequently mentioned consequences included: interactions ( $n = 89$ ), being challenged ( $n = 56$ ), new perspective ( $n = 43$ ), and new experience/opportunity ( $n = 41$ ). The most frequently mentioned values included: self-respect/esteem/confidence ( $n = 66$ ), transference ( $n = 49$ ), and sense of accomplishment ( $n = 55$ ).

The HVM generated from the 2008 follow-up data ( $N = 197$ ) appears as Figure 3. A cutoff value of 4 (88.6% of the data) was used to create this HVM. The most frequently mentioned attributes included: group ( $n = 116$ ), expeditioning ( $n = 82$ ), and overall course ( $n = 57$ ). The most frequently mentioned consequences included: interactions ( $n = 145$ ), being challenged ( $n = 101$ ), and personal growth ( $n = 92$ ). The most frequently mentioned values included: transference ( $n = 139$ ), self-respect/esteem/confidence ( $n = 126$ ), sense of accomplishment ( $n = 97$ ), and warm relationships with others ( $n = 96$ ).

The HVM generated from the 2009 follow-up data ( $N = 200$ ) appears as Figure 4. A cutoff value of 5 (82.5% of the data) was used to create this HVM. The most frequently mentioned attributes included: group ( $n = 111$ ), expeditioning ( $n = 85$ ), and instruction ( $n = 60$ ). The most frequently mentioned consequences included: interactions ( $n = 125$ ), new experience/opportunity ( $n = 110$ ), and new perspective ( $n = 84$ ). The most frequently mentioned values included: transference ( $n = 155$ ), self-respect/esteem/confidence ( $n = 77$ ), and sense of accomplishment ( $n = 70$ ).

Across all four years, the most frequently mentioned attributes were group, expeditioning, and overall course. The most frequently mentioned consequences were interactions, new experience/opportunity, being challenged, and new perspective. The most frequently mentioned values included transference, sense of accomplishment, and self-respect/esteem/confidence.

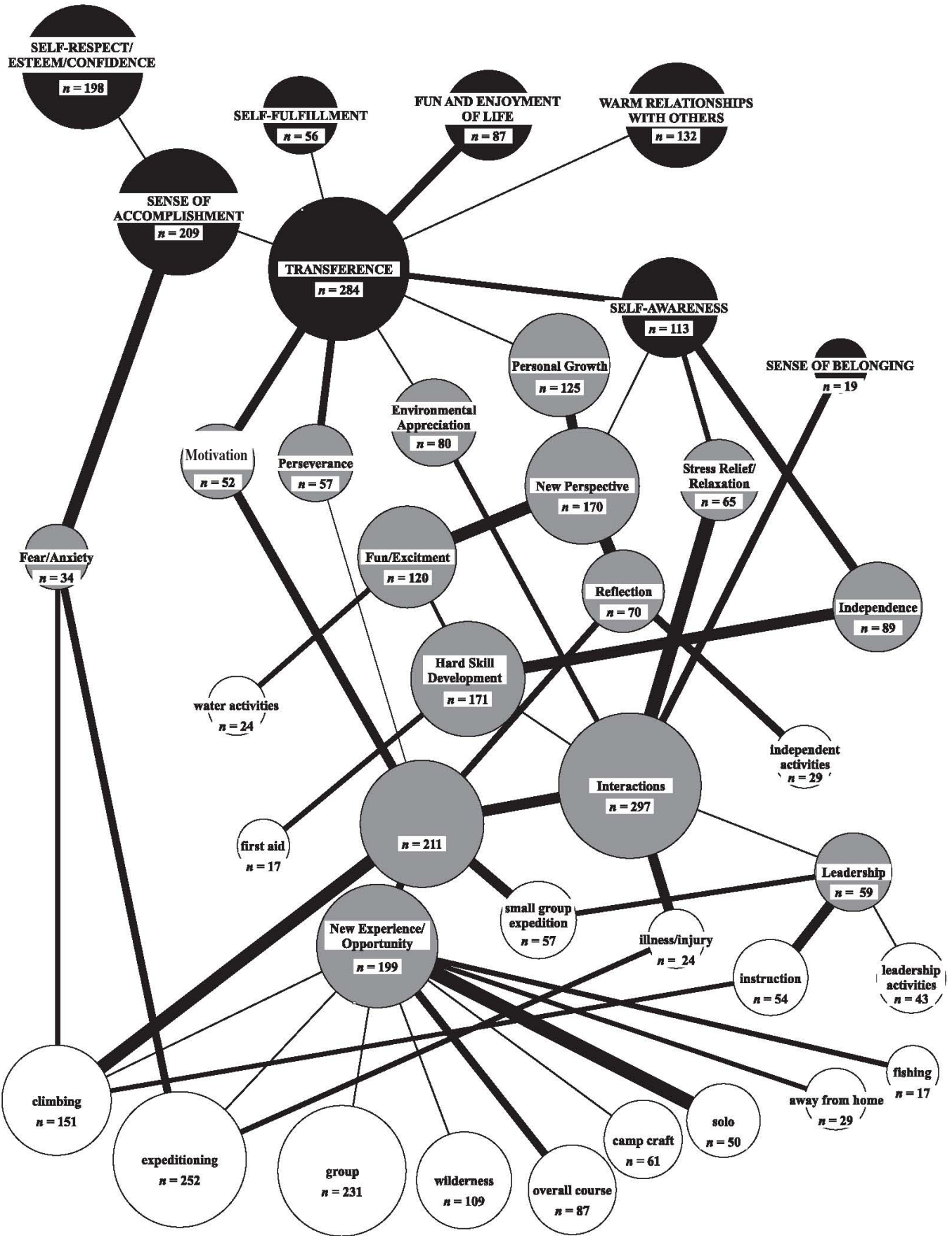


Figure 1. Hierarchical Value Map for 2006 (N = 510), cut-off value of 8 (77.44% of data).

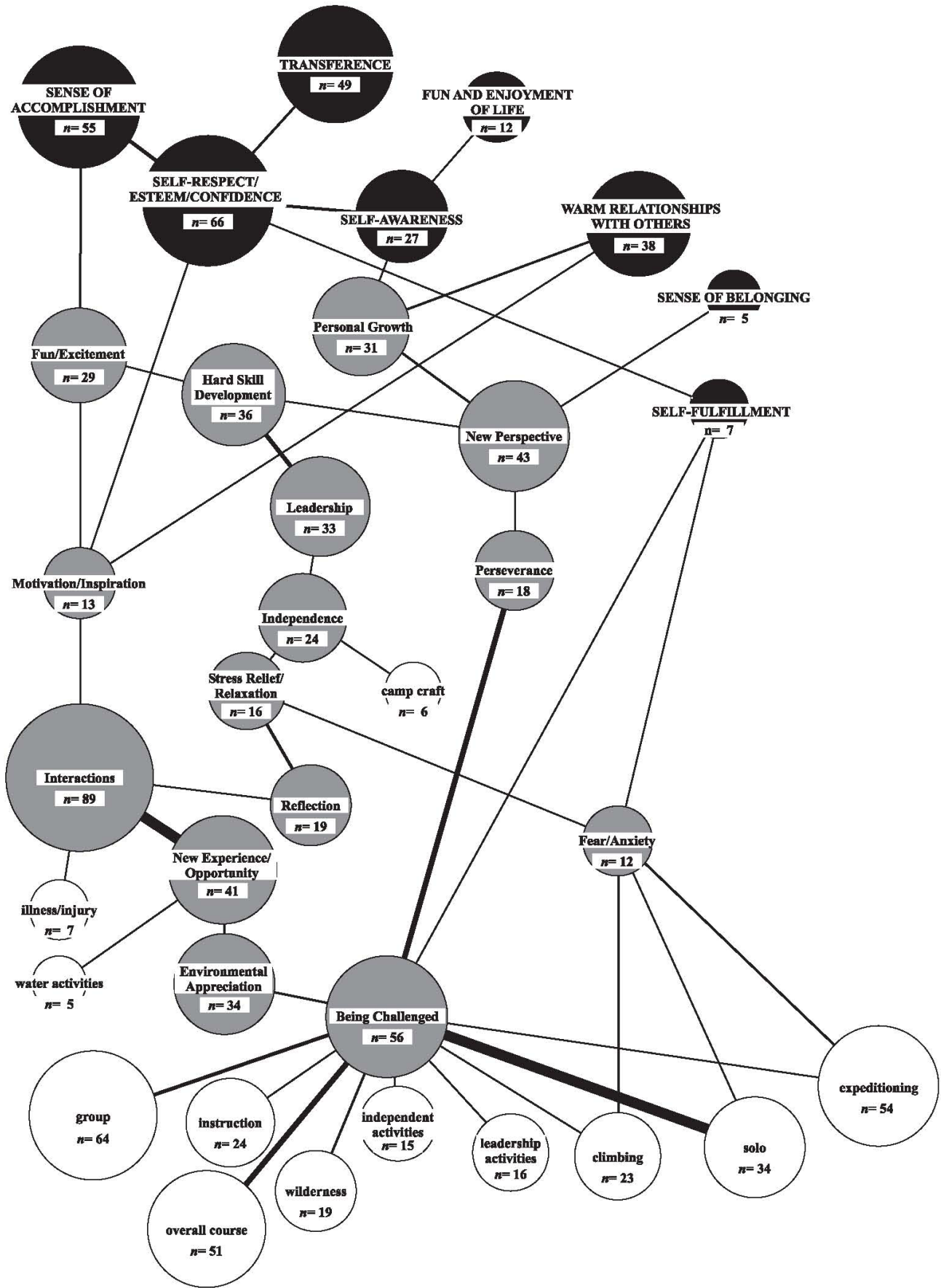


Figure 2. Hierarchical Value Map for 2007 (N = 184), cut-off value of 2 (91% of data).

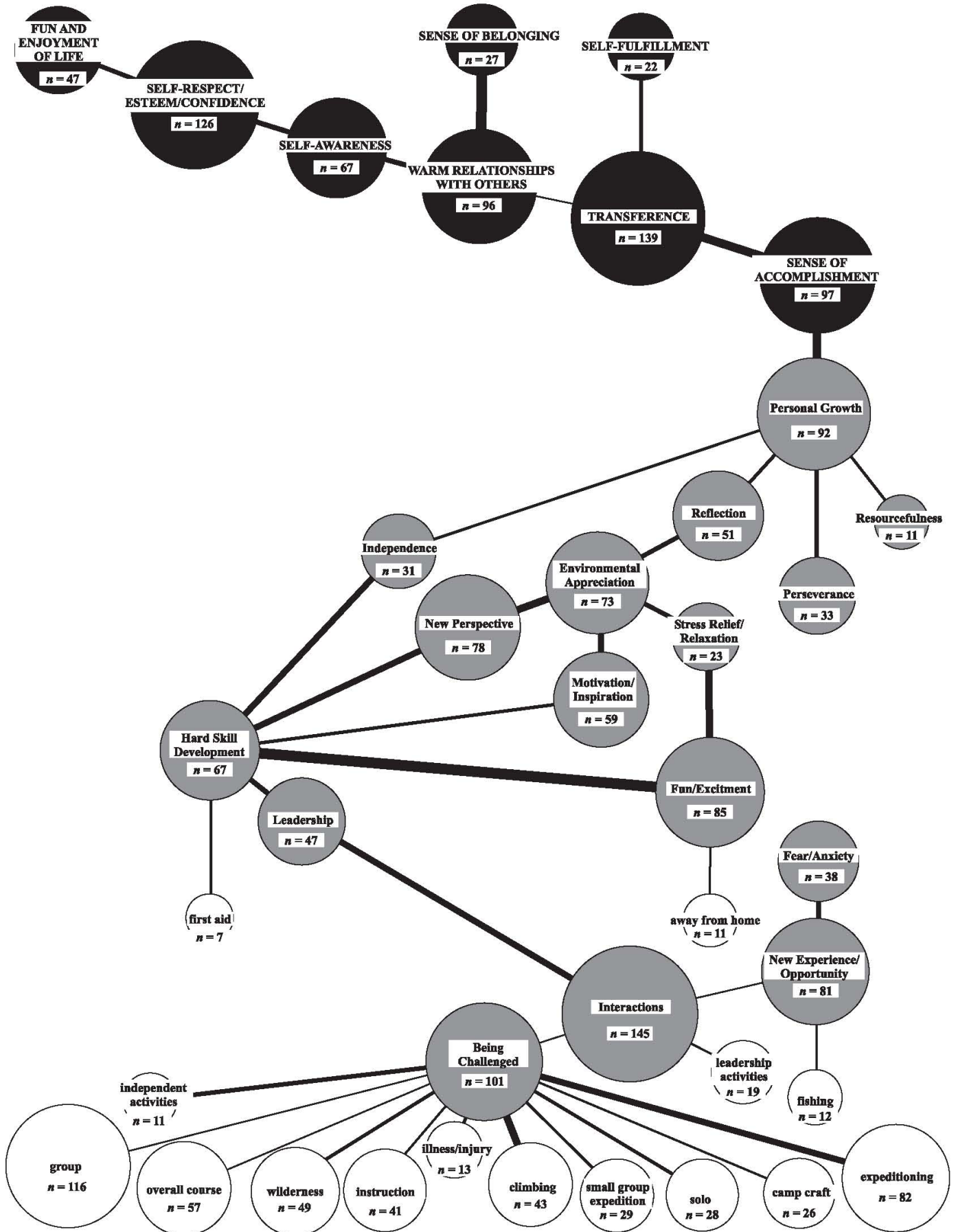


Figure 3. Hierarchical Value Map for 2008 (N = 197), cut-off value of 4 (88.6% of data)

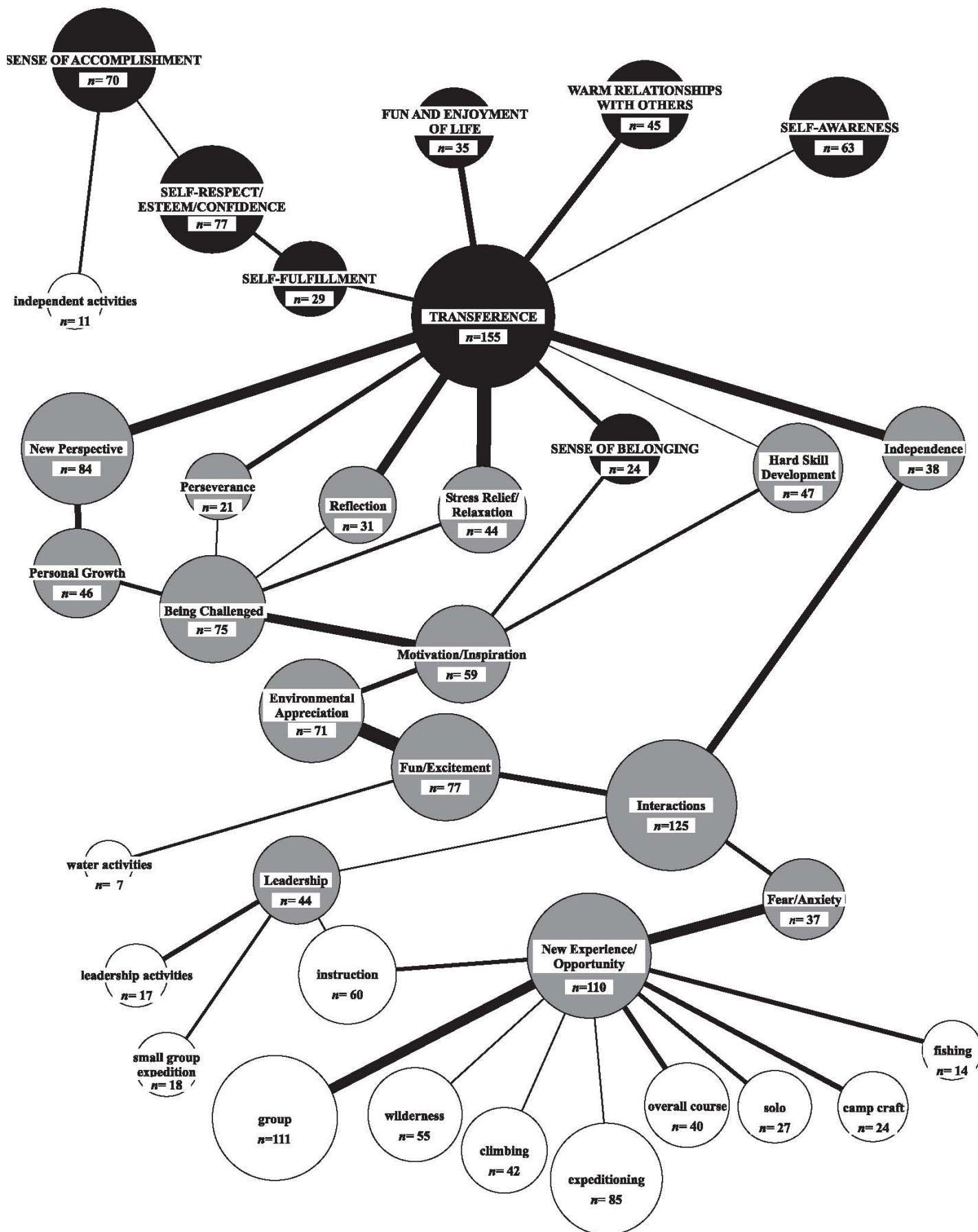


Figure 4. Hierarchical Value Map for 2009 (N = 200), cut-off value of 5 (82.5% of data).

### Summary

Two research questions steered researchers throughout the course of this study. Combined data and results from four years of data collection provide answers to these questions.

#### Question 1

*What are the attributes, consequences, and values associated with participation in OB and NOLS adventure education courses?*

Identification of the most frequently cited attributes, consequences, and values associated with participation in OB and NOLS courses provides insight into the benefits and outcomes of course participation. Across all four years, the most frequently mentioned attributes associated with participation in OB and NOLS courses were group, expeditioning, and overall course. Consequences frequently associated with course participation were interactions, new experience/opportunity, being challenged, and new perspective. Many of the participants reported transferring the consequences and benefits of their participation to their lives outside of OB and NOLS. Numerous participants reported that at least one aspect of their experience, if not the overall course, caused them to feel a sense of accomplishment. The majority of participants indicated gaining more self-respect, self-esteem, and self-confidence.

#### Question 2

*How do outcomes associated with participation in OB and NOLS courses change over time between the initial end-of-course collection and the following 3 years?*

While attributes and consequences associated with course participation slightly varied over the years, all concepts consistently linked to the values of transference, sense of accomplishment, and self-respect/esteem/confidence. This consistency validates the premise the OB and NOLS course promote participants' personal development and improve self-efficacy.

### Discussion

This research offers an examination of the long-term effects of participation in OB and NOLS courses. A number of prior studies have documented a need for longitudinal studies that track program outcomes over time (Ewert & McAvoy, 2000; Sibthorp, 2003; Sibthorp, Paisley, & Furman, 2008). As the first application of means-end theory in a longitudinal study, this study contributes to the body of knowledge by examining the transference of personal outcomes from participation in wilderness adventure education programs into participants' lives.

Priest (1999) documented a need to investigate "what transfers, how much of it, for how long, and because of what program elements or barriers" (p. 315). This study found that three years after course completion, participants continue to transfer numerous course elements, including group experiences, interactions, instruction, being challenged, new perspectives, new experiences/opportunities, personal growth, expeditioning, and climbing.

Numerous studies researched wilderness adventure course participation outcomes on group dynamics, development, and characteristics (Ewert & Heywood, 1991; Fielding & Hogg, 1997; McKenzie, 2003). These studies found that course participation positively impacts group effectiveness and interactions. Likewise, results from this study indicate that participants experienced transference of group experiences and interactions into other areas of their lives.

Hattie et al. (1997) determined that OB courses positively impact participants' interpersonal skills, leadership skills, assertiveness, decision making skills, and self-esteem. Many of these same skills were frequently mentioned by participants and coded as consequences (interactions, personal growth, and new experiences/opportunities) that led to transference of these skills into other areas of their life, in addition to improved self-respect/esteem/confidence.

Ewert and McAvoy (2000) found that participation in wilderness adventure programs resulted in positive and beneficial changes in participants' self-confidence and self-esteem. Results from this study similarly identified the value of self-respect/esteem/confidence as an outcome of participation in OB and NOLS courses.

Goldenberg et al. (2005) examined OB participation outcomes and found that rock climbing, interactions with others, and expeditioning led to strengthening personal values and positively impacted participants' lives. This study confirms these results as climbing, expeditioning, and group led to improvements in participants' self-respect/esteem/confidence, as well as transference of benefits and skills to other areas of their lives.

### Limitations

Limitations associated with this study include the use of a convenience sample, interviews conducted with note taking, and date condensing when entered in LadderMap. Being a longitudinal study, several participants were unreachable throughout the years due to moving, schedules, or change of contact information. While NOLS and OB were selected for similarities in program philosophy, course attributes, course length, and geographical locations, the fact that they are two different programs is a limitation of the study. Another limitation of the study was the lack of consideration for other factors that could affect participant outcomes, such as program philosophy, weather factors, or course instructors. While program philosophy has an affect on participant outcomes, the study was not designed to measure this.

### Managerial Implications

Outdoor adventure programming management can apply knowledge and understanding about participation outcomes when developing programs, creating marketing materials, and assist in obtaining outside funding. Sibthorp, Paisley, and Gookin (2007) found that adventure program managers assume that participation leads to growth without being able to explain how this growth occurs. Understanding that course components and the consequences of these components lead to specific values will assist managers in designing programs that will provide participants with the opportunity to obtain specific values. For example, this study shows that transference of course outcomes into participants' lives was mentioned by a majority of participants sampled. Managers aware of these results now have incentive to design future programs with activities and group discussions focusing on transference of course outcomes.

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