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## Affective And Motivational Components Of The Flow State: Rock Climbing Revisited

Helen Hooper

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AFFECTIVE AND MOTIVATIONAL COMPONENTS OF THE  
FLOW STATE: ROCK CLIMBING REVISITED

by

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Bachelor of Arts (Education), Exeter University, UK, 1992

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota  
December  
1999

This thesis, submitted by Helen Hooper in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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This thesis meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Harvey Kull  
Dean of the Graduate School

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## TABLE OF CONTENTS

LIST OF FIGURES .....	vi
LIST OF TABLES .....	vii
ACKNOWLEDGMENTS .....	viii
ABSTRACT .....	ix
CHAPTER	
I. INTRODUCTION .....	i
Issues Arising .....	2
Outline of Thesis Sections .....	6
Definition of Terms .....	7
II. THE CONSTRUCT OF FLOW: A REVIEW OF LITERATURE .....	12
Characteristics of the Flow State .....	12
Flow in Rock Climbing .....	17
Antecedents and Barriers to the Flow State .....	18
Peak Performance, Peak Experience, and Flow .....	20
III. ISSUES ARISING FROM THE LITERATURE REVIEW .....	24
Conceptual Concerns .....	24
Methodological Concerns .....	38
Overview of Research Aims .....	46
IV. METHOD .....	48
Informants .....	48
The Contribution of the Pilot Phase .....	50
Data Collection .....	54
Data Analysis .....	64
The Role of the Researcher .....	68

V. RESULTS .....	72
Descriptive Data .....	72
The Construct of Flow .....	78
Conceptual Issues .....	108
Methodological Issues .....	140
VI. CONCLUSIONS .....	146
Conceptual Issues and Future Research Directions .....	150
Methodological Concerns and Implications for Future Research .....	157
APPENDICES .....	160
REFERENCES .....	175

## LIST OF FIGURES

Figure	Page
1. Schematic overview of findings from this study .....	151

## LIST OF TABLES

Table	Page
1. A Classification of Probes Used During Interviews.....	59
2. Quotations Used During Interviews.....	61
3. Informants' Reasons for Participation in the Activity of Rock Climbing.....	117
4. Definition of Success and Flow for Each Informant as Categorized by Ability Level and Experiential Background .....	135



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## ABSTRACT

The affective and experiential components of the flow state, as outlined by Csikszentmihalyi (1975), have served as a basis for research into optimal experience over the past twenty years, and although adjustments have been made by various researchers, the description of the characteristics remain essentially the same. This study used qualitative methods to further explore this area. With the initial aim of enhancing our understanding of the optimal experiences of rock climbing participants, the present study purposefully sampled fifteen informants representative of the range of characteristics found in the setting. Questioning techniques and analysis methods used in this study sought to retain the individual meaning perspectives of informants and to address concerns with the decontextualization of data apparent in much of the previous research. In-depth interviews focused on characteristics of optimal experiences and emotional performance concomitants. Initially data were analyzed deductively using the characteristics of flow documented by Jackson (1996). Dimensions of flow which were associated with a total immersion in the activity of rock climbing were recognized by all informants, regardless of ability level or experiential background. Additionally, climbing was enjoyable for all informants, yet different opinions existed as to what constituted an enjoyable experience. Enjoyment often appeared unrelated to the fear, pain and strenuous muscular effort involved in the facilitation of the necessary focal intensity and was reported by all informants as a post hoc evaluation of a positive experience or outcome. Flow received

endorsement as a motivational variable, yet was not necessarily equated with true intrinsic motivation. Particularly among sport climbers, both introjected and identified regulation (Deci & Ryan, 1985; 1991) were reported as concomitant with flow. Methodological and conceptual concerns are discussed in relation to reflections on techniques used and results obtained in this qualitative study.

## CHAPTER I

### INTRODUCTION

The construct of flow pertains to an optimal psychological state proposed to occur when there is a “balance between perceived challenges of a situation and a person’s skills or capabilities for action” (Csikszentmihalyi, 1990, p. 145). The characteristics of the flow state cannot be seen as either discrete or equally important entities, relationships being many and complex. The initial purpose of this study was descriptive in nature and aimed to explore how flow was experienced by a group of rock climbing participants.

Adventure pursuits such as rock climbing are proposed to lead to individually specific levels of optimal arousal mediated by perceptions of environmental and personal variables, which can result in the experiencing of flow by the participant (Schreyer, White, & McCool, 1978). In order to give appropriate consideration to the experiences and perceptions of individual climbers and to address questions regarding the assumption of some subjective level of skill as a pre-requisite for the achievement of flow (Csikszentmihalyi, 1975; 1990; Massimini, Csikszentmihalyi, & Carli, 1987), it was decided to use a sample of climbers encompassing a broad range of abilities and experiential backgrounds. This broadens the scope of previous work, since most research in the sports realm has concentrated on the elite performer, in which justifications for the study of optimal experience have posited its application to performance enhancement strategies. However, Kimiecik and Stein (1992) suggested a profitable future research

direction as involving the study of the equivalence of the flow experience across a range of competencies and levels of experience in one particular activity. Therefore, a need exists to consider the effects of alterations in the nature and intensity of perceptions of competence and control across differing levels of ability in rock climbing on the flow experience. This will be examined qualitatively in the light of Csikszentmihalyi's (1975) conceptualization of flow. Specific questions which initially acted to guide this investigative study are as follows:

1. Does an individual's experience of flow change as a function of level of ability?

The proposed subjectively high level of challenge and skill necessary for the attainment of the flow state would appear to exclude the beginning climber from this experience.

However, being a subjective balance of demands and capabilities, perhaps all participants experience flow.

2. How does an individual's experiential background in rock climbing affect flow?

The recent development of sport climbing will be considered in comparison to more traditional backgrounds.

### Issues Arising

During the initial phase of data collection, which shall be referred to throughout this thesis as the pilot phase, and from the continuing review of literature, further questions and issues arose which served to shape both data collection and analysis. Three major areas which acted to guide this study are introduced here to provide the reader with some insight into the direction taken by my research. Additionally they form the framework for the organization of this thesis.

### Flow-Related Constructs

Questions arose as to the relationship of this experiential state with the constructs of peak experience and peak performance. Unfortunately, much of the existing research has focused on each as a single and separate construct (e.g., Brewer, Van Raalte, Linder, & Van Raalte, 1991; Jackson, 1992; 1995; Yeagle, Privette & Dunham, 1989). Although having the potential to be one and the same in particular instances, they have been researched as different theoretical constructs. Other research, (e.g., Privette, 1983, 1986; Privette & Bundrick, 1991) has attempted to clarify the discrete qualities of these constructs. However, through my review of existent literature and conversations with participants in the pilot phase, I came to suspect that our understanding might be more profitably advanced by less emphasis on their separation, thus allowing consideration of their shared attributes without attempting to narrow the discourse by proposing them as one and the same. In relation to this study, the possibilities for individual choice and control which are integral to adventure activities, offer a theoretically productive arena in which to further explore the experiencing of flow by such athletes and its relevance to the constructs of peak experience and peak performance. As part of the multifaceted construct of optimal experience, it seemed illogical that flow was viewed in isolation and thus, an initial aim of this study became one of elucidating its links with other factors through the deliberate consideration of the context(s) surrounding its reported incidences.

### Emotional Concomitants of Flow

Data collection in emotion research has generally been instrument-led and has tended to focus on a limited number of emotions. Enjoyment, although well-documented

in relation to optimal sport experiences, has yet to be incorporated into a model that details its characteristics, temporal positioning and effects on an athlete's performance. Is anxiety the dominant influence that research would suggest, or do other more positive emotions play a role in determining the athlete's performance? The proposed mediating effects of an athlete's goals and motivational structure on affective experiences (Crocker & Graham, 1995) requires thorough investigation if the mechanisms influencing affective responses are to be adequately understood.

Csikszentmihalyi (1975) regarded flow's emotional concomitants as concurrent with the experience itself. The possibility of these emotions continuing after the instigating event has passed may be particularly pertinent in the case of adventure activities, perhaps figuring as an individual's intrinsic motivation for continued participation in the activity. This is illustrated by Miles (1978), who commented:

A person moves into the situation and is elementally committed; there is a thrill to the encounter and to the mastery. After the risk has passed and the challenge met, a great physical and spiritual satisfaction is the reward. It is an extreme emotion.  
(p. 27)

### Intrinsic Motivation and Flow

Flow is a native category, volunteered by Csikszentmihalyi's (1975) initial informants as a descriptor of an intrinsically rewarding experience. Flow is viewed as an autotelic activity, (or one with the potential to maximize intrinsic rewards). With researchers increasingly placing emphasis on affective components, the definition of flow and intrinsic motivation appear to be converging, Csikszentmihalyi's (1975) conceptualization of flow possibly representing a qualitative look at the actual feelings evoked when intrinsically motivated. In order to assess the compatibility of the constructs of flow and intrinsic motivation, it is

essential to look not only at the experiential characteristics of the flow state, but at the individual's motives for participation in the sport. Hence this became a major focus of data collection throughout the study.

### Some Measurement Issues

My review of previous flow research carried out in sport contexts highlighted four major methodological issues which gave cause for concern:

1. The inappropriate use of psychometric techniques,
2. The prevalence of watered-down qualitative methods,
3. The limited consideration given to the subjectivity of optimal experiences, and,
4. The extensive use of retrospective data collection.

The effects of these issues on both data collection and analysis will be discussed in detail and influenced decisions made regarding methods employed in my research. This study intends to utilize some of Jackson's (1992; 1995) techniques while seeking to avoid any decontextualizing of data, thus retaining the individual's perspective. The adoption of this approach will hopefully enable a further look at the emotional concomitants of the flow state while clarifying some of the proposed links between dimensions, and shedding further light on apparent anomalies. In so doing, this approach should thus elucidate the compatibility of flow with other psychological constructs, namely peak experience, peak performance and intrinsic motivation. Indeed, the investigation of positive performance states from a motivational standpoint was endorsed by Jackson and Roberts (1992) as a future research direction with potential to offer understanding of the underlying conceptual base.



A brief summary of the content and organization of this report is given in the following section. The reader's attention is deliberately drawn to the process of retaining contextual information in order that the complexity of personal and situational interactions evidenced throughout the study could be given full and merited consideration.

### Outline of Thesis Sections

The complexities of such a subjective experiential state demanded a recursive approach. Indeed, the relevancy of the literature reviewed altered as the project progressed. Thus, the first section (chapter two) seeks to briefly outline any theories that influenced the development of this study, and those which are currently deemed relevant to the data obtained. Chapter three addresses methodological concerns and conceptual issues arising from this review of literature and includes salient contributions of the pilot phase in shaping both literature reviewed and data collected in the main investigation.

Likewise, in response to a continuous process of reflection, the method altered somewhat as the project progressed. This is documented fully in chapter four after a discussion of the participants and the setting involved in the investigation in order to compliment an explanation of the theoretical framework which guided this study.

The collection and recording of data is documented both to provide contextual information with regard to the nature of data obtained, and to describe the rigor and applicability of research technique in the situational and theoretical context. A description of the ensuing analysis together with theoretical underpinnings comprising the justification for techniques utilized completes this section of the report.

Recognizing that the process of data interpretation continues as you, the reader, bring to bear your own experiences and critique, a summary of descriptive data comprising detailed accounts from field notes, documentary evidence and illustrations from interviews undertaken, precedes any discussion. Thus an attempt is made to provide the reader with sufficient detail to enable an informed insight into the setting studied. In addition, the various interpretative statements and assertions comprising the discussion are made with supporting evidence from the descriptive data, enabling the reader to understand the contextual situation from which such assertions arose.

In conclusion, in line with the purpose of this study, the reality of flow for rock climbers in this setting is summarized. This is accomplished both in words and in a more diagrammatic format which serves to highlight possible interactions of a conceptual nature. These theoretical considerations are discussed alongside implications for method in the context of future research directions.

#### Definition of Terms

As with any group indulging in a common behavior, certain jargon has evolved among climbing participants. The following list is by no means complete, but enables the reader to access some of the components of a climber's experience. Furthermore, the use of this vocabulary indicates a set of competency values which might well serve as a partial explanation for some of the experiences articulated by informants in this study. While accurate definitions are necessary to facilitate the reader's understanding of this study, my understanding of these terms often changed due to data obtained during the study. Social context such as gender and culture could be seen to influence an individual's interpretation

and emphasis. In providing a list of common climbing terms, it is difficult to relay the different contextual perspectives without recourse to data obtained. To avoid any perception that I entered the setting having already formed hypotheses regarding the data which would be collected, comments resulting from my interpretation of informants' responses are italicized:

Sport climbing: Engagement in climbs where fall-arresting equipment (“protection”) consists of in-situ bolts attached to the rock face at three to eight foot intervals. Carried out increasingly in indoor climbing facilities where manufactured holds simulate the outdoor situation and where bolts are rarely more than three feet apart.

Traditional climbing: A term used in the United States for the form of climbing where protection is carried on the lead climber's harness, and placed by the lead climber, into available cracks in the rock. Both objective and subjective danger is increased since the lead climber relies totally on protection which is placed during the climb. Dependent on personal experience and the subjective or objective problems posed by the climb, traditional climbing again necessitates a complete focusing of the climber's attention as very real dangers can be present throughout the activity.

*When sport climbing, possibilities for the enhancement of egotistical ends exist, for example, the comparison of self with other participants. Yet arguably, the relative absence of objective dangers in this method of climbing, could also lead to a complete absorption in the process of climbing--another central characteristic of the flow experience (Csikszentmihalyi, 1975).*

Difficulty ratings: 5.6, 5.11, 5.13 etc. These represent examples of the subjective grading system which is used to convey a measure of the difficulties that a climb is considered to possess. A climb of up to the grading of 5.6 may be considered suitable for a beginning climber, although the early experiences of most will comprise climbs of grades 5.0-5.2. In terms of this study, an intermediate climber was defined as one who regularly undertook climbs between the grades of 5.8 and 5.10. Elite participants were considered those who had undertaken climbs graded 5.12 and above. Technical difficulties, rock quality, and possibilities for the placement of protection are factors contributing to the assignment of the given grade, although on sport climbs, the major concern lies with the technical difficulties posed.

*Much of the contention with respect to allotted grades reveals a normally well disguised ego-involvement in the activity and generally takes one of two forms:*

- a. The climber completes the said climb with apparent ease and is quick to downgrade its existing agreed level of technical difficulty, seeking to convey that he/she frequently engages in much harder climbs with an equal or greater numeric grading, or,*
- b. The climber completes the said climb with a certain amount of difficulty and is quick to express the opinion that the climb is deserved of a much higher technical grade. (A protection of the ego perhaps?!)*

To top-rope: The act of ascending a climb while attached to a safety rope suspended from above, thus reducing the objective danger if a fall is taken. The rope can be controlled to allow the maximum of tension enabling the experienced athlete to climb,

confident that a mistake resulting in a fall will result in only a minimal decrease in height gained.

*However the novice climber, unaware of the relative safety of this situation may still experience uncertainties regarding challenges posed and skills possessed--an optimal state perhaps for the experiencing of flow?*

Seconding: Ascending a climb while attached to the rope carried to the top by the leader. Objective danger is mainly reduced (as with top-roping), however on ascent, the second must remove pieces of fall-arresting protective equipment left in place by the lead climber, and hence may at times be exposed to the possibility of a sideways fall dependent on the nature of the climb.

*Through this method, objective dangers are minimized, giving rise to a situation where a certain level of self-consciousness can be retained by the climber, possibly even to the extent where social comparison concerns could result in the adoption of an ego-orientation to the activity--such motivations not thought to be conducive to the experiencing of flow (Jackson & Roberts, 1992; Duda, 1993).*

Leading: Attempts to complete climbs where climbers protect themselves by clipping the rope attached to their harnesses into pieces of artificial protection placed during the climb.

*It is in this situation that a far greater focus on the task in hand is necessitated with respect to the activity itself, however the extent to which this occurs will perhaps be seen to be a product of climbing ability and the mode of climbing in which the climber is engaged.*

Some additional pertinent definitions used frequently in climbers' accounts, completes this introductory section of the report.

Belay: Is a term which can be used both as a noun and as a verb. The verb describes the act of controlling the paying out or taking in of your partner's rope, facilitated by the use of a friction device which enables falls to be arrested. The noun describes a stance on a multi-pitch climb where the leader will arrange sufficient protection to enable the belay of the second as they too complete the pitch.

Pitch: A section of a route, usually no longer than 150 ft., (this being the normal length of a climbing rope).

To work a climb: Practicing the moves or sequences of moves on a top-rope, or by leading and resting at pieces of protection, which may or may not have been pre-placed. A successful ascent following the working of a climb is termed a "red-point" ascent.

*The adoption of this definition required an alteration in the researcher's standpoint as a cultural difference was discovered. The working of climbs appeared far more acceptable ("ethical") in the USA than in the UK, where the "on-sight flash" (an ascent with no rests or falls, where no information was obtained by the practice or inspection of the route on top-rope) is still regarded as the only true ascent of a climb (excepting those of extreme technical difficulty where a fall would result in significant injury).*

## CHAPTER II

### THE CONSTRUCT OF FLOW: A REVIEW OF LITERATURE

In this chapter the construct of flow will be considered along with a discussion of the recent popular focus on the antecedents and possible barriers to the experiencing of flow. This chapter aims to provide background information as to the conceptualization of this optimal experiential state and the perspectives held by different researchers in this field.

#### Characteristics of the Flow State

The affective and experiential components of the flow state outlined by Csikszentmihalyi (1975) have served as a basis for research into optimal experience over the past twenty years. Although adjustments in order to further expound or clarify have been made by various workers, the characteristics remain essentially the same.

The flow state is experienced when a *balance between skill and challenge* exists in a particular situation. The individual must perceive his/her capabilities to match the challenges posed by the situation (Csikszentmihalyi, 1990). In a replication of the experience sampling method (ESM; Csikszentmihalyi & Larson, 1987), the work of Massimini et al. (1987) showed flow to begin when challenges and skills were balanced, but at a level above a personal average, indicating that relative rather than absolute levels are experientially significant. This addition of a subjectively high level to the already well-

documented balance of challenge and skills has been supported by other research (Csikszentmihalyi & Csikszentmihalyi, 1988; Jackson, 1992; 1995).

*A merging of action and awareness* occurs as the individual seeks to focus attention on the task at hand: "There is an awareness of the actions but not of the awareness itself" (Csikszentmihalyi & Csikszentmihalyi, 1988, p. 151). This merging of action and awareness is facilitated when the task possesses *clear goals* and the ability to offer *unambiguous and concurrent feedback*. Thus, Csikszentmihalyi suggests, neither the need nor opportunity exists for formal reflection or evaluation. Instead, there is a knowledge of what must be done, the participant's internalized goals facilitating the recognition of positive feedback. Thus *attention is centered on a limited stimulus field*, irrelevant information being excluded.

Any questioning of the self can be seen as irrelevant to the experience, yet although hidden, the self thrives as a result of these transcendent feelings. This "loss of ego" (Csikszentmihalyi & Csikszentmihalyi, 1988) refers not to a dulled awareness of the body and the functions it is performing, but to a *lack of preoccupation with self*. Instead, any evaluation that occurs relates to a heightened awareness of the body and the ability to recognize movements as positive or negative as they occur. A related transcendental aspect is the *transformation of time*. Although detailed as a separate characteristic in earlier work of Csikszentmihalyi (1982), later discussions revealed these two characteristics to be distinct but interconnected (Csikszentmihalyi & Csikszentmihalyi, 1988). The "*paradox of control*" (Kimiecik & Stein, 1992), earlier represented as feelings of being in control (without actively seeking control), might equally figure as a facet of the



loss of self-consciousness when understood as a cessation of worries about losing control (Csikszentmihalyi & Csikszentmihalyi, 1988).

Finally, Csikszentmihalyi reported the *autotelic* nature of the experience.

Individuals experiencing flow interpret it as a positive experience (Csikszentmihalyi & LeFevre, 1989; Scanlan, Stein & Ravizza, 1989) hence the emphasis on the enjoyable nature of the experience--a concomitant of Csikszentmihalyi's (1975) original labeling of autotelic. The flow experience, being an autotelic or intrinsically rewarding experience is thought to result in part, from the nature of the activity itself. In Csikszentmihalyi's (1975) study, a factor analysis of twenty activities, scored regarding their resemblance to a typical bout of the respondent's main activity, revealed five categories to be linked to the autotelic nature of a particular activity: friendship and relaxation, risk and chance, problem-solving, competition and creativity. Autotelic activities, (or those with the potential to maximize intrinsic rewards) were all characterized by feelings of novelty and challenge. Individuals were regarded as possessing an autotelic personality if they appeared to enjoy the activity regardless of extrinsic rewards. These informants described their activities as significantly less competitive and more creative, thus a convergence of activity, individual, and experience was noted. Thus, in order to assess the compatibility of the constructs of flow and intrinsic motivation, it becomes essential to look not only at the experiential characteristics of the flow state, but at the individual's motives for participation in the sport.

While there is broad agreement regarding the characteristics of the flow state, it must be noted that even in early studies, there is less agreement on the extent to which

they were apparent in all subjects. Csikszentmihalyi's (1975) initial research, which included a sample of rock climbers, found most informants to have experienced aspects of "deep flow." However, an experience incorporating all characteristics appears much rarer, experiences of this intensity perhaps only occurring a few times in a lifetime (Csikszentmihalyi & LeFevre, 1989). This finding was also endorsed by Kimiecik and Stein (1992) and Jackson (1992) who reported that while most participants had experienced at least some of these factors, the flow state as a totality had not been experienced by all.

In her study of elite athletes, Jackson (1996) found the nine dimensions of flow to be accounted for by 97.3% of the raw data themes. However, five themes received weaker endorsement than the remainder, these being the possession of clear goals, the balance of challenge and skill, the transformation of time, the autotelic nature of the experience and the loss of self-consciousness. Further inspection of Jackson's (1996) data showed that these nine dimensions are by no means a definitive list of requirements composing a flow experience. From the low endorsement percentages received by each of these five characteristics, it appears that the meaning-perspectives attributed to flow by Jackson's informants varied significantly. In addition, all themes not fitting the much-researched model of flow were grouped in a miscellaneous category thus casting some doubt on the true inductive nature of her inquiry.

One explanation of this difference may be the familiarity of informants with the construct of flow--a question asked of informants at a belated point in the interview schedule used by Jackson (1996). One could argue that responses received from

informants who were familiar with the construct of flow should be differentiated in some way from the responses of those who had no prior knowledge. In this respect, a distinction made between informants familiar/unfamiliar with the construct of flow would have allowed the separate exploration of truly individual meaning perspectives and those reflecting consideration of theoretical perspectives.

Jackson and Marsh (1996) also considered the factor loadings of each dimension on the higher order construct of "global flow." This was largest for "sense of control," closely followed by "challenge-skill balance," "clear goals" and "concentration." *However*, lower factor loadings were found for "transformation of time" and "loss of self-consciousness." Clearly, characteristics of the flow state cannot be seen as either discrete or equally important entities, relationships being many and complex. In addition, some dimensions are task-specific. Swimmers rarely lose track of time, this being essential for them to monitor progress in relation to their goals (Csikszentmihalyi & Csikszentmihalyi, 1988). Although reiterating this concern in relation to time alteration, Jackson (1996) does not apply the same rhetoric to other dimensions, and appears to search instead for universal explanations and predictive variables. The application of the psychometrics to qualitative data, where context and interrelationships are ignored in order to reduce data to succinct and consistent summary statements has received criticism (Erickson, 1986).

One example of the interrelationship of dimensions is the passive process whereby the athlete feels in control during flow. Although receiving considerable endorsement, this sense of control would appear to be closely related to the merging of action and awareness and quite possibly reflecting the balance of challenge and skills experienced by the athlete.

Similarly, in Ravizza's (1984) discussion of optimal experience, "control of self and environment" was central, this being characterized by a dispensation with usual cautions, which was facilitated by a "focused awareness" that was neither judging nor classifying. Such a non-evaluative aspect can be seen as integral to each discrete category and is proposed by Ravizza as the justification for the pre-requisite of basic skill mastery-- automatic execution being essential for total involvement. With the attentional focus free from technical aspects, this is seen as permitting a complete absorption in the moment.

### Flow in Rock Climbing

In the climbing aspect of Csikszentmihalyi's (1975) initial research, 30 rock climbers and mountaineers were interviewed using a common set of directed questions with the emphasis being placed on the climber's interpretation of the questions asked. It is worth noting that the interviewee was encouraged to "commandeer the interview" (p. 78) for his own purpose--in other words to go beyond any assumptions contained in the questions, and to explain to the researcher his personal experiences. The sample consisted of five females and twenty five males with a mean age of 28 years and a mean experience of five years. The mean standard of seconding was 5.8, with a leading standard of 5.5 (Csikszentmihalyi, 1975, p. 77). Today the frontiers of climbing ability now stand at a technical grading of 5.15 and thus Csikszentmihalyi's sample would be considered to lack ecological validity, representative of a beginning-intermediate population and lacking both the youth and female participants that the sport presently encompasses. Even allowing for the passage of time, and considering these respondents' skill levels within their own era, such standards were certainly well below what would have been generally accepted as

elite. Therefore the need exists to explore the descriptors elucidated by Csikszentmihalyi (1975) with respect to a more representative sample of today's rock climbers, that includes elite participants.

In Csikszentmihalyi's (1975) study, recurrent themes were reported by climbers as being integral to this experience. A "one-pointedness" of mind was articulated, where attention was centered on a limited stimulus field, some emphasizing problem-solving, others the aesthetics of the situation. Secondly, 21 out of the 30 climbers denied the presence of any danger in climbing, leading Csikszentmihalyi to presume that it represented a calculated risk, and as such, that climbers were in control. Action and awareness seemed to merge with a related lack of thoughts involving the climber's ego, it being seen as redundant in the climbing process described by his informants. This process was also proposed to lead to an altered sense of time. Climbers' experiences were reported as enjoyable, this response involving a oneness with nature, and an attraction towards the intrinsic rewards gained through their engagement with the activity.

#### Antecedents and Barriers to the Flow State

A line of research which has sought to bring some context to the construct has been the exploration of antecedents and barriers to the experiencing of the flow state. Following a qualitative investigation of flow states experienced by elite figure skaters, Jackson (1992) talked of flow as an optimal mental state which often leads to the enhancement of both performance and experience. Through in-depth interviews with 16 former US National Champion figure skaters, she was able to ascertain not only the quality and frequency of the flow experience, but also a number of antecedent factors and

barriers to this optimal state. The main facilitators of flow were found to be the maintenance of an appropriate focus, a positive mental attitude, positive affect pre- and post-competition and partner unity.

In Jackson's (1995) second study with elite athletes from different sports, data revealed ten dimensions which facilitated flow and nine diametrically opposing factors that prevented it. Factors helping flow included performance motivation, optimal arousal levels, optimal preparation, confidence and focus. Disruptions to flow included problems with preparation, performance errors, doubts and inappropriate focus. Interestingly, 79% athletes perceived the flow state itself to be controllable. Further consideration of contextual information such as that provided by Jackson (1992; 1995) will be necessary given the aims of this study. The assessment of the compatibility of the flow state to constructs such as intrinsic motivation, peak experience and peak performance requires a closer inspection of personal, environmental and situational variables surrounding the experience.

Thus following a review of existing literature and the analysis of pilot phase findings, the aims of this study were defined further to include an assessment of the compatibility of related experiential constructs. Other terms sometimes used interchangeably in this field and recently the subject of papers examining their relative independence (Privette 1983; 1986; Privette & Bundrick, 1991; Jackson & Roberts, 1992) are the three concepts of peak experience, peak performance and flow. A review is necessary in order to clarify their relevance to this investigation of optimal experience.

## Peak Performance, Peak Experience, and Flow

Csikszentmihalyi's (1975) conceptualization of optimal experience as *flow* remains markedly similar to the construct of *peak experience* which is described by Maslow (1971) as, "a generalization for the best moments of the human being, for the happiest moments of life, for experiences of ecstasy, bliss, of the greatest joy" (p. 105).

Recently however, attempts have been made to separate out any unique elements in order to facilitate their consideration as discrete entities (Privette, 1983; Privette & Bundrick, 1991). Their work has attempted to differentiate between the increasing number of terms used synonymously in the study of optimal experience. In the initial attempt at theoretical clarification, flow was dissociated from peak performance and peak experience. All *three* states were found to encompass joy, alongside a letting go of the process, feelings of integration and personal identity and a clear focus or complete absorption. However, as both joy and performance levels were found to vary in the flow state, flow was proposed as more aligned with intrinsic orientations and experiences. Peak experiences were described as possessing "mystical and transpersonal qualities" and it was here that the enjoyment factor was seen as a more relevant characteristic, these being considered moments of "intense joy" (p. 1364). In contrast, for an event to be considered exclusively peak performance, "superior functioning" (p. 1364) must be accompanied not by enjoyment, but by a clear focus on self and object in transaction.

Jackson and Roberts' (1992) study of peak performance involving self-report data from 200 athletes representing eight individual sports, led them to hypothesize that "a peak performance involving high flow is perceived as a peak experience by the majority of

athletes" (p. 38). It was found that best performances usually involved flow (mean flow score being 27.42, out of a possible 30), as compared to a mean score of 13.32 for subject's worst performances (Jackson & Roberts, 1992). Also supporting the compatibility of flow with peak performance was the finding that both challenges and skills were perceived to be higher in athlete's best performances.

Williams and Krane (1993) give consideration to peak performance as a mind-body interaction, thus positing its incidence across the whole range of competencies within a sport. In their work, mental factors are discussed in relation to their approximate percentage relevance during peak performances. This draws on the research of Orlick and Partington (1988), whose assessment of the physical, technical and mental readiness of Canadian athletes at the 1984 Olympic Games revealed that only mental readiness was predictive of Olympic success.

Research has identified a series of mental state characteristics which are perceived as facilitating peak performances which include confidence, optimism, low anxiety (fun, enjoyment, low pressure, mental relaxation), a narrow focus of attention, being in control without exerting control, detachment and a feeling that the performance was automatic and effortless (Loehr, 1984; Garfield & Bennett, 1984; Cohn, 1991; Eklund, 1994). Although seemingly analogous to flow, Jackson and Roberts (1992) suggest that differences exist. They found that although athletes reported flow as integral to a peak performance, flow could be experienced without a display of superior functioning. This resulted in flow being hypothesized as a precursor to peak performance.



Privette and Bundrick's (1991) study involved the administration of an expanded version of the "Experience Questionnaire" (Privette, 1984) to a sample of 42 male and 81 female undergraduate Social Science and Communication Arts students to assess the salience and independence of the three constructs. Stimulus questions asking for a narrative description of a personal episode of each of the three constructs were given in a random order and were followed by 47 items to be rated according to their perceived importance in the reported event. Peak performance and peak experience were seen as extremes of positive performance and affect respectively. Flow appeared a compatible construct, *probably* involving both peak performance and experience which could *possibly* be at the extremes of either or both (Privette & Bundrick, 1991). Flow was once again conceptualized as fun, although endorsements were also made regarding "outer structure" and the "importance of others. The rationale behind absorbing Csikszentmihalyi's (1975) discovery that flow was often experienced during sport involvement into their related stimulus question may be seen as dubious, and can be seen to have influenced the responses of participants. It is perhaps unsurprising to discover that when asked for a description of "the last time you played a sport or game" (Privette & Bundrick, 1991, p. 173), the responses of students showed moderate endorsements of the importance of others, and included responses articulating the contribution of others, the interactive nature of the situation and encounters with other persons.

Peak performance and peak experience can be seen to have close links with the flow state, many experiential characteristics being almost identical. However, the literature contains "a baffling quantity of characteristics and semantic differences which present an

immediate impression of disarray" (Privette, 1983, p. 1361). A single event may often involve more than one experience if viewed from these different perspectives, but to the individual athlete, each multifaceted experience is a unique, but singular entity. Thus the question remains, not as to whether it is possible to differentiate between the various labels, rather, can we afford to segregate our findings if we are truly seeking to understand what constitute positive experiences for athletes?

## CHAPTER III

### ISSUES ARISING FROM THE LITERATURE REVIEW

Concerns which arose while reviewing the literature will be discussed in two sections. Although not totally discrete categories of concern, matters relating to conceptual and methodological issues will be discussed separately in order to aid the reader's understanding of the complexities addressed. Initially, a review of matters pertaining to the flow state and its emotional concomitants and its relation to other, similar constructs is provided.

#### Conceptual Concerns

##### Emotional Concomitants of Flow

Enjoyment and Fun. Previous researchers have assumed enjoyment to be of critical importance, placing it as a central characteristic and even including it in operational definitions of the flow experience (Csikszentmihalyi, 1975; Csikszentmihalyi & Csikszentmihalyi, 1988; Jackson, 1992; 1996). Massimini et al. (1987) found further support for the affective components of flow, eighteen out of twenty-seven experiential dimensions being found to be more positive in the flow states of a sample of Milanese teenagers. In contrast, a confirmatory factor analysis conducted by Jackson and Marsh (1996) to evaluate the internal structure of the Flow State Scale, revealed only a moderate second order factor loading relating autotelic to the higher order factor labeled "global flow."

Data collected during the pilot phase of this study provided much support for the existence of an optimal state in which documented flow characteristics play a major role. However, two main questions arose during this period. The first related to concerns regarding the central role apportioned to enjoyment within the flow experience. When challenges are low and skills are high, a state of boredom was reported by individuals (Csikszentmihalyi, 1975). Indeed, Massimini et al. (1987) found 20 out of 27 experiential dimensions significantly more negative in this state. Findings that easy climbs were consistently reported as enjoyable led to a questioning of the applicability of this finding to rock climbing. A contrasting concern arose in this setting from a number of informants who described climbing experiences as less than enjoyable at the time, yet interpreted these experiences as fun after the event.

In response to conceptual and definitional problems which have continued to characterize research into enjoyment, Kimiecik and Harris (1996) suggested a consideration of enjoyment as an optimal psychological state rather than merely an affective response. In this working definition, enjoyment is defined as a process involving flow, intrinsic motivation and achievement. Responding to this proposition, Wankel (1997) argued that while positive affect “is the essential, underlying component common to all exercise enjoyment experiences” (p. 103), this affective component will be linked to specific cognitions and/or physiologic states. For instance, while some individuals report enjoyment derived from social encounters in sport contexts, others report an attraction to challenge and sometimes risk/danger as resulting in the same affective experience. Thus

Wankel (1997) recognizes the subjectivity of the flow as a potential difficulty for researchers seeking to provide generalized affective explanations of optimal experiences.

The 'flow is fun' proposition, although having been drawn directly from Csikszentmihalyi's (1975) research, is arguably the weakest concept in the continuing discussions. To use the term enjoyment to describe a state characterized by an intense focus, a merging of action and awareness, as well as a lack of external goals and rewards, leads one to question the validity of using a commonly expressed, but retrospective descriptor to encapsulate the entirety of this complex phenomenon. The following two quotes are taken from pilot study interviews and reveal a questioning of the flow as fun concept:

Yes it was enjoyable after I got done with the climb and I was sitting at the top. I remember feeling the ground digging into my butt and looking down and seeing all these scratches on my legs and my leggings were torn at the knees. I remember thinking, "How did that get there?"

It was a good feeling...when I got down.

In some cases, even retrospective labeling of the experience in such a manner seemed unlikely given the other salient characteristics of flow:

I don't know if enjoyable is the right word. I think some of the greatest experiences that I've ever had have been very painful.

These reports of "painful" but enjoyable experiences may be peculiar to sports such as rock climbing, mountaineering and caving, in which successful outcomes sometimes necessitate a very physical approach. Given the sporting context of this study, one criticism of research into optimal experiences is the apparent lack of concern with the grunty, sweaty bits of performance. The descriptions of peak performance and flow focus

on automatic execution of skills--an effortless synchronization of mind and body (cf. Privette & Bundrick, 1991; Kimiecik & Stein, 1992). By omission, research suggests that the more muscular exertions commonly found in sport, bear little relation to flow, focusing instead on more ethereal characteristics. However, descriptions of flow and enjoyment received from rock climbers during the pilot study suggest otherwise, flow often incorporating a close encounter with perceptions of physical risk, which, when successfully (and often strenuously) overcome, resulted in a post hoc positive affective state.

Ravizza (1984) proposed that flow constituted a temporary, involuntary and unique peak experience. His acceptance of a person's inability to evaluate feelings whilst engaging in such an experience is further acknowledgment of the retrospective evaluation and labeling of the emotions evoked by these experiences themselves and raises questions as to the affective components of their conceptualization. Although not articulating a particular concern with the limitations that language imposes on our description of these experiences, Csikszentmihalyi (1975; 1990) never aimed to produce a rigidly delineated definition of enjoyment, recognizing this as representing the antithesis of the construct of optimal experience his work espoused:

To a certain extent, our attempt to formalize the experience of enjoyment and the activities that allow it to occur results in a relative impoverishment of the object of knowledge. (1975, p. 11)

Perhaps further differentiation of the timing and content of the affective response will be found through the comparison of climbing situations involving a sense of mortal danger (e.g., traditional climbing) with situations where the fundamental concern is with possible

damage to the climber's ego (e.g., sport climbing). Incorporating a wealth of experiential backgrounds, this study will investigate further this possible additional constraint to the conceptualization of enjoyment as a global factor in the flow state.

Momentarily leaving aside discussion of the likelihood that *all* affective attributions are offered after the event has passed, perhaps the timing of these emotions may serve to differentiate between the novice and elite climber's optimal experiences. The former, it is proposed, experience the tension of danger as foremost for the duration of the climb (Schreyer et al., 1978).

Fear and Flow. The label of anxiety given to the emotional state which characterizes incongruous situations has led to much confusion in the literature (Crocker & Graham, 1995). It appears that in situations of perceived incongruity between task demands and behavioral output capacity, emotional states may be harnessed productively in order to facilitate the appropriate adjustments to the athlete's state of readiness. The mechanisms underlying the directional influence of these situationally evoked feelings deserves further research attention, the facilitative use of such responses possibly proving to be an important antecedent to the attainment of a flow state. However, rock climbing is undoubtedly often an intense experience. Can the intensity associated with the perceived risk of the novice be of a great enough magnitude to deny time for reflection or evaluation, thus pre-disposing the participant for a possible peak experience? Or does this intensity of emotion, interpreted after the act as a positive experience, better describe intrinsic motivation for the inexperienced?

Schreyer et al. (1978) proposed that, to the novice, unfamiliarity with the level of objective danger posed by the activity of rock climbing represents an unknown and results in mounting tension. The more experienced participant is seen as being oblivious to the tension of danger, rendering them free to concentrate instead on perfecting technical skills and the attainment of the necessary level of sensory arousal deemed appropriate for the task ahead. This proposal would seem to suggest that flow will be more easily experienced by more competent rock climbers and those without the pressures of *actual* risk (i.e. the sport climber). However, the tension resulting from unknown dangers and required skills could be interpreted as the documented antecedent to flow labeled "uncertainty" (Csikszentmihalyi, 1975). Likewise, in more elite participants where skill level is less of an uncertainty, very real dangers of routes requiring both mental and physical commitment might act to provide a comparable antecedent, with increased perceptions of competency leading to an increase in another salient motivational variable--that of perceived choice (cf. Deci & Ryan, 1985). Thus further examination of the mediating effects of ability level on the flow experience is required.

Risk may be more profitably conceptualized as a measure of the level of uncertainty integral to the experience. Whether it be the perceived risk of the novice, an objective discrepancy between activity demands and personal competencies, or uncontrollable factors such as environmental dangers, the uncertainties are always present when one pursues adventure, as illustrated by the following excerpt taken from the autobiography of the British mountaineer, Chris Bonington:



After fixing runners, some of questionable security, up the lower wall, an exploratory peep up the hard section reveals another welcome runner point. Then a contrived rest before the big push--the initial committing move, then forcing steadily upwards, arms and fingers tiring, but hopefully staying in enough control to gain another resting point and with luck another runner. The possibility of failure and a fall or desperate retreat is ever present, adding that spice of danger that makes success correspondingly sweet. (Bonington, 1990, p. 16)

Thus, a threat to the physical self is always present in adventure sports, and can be seen as a component of participants' motivation to continue their involvement with the activity.

This contrasts with Csikszentmihalyi's (1975) proposal that even in rock climbing activities, there is no threat to the self as the athlete's experience will enable them to accurately assess and complete the moves on the chosen climb.

While the flow state will also permeate other competitive sport settings, adventure pursuits offer a productive arena in which to explore the experience of flow and its emotional concomitants. Rock climbing and other adventure activities perhaps facilitate this state, the activities themselves appearing to incorporate many of the documented antecedents of flow, risk recreation involving "a deliberate process in which individual skills and abilities are weighed against projected requirements and possible negative outcomes" (Ewert, 1994, p. 5).

In summary, risk sports appear to offer the opportunity for several of the documented characteristics of flow. Levels of challenge and uncertainty, mediated by skill level and experience, often result in an intense emotional response. When harnessed productively, this perhaps represents an important antecedent to the attainment of a flow state.

### Motivational Theories and Optimal Experience

For the mountaineer the peak is only an excuse for climbing, a goal which gives direction and rules to the striving which is the real motivation for the activity. (Csikszentmihalyi, 1985, p. 10)

Intrinsically motivated behaviors are freely chosen and without external reward. As a result, they are likely to increase the individual's sense of competence and self-determination, with consequent feelings of positive affect and self-fulfillment (Deci & Ryan, 1985). With researchers increasingly placing emphasis on affective components, the definitions of flow and intrinsic motivation appear to be converging, Csikszentmihalyi's (1975) conceptualization of flow possibly representing a qualitative look at the actual feelings evoked when intrinsically motivated.

Self-Determination and Intrinsic Motivation. Cognitive Evaluation Theory (Deci & Ryan, 1985) has much of its origin in White's (1959) effectance motivation theory, where effectance is seen as the desire to master the environment in order to maximize feelings of personal competency. This theory proposed that increases to perceptions of competence, if seen as occurring autonomously, lead to an increase in intrinsic motivation. Self-determination theory (SDT; Deci & Ryan, 1985; 1991) represents an extension of their position on motivation. Three human needs are proposed to exist in relation to the choice of optimal challenge, these being competence, autonomy and relatedness (the need to relate to others and feel coherence and involvement with the social world). A differentiation is made between contingent self-esteem, and true self-esteem. In the former, feelings about oneself are dependent on the meeting of a standard, and thus is often characterized by ego-involvement and forms of social comparison. The development

of true self-esteem occurs as a person acts to satisfy the psychological needs of autonomy, competence and relatedness, and may be intrinsically motivated, or regulated by integrated processes (Deci & Ryan, 1995). Csikszentmihalyi's (1975; 1990) description of the flow experience as autotelic could perhaps be regarded as equivalent to such true intrinsic motivation, where engagement is entirely volitional and emanates from an integrated sense of self. However, it is important to consider that flow may perhaps also be experienced during a self-chosen activity where more instrumental, externally regulated ends provided the motivation to engage in the behavior.

Deci and Ryan (1985; 1991; 1995; in press) viewed motivation in terms of processes of internalizing and integrating certain aspects of the activity such that they become integral to perceptions of self. Organismic integration theory (OIT; Deci & Ryan, 1985; in press) is a subtheory of SDT which details the different forms of extrinsic motivation and the contextual factors which may facilitate or hinder the internalization and integration process. These motivational processes are currently viewed as a continuum from external regulation through to true intrinsic motivation (cf. Whitehead & Cribbin, 1997). Extrinsically motivated behaviors may vary with regard to their relative autonomy. Even self-chosen behaviors may be motivated by a recognition of the instrumental value of the outcome (Deci & Ryan, in press). Introjected regulation is a term used by Deci and Ryan (1985) to describe behaviors motivated by the approval of self and others. Although internal, this form of motivation represents a regulation that "remains conflictual and external to the self" (Ryan, 1995, p. 406). When a behavior is felt to reflect the individual's conscious values and identity, the motivational process has been termed

identified regulation (Deci & Ryan, 1985; 1991). Even externally motivated behaviors can become self-determined as a product of a person's continued involvement with the activity, this leading to the internalization and eventually, the integration of these external regulatory processes with one's true sense of self. The motivational continuum was further refined in 1997 by Whitehead and Corbin with the inclusion of a "threshold of autonomy" (p. 178). This threshold serves to differentiate between externally regulated behaviors and those which are regulated and valued internally, eventually becoming integrated with the person's true sense of self. However, even if a person's general motivation to engage in the activity remains autonomous, this autonomy may be undermined by more external influences which may serve to alter an individual's generally internally regulated motivation to a more external preoccupation in specific instances. Thus a consideration of the interaction of personality and situation and the resulting effects on optimal experiences will be addressed in this study through the inclusion of participants representative of various ability levels and experiential backgrounds.

Motivational Orientation. Goals and goal choices have underpinned the work conducted regarding motivational orientations (White, 1959; Bandura, 1977; Locke & Latham, 1990; Duda & Nicholls, 1992). Goals are seen as desired outcomes towards which behaviors are directed. One line of research relating to these goal choices is the distinction made between task- and ego- involvement (Nicholls, 1984). Definitions of success incorporating task mastery and improvement of skills have been found to correspond to task-involvement--an orientation leading more readily to intrinsic motivation (White, 1959; Duda & Nicholls, 1992). When perceived ability is referenced

normatively, success is attained by the demonstration of superior competence. These ego-orientations are seen as resulting from an interaction of both person and situation factors (Duda, 1988; Nicholls, 1989). Situations which encourage the adoption of an ego-orientation are those where interpersonal competition and social evaluation prevail (Duda, 1993). Those emphasizing the application of effort and the mastery of skills lead more readily to a task-orientation (Ames, 1984; Duda, 1993). Additionally, behaviors which support mastery and minimize external control and ego-involvement are documented as leading to a healthy sense of self (Deci & Ryan, 1995). In fact, Ryan and Deci (1989), in their proposal of a synthesis of self-determination theory and the task- and ego-involvement work of Nicholls (1984), state that ego-involvement represents “a motivational orientation that is based on contingent self-esteem and thus entails pressure to perform in particular ways” (p. 267). Viewed in this way, they postulate that ego-involvement will be detrimental to interest, task-involvement, and intrinsic motivation. Interestingly however, recent papers have linked ego-involvement, when combined with a strong task-orientation, with enjoyment (Duda, Fox, Biddle, & Armstrong, 1992; Fox, Goudas, Biddle, Duda, & Armstrong, 1994).

Duda (1993) proposes that task-involvement should correspond to the appropriate selection of task difficulty such that maximal improvement and personal satisfaction is achieved. Corresponding to the selection of situations that offer moderate challenges, this orientation would appear to be conducive both to the enhancement of intrinsic motivation and the experiencing of flow. The research of Duda and Nicholls (1992) with high school students, found task-orientation to be related positively to satisfaction and enjoyment

experienced in sport. Jackson and Roberts' (1992) study of athletes' peak performances found flow to be significantly and positively associated with both task-orientations and perceived ability, these being proposed as the two main predictors of the flow state. However, such work has downplayed and effectively ignored the interaction of personality with situational context, motivational orientations arising from both prior history and current conditions (Ryan, 1995). Thus, although identified regulation in self-determination theory, and task-involvement share many common factors, it appears that further refinement/clarification is warranted before they could be proposed as either totally compatible, or discrete constructs.

The Role of Self-Efficacy. The choices made regarding goal-directed behaviors can also be related to the construct of self-efficacy, the situation-specific form of self-confidence pertaining to a person's beliefs about what they can accomplish with the skills they perceive themselves to possess (Bandura, 1977; 1989). Set within a social-cognitive framework of many interactive influences, these expectations are thought to form as a result of cognitive appraisal of performance accomplishments, vicarious experiences, verbal persuasion and emotional arousal. Although research has found information about past experience to be most influential in the development of efficacy expectations, the influence of the athlete's cognitive appraisal of his physiologic arousal has a very limited research base (cf. Jones & Hanton, 1996). Its customary place as last on the list of influential factors (cf. Bandura, 1977; 1989) suggests an assumption of less significance in the development of self-efficacy: "The final, and least powerful, predictor of self-efficacy is emotional arousal" (Hardy, Jones, & Gould, 1996, p. 47). Within the competitive

environment Jones, Hanton, and Swain (1994) examined athletes' directional interpretations of anxiety effects, alongside the levels of anxiety experienced. Their results showed that elite performers generally interpreted anxiety symptoms as facilitative rather than debilitating, this directional interpretation, regardless of ability level, being related to higher levels of self-confidence. In the realm of rock climbing, awareness and control of one's physiologic arousal plays an important role and as such, may contribute to the development of efficacious perceptions regarding participation in the activity.

The influence of self-efficacy on the flow experience in rock climbing is illustrated well in the following quote taken from a climbing calendar:

All through her voice is the clear assumption that this pitch is clearly within my abilities. I question her analysis but on another level I take in the confidence. Or at least I think that's what happened, because the next thing I know, I'm swinging my tools and frontpointing sturdily straight up the ice. In the middle of this I suddenly wonder what got into me. (Phibbs, 1991)

Data from the pilot phase of this study indicated that as well as verbal persuasion, the role of emotional arousal in climbing was seen to be important, many informants mentioning their state of physiologic arousal in conjunction with their emotional state. Often relating to perceptions of control, an exploration of any perceived effects on the flow experience and of the role played by their interpretation of these emotional states would appear to be warranted.

Flow and Motivation. Ignoring the emergent nature of a person's motivation system and reducing explanations of participation to "closed needs" such as achievement or optimal stimulation is vehemently opposed by Csikszentmihalyi (1985). Instead the unique experiences resulting from the interaction of person and situation were thought

responsible for the motivation to repeat the activity. His analysis suggested that it was "the quality of the subjective experience itself" (Csikszentmihalyi, 1985 p. 150) that motivated an individual's participation. Thus, a person's emergent motives are seen as intrinsic in nature. In this context, research has found rock climbers to be attracted to challenging situations, a characteristic thought to be indicative of an intrinsic motivational orientation to a particular activity (Deci & Ryan, 1985; Eysenck & Eysenck, 1975). Additionally, Deci and Ryan (1985) documented many of the flow state characteristics (i.e. clear goals, clear feedback, control and optimal challenge) in relation to intrinsically motivating experiences. However, recent research has found that as a participation motive, risk was not significantly endorsed by those involved in adventure pursuits (Ewert, 1994). Instead, motives were found to reflect level of experience in the sport. Whereas excitement/exhilaration was a theme common to all three levels of climbing ability, beginners were found to endorse aspects of climbing reflecting a learning orientation and image. Alongside excitement, intermediate level climbers endorsed the decision-making opportunities, whereas advanced climbers highlighted self-expression as a motivation for continued participation. Thus a continuum of motivation was proposed (Ewert, 1994), with mechanical beginnings (a "learning-how-to" orientation), culminating in intrinsic meaning characterized by an emphasis on exhilaration and self-expression. In 1992, Vallerand, Pelletier, Blais, Briere, Senecal, and Vallieres proposed a less exclusive taxonomy where intrinsic motivation was viewed as comprising of three differing goal types: the goals of knowing, accomplishing and experiencing stimulation not indicating such a necessity for a certain level of involvement or prior experience in the activity. In



their work, both flow and peak experience are proposed as exemplars of the latter form of intrinsic motivation.

The coordination of systems of behavior, affect and cognition, and the need to consider all aspects as indices of goal-related processes (Dweck, 1992), would appear to suggest a further role for the study of flow in relation to motivation. It is the central role apportioned to perceived competence and autonomy as antecedents to an intrinsic motivational orientation that is of relevance in this study. Self-determination, studied alongside the contributions made by past performance, vicarious experience, verbal persuasion and emotional arousal to an individual's self-efficacy, represents a framework that will enable flow to be considered in relation to a climber's motivational orientation in this investigation.

#### Methodological Concerns

The inappropriate use of analytic procedures may reflect the assumptions of predictability and generalizability which underlie research into optimal experience. My review of previous flow research carried out in sport contexts highlighted four major methodological issues which gave cause for concern:

1. Inappropriate uses of psychometric techniques,
2. The prevalence of watered-down qualitative methods,
3. The limited consideration given to the subjectivity of optimal experiences, and,
4. The overly extensive use of retrospective data collection.

This section reviews previous flow research and discusses the ways in which each method could be, or has been detrimental to the integrity of the construct.

### Inappropriate Use of Psychometrics

The work of Csikszentmihalyi (1975) sought to understand the flow experience using naturalistic methods which assume that multiple, socially-created realities exist in relation to situational and personal variables. Recent flow research has reflected a change in emphasis from the understanding of flow towards measurement of the construct. The work of Jackson (1996), Jackson and Roberts (1992), and Stein, Kimiecik, Daniels, and Jackson (1995) has juxtaposed positivistic method and assumptions alongside those reflecting more naturalistic underpinnings. Although in-depth interviews figured as the prominent tool in early flow research, increasingly, more quantifiable methods are being employed. Some studies have used the Experience Sampling Method (ESM) where on receipt of random signals generated throughout the course of a day, subjects must answer a brief questionnaire. Studies have shown this to be a valid and reliable measure of flow (Csikszentmihalyi & Larson, 1987; Massimini et al., 1987). Further uses have been suggested by Kimiecik and Stein (1992) including investigations of flow across life activities and across the different components of a sport. However, in some cases the ESM proves obtrusive and may even disrupt flow itself thus proving impractical in many investigations.

Stein et al. (1995) used the ESM to study the relevance of three proposed antecedents to the state of flow. It was found that neither goals, competence or confidence significantly predicted flow in their sample of golfers, tennis and basketball players. ESM data revealed once more that athletes in the flow state experienced increased feelings of enjoyment, satisfaction, concentration and control than others classified as being in

boredom, apathy or anxiety states. However, with the absence of absolute criteria, in order to allow between-subject comparisons, the data were split above and below the median, representing “flow” and “no flow” groups. Thus the characterization of the flow state using inappropriate psychometric techniques can be seen to deny credence to the individual’s interpretation of his subjective experience.

A more recent publication of Jackson (Jackson & Marsh, 1996) looked further at the methodological constraints limiting the study of flow. The article outlines a validation of the Flow State Scale (FSS) which found reasonable consistency estimates for the nine scales. Subjects were asked to recall an optimal experience during their sport participation defined as “one where you were totally absorbed in what you were doing and which was very enjoyable” (p. 22). After naming the experience and rating the degree to which challenges and skills were in balance, the subjects completed a 36-item questionnaire. Again, the appropriateness of rating characteristics using psychometric scales given the dynamic and interactive nature of the flow state is open to question and Jackson and Marsh (1996) acknowledge that the FSS merely offers another indicator of the flow construct, suggesting that part of the attraction to the study of flow as lying in its mystique. In apparent contrast however, they also offer the idea that “the development of a psychometrically valid scale will open up possibilities for quantitative investigation of flow” (p. 20). Csikszentmihalyi (1992) however, cautioned against a reliance on such empirical measures stating that “any measure of flow we create will only be a partial reflection of this reality” (p. 183).

### Qualitative Methods in Flow Research

Compartmentalization of responses is as evident in structured interviews using identical wording of questions and sequences of probes, as it is in the traditional quantitative pen and paper techniques. Thus, criticisms ranging from bias to social desirability in the given responses can be equally applied to studies which have juxtaposed quantitative and qualitative techniques (whether it be by questionnaire or the rigorous content analysis employed by Jackson, 1992; 1996) as to more traditionally psychometric studies. In the former, a narrow definition of the concept of flow and other optimal experiential states has been necessary in these attempts to discover possible antecedents, often using pre-determined coding categories for the experience itself. This highlights the need to separate the different methodological stances, or at the very least, to ensure that their philosophical underpinnings are retained.

Csikszentmihalyi's (1975; 1990) work has provided a blueprint for many of the subsequent studies. Jackson (1992; 1996) used a 10- and 12-item scale to assess the frequency of experiences deemed to be characteristic of this state (Csikszentmihalyi, 1975; 1990). Although effective in the deductive examination of the model of flow, these scales made no allowances for individual meaning-perspectives. Likewise the Experience Questionnaire (Privette, 1984) is comprehensive in its inclusion of numerous statements encompassing all of the accepted characteristics of flow. However, in the demands for rated responses, respondents are channeled to reflect on dimensions which may not have been mentioned in an interview situation.

In summary, my main concerns relate to assumptions of commonality-- and thus, predictability, which may result in a narrow definition of the flow state.

Compartmentalization of responses may allow little room for individual meaning perspectives to be maintained in the study of a truly subjective experience.

### The Subjectivity of Experiential States

The nature of qualitative research is described by Erickson (1986) as "a matter of substantive focus and intent, rather than of procedure in data collection" (p. 120). A concern influencing this study was the assumption by researchers (Jackson, 1996; Privette & Bundrick, 1991) of the significance of certain elements of optimal experience and thus the immediate meanings of actions, thoughts and feelings to the informants themselves had no further exploration:

We take action toward the objects that surround us in the light of our interpretations of meaningfulness. Those interpretations, once made, are taken as real--actual qualities of the objects we perceive. (Erickson, 1986, p. 126)

Interviews allow informants to frame and elaborate on their specific feelings and the characteristics of the context when these feelings were experienced. For this reason, interviews will be the primary method of data collection utilized in a study aiming to "formulate theoretical and conceptual relationships" (Glaser & Strauss, 1967) rather than to test specific hypotheses. Yet language as a transmitter of feelings and thoughts is limited by our grasp of verbal skills. A wealth of descriptive language exists for negative experiences (Lazarus, 1991). This is illustrated by the predominance of negative emotion names (60%) in the cluster analysis reported by Shaver, Schwartz, Kirson, and O'Connor (1987) and by Lincoln and Guba (1985), who state: "it would appear that the construction

of realities must depend on some form of consensual language” (p. 71). We can wax lyrical and the depth of our condemnation will be easily interpreted, however when talking of positive experiences, we appear to be more constrained and that which we do use is found ambiguous and hard to quantify by our listeners.

It is often our flawed attempts to deal with messy, ambiguous, unrepresentative data from the “real world” that lay bare our inferential shortcomings (cf. Erickson, 1986; Tesch, 1992). In validating the Flow State Scale (Jackson & Marsh, 1996), subjects failing to identify a specific instance of flow and those writing ‘0’ in response to a question about the number of times such a state would be experienced in one year were excluded from the analysis. Factor analysis of data demands such a rigorous approach. Nonetheless, those subjects not identifying clearly with the flow state may be equally, if not more important to the enhancement of our understanding of this area. Recognizing these issues, no attempt will be made to tidy up the data in order that deductive compatibility can be obtained with theoretical frameworks under scrutiny. Instead, questions will be raised as to those assumptions of predictability and generalizability which underlie much of the recent research into optimal experience. Indeed, validity in qualitative research is a much debated point. With the small numbers of participants involved in this idiographic study, it is apparent that standard nomothetic criteria for judging results are difficult, if not impossible, to apply. Any authenticity (Guba & Lincoln, 1989) is as a result of the reader's belief in the description provided. It is perceptions of the credibility of data that enhance the case for the application of findings to similar contextual situations. In this respect, the analysis of data involved a deliberate search for negative cases (i.e. information which

appeared to contradict emerging interpretations) at all stages. The presentation of results by describing the comprehension of phenomena from an emic perspective, including, where possible, the use of the informants' own language, provides the reader with the thick description necessary to allow an informed evaluation of the results obtained (Patton, 1980).

### Retrospective Data Collection

Qualitative investigations of the flow experience have all been retrospective, often with long temporal separation of flow experience from the time of recall. In Jackson's (1992) study all informants had *once* been champions in figure skating which left responses open to self-presentational processes where experiences are romanticized in order to convey specific impressions (Leary & Kowalski, 1990). This criticism of retrospective reports has relevance to the increasing use of self-report inventories in the measurement of the flow state and highlights the need for interviews to be carried out soon after athletic experiences, by investigators known to, and trusted by the respondents, to lessen the opportunity for self-presentationally motivated modification.

Research by Brewer et al. (1991) casts some doubt on the validity of psychological characteristics obtained from self-report data. In their two initial experiments, focused attention and confidence were the most strongly identified characteristics relating to peak performance reflecting the findings of other research in this area. A third experiment incorporated the random assignment of bogus performance feedback relating to the subject's success at a pursuit rotor task. Results indicated that recollection can be biased by performance outcome as subjects given success feedback perceived themselves as being

more confident and focused on the task than subjects given failure feedback. Thus this may also have implications for data collection in retrospective studies of performance states.

Brewer et al. (1991) also surmised that the subjects' familiarity with popular reports on peak performance may have further confounded results, enabling subjects to report psychological states typically associated with a successful performance, without having had the experience. The pilot phase revealed the construct of flow to have achieved a place in popular psychology. Thus this latter explanation for the theoretical compatibility of empirical findings in retrospective studies is of significance in this study and was addressed both in data collection and analysis where the meaning-perspective attributed to flow by rock climbing informants, i.e. their subjective reality, became of greater importance than merely the existence of such a concept.

### Summary

The provision of lengthy justifications for the use of qualitative techniques and the inclusion of rigorous statistical method has the potential for devaluing the unique contribution of qualitative technique to this field. Additionally, the process of analysis is made more complicated by utilizing methods which reason differently and attempt to understand reality from differing philosophical stances. However, it is perhaps a mark of the current level of acceptance of qualitative research that such a discussion is still felt necessary. Obviously objective social regularities *do* influence an individual's subjective version of reality and no attempt is made to deny credence to certain psychological



variables, instead, clarification is sought of the burgeoning research base and theoretical positions regarding the subjective state of optimal experience.

#### Overview of Research Aims

A psychosocial approach to the construct of flow assumes that optimal experience is underpinned by a complex interaction of psychological and situational variables. Accordingly, qualitative methods were adopted in order to address questions pertinent to such a multifaceted experience. This investigative study was initially seen as an attempt to enhance our understanding of the optimal experiences of rock climbers within two distinct sub-categories of climbing mode and across a range of competencies. Through the review of existing literature, the conduction of pilot interviews, and visits to the setting, the aims of this study, and questions to be addressed became more specific in objective and definition. The aims and questions which served to guide the main data collection phase of this study are as follows:

1. It has been suggested (Jackson, 1992; Kimiecik & Stein, 1992; Schreyer et al., 1978) that the antecedents, barriers and the flow experience itself, may be very different dependent on an individual's level of competency, yet to date, research has focused on the elite performers within a sport. This study aims to explore the flow experience across ability levels in rock climbing.
2. Consideration of the recent development of sport climbing as compared to more traditional climbing activities will allow exploration of any mediating effects of an individual's experiential background in rock climbing on the flow experience.

3. An aim of this study is to ascertain whether the dimensions of flow are as discrete as previous research in sport has suggested. By avoiding the decontextualizing of data and the compartmentalization of responses which has often characterized research into the flow state. It is hoped to discover whether, and in what form, cross linkages exist between accepted dimensions of the flow state.
4. A clarification of the existing research base and theoretical perspectives regarding optimal experience will be sought through the elucidation of informants' meaning perspectives and in particular, their perceptions of the contributions made by peak experience, peak performance and flow to these optimal situations.
5. Is enjoyment integral to the flow experience or is this emotional state reported as a result of a post hoc evaluation of an experience deemed to have been positive, in retrospect? The relevance of this dimension in the optimal experiences of informants will be discussed and a closer look will be taken at the affective components of the construct in relation to level of experience within rock climbing.
6. Do participation motives alter as a result of level of experience and how do these relate to flow? The contribution of intrinsic and extrinsic motivational factors/orientations will be explored in relation to the flow experience.

In summary, this study aims to explore the characteristics of the flow state among a group of rock climbers. With regard to expressed conceptual and methodological concerns, findings will be used to propose future directions with regard to a phenomenological approach to the study of optimal experience and its application in the context of sport.

## CHAPTER IV

### METHOD

#### Informants

The setting chosen for this study was a large Midwestern city with a known population of rock climbers. The composition of the group of key informants was based on observations and responses from the pilot phase of the study. The initial clustering arrangement involved having adequate representation of all levels of ability, which were categorized for this purpose as beginner, intermediate and advanced. Secondly, representation from experiential areas of both sport and traditional climbing was sought-- these being terms used by informants themselves to describe a particular mode of climbing. Although not seen as a dichotomous divide, representation of both modes proved essential as it was found that each informant had a tendency to participate more frequently in a particular type of climbing experience. Lastly, male/female representation was attempted in both preferred climbing modes and at all levels of ability. Thus sampling was purposeful (Lincoln & Guba, 1985; Siedman, 1991) to ensure that information was obtained from both typical and non-typical cases enabling a maximum variation in possible response.

Possible informants were screened for level of proficiency and experience using observations made during the pilot phase of the study. Prior to entering the setting, telephone conversations had secured the involvement of five informants and interviews had been arranged. Seven of the remaining participants were found using snowball

sampling techniques, where, through word of mouth and recommendations of other informants, possible participants were identified (Stainback & Stainback, 1984). Lynn, as the gatekeeper of the study, performed the roles of peer debriefer, host and informant at various points during the study period. Jacob, the final interviewee, was a choice resulting from purposeful sampling in order to obtain data regarding types of instructional situations for beginning climbers.

Prior to participation, informants completed a consent form as approved by the Human Subjects Committee at UND (see Appendix A). To maintain confidentiality, all names of participants and names of towns, places, buildings within the setting itself have been changed. There were eight male and six female informants ranging from 20 to 42 years of age (mean = 30.67 years). Length of involvement with rock climbing ranged from two introductory experiences to 20 years of fairly consistent participation. The mean length of involvement with the sport was five years, though this does little to reflect the quantity or range of climbing experiences encountered. As technical ability and level of experience increased, so too did their experience of a wider range of climbing locations, most having lived in areas more conducive to participation at some stage in their climbing history. The top-roping experiences of beginning climbers (n=5) cannot be accurately classified as either sport or traditional climbing. The remaining ten interviews revealed five informants to have had predominantly sport climbing experiences. Only one informant had maintained a completely traditional mode of climbing while living in the Midwest, yet the four informants who had engaged in both modes of climbing spoke of a preference for traditional experiences. Further demographic information pertaining to the 14 key

informants, their life situation and climbing history can be found in Appendix B, this information having been drawn from the initial structured familiarization section of the interviews.

### The Contribution of the Pilot Phase

Prior to the main investigation, consent was obtained from the owner of the Rock Factory (the central, city-based indoor climbing venue) which provided open access to the site. Participant observation is undoubtedly a necessary exercise prior to interviewing members of the population, however, my experiential background in rock climbing enabled the use of a combination of interviews and observation during the pilot phase. This period also served as a practice with respect to the adoption of appropriate demeanor conducive to such in-depth interviewing. The maintenance of the required neutrality, even when information regarding the topics that inspired the research question did not prove immediately forthcoming, was considered essential. Some preliminary recursive validation (Stainback & Stainback, 1989) of both techniques and questions occurred during this period. The schedule for the interviews changed as a result of information obtained and the learning process regarding interview technique that took place at this time--an iterative process, each interview shaping the next (Miles & Huberman, 1984). Good listening was indeed found to be "an act of submission" (Glesne & Peshkin, 1992) with a tendency to interrupt on receiving information compatible with personal experience proving the hardest lesson to learn! Other than violations of this particular act of submission, reactions to comments were controlled and neutrality maintained, expectations being very flexible for each interview.

Nine interviews were conducted during the pilot period. After an initial practice interview, the schedule displayed in Appendix C was used for the first two pilot interviews. On reflection, the leading nature of some of the questions came to be viewed as incompatible with the aims of this study. Thus the format was altered and the schedule with which the pilot interviews were conducted during the first visit to the setting is shown in Appendix D. A variety of “working titles” were drawn up to reflect data from this pilot period (Cronbach, 1975). For example, “Is flow an optimal experience?” resulted from the inability of questions pertaining to optimal experience to elicit descriptions of flow in the majority of cases. A change was made to further emphasize that of a personally satisfying experience which would be remembered for the rest of their lives (Jackson, 1992), these peak experiences being found to encompass descriptions of flow for the majority of informants. Many questions revolved around the issues of enjoyment and perceived competence. The question arose as to whether the total immersion in the climbing experience articulated in the interviews could occur regardless of ability level due to the intensity of the experience and the central role apportioned to the individual’s perceptions of skill and challenge as antecedents to flow. The use of Likert-type scales was attempted during the pilot phase to gain some quantifiable measure of perceptions of challenges posed and skills possessed (Jackson, 1992). However, even with verbal anchors, these scales were found to be inappropriate in this setting due to the tendency for informants to confound the scale with the dominant conception of ability/difficulty in the sport (i.e. the numeric grading system). Their use was thus abandoned in the main study. In addition, it

was noted that a change of format would be required as beginners seemed less able to separate flow from their general climbing experiences.

Although initial entry had been arranged with consent of members of the population via telephone calls to the Rock Factory, an awareness was maintained of the continuous process of negotiating entry. The establishment and development of relationships figured as a process which was to be engaged in throughout the data collection and beyond. Aware that "how one gets in and manages to stay in will shape, if not determine, what one gets out of the site and its host" (Schatzman & Strauss, 1973, p. 22), a statement was prepared as to the my affiliation, research interests, objectives and method. Never formally written down, this statement (with slight alterations dependent on situational requirements) was repeated on numerous occasions and formed part of the initial conversation with any possible informant.

In order to further facilitate the level of trust deemed necessary for the willing cooperation of informants, it was agreed while negotiating entry to the site and outlining interview methods with informants, not to invade sensitive areas without permission. However, it was found that most participants willingly used descriptions of relationship or marital problems, drugs and other such potentially sensitive issues to depict the emotions and situations they were attempting to articulate. Negotiating access to observe at the climbing gym proved most difficult and a separate consent form was designed to this effect (Appendix E).

This period also led to the adoption of Lynn as the gatekeeper of this study. Lynn began her climbing in New Mexico among a very stalwart traditional climbing group,

leading a few mid-grade routes before her relocation to the Midwest necessitated a change in orientation to climbing. Being of small stature and very strong, she successfully made the change to sport climbing, having worked several very difficult climbs and reaching the finals in a Chicago competition in the year prior to the start of my study. Lynn had extensive experience in all areas of rock climbing with the exception of mountaineering (something which she hoped to address soon, not being comfortable with this void). With this and her relatively high level of technical ability, Lynn was in an ideal position to be able to challenge my evolving conceptions and to provide some insight into the credibility of my interview questions. A respected and well-known member of the local climbing fraternity due to her work at The Rock Factory, she not only helped progress the author's understanding of the setting, but provided relevant information and access to a number of informants.

Interactions with Lynn during this phase were fully documented in field notes. Regarding flow, she expressed excited surprise at the term, having decided upon the same phrase following discussion with her partner on return from a climbing trip. "Feeling on" was not something that happened on every occasion and could easily change throughout the day or even the climb--"It's a feeling of not being gripped<sup>1</sup> and just flowing through the moves."

Through these discussions she confirmed some aspects of the study as applicable to the setting yet raised questions about other assumptions. These insights and other data

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<sup>1</sup> "Being gripped" was a term used by climbers to describe the stronger grip on holds which characterized moments of intense fear.



obtained from the pilot interviews were used "to assist the researcher in determining what further questioning might deepen and expand the knowledge base" (Stainback & Stainback, 1989, p. 274) during an eight month period of recursive validation.

The contribution made by the pilot phase proved invaluable, providing data, contextual information and names of possible informants. One member of the pilot group was interviewed again during the main study period in order to assess the validity of both questions asked and the dynamic aspects of the concept over time. His responses reveal both stable and dynamic aspects, and these will be discussed in chapter six.

### Data Collection

Participant observation and the recording of detailed field notes formed an integral part of the data collection process. Participant observation was of a moderate kind, a balance being kept between the role of a natural participant and that of an outside researcher at the gym. Outside, there was sometimes a complete participation, this being deemed more appropriate in someone who was already a natural participant. A reflexive journal was incorporated into field notes, serving to detail thoughts and ideas as they evolved in marginal and footnotes. (See Appendix F for further details and protocol). Prior to each visit to the setting, these notes were reviewed in a continuing process of reflection and analysis. These notes and documents collected from the site were used to enhance the situational context of descriptive data given in the interviews and also served to illustrate and clarify some questions used in the analysis of data.

Interviews formed the core record of the setting and these varied from casual discussions whilst participating in the setting (another form of purposeful sampling), to the

formal, in-depth interviews with selected key informants. The aim of the interviews was to have participants talk of things that interested them using their own language. This was highlighted by Patton (1980) who stated that “the fundamental principle of qualitative interviewing is to provide a framework within which respondents can express their own understanding in their own terms” (p. 205). To address the often assumed functionality and evaluative aims of research into human behavior (Schatzman & Strauss, 1973), the pursuit of clarification of concepts and ideas stemming from the wealth of existing flow research was stressed. My interest in the informant’s perceptions meant there were no right or wrong answers, or even suitable topics to discuss, within the general overview of optimal experience. This was highlighted prior to commencing the interview and at appropriate times throughout the conversations. Thus the purpose of the investigation was stated as one of clarification and information gathering rather than evaluation.

Unstructured interviews are believed to be the best way to learn about people's perceptions and gain an understanding of how informants structure the topic under study (Stainback & Stainback, 1989). Thus although armed with a list of topics, flexibility was deliberately maintained throughout each interview.

Times were selected to be acceptable to both parties and at least two hours of uninterrupted time set aside whenever possible. Each interview was recorded on micro-cassette after the informant’s permission had been obtained. Comfortable surroundings for informants in this study ranged from sidewalk venues, through relatively flat rock surfaces at climbing sites, to interviews in their own home. Thus all informants acquiesced, or even

chose the site for the interview which represented an environment with which they were familiar.

Possible informants were contacted by telephone or face-to-face, some participants being tactfully dismissed at this stage to compliment the non-random approach to sampling. Two informants, although not fulfilling all criteria, had to be interviewed to avoid potential damaging effects to the relationships being built with other climbers. However, despite misgivings, these informants provided usable and often distinctive data. To assess any dynamic changes in perceptions of flow with regard to factors of maturity, geographical climbing experience and mode of climbing, one member of the pilot phase was interviewed using the new interview schedule, this being suggested as appropriate by Glesne and Peshkin (1992).

Demographic information was collected in the initial stages of each interview along with salient parts of informants' life histories, including how they came to the sport of rock climbing and their reasons for continued participation (where applicable). The initial stages of each interview also functioned as a structured acclimatization process which allowed both researcher and informant to relax. This also served as a means of researcher control as the stage could be set with a general statement of what was to follow (Schatzman & Strauss, 1973). Prior to revealing documented characteristics of the flow state, informants were asked to further describe the characteristics of these optimal states in relation to their own experience. This allowed for a separation of independently mentioned characteristics and those mentioned as a result of prompting. Having attempted

to elicit independent descriptions of the flow experience, informants were asked about their familiarity with the term and interviews were then structured accordingly.

Informants were interviewed in sufficient depth in order to present detailed information to enable an informed analysis of content. This level of detail also allows readers to connect to the experience through learning how the experience was constituted in the setting and the issues it reflects. To enhance the depth of response, informants were asked to recall their thoughts, feelings and various situational variables at the time of the incident under discussion, prompting occurring as the situation demanded.

As already documented, topics evolved gradually during the pilot period and the focus of questioning reflected these changes (Appendices C, D & G). However, during the main investigation these changes were realized more through the use of prompts and probes although any relevant changes to the interview schedule are documented as the contents of square brackets in Appendix G, which also provides the interview schedule in its entirety.

Siedman (1991) suggests interviewing the gatekeeper at the outset, but this proved more difficult than initially assumed. Instead, Lynn was formally interviewed when leaving the setting. Discussions throughout the course of the study period proved invaluable, such a knowledgeable informant serving to enhance the experiential foundation of this study (Glesne & Peshkin, 1992). Additionally, the interviewing of Lynn on leaving the setting allowed a synthesis of evolving ideas and a final clarification of certain points.

Participants were interviewed formally once. Several, having since moved to other parts of the US have had no further involvement in the study. Others remained in close

contact after the interview period and were consulted as to their views on the evolving data analysis. The total time spent investigating this particular setting was a little over three years, yet actual time spent working alongside informants amounted to approximately four weeks at various times over this period.

### Plumbing the Depths

Probing was used on receipt of a vague response or one for which clarification was necessary. Probes used are summarized in Table 1. Probing cues were mainly of a positive valence due to the nature of the responses received, although checks were made on the validity of responses by posing some questions in a negative way. These enabled comparison and analysis of the quality and quantity of the experience.

Some criticisms of qualitative research technique and ensuing analysis have focused on the lack of clarification sought by the researcher and assumptions made regarding the language used by respondents (Siedman, 1991). Both linguistic and cultural differences, products of my United Kingdom origin, allowed me to follow-up comments using this as justification and thereby not appearing to cause offense to the respondents. As well as negating these criticisms, in some cases this elicited further articulation of thoughts and feelings, which served both to clarify and add description. An example from Cindy's interview illustrates this use of probing for clarification purposes. This extract also illustrates the type of interaction engaged in with an informant in order to press for clarification when seeming ambiguities occurred:

Table 1

A Classification of Probes Used During Interviews

Probe Type	Definition	Examples From Interviews
* Echo probe	<i>The answer was echoed whilst voice raised at the end to form a question</i>	To a greater degree? You were scissor-legged? Your body just "kind of did it"? Fear?
* Requestion probe	<i>Part of the question was repeated</i>	Can you remember anything else about what you were focusing on? What else characterizes this feeling of "being on"?
* Silent probe	<i>Pause whilst maintaining eye contact for a comfortable time.</i>	
* Non verbal	<i>A nod of the head, a smile, a look of interest. Usually accompanying a silent probe.</i>	
* Encouragement	<i>Impartial means of support</i>	Uh-huh. Yes...yes. I see.
* Recapitulation	<i>Aimed at the stating of the response in a different manner</i>	When you say "everything seems to feel better", what exactly do you mean by that? "Position" as in relation to individual moves? I'm not sure I know exactly what you mean by...
* Specification probe	<i>Question asked to obtain more detail or specifics</i>	Can you give me an example? How does this "energy" feel? Can you describe this "being on" feeling a bit more to me?
* Repeat probe	<i>If confusion existed, the question was repeated</i>	So success to you then. Would you say then that (repeat question)

H: How's the movement characterized when you're feeling this focused?

C: It just comes naturally....I mean I'll just see something and just do it--especially with my feet. I don't always think about it. If there's a nub way up high, I'll just go for it. There may be something in between but I found that and I'm not going to stop and think about, "Well I could do this, or I could do that...or I could do the other." It's just instant.

H: So your mind isn't involved when you're climbing well then?

C: Um...god this is getting twisted! [She chuckles] Um [pause] I think my mind's involved...god what have I said that made it sound like...

H: You said you weren't thinking about what you were doing with your feet.

C: Maybe 'cos I concentrate more on my hand placements because I feel like that's right in front of me.

H: So that's where the naturalness comes in--your foot movements only?

C: [Pause] I feel like it's all natural and instinctive and thoughtful.

H: So your whole body's involved?

C: Well yeah! I can definitely feel it--feel everything working.

H: Mm. How does this feeling of "everything working" feel?

C: I love it. I love it. It's really empowering.

H: Can you describe it in any...?

C: I'm a really physical person and I love to feel that I'm working my muscles until I'm shaking--everyone of them. But I can still keep going--when it's instinctive.

An example from Erin illustrates the added description arising from some uses of probing cues:

E: It's just fun. The moves are fun, the belays are fun.

H: How does that sense of "fun" feel? How is it characterized?

E: [Long pause] It feels like time slows down and gravity doesn't mean anything and the sky is bluer, the rock crystals are bigger, the air smells better. Everything is just the same, but just more. Bigger, or larger, or denser uh [30 sec pause] When you ask the question and I think about what is it like, one of the things that comes into my head immediately is the smell of the rock. I can smell it more clearly than I can visualize it.

When the flow of information began to falter, or sometimes to elicit comparative responses from even the most articulate of informants, a series of quotes were used, taken from the following list (Table 2). The statements used by Privette (1984) and Jackson (1992; 1996) were used extensively in the pilot phase and led to concerns about the

Table 2

Quotations Used During Interviews

QUOTE	SOURCE
<p>My attention is focused entirely on what I am doing            I know clearly what I am supposed to do            My mind and body seem to work in perfect unison            It doesn't take an effort to keep my mind on what is happening            I get direct clues (feedback) as to how well I'm doing            I have a deep but effortless involvement            I am not worried about losing control            I am not self-conscious            Time seems to alter (either slows down or speeds up)            I really enjoy the experience            I am in control            I am at the cutting edge between my ability and the skills I am performing</p>	<p>Jackson (1992) and Privette (1984)</p>
<p>My mind isn't wandering. I am not thinking of something else. I am totally involved in what I am doing. My body feels great. I don't seem to hear anything. The world seems to be cut off from me. I am less aware of myself and my problems.</p>	<p>Jackson</p>
<p>You feel good...you're not sore or stiff and you don't feel weak and just like, when you're doing a difficult move...you move through it well. If everything clicks, you're having a blast and you've got so much energy.</p> <p>(1993)</p> <p>It's sort of like a Zen experience. All the rest of the world drops away. You're sort of totally focused--but without a lot of intensity. You glory in the feel of your muscles working so smoothly. Your body's just in tune and flying.</p>	<p>Pilot interviews</p>



validity of prompted responses, thus they were used more judiciously in the main investigation.

Interview summary sheets were compiled for each informant. These summarized the main themes, questions arising and points necessitating further investigation and formed a first point of reference to assess the propositions emerging from the setting. To assume that informants are always truthful is a naive but convenient assumption for researchers which avoids any uncomfortable questions about the validity of findings (cf. Locke, 1989; Schatzman & Strauss, 1973). One strategy used to redress this situation was a consideration of the informant's possible agenda during both the interview period and the ensuing analysis. Most appeared genuinely interested in the conversations about their optimal experiences in rock climbing. Difficulties were only experienced in two interviews where informants insisted on returning at every opportunity to the theme which figured as their agenda. Where a possibility existed of a response having been influenced by this agenda, it remained uncoded. This enabled subsequent consideration of such statements as instances of the aspect under exploration.

Once a question or theme has emerged as a focus for the investigation, Erickson (1986) warns of a tendency for researchers to cite such incidences to the exclusion of others in their field notes. This tendency reflects a narrowing of vision where confirmation becomes paramount. To compensate for this human tendency, deliberate attempts were made to note actions and follow up responses which appeared incongruous with evolving themes. On compilation of supporting data, discrepant cases were always included,

whether fitting an alternative theoretical position or figuring as an isolated, inexplicable case.

### Quality of the Interviews

The taped portion of the interviews lasted for an average of 90 minutes, with actual time spent with the informant extending as far as schedules allowed. In all instances informants willingly articulated their thoughts and feelings regarding optimal experiences in rock climbing. Rapport was established easily with all participants, this being facilitated somewhat by an insider knowledge of the social and political structure of the setting provided through interactions with Lynn. These developing relationships did allow some disputing of accounts when meanings were unclear or when ambiguities occurred. In some instances, informants were taunted lightly in order to elicit further detail.

The statement of Schatzman and Strauss (1973) that "eloquence has no relation to validity; it probably relates better to differentiation and rhetoric" (p. 68) proved pertinent. Thus assumptions and assertions were challenged as a matter of course. This necessitated active listening in order to compare and contrast information within the developing framework. Using strategies proposed by the above authors, informants were sometimes confronted with an opposing argument in order to confirm their response or perhaps to test an emerging proposition. The following excerpt from the interview with Paul, an elite climber, exemplifies the use of this strategy:

P: I can see that the more I can set my emotions aside, the better I climb.

H: If not an emotion then, did you experience enjoyment while you were climbing it?

P: That kind of bothers me because I don't know if it's because I remember it being a good climb that I enjoy the memory of it, or did I enjoy the climb?

At other times, propositions were deliberately tested, serving to validate the evolving direction or to cast doubt on the significance of certain themes.

There were instances when discomfort was experienced with the directions that the interview was taking. This occurred most often when the articulated experiences found limited compatibility with evolving conceptions, or when an informant's tendency for verbosity made control of the interview exceptionally difficult. Although a certain level of discomfort had been felt in two interviews, the informants themselves appeared unaffected. On transcription it was found that extremely valuable information had been offered in both cases which served to highlight certain emerging themes and questions.

Some interviews also provided a verification of self-reported ability and experiential background. As social linkages were discovered, questions were sometimes tactfully asked after the recorded interview, to obtain confirmation or otherwise regarding the categorization of other informants using these two criteria.

As in conversation, the interviews had no need for a conclusion and most were left open to allow further contact after transcription. Follow-up letters containing questions arising in the interim period accompanied a copy of the interview transcript for verification. This elicited further contact with most informants, although two had since left the state and no response was received from one other informant.

#### Data Analysis

A pragmatic view that the reality of true grounded theory and theory-free observation is unsubstantiated (Dobbert, 1982; Smith, 1993) was taken and it was accepted that all researchers bring particular theoretical perspectives into their

investigations. With this and the wealth of extant research, a first level of deductive analysis was undertaken utilizing the nine dimensions endorsed by Jackson's (1996) study. The aim of this initial analysis was to satisfy the notion that such a concept was both recognized and experienced within the population under investigation. Representative of the current state of research into the flow state, these nine characteristics were used in this study as a working definition of flow and served both to guide the initial analysis of data and later, in the discussion of results.

1. Challenge-Skill balance: seen as a match between perceived challenges and skills with both being at a high level in a particular situation.
2. Action and awareness merging: Involvement so deep that it becomes spontaneous or automatic. "There is no awareness of self as separate from the actions one is performing" (Jackson, 1996, p. 77)
3. Clear goals
4. Unambiguous feedback
5. Concentration on task in hand
6. Paradox of control: as the "sense of exercising control without actively trying to be in control" (p. 77)
7. Loss of self-consciousness: "Concern for the self disappears as one becomes one with the activity" (p. 77)
8. Transformation of time
9. Autotelic experience

The physical process of cutting and pasting has become a standard procedure for qualitative analysis (Glaser & Strauss, 1967; Miles & Huberman, 1984; Glesne & Peshkin, 1992). However, to address concerns about the decontextualizing of data by their placement in a single category, statements were allowed to overlap and were placed in all applicable categories. In this way the meaning-perspectives of informants were left intact as far as possible. For example, the following quote was placed in three categories representing dimensions of flow, these being enjoyment, concentration on task in hand and a loss of self-consciousness:

I don't think, "Wow! This is really good" because I'm so focused into what I'm doing that my mind doesn't retreat back to analyzing the situation at the time.

Items mentioned independently were coded differently to those which followed leading questions or deliberate prompting using quotations from previous research (e.g., Jackson, 1992; 1996). For example, transformation of time was rarely broached independently in this investigation, and yet on prompting, elicited a variety of responses:

It seemed like it took a lot longer than I expected. Things kind of seemed to go in slow motion.

I remember last time I was in a really hard spot it seemed like, "I'm never going to get off this climb." But when I got off it, when I was done, I was like, "Wow, that was really fast!"

Concern with the context surrounding responses represents an attempt to determine the "specific structure of occurrences rather than their general character and overall distribution" (Erickson, 1986, p. 121). Additionally, components were analyzed as to the frequency and emphasis placed on their citation, or in some cases, their omission or negative perceived status. Several new codes were also used to depict other regularly

cited instances of actions and perceptions found across informants. Thus the segmentation of data involved a continuous process of examination and comparison both within and between categories as I sought to retain the perceived links between categories that characterized reports of flow from the setting. Additionally, maintaining these interconnections enabled the accurate and valid reporting of subjective feelings.

In the light of existing theories of optimal experience, motivation and participation in risk sports, data analysis also led to the placement of informants into several discrete typologies. However these placements were dynamic, the orientations of informants being found to change in the light of both situational and personal variables. For example, one informant had an extensive background in sport climbing and ability-wise, she was an experienced intermediate climber. "I like sport climbing because I like the movement. I like muscles and how they work. I think it's really neat how you can control your body and make yourself stay on these little pieces." She had competed successfully in several competitions, but had more recently turned her back on such overtly competitive experiences: "I don't like having people sit there and watch me and evaluate how I'm doing...climbing's a very personal sport to me." Instead she expressed a preference for climbing "longer routes in the middle of nature." In the traditional mode of climbing however, her level of experience and the technical grade with which she found herself comfortable, represented at best, an inexperienced intermediate: "I'm still in the learning stages."

Further analyses, occurring both during and after data collection, were undertaken to determine the "full range of variation in social organizational arrangements, meaning-

perspectives and connections of influence within and across system levels in the setting” (Erickson, 1986, p. 143). The cut and paste process was repeated a further four times in order to assess support for evolving themes and through the detailed labeling procedure, attempting to outline informants' experiences of flow across ability levels and experiential backgrounds. The second stage of analysis involved the extraction of data relating to the autotelic nature of flow and that relating to how flow was experienced in other activities. The third stage allowed the existing theoretical positions on the constructs of flow, peak experience and peak performance to guide coding of the data. Finally, data were coded in relation to intrinsic motivation, competition and social comparison. As assertions were tried and tested through physical sorting procedures, discussions with informants and further reviewing of relevant literature, facilitated the emergence of “key linkages” (Erickson, 1986), which served to connect up many items of data as analogous instances of the same phenomenon.

### The Role of the Researcher

Stainback and Stainback (1989) hold up to scrutiny the questioning techniques employed by a researcher who is also a natural participant in the area under study. They believe that familiarity with the situation makes it more difficult to “maintain a questioning stance and reflective awareness” (Stainback & Stainback, 1989, p. 272). However, equally, a failure to understand what is seen and heard can result from an unfamiliarity with the population being studied. Patton (1980) describes qualitative methods as allowing the researcher to investigate complex relationships between variables in a holistic manner with the least disruption to the natural course of action in a setting or group. In this

respect, my own experience with rock climbing served not only to gain entry, but also to facilitate an understanding of the experiences described. It is for this reason that I include the next section, which briefly outlines my own rock climbing participation. The integration of ideas and attitudes into my personal goals and motivations is highlighted and thus readers are able to draw their own conclusions as to their influence on the process of data collection, analysis and reporting.

On entering the setting, rock climbing had figured prominently in my life for about eight years. My initiation onto the sport and much of my development as a climber had been under the umbrella of traditional climbing. My orientation was more aligned to the general lifestyle of the traditional climber. This is illustrated below in a passage from my journal, written while injured, and reflecting on what climbing meant to me:

Feeling the sun massage your aching limbs as you basked like a lizard, insignificant on a wide expanse of rock, your skin soaking up the warmth, freed from its normal restrictive clothing; getting caught in huge storms in seemingly desperate situations, on mountainous crags, far from civilization; curries cooked with friends-  
-a spicy stew of half rotten vegetables suffering from their week spent trapped between climbing gear and camping stove, swilled down with a few beers or the cheapest bottle of red; until finally easing your battle-weary body into the familiarity of its trusted night-time cocoon. (Personal journal, July, 1993)

Sport climbing and its increased requirement for power made possible by the relative safety of ascents intrigued me. I knew full-well of its benefits in terms of training, yet I had never been able to subdue that essential fear of falling which characterizes indelibly the ascent of traditional climbs. In fact, I had experienced problems with inadequate attention being allocated unless finding myself in situations where a complete focus on the task in hand was absolutely essential. Indeed, my hardest ascents had been on



friable rock with only widely spaced possibilities for protection. Standing in support of Csikszentmihalyi's (1975) construct of flow, these too have been the occasions of complete absorption when I have experienced a fluency of movement made possible by a relinquishing of conscious control. Although never enjoyable at the time, these have been experiences with considerable influence on both my personal and climbing development. In addition, some of my most enjoyable climbing experiences have been where a problematic move necessitating a concentration of focus was swiftly overcome. Thus the climb allowed opportunities for immediate evaluation of the previous challenge before presenting further testing situations. These personal experiences and those of other close acquaintances led to my questioning of the central tenet of enjoyment in the flow experience and also the assumed inevitability of such an experience given the presence of predicted antecedent situational variables--a critical interest which culminated in this research proposal.

Although in no way meant to be an ethnological account of rock climbing, my cultural influences formed one "non-local" influence on any "shared standards for perceiving, believing, acting and evaluating" (Erickson, 1986, p. 129) that may exist among rock climbers in general. Therefore maintenance of a "naiveté" (Glesne & Peshkin, 1992) proved necessary, clarification being sought as relationships developed with informants and others in the population.

A range of participant observer roles were utilized dependent on requirements of the study and/or situation. Occasionally I bouldered (climbed without ropes on low level problems) to assert my status as a practicing climber and also to allow proximity to other climbers, enabling closer observation and eavesdropping! At other times I entered the gym

purely to observe as a non-participant. At such times my dress, although casual, reflected my role as a non-participant. The advantages of my roles in the setting were many, the only disadvantage being limitations to my ability to record conversations and observations when functioning as a full participant. Yet the access this provided to more open and spontaneous contact far outweighed any disadvantages.

Through my liaison with Lynn, I interacted socially with members of the population and thus was able to rapidly assimilate into the particular context of the setting. This allowed elucidation of social linkages and relationships amongst members of the city's climbing population aiding the achievement of rapport with informants and giving further contextual information.

## CHAPTER V

### RESULTS

#### Descriptive Data

##### Site and Setting

The following section gives a description of the site and sample, involving both objective reporting and interpretative comments in the light of my experience with this sample in particular and with rock climbing in general. This is seen as necessary to familiarize the reader with the subculture of the setting and to facilitate understanding of the ensuing analysis and interpretation of data collected (Patton, 1980; Stainback & Stainback, 1988).

Situated in the heart of the city, The Rock Factory is a recent development in indoor climbing which allows year round access to artificial bolted lead routes at a variety of grades. The Rock Factory was cited by eleven of the fifteen informants as their preferred venue for indoor climbing. A central venue for climbers living in the city and remaining open until 10 p.m. each night, for most it functioned as a venue for winter climbing and fitness training during the week, if unable to get to one of the outdoor city venues in an evening. Constructed in a disused factory building, The Rock Factory provides a warm, safe environment for all abilities. However, with its weight training gym-like atmosphere, bouldering areas and rapidly changing lead routes, it provides an ideal venue for the serious sport climber and was reported by informants as being the only

climbing venue for some members of the population. It is here that regular sport climbers train, compete (competitions being organized at regular intervals) and discuss training schedules and dietary regimes. Social encounters they may be, but talk revolves around individual moves, tendon injuries and training problems, usually in the context of “projects”--sport climbs that they are in the process of piecing together move by move, with the eventual aim of a successful redpoint attempt. They avidly read the latest climbing magazines, vying to outdo each other in critical analysis of the content. Pages are scanned for climbs and climbers that they recognize, but more importantly, for climbs that the climbers themselves have completed. These behaviors may seem strange and as a group, the sport climbers appear to have distanced themselves from other groups, as evidenced by these informal expectations for behavioral interactions (Carron, 1988). Although the majority of informants climbed regularly indoors, two informants were more reticent about their participation at the gym:

It's like a quick pacifier for the need...you can get on the wall and move the way you do when you climb. It doesn't bring in all the other beautiful aspects of it, but at least your body can pretend to make that motion.

If I climb indoors at the gym, it's fun because of that physical workout. There's no real mental aspect because I don't have that fear or danger feeling--so that's fun just because you keep in shape.

Erin and Cindy were openly scathing about indoor climbing and had chosen to never, or very rarely climb at The Rock Factory:

Climbing gyms don't appeal to me very much. For one thing it's not outside and there's lots of people. You go to a climbing gym and it's not climbing.

I have a hard time with it, even though it means getting into shape in order to climb better outdoors.

The following account is presented with the aim of enabling the reader to reach a deeper understanding of the informants and the setting in a few context-laden paragraphs. Such methods of representation have been termed “ethnographic fiction” (Sparkes, 1997) although a more accurate descriptor may be ethnographic *non-fiction* as the account utilizes information from observational field notes, site documents, and interviews to describe some of the experiences of my initial visit to the setting. The excerpt highlights issues of gender, ability and climbing mode and thus facilitates understanding of the ensuing analytic interpretations (Patton, 1980; Stainback & Stainback, 1988).

Monday Evening at the Rock Factory. "Man!" A flat sounding exclamation is heard above the loud music playing. If the ferocity of the lighting of the gym, which leaves no escape--no hiding places in dimly lit corners, was not enough to wake you from your reverie, the volume of the music certainly was. The orator is now sitting up in the rafters of the gym having fallen from the climb he was attempting. His frustration is accentuated by a sudden folding of his arms across his chest. "Down." His climbing partner slowly allows the rope to run through the friction device and the man begins his twirling descent from the ceiling. The few people already present in the gym turn to watch his graceful, center-stage descent. One foot hits the deck whilst the other is thrown out to the side in an attempt to remain balanced. "Slack" accompanies one strong downwards pull on the rope which, thanks to the immediate compliance of his partner, results in enough leeway for him to untie the knot which keeps him inextricably bound to the other climber in a system of trust, skill and expensive equipment. It's noticeably cool in the gym, yet the now

released climber wipes his hand across a glistening brow, leaving a smear of chalk in its place.

I move slightly further into the gym to gain a vantage point. Some beginning climbers are receiving instruction from a female member of staff who is explaining to the group what is occurring in different parts of the gym. Moving around anticlockwise from the introductory area, the wall loses some of the larger holds and takes on overhanging proportions in places. Some extend completely across the central portion of the gym, these arched routes finishing on a vertical wall devoid of all but the smallest of holds.

The beginners are concentrating intently on what she's doing with her harness. "All right you guys" she beams broadly. No-one smiles in return. One of the female beginners is about to start. She looks at the wall and then turns to the instructor: "What do I do when I get to the top? I've never done this before you see." Her words tumble out.

A family has arrived. The husband climbs with the two children--a girl of 11 or 12 years and a slightly younger boy. As the girl climbs, she tries each hold several times and adjusts her balance before moving. She reaches an overhang and slowly at first, explores each option. As she tires, her movement becomes more frantic and without verbal comment, but never taking his eyes off his daughter, her father takes in all the slack from the rope system to ensure that she doesn't fall more than a couple of inches. Eventually, she cannot hold on any longer and drops off, calling urgently to her dad, "Don't lower me down!" While hanging in her harness in a sitting position, she shakes her arms and legs. Still determined to get to the top, she moves to the right of the overhanging section and quickly finishes the climb.

My attention is caught by two males at the far end of the pit. They are both wearing vest tops which show clearly their muscular shoulders and back. One of them is rehearsing the moves, talking to himself as he does so. A foot flags out to the side, hips twist, two fingers push down on an imaginary hold and the other hand reaches up and back to a fully extended position. He shakes his head and ties in to the rope. Not a word has been spoken between them. He starts to move. No energy is wasted. Movement is calm and slow. It seems choreographed--graceful, rehearsed movements being executed under full control. No instructions are issued. As bolts are reached, slack is given and he clips into the quickdraw that he has deftly placed through the bolt. The angle changes and now he is spread-eagled across the ceiling. Suddenly, his hat almost falls off. Hanging precariously, it is perhaps caught on one of his many ear rings. I notice a quick intake of breath from myself and others who have turned to watch. One hand goes back into the small bag of chalk tied around his waist with a piece of cord. He exchanges for the other hand which he uses to remove the wayward hat. Flinging his head back to ensure all of the abundance of hair is caught in the headwear, he replaces the hat. A quick look down at his climbing partner, a smile and he continues on his upside-down journey across the ceiling of the gym. Smooth and calm, both climbing and belaying. They know each other well it seems.

The beginners are leaving. Much more vocal now that the pressure has been relieved, they express their enjoyment of the experience and ask excitedly about when they can come again and receive further instruction. I move back towards the reception where the receptionist is talking to a friend, both of them poring over an open climbing magazine.

His friend seems interested in my climbing background. I tell a few tales in response to his questions and he talks of his sport and competition climbing experiences. Neither of us comprehend the experience of the other. This is going to be harder than I thought.

### The Traditional-Sport Climbing Dichotomy?

Assessment of the ecological validity of the traditional/sport climbing distinction within the sport necessitated a critical reflection on data obtained. Although a dichotomous distinction was expected on entering the setting, much confirming evidence for this assumption was discovered throughout the course of the investigation. The following quotes illustrate some of the views expressed by the informants:

Presently it's becoming more common that people like the physical challenge and don't really know necessarily that there's other challenges that can be achieved. Or maybe their personalities don't allow them...don't lead them to take that sort of risk.

It seems to me that the satisfaction gained is a lot more superficial in sport climbing...it has some deeper, intuitive meaning in traditional climbing, whereas in sport climbing, it's sort of like a coke buzz or something!

People are doing it just for the plain simple fact that it is fun entertainment. I think that's just because of the advent of sport climbing and indoor gyms. I think that's really allowed more people to experience rock climbing without the risk.

Some informants were emphatic in their belief that these constituted two separate sports within one nominal category. Indeed, certain generalizations were perceived to be true of most traditional climbers:

The ones I hang out with are more into climbing because they like being in the outdoors. They don't care if they're on a 5.4 or a 5.10.

The traditional climbers I know can get on a 5.9 and have a fantastic time and, if it's run out and the protection isn't any good, it'll be quite interesting!



Generally I think traditional climbers are more laid back and what they get out of climbing is more experiential.

Other generalizations were perceived to be true of most sport-orientated climbers:

A lot of sport climbers are in it to always push the grade and see how much harder they can climb.

I think that sport climbers, the bolt clippers, are more competitive.

I think that for a lot of sport climbers the experience is not as important, it's the achievement.

However, closer inspection of the data led to the proposition that the underlying influence on their experience of flow had little to do with climbing mode. Linguistic differences aside, similar experiences were articulated in both sport and traditional situations. Most members of the population, although perceiving the two sports differently, had chosen to engage in both modes during their experience with rock climbing. In this setting, the experience of flow appeared to be more accurately differentiated by the personal and situational variables which figured as antecedents and barriers to flow.

### The Construct of Flow

Twenty years on from Csikszentmihalyi's (1975) original research, flow figured as a part of the shared vocabulary of rock climbers. In some, this represented an informed decision, stemming from their familiarity with popular reports; however in most, "flow" could be seen as a native term arising from their experiences in the sport. Although one could question the extent to which this has stemmed from interactions within the community, flow represented an immediately recognizable experiential realm seemingly shared by all but one member of the informant group.

However, as found in previous research (Jackson, 1996), the constituents of flow differed in informants' reports. In this study, some of these differences can be seen as resulting from ability level, though little if any difference could be attributed to experiential background. These differences will be discussed in relation to discrete dimensions within this section of the report and to the overall experiential state in the concluding section. With regard to any mediating effects of the developmental progression in ability level and experiential background, the two temporally-separated interviews with Joe are also discussed in this section. However, initially, dimensions will be discussed individually, with emphasis being placed not only on the discussion of data reflecting positive incidences, but highlighting any differences and omissions that became apparent during data analysis.

#### Activity-Related Categories

Clear Feedback. The notion of unambiguous and concurrent feedback relays the inability of the climber to reflect on and evaluate the actions in which she is engaged. The category entitled "clear feedback" figured in only five of the interviews, most responses being the result of a prompt:

You either go up, or you fall off!

There are no judges...there's no, "Well the Czechoslovakian judge gives it a 5.9, the British give it a 5.4." You're either up or you're not.

Whether or not this is necessarily subjective and self-referenced for beginning climbers was highlighted by Linda who stated:

Usually people that are around you are supportive enough, especially when they know that you haven't climbed a lot, that, like, "You're doing great"--they keep telling you all the time that you're doing really well and usually I base it off of that.

This perhaps results from a lack of knowledge concerning the necessary skills for the uncertain challenges posed by the climb as she later stated:

I can picture every move I made...not being sure halfway through and then started climbing more and more and more and getting most of the way through it and knowing that I knew what I was doing and that I could make it to the top. It was the greatest feeling in the world.

Independently, it figured almost exclusively in the discussion of clear goals. It was here, when experience or situation resulted in a lack of goal clarity, that a necessity for feedback was articulated:

If I didn't know the climb I just tried to keep an open mind as to how my body felt, different ways I could move--things like that, to get into a better position. It's kind of the initial move that marks it and once you get through it, for me...my confidence level rises.. "See you knew you could do that" and then I just kept going and the next thing I knew, I was at the belay.

Clear Goals. This refers to there being no ambiguity or conflict regarding goals and that the means to reach them were also clear. An interesting finding was that the greater prevalence of such responses were made in the sport climbing context, perhaps relating to the situational context of well-defined routes using specific holds, or possibly to the different orientations of the participant when engaging in these activities:

Even if we were gonna do a 5.7, we want to get to the top of a 5.7. So we have a goal.

[In the gym] the goal is to do the climb and to do it in good style. I don't myself do a lot of goal setting in my traditional climbing, it's much more experiential climbing.

Eight of the interviews contained references to this dimension, the majority of responses representing these same goals of accomplishment and experiencing stimulation which Vallerand et al. (1992) proposed as goal types indicating an intrinsic motivation. In three

of these instances, prompting occurred before this topic was broached, however five informants initiated the subject prior to any prompting.

Linkages between the dimensions of “clear goals” and a “sense of control”, often reported in relation to the perceived balance of challenge and skills, were described eloquently by Erin and lead the discussion directly into the next activity-related category:

Climbing isn't choreographed, so it's not having something memorized and choreographed where you know every move. It's not a matter of knowing exactly what you're going to do. It's a matter of knowing that whatever comes up you can handle. So it's a little bit different, but it's still that 'knowing'. That everything is good, everything is under control. I prefer the unknown--not knowing what's going to happen, but knowing I can deal with it.

Balance of Challenge and Skill. After much discussion in recent research (cf. Moneta & Csikszentmihalyi, 1996; Kimiecik & Stein, 1992; Stein et al., 1995), this has been defined as a balance of the challenges posed by the climb and the perception of skills possessed--when both are at a subjectively high level. One can take issue with this definition, beginning climbers neither possessing knowledge of the possible challenges nor of how they will function when faced with these problems and yet some semblance of a flow experience was reported by all but one beginning climber in this study. Whether the balance of challenge and skills at an optimal level is actually necessary in rock climbing due to the intensity of the experience, is questionable when compared to informants' accounts of flow in other activities:

It's very easy when you're climbing to develop that focus. I don't do anything to consciously engender it, but to do something elsewhere...if I've got to get something done at work, I have to really work to develop that focus, it doesn't just happen.

When you're running, there's only several variables that you think about and in climbing, you're looking at I don't know how many really important ones...so maybe you can tap into that a little sooner.

Although rock climbing, possesses characteristics which would render it an autotelic activity (Csikszentmihalyi, 1975), one informant showed no evidence of having experienced flow. Thus it appears that rock climbing provides no such inherent optimal experiences. Indeed, there appears to be no simple formula for optimizing the likelihood of experiencing flow, antecedents and flow itself resulting from the complexity of interactions between person, situation and activity.

Situations where challenges were low and skills were high figured as an enjoyable, flow-like experience for all, rather than the boredom and apathy proposed to result from such situations (Csikszentmihalyi, 1975). Not applicable to beginning climbers, these situations were mentioned independently by nine respondents:

If the moves are really straightforward and there's a lot of them, you can get into the flow because you can see them ahead of time and you can visualize how you are going to do the moves.

If you can find a 5.9 with just tremendous moves on it, you want to do it every time you go to that crag because the moves are just so good. And you can definitely...I can definitely get the flow on those things.

It was a sunny day, the climbing was beautiful. It wasn't deathly hard where I was taking 10, 12 falls. I didn't fall, I just cruised it, but it felt so good. That to me is the perfect day of climbing.

Six informants went on to describe essential differences between flow experienced on such climbs and those where the subjective balance of challenge and skill was somewhat higher:

But I mean on the real hard routes it's just so much more intense. It's almost a given when you're moving pretty freely on other parts of the climb--but it's even moreso when you have to do a really hard move.

I can get that feeling on a 5.9, but I can feel it to a higher level on a 5.11 because I have to concentrate more. I have to be more emotionally together [Pause] In every way it's challenging me more

The question thus arises as to how much of the former can be explained by "micro-flow" (Csikszentmihalyi, 1975) or by theories pertaining to play. It is interesting to note that those who did not mention a commensurate increase in flow with the increased level of challenge/skill were experienced beginners and intermediate climbers. Without the emotional commitment and investment of time and money of more experienced participants, these climbers experience the freedom, tension and uncertainty which contribute to their absorption in such an intense, but essentially play-like activity (Huizinga, 1955). An interesting adjunct to the much documented balance between challenge and skills was discussed recently in a paper by Moneta and Csikszentmihalyi (1996), where differences in social context were reported to mediate the positive effects of such a balance, flow being facilitated in contexts where achievement played an important role.

Descriptions of a balance between challenge and skill were elicited from all respondents independently, thus figuring as a central construct in their discussions of flow. Of particular note was the mental challenge/skill component, which figured at least as strongly for respondents in flow experiences as physical components. This was only mentioned in relation to traditional climbing:

So I was just very nervous about getting on it and going, "Well gee, if I climb up 35 feet, I'm going to fall 35 feet and land on my butt and really hurt myself!

I wasn't thinking about the grading as much as I was about my ability to place the gear properly. That was the difference because it was a traditional route.

And I think that's what allows traditional climbers to do very bold things is they don't want themselves to fall. I think they push themselves to the edge mentally and emotionally--but not necessarily physically.

The subjectivity of this balance, implicit in informants' discussions, did not form a focus of the interview, yet was articulated by several informants as involving emotional and mental aspects. Erin talked also about the situational specificity of this balance to the individual:

It's hard to draw that line. The very best experiences are the ones that are this close to the line. [Shows a barely perceptible space between thumb and forefinger] But it's incredibly difficult--we can't judge where that line is on any given day--you're never quite sure.

Centering of Attention on a Limited Stimulus Field. This concentration on the task in hand formed an integral part of the flow experience and was mentioned independently by 12 informants. However, whether this focus was activity-related, forming an antecedent factor to flow or an experiential aspect of the experience itself, is debatable. Various responses were given as to what constitutes the object of this focus. These were often dependent on the subjective difficulty of the climb and/or the informants' motivations for engaging in the sport:

I generally try and focus everything on the wall. I'm not focusing on my breathing, I'm just focusing on where the next few moves are.

It definitely helps to narrow your focus and just focus on little bits.

I think it is a way of focusing. I can't just say, "Breathe" because then I start dwelling on breathing. When I start singing I do much better because it relaxes me to hear myself singing to myself.

I can remember keeping my eyes focused on the next bolt. Once I got my foot on the flake, my eyes were focused on that next bolt and as soon as I stood, I had to reach for it.

In some responses focus figured as a pre-requisite for flow:

I think it's much easier if you're able to focus on the climb itself and what your body's doing in relation to the climb.

If I'm not focused on what I'm doing, I'm not going to have that feeling of being on.

The notion of focus as an antecedent to flow receives support from Jackson's (1995) work with elite athletes. Data from this study revealed the nature of rock climbing activities themselves to result in a purposeful focus, thus this centering of attention has been included as an activity-related dimension of flow.

However, standing in disagreement with previous research denying the forced nature of this concentration, two sport climbers indicated that this focus was something that was consciously engendered:

But I feel that the higher my concentration level is, the better I'm climbing, the better experience I'm having. That is what I'm trying to achieve. Trying to be more focused and not react with emotion.

Several climbers also articulated their requirements for the achievement of the necessary level of focus perceived to facilitate flow:

It's being able to focus on the day and what we're doing and that's a huge click for me. If I can let everything else go in my life and just click on what I'm doing and what my task is for the next climb.

However, as ability level increased, an emphasis on focus was often omitted and could therefore be presumed not to be integral to flow. Yet when probing continued, the necessity of such a centered concentration was revealed by more advanced participants:

Your total focus is on movement...moving at extreme difficulty.  
I think that part of what happens is the moves become more intuitive. You're just as focused, but you're focused on a larger picture than the particular three by six foot square that you're on at that moment.



I think the difference when you've sort of mastered the skill and you're climbing something that's within your capabilities, is that the focus is still there but your conscious mind is freed up to a certain extent to enjoy the entire thing.

Thus elite climbers were found to take this state for granted, which they related to their experience in the sport.

Beginning climbers however did not talk of consciously engendering this focus and their concentration appeared more closely related to the activity itself:

It's very easy I think when you're climbing to develop that focus. I don't do anything consciously to engender it, but to do something else where....I'm not quite sure what the difference is, but if I've got to get something done at work, like an experiment or something, I have to really work to develop that focus--it doesn't just happen.

Rock climbing necessitates a focusing on the task in hand in order to successfully ascend a given climb. Clear goals and feedback also appear to be associated with the activity itself.

Do these characteristics themselves constitute flow?

I think it has something to do with that extreme, that being close to the edge, that makes you focus, makes you concentrate so much.

I guess it's a kind of feeling of taking my life in my hands and so I don't want to be concentrating on anything else, I want to be concentrating on what I am doing.

You can't concentrate on anything else, you can only concentrate on what you're doing.

The first time I just sort of ran up the rock because I didn't want to look down, I didn't want to look up--I just wanted to look at the rock in front of my face.

If the activity-related dimensions of a narrow and full focus, clear goals and unambiguous feedback really do represent the core of flow characteristics, these data suggest that optimal experiences *can* be guaranteed merely by matching level of risk with level of skill. However one respondent (a beginning climber) did not report anything approximating a

flow experience, excepting the aforementioned characteristics. Thus it appears that personal variables do play a part in the experiencing of flow. Additionally, two respondents indicated that focus was not automatically characteristic of the activity itself. The first, in response to a question regarding the frequency of this focused feeling stated, "Probably about 90, 95% of the time, but every once in a while you'd realize that people were cheering you on." The second informant responded, "That part about everything else kind of slipping away isn't always there for me."

Others mentioned focus as something experienced during flow, tying in closely with the loss of self-consciousness experienced:

I think I climb because I enjoy the focus--the concentrating so much on something that nothing interferes with the focus. There's very few things in life that I've done where bombs could go off around me and I wouldn't notice.

I'm totally engrossed in it. My body feels like it's moving without a glitch. I don't think about anything around me.

You're just oblivious to everything around you, except pretty much what's right there in front of you.

That was my whole universe--where my hands were, where my feet were, and where the next holds were above it. I was pretty much oblivious to whether it was sunny or cloudy or cold, or anything like that.

Although several beginning climbers mentioned the "choppy" nature of their focus, only one advanced climber commented as to the deleterious consequences of an interruption to this sense of flow:

I think that flow can be interrupted by something forced into my consciousness that might interrupt that feeling. At Devil's Tower I think my flow was interrupted. Up to the point where it started to sleet on us, I really felt that feeling of flow and then I think that feeling of responsibility broke that flow.

Interestingly, two respondents did not mention this centering of attention during the course of the interview, both of whom being more advanced and experienced climbers. Coupled with the fact that the majority of the incidences occurred in the interviews of less advanced climbers, this can be seen to lend support to the assertion that focus is taken for granted by elite climbers.

### Experiential Categories

Time Alteration. This experiential category was mentioned a total of nine times by six respondents, four of whom were responding to direct prompts. Time alteration figured in the experience of flow as a replacement of clock time by experiential sequences as illustrated by the following comments:

You kind of lose the concept of time... If you climb a whole route in the flow it goes by fast and it's over and you're there, you're done.

Yes, time and space are different. You're in a different mode.

When I was done, I was like, "Wow that was really fast!" I thought it took a lot longer.

However, for the informants in this study, time alteration was rarely a part of their meaning-perspective and they seem somewhat reticent about confirming the experience or illustrating its components. Of interest is a comment about time alteration made independently by Paul which illustrates some of the retrospective interpretations made of such experiences:

Sometimes I can get up a climb, get to the top of a climb and it feels like it happened a long time ago. Or it's almost like a sudden memory because I wasn't necessarily conscious of everything that was happening at the time.

Loss of Self-Consciousness. This lack of preoccupation with self is seen as resulting from there being no need or opportunity to engage in self-reflection. Csikszentmihalyi (1975) describes this “egoless” state as being a product of the intense focus characteristic of the flow state. Inadequate attention remains for consideration of the past, the future, or stimuli seen as irrelevant to the task in hand. Indeed, on analysis of data, this category proved difficult to distinguish from “concentration on the task in hand”, the two seeming inextricably linked in the minds of those studied. Although beginning climbers reported these interconnections only as a result of prompting, more advanced climbers were more likely to mention this independently, their responses showing clearly the link with the climber's concentration on the task in hand:

My mind is on what I'm doing instead of something else, some other problem, something else that I'm trying to do.

The more of the outside world you can get rid of when you're climbing, the better you climb and that's what I think we did. We didn't have to worry about anything.

When you're climbing, you forget about anything that's been bothering you. It clears everything out of your head and you just concentrate on one thing.

Several comments indicate that at times, this category can stand alone as a facet of the experience, figuring frequently as the ability to let other life situations and worries momentarily slip away:

Everything just clicked the entire day. Everything just clicked really well and a big part of it is just because I was with friends that didn't really care how well I was doing. I didn't care how well I was doing and so everything flowed real smoothly.

You know how when you're stoned you're whole world becomes very small and things happen outside of you--you just don't know what's going on. And climbing in some ways is like that too--but not artificial, it's very real.

Although this may better represent the loss of self-consciousness described by Csikszentmihalyi (1975), previous research has not found a strong endorsement of this particular characteristic of the flow state (Privette & Bundrick, 1991 Jackson, 1996). Confusion appears to exist as to the defining characteristics of this experiential aspect. Privette and Bundrick (1991) report moderate endorsements of the self in “clear process” during flow and later discussions of the role of experience in the internalization of feedback mechanisms reveal an immense consciousness of the self during rock climbing and other activities. Climbers were conscious of actions, but in a non-judgmental fashion. This may, in part, be due to the nature of the activity. Some activities that carry a comparatively lower processing load (e.g., running) may allow reflection to occur during the process of flow. However, in rock climbing, although the climber is very aware of actions undertaken by the self, evaluation does not usually take place during the flow experience.

Although linguistic confusion is considerable, my biggest concern with Csikszentmihalyi’s (1975) definition of this experiential characteristic is the idea that the physical self is under no threat during flow. In relation to rock climbing activities, he proposes that experience allows the climber to proceed on the chosen climb without feeling under threat. Earlier discussions of the role of uncertainty as a motivating factor for participants in adventure sports (see Chapter Three) clearly take issue with the lack of preoccupation with the self during flow. Indeed, this lack of threat to the self finds no echo in data from this study excepting situations where climbers are both experienced *and* performing well below their technical limits.

To conclude, I would suggest that a better descriptive term for this dimension is either a *loss of ego*, or perhaps a *now-consciousness*--reflecting the lack of attention remaining for consideration of other factors. This loss of ego figured in many reports, the most commonly given reason for its return being a feared social comparison which could result if the informant was unable to climb successfully. This was only mentioned in the context of sport climbing:

Maybe it has to do with the self-consciousness. The reason I don't climb well when I'm following or top-roping is because I'm self-conscious--worried about what other people think.

Once you've started climbing, you kind of get rid of them, but then as soon as you fall or make some stupid move, you're like, "Oh God, I hope they're not watching me!" [She laughs]

Action and Awareness Merging. The whole thing is intuitive when you're climbing well--it's a very interesting combination of intuitive and conscious...so the better you're climbing, the more intuitive it becomes.

At first glance, the experiential category of "action and awareness merging" would appear to negate any conscious focus on the task in hand. However, on further inspection, an "awareness of the actions, but not of the awareness itself" was a relevant facet of the feelings of focus among the respondents--possibly serving as the biggest distinction between the beginning climber and the more advanced in this setting.

Although the deep involvement experienced by informants was immediately attributed to the sense of focus, John postulated that for most beginners, a greater degree of effort was required to achieve this sense of unison:

Even when I was feeling quite good and was successful at the moves, there was still a bit more planning and conscious effort than I suspect some of these more experienced people were putting into it.

Linda's experience stands in contrast to this claim however:

It doesn't seem like it takes much effort at all. It feels like the only thing that would be an effort would be to think about something else besides.

It may be possible that the action must be within the climber's ability to perform for this sense of action and awareness merging to be experienced. However, in sport climbing this familiarity with the moves involved can also be a product of working a climb and the specific training involved:

If you've practiced it well enough in your mind and you've trained for it, you almost don't have to think. You could put your body at the bottom and it would go up by itself.

Could the merging of action and awareness better describe the sense of effortless focus which characterized the reports of informants with greater levels of experience? Indeed, this merging of action and awareness was the one facet of flow not experienced by beginning climbers in many instances. However, some sense of a mind-body unison was described by all but one beginning climber, for example:

I feel like it's all natural and instinctive and thoughtful.

It's just kind of a burst of energy...and you get into a rhythm.

However, this figured less in their descriptions of optimal experiences than for more advanced participants.

For almost every climber, an inability to achieve or maintain a merging of action and awareness was seen as a barrier to flow. This was cited independently by eleven respondents:

The mental control. Not being afraid. Of feeling confident in my ability. Feeling physically well...that's kind of a weird thing, some days you are happy and in a good mood, but weak climbing. So I need to feel good mentally and good physically.

I'm getting a mental picture of how to do it, but I haven't taught my body how to do it yet!

If my mind's prepared, my body just immediately follows--I'm doing it and that's all there is to it. But if my mind isn't prepared, I can be physically ready to go, but it won't happen.

When mentioned independently, this feeling of action and awareness merging most often figured as a sense of moving without hesitation, without stopping to think:

And there was only a couple of moves left and then, without hesitation--I just did not hesitate, I topped out.

'Cos I'll just keep right on moving. You're flowing, you know.

Most referenced these comments to their meaning perspective on flow. This will receive further discussion, however for most informants, meaning perspectives were related to the movement experience while climbing:

The movement felt really smooth. I mean that in that flow sense--in that word I mean like my body feels like there's not any hesitation.

Many phrases used to describe experiences of the merging of action and awareness were shared by more than one informant, two of the more popular ones being "in tune" and "clicking":

When you're really in tune with the climb and your body feels good.



When everything clicks, your energy is just unstoppable.

Climbing is like music--when you feel good, it's rhythmic, it's flowing.

Four respondents explicitly spoke of the "unconscious" nature of the experience, which to them described the merging of action and awareness which they experienced:

I just go up and I do it. I don't have to think. I do it the right way without consciously thinking about it.

It almost feels like it's my body that takes over at this stage and disengages my mind. Whereas in reality, I know that what's happening is that my mind is taking over and disengaging my consciousness or something!

These descriptions closely parallel those reported by Csikszentmihalyi (1975).

Enjoyment. Enjoyment appeared an integral part of the experience in this study as in previous studies and was mentioned independently by every informant. Yet is the flow experience in rock climbing necessarily enjoyable? Selye (1975) described certain athletes as being orientated to seeking out stressful situations--situations of high challenge in relation to their skills. However, in such athletes, the resulting high arousal state is not perceived to be negative ("distress"), but positive (labeled "eustress"). This alternative interpretation of stress was highlighted in the responses received from four respondents:

It was so intense because immediately, when I knew I was leading, it was like, "Phwow." I could just feel this totally different rush come over me. And while I was climbing, it was fear.

If you didn't feel really scared, somewhere, you didn't actually have a good day. You might have had a pleasant day, a pleasant outing, but you didn't really have a memorable experience.

These informants, and two others who mentioned similar ideas, were male. Are male climbers predisposed to take greater risks? Women have certainly made inroads into the traditionally male bastion of risk, but still have a ways to go according to Paul:

That's why a lot more men climb than women because I think women are trained not to take risks. I'm not saying that women aren't capable of it, but I think that it's more difficult for them to make that decision than it is for men because of their societal training.

Only one experienced male informant with a traditional orientation did not cite such an attraction to the stressful situations that previous research suggests are conducive to the experiencing of flow:

In some ways it's easier to really enjoy an easy climb. For me, there's a point of difficulty which, if you go across the line, it stops being enjoyable...because you're too focused on the immediate moves.

Different perspectives existed regarding the length of time that such positive feelings resulting from a flow experience could be expected to last:

It was just a really nice bell curve...I maybe rode on that one for a couple of weeks.

I'll continue to think about it, probably for the next week.

Major elation. I didn't care if I climbed anything else for the entire rest of the weekend.

Likewise, the different characteristics of sport and traditional climbing seem to lend themselves to various definitions of fun:

Yeah to me sport climbing is pure fun. It's not the same as traditional climbing.... To me, with traditional climbing, I don't feel as confident--that I'm not going to zipper out [all fall-arresting equipment dislodges as climber descends] and fall to my death.

There is no doubt that rock climbing was enjoyable to all informants, yet different attitudes existed as to what constituted an enjoyable experience. Reflecting different experiences of flow in relation ability level and/or motivational orientation, this will be explored in relation to data pertaining to the conceptual issues arising from the literature review.

The Paradox of Control. Several interesting discussions ensued from the prompting of informants by asking what “control” meant to them in relation to their climbing experiences, yet it was also mentioned independently by ten respondents. Interestingly, various aspects of control were endorsed by study participants. The most common use of “control” was in relation to control of body and/or mind:

But climbing's taught me that you're up there and you're scared shitless...and you're the one that has to control your emotions.

I like my muscles and how they work. I think it's really neat how you can control your body and make yourself stay on these little pieces.

Mental control I think is what is important with the flow because I talked about how nervous I get and how that detracts from my achieving a flow state.

There appears no obvious explanation as to the focus on the body or the mind as they were each endorsed by advanced and beginning climbers, males and females, traditional and sport climbers, thus any understanding would necessitate a closer look at situational aspects and personal psychological variables. Whether mental or physical control was reported, “control” related to perception of competence and the emotions that this control then evoked:

Not being sure halfway through and then started climbing more and more and more and getting most of the way through it and knowing that I knew what I was

doing and that I could make it up to the top. It was the greatest feeling in the world.

Beginners' comments were more typically related to choice or autonomy issues rather than to perceived competence, possessing no real reference point regarding the latter:

I was the one making the decision to do this and I tried to put my hands and feet where they were at the time...I was controlling my body.

If you neglect the safety ropes and the belayer, I think the climb is completely in your control.

Well there was some control over me in the fact that I had a safety line on and some guy at the top was holding it. So if I fall, he's not going to let me down--so he's controlling me in that sense.

One issue clearly depicting the importance of autonomy for Teresa relates to the mental preparation integral to her training/work orientation to climbing: "Part of my control is sitting back and seeing, 'what do I decide I want of this today?'" Thus once more highlighting control in relation to individual choice.

"Being in control without actively seeking it" is highlighted more by omission, in the sense that being out of control was discussed by several informants to illustrate their perceptions of its relevance:

When I'm having a good day and I'm on, I don't think as much about control. Maybe I can describe it better if I say...if I'm having an off day, I feel like I really need to control my body more. When I get a hold and I kind of have to struggle for balance.

It's when I feel like I'm going to fall, or when I'm stopping and turning all the time and I'm doing that [moves her hands around in frantic actions] that I don't feel I know what I'm doing, that I don't feel in control.

However, this receives more direct support from advanced climbers who talk of a "letting go" experience, relating to a merging of action and awareness:

You have to absolutely let yourself go. It's like letting yourself fall into somebody's arms, except it's really more dangerous!

To achieve an unconscious state but still be awake--especially when you're in that kind of position, that high...that you're willing to trust that feeling enough, to go with it! You're actually safer in that position than if I was really conscious and thinking about everything. It's almost like alcoholism--when they admit they're powerless, that's when they finally have the strength to quit drinking. And maybe it's kind of like that when you finally let go of that control and turn it over to the unconscious.

Thus a sense of subconscious motor control was endorsed, perhaps related to the levels of technical skills and experience possessed by participants. However, control for these two participants and for other advanced climbers was usually mentioned in relation to concentration:

When I'm climbing well and I feel good, you do feel in control, even if you're taking a risk. And I think that it takes experience and extreme concentration--and there's no more concentrated thing than climbing.

Your world becomes very small and that's all you know. At that concentration level, you feel very in control of things.

Thus in this study of rock climbers, four aspects of control were highlighted: control of emotions, individual choice, motor control in relation to skill level, and feelings of extreme concentration. In relation to other dimensions of the flow state, control can be seen as closely related to both focus and the merging of action and awareness.

Some Additional Characteristics? The final dimension of flow discussed by Jackson (1996) was labeled "miscellaneous" and perhaps represents an admission that other facets of the experience exist, but an unwillingness to postulate further on their significance. On the other hand, perhaps this category contained characteristics that really

had no relevance during flow, representing instead contextual factors associated with the experiential state.

To this climbing population, the weather seemed to figure greatly in descriptions of flow. Sunshine almost seemed a pre-requisite for this experience:

It was a beautiful day and I love crack climbing and it just went really well.

Part of it was just being outside in the middle of January...being able to climb outside had me in a better mood.

It was a nice sunny day and so I felt great!

I've been in climbing situations where the situation's changed...where I wish I weren't climbing 'cos the weather got bad.

Yet discrepant cases did exist:

I was pretty much oblivious to whether it was sunny, or cloudy, or cold, or anything like that.

Doing like a ten mile approach in shitty conditions...barely getting off with a lightning storm starting to blow in.

Likewise, beautiful places, aesthetic climbs and the intensity of relations with others present, all figured often in descriptions. Do these constitute separate characteristics or do they function in some way to alter the challenge/skill balance. Or perhaps they mediate to affect the degree of flow experienced?

To this population, degrees of flow did exist, most commonly articulated in conjunction with the subjective difficulty of the climb. Previous experiences mean that the climber is aware of factors that have a tendency to contribute to an enjoyable, memorable, or successful day of climbing. These factors possibly serve to alter the perceived balance of challenge and skill, perhaps also enabling the climber to focus more easily.

The relevance of movement could be postulated as another influence on the challenge/skill balance if movement is perceived as a skill. Inadequate data were obtained to explore this premise although “flow as movement” figured as a meaning-perspective shared by all members of the population.

### Flow and Climbing Experience

Joe was interviewed in the pilot phase at the age of 20 years, his climbing experience having consisted of one and a half years of leading and top-roping sports climbs in the mid-west, in both indoor and outdoor settings. He was categorized as an inexperienced intermediate climber. One year later a relocation to the University of Boulder, Colorado had made it possible to climb on three to five occasions each week. He had significantly expanded his experiential background, having made forays into traditional climbing and having achieved competitive success in the intermediate category of a regional sport climbing competition. Remaining excited about the thought of contributing to a study of his “passion”, he agreed without hesitation to be interviewed a second time.

The First Interview. At the time of the pilot interview, he had no familiarity with the flow construct, but mentioned independently the characteristic of centered attention:

When you’re climbing , the only thing that you’re thinking about is climbing...it clears everything out of your head and you just concentrate on one thing.

Also mentioned independently was a merging of action and awareness:

There’s days when you just feel in tune.

You’re not sore or stiff and you don’t feel weak...if you’re doing a difficult move, you move through it well. If all these things click together, you’re having a blast.

A weaker endorsement was made of a loss of self-consciousness. His enjoyment of the experience figured as one of his motivations for climbing, along with feelings of success, perceptions of risk and the discovery of a set of like-minded people whose company he enjoyed:

I climb for the enjoyment and the feelings of success when you do something you haven't done before, just an excitement, the rush of it. Off the crag, I really like the people a lot.

The Second Interview. Throughout both interviews, experiences perceived as optimal were described in a virtually identical manner, thus providing a validation of both construct and questioning techniques. Although Joe's definitions of success had altered, his reporting of the experiential components of the state remained essentially identical. Some changes were apparent such as the addition of a "mental aspect" to the reasons Joe expressed for his participation in climbing:

I like the mental aspect of it. One day you can go out and feel really good and climb really well and not feel afraid of anything. You can go up the next day and feel really horrible and scared...it's really interesting to me how fickle the sport is.

I climb at my mental limit a lot more traditionally.  
A new sense of excitement was evident about places visited and settings where climbing had been undertaken. This was interpreted by Joe as having resulted from an expanded awareness of the possibilities regarding climbing venues since his relocation to Colorado.

Independently mentioned characteristics were identical to those of the initial interview, with the addition of the endorsement of "effortless"--perhaps linked to the skill development which had taken place over the course of the year:



If I'm climbing really well, my body feels like it's moving really well. I'll reach for the handhold and I won't think, "Well how shall I hold it?" I'll just keep right on moving.

However, a noticeable omission from the nine flow characteristics was a loss of self-consciousness. Reflecting the lack of opportunity for evaluation, the emphasis was placed (mirroring responses from other informants) on the central role apportioned to smooth, non-hesitant movement in the flow experience:

My body feels like it's moving without a glitch.

If you're doing a difficult move and you move through it well.

In the first interview, concerns with social comparison were reflected in his criterion for success. "The completion of a climb that had previously presented a problem" represented an outcome orientation based very much on his awareness of his abilities in relation to other climbers. In the second interview, his experiences with competition climbing had resulted in an ability to openly discuss his thoughts on the experiential effects of "the pressure of evaluation." A dichotomous orientation to success was articulated, dependent on the mode of climbing, level of social comparison involved and to some extent, the indoor versus the outdoor setting within the sport climbing mode. These changes relate to the process of self-determination described by Deci and Ryan (1991; 1995) whereby externally regulated aspects of the activity become integrated such that they become integral to perceptions of self. It appears that the introjected regulation which characterized the first interview had shifted to a more identified form of regulation, at least within his traditional climbing. However, in the sport climbing setting, forms of social comparison were still recognized. Success was defined as the climbing of increasingly

higher graded routes (“pushing the numbers”). This orientation can be seen as an introjected form of regulation (Deci & Ryan, 1991) and for Joe, it functioned well as a facilitator of performance by increasing motivation to succeed in this mode of climbing. Outdoor sport climbing was perceived as more exciting, something that Joe attributed to the “uncontrolled nature of the outdoors.” In relation to his comments pertaining to sport climbing, this appeared to indicate a dimension of realizing control over the climb/environment which figured to facilitate an optimal balance of challenge and skills. Indoor sport climbing posed no such challenge, not being seen to possess “mental aspects”--such climbs instilling no sense of fear, safety factors being controlled without necessitating any action by the individual for the duration of the climb. Thus it appears that even within one mode of climbing, the experience of flow and its antecedents may vary as a result of the individual’s orientations and meaning-perspectives. Although most often engaging in sport climbing, for Joe, his major achievement of the year had been his first traditional lead, a form of climbing that for him, has enabled the experiencing of flow on any grade, subjective challenge changing from day-to-day and from climb-to-climb.

#### Climbing Ability and the Flow Experience

Although Jacob’s experience of flow did not contain all of the documented characteristics, there can be no question as to the recognition of the characteristics of flow amongst all informants regardless of ability level. Proving more useful was to ignore the eloquent articulation to which purposeful prompting often led and to isolate those characteristics of flow mentioned independently by each informant. Flow as a description of movement integrated with subjective difficulty (the balance of physical and mental skills

with challenges) was strongly endorsed by the majority of informants as the definition of flow in this setting. This meaning-perspective appears evident in other activities in which informants engage and was sometimes more eloquently described, as characteristics tended to be synthesized into an easily understood account:

When everything is going right, when your reactions are perfect, when your balance is perfect and you're riding something real hard but the energy's there so it doesn't feel hard, you don't hear anything else, you don't smell anything. It's almost like it's this tiny vapor of time and it's like it's you and the whole world-- but all by yourself, at the same time.

It was a ten mile race and all of a sudden I was going faster, I was racing at a pace faster than I'd ever raced and it was effortless. I thought, "I'm four miles into this race, this should be getting harder." You don't even think about it at the time, you just let your body go... let your body do what it's feeling. I raced faster than I'd ever run! And I remember thinking, "That's how I feel when I'm climbing."

The definition of ability level in rock climbing utilized in this study evolved from a micro-preoccupation with grades into a more holistic assessment. Consideration was given to length of participation in the sport, knowledge thus far accrued, experience at different grading levels and with different forms of climbing including, top-roping, seconding and leading. The other major form of ascent, free soloing, where the route is climbed without the use of ropes or other safety equipment, was not included here as this represents a decision as to personally acceptable levels of risk and not necessarily to ability level. This resulted in a more complex, but equally well distributed categorization of responses reflecting the informants' reports of their perceived ability levels:

I would like to say that I'm past the beginning climber because I've learnt to use my head instead of my body more. I'm thinking through my climbs more, but I still have a lot to learn.

Last year I started learning how to traditional climb with pro [protection]. I haven't done a lot--it's usually doing easy climbs....I've been in three competitions. The first one I was in was novice category and I took a first in that one and was told that I could never ever do novice again. In the other two, I skipped up to expert. I took third in both comps.

Beginning climbers seemed less likely to endorse all the documented characteristics of flow than more experienced climbers, whose memories of their early experiences showed a positive bias:

I was all over it. I just loved it and I was completely passionate about it, right from the start.

This contrasted somewhat with the "fear" articulated by most beginners. This sense of "fear" seemed almost a pre-requisite for a flow experience in the beginning climber, necessitating a centering of attention characterized by an inability to "stop and think" resulting in the "letting go" of conscious control experienced by more advanced climbers. However, in the beginning climber, this "letting go" proved an unnerving experience stemming perhaps from their lack of knowledge regarding challenges posed and skills possessed. "Fear" appears a natural reaction to their lack of experience with successful outcomes in rock climbing, rendering them ignorant as to whether the outcome would remain in their control:

It's kind of a feeling of taking my life in my hands and so I don't want to be concentrating on anything else.

The main thing I remember was really concentrating on the climb and just being scared.

I still had that fear, no matter how solid both my hands and my feet were.

One discrepancy exists, comprising the response from Jacob (the only informant not to have experienced flow):

Fear didn't really play a part in it. Maybe I was over-confident, but either way, I was successful.

This tension posed by a perception of danger in the beginning climber can be categorized as the antecedent variable of uncertainty (Csikszentmihalyi, 1975) and was seen to result in an intense emotional response on completion of the climb. This emotional response appeared to figure as the motivation for several beginning climbers to continue in the sport:

It's more of a scary thing climbing, until I'm done with it and I can look up and say, "Wow, I did that! That was a lot of fun, I'll try it again."

After is the real high. A little treat you get, a little boost of confidence.

I'll do it and get a real sense of relief that "Oh my gosh, I did do that! Maybe I could do others then."

For beginners then, the intensity of perceived risk was sufficient to deny opportunities for reflection and facilitates a flow experience. Their flow experiences were categorized as non-hesitant movement described as "instinctive" and "rhythmic."

For more experienced sport climbers, this perception of danger was non-existent, their focus being the result of a conscious decision based on performance orientations. Focus also served as a barrier to flow if the climber was unable to achieve or maintain an adequate centering of attention. This often resulted from self-imposed pressures of social comparison. Although issues of social comparison were mentioned by beginning climbers,

the focus that occurred as a result of their fear was sufficient that such issues did not serve to interrupt or prevent the flow experience.

When climbing traditionally, the experienced participants spoke of the role that the very real dangers played in providing the same tension of danger, thus necessitating a similar level of focus:

If I'm up on gear [high above the last piece of protection] I don't want to let myself quit. If I'm on a bolt, I'll let myself quit. I don't give it 100%.

I think it has something to do with the extreme--that being close to the edge, that makes you focus, concentrate so much.

I think that's what allows traditional climbers to do very bold things, is that they don't want themselves to fall.

Flow to experienced climbers was likewise characterized in movement terms as "fluent" and "smooth", however links with other dimensions were reported, movement being seen as "natural", "effortless" and without the need for conscious thought.

Interestingly, flow was reported to occur on "easy" climbs (those where skills possessed far outweighed any challenge posed) by experienced participants. In Csikszentmihalyi's (1975) model of the flow state, engagement in such activities would be predicted to produce feelings of boredom. As previously discussed, rock climbing is by nature an autotelic activity, even simple moves necessitating a certain level of concentration for them to be performed safely. Additionally, Csikszentmihalyi and Csikszentmihalyi (1988) proposed that individuals possessing what are termed "autotelic" personalities are disposed to find intrinsic reward whatever the given situation. Thus, the finding that enjoyment was experienced on easy climbs could be attributed to the situation

(the autotelic nature of rock climbing activities), or the autotelic personality of rock climbers. A total immersion in the activity of rock climbing can occur regardless of ability, although the necessary level of concentration figured as a more consciously engendered antecedent in experienced sport climbers. However, with flow not having been experienced by all informants, this finding can be seen as one example of the complexity of interactions which underpin sport experiences. Such complexities again point to the limitations of reductionist approaches for the study of optimal experiential states.

The proposed links with motivational orientation and the role of affective responses in the facilitation of flow and peak performance will be discussed individually in the next section of the report. Possible interactions between what have been labeled discrete psychological constructs and theories will be discussed in the light of data from this study.

### Conceptual Issues

Data pertaining to many of the questions which arose from the review of literature warrant discussion in this section, yet for the purposes of simplicity, each issue will be addressed individually wherever possible. In the concluding chapter, an attempt will be made to highlight the many complex interactions which are thought to occur.

#### Peak Experiences and Flow

Used throughout the investigation was the Jackson (1992) definition of flow as corresponding to the “most satisfying performance, the one you want to remember for the rest of your life.” Responses to this question were found to relate more to Privette’s

(1983) definition of peak experience as a “fulfilling psychoemotional moment,” although many characteristics of flow were experienced during these satisfying times:

It wasn't really, really hard, but it was like looking at it, being totally absorbed in it. It's a matter of being in a place of total concentration, but completely relaxed....and I remember climbing that route. Fitch after pitch of this wonderfully consistent thing.

On analysis, peak experiences reported during the interviews were most often flow experiences. Likewise, flow experiences were nearly always interpreted as peak experiences, indicating the correspondence of these two constructs in the memories of respondents--this being strongly expounded as their version of reality:

I think it's very fulfilling when I experience flow.

Compared to the things you experience in everyday life it's [flow] high, far and away better.

Thus descriptions of flow and peak experience appeared compatible with the goals both of accomplishing, and of experiencing stimulation, which Vallerand et al. (1992) described as two of three factors characteristic of intrinsic motivation.

### Flow and Peak Performance

What constituted a peak performance to rock climbers was not necessarily a macro-level experience with higher grades or extreme difficulty. “Superior functioning” (Privette, 1983) could just as well refer to a mental aspect involved in overcoming a specific challenge:

It doesn't necessarily have to be a difficult climb as long as it involves ground fall. I like placing my own gear and working that all out. I can be as challenged on a 5.8 as I can on a 5.11.



The more challenging a climb, the more satisfaction, or the more adrenaline I get when I get to the top of it. And it doesn't necessarily mean that it's a tougher climb technically or physically--some climbs are mentally harder.

For some informants, this superior functioning could even relate to their interactions with others, exemplifying the need for relatedness proposed by Deci and Ryan (1995) as a component of self-determination:

And I felt like we knew exactly how the other one was feeling and thinking and everything clicked. We didn't fall on it. I've never felt so close to anybody in my life.

We did a 5.10 route, we had a great time...we worked really well together--everything went smoothly.

Not surprisingly, informants' definitions of success (see Table 3, p. 126) were closely related to articulated instances of peak performance. For Cindy, success was defined as "conquering the rock. It's getting to the top and knowing you've pulled yourself all the way to the top." Obvious parallels exist with her description of a peak performance: "It was the longest climb I had done and I seconded it clean. It was really strenuous climbing and sometimes it got real thin. I thought it was a big challenge and I did it. Getting to the top...very, very satisfying, really fun." Karl's definition of success: "I like aesthetics. I like a climb that looks good, that feels good...that's challenging. (If you didn't feel really scared somewhere along the way, you didn't actually have a good day)", is equally reflected in his response to a question about the characteristics of a peak performance: "You're 20,000ft up in the air and it's just the most beautiful thing you can imagine to be up there and your sense of danger's such that I just really was nervy...you feel a lot better about it afterwards!"

Two informants cited the flow experience itself as their definition of success, this figuring as their motivation for continued participation in the sport:

Flow is success to me.

It's [Flow] tremendous and that's part of the reason why I still climb and feel so good climbing.

More commonly, when talking of a particular flow experience, aspects of the individual's definition of success were described. This assertion received most support from more advanced climbers who offered integrated explanations of success, flow and peak performance:

The whole thing is intuitive when you're climbing well. Your body recognizes a sequence and sort of automatically moves into it without your mind sort of consciously having to focus on this. The better you're climbing, the closer to your actual physical limit, you can feel that way--when it almost becomes subconscious.

It's horrendously hard, but if you get it right, it's effortless. It's like my first 5.12 I flashed. It's almost like it happened and I don't know how it happened--it just did!

The participants' definitions of success and whether these were orientated to mastery of the task itself, or to more externally regulated processes, appeared integral not only to the flow experience, but to their peak experiences and peak performances. If adopting an ego-orientation to success on a climb, flow was always integral to a peak performance.

However, in these informants, flow was rarely reported as occurring on easier climbs--although these were occasionally cited as peak experiences. The task orientation adopted most often by climbers in this sample, frequently resulted in the merging of these three experiences in the perception of the individual:

If I'm doing better climbing, I enjoy myself more and then everything just kind of fits. I'm climbing well, I'm having a good time, I'm really focused, I feel strong,

my balance is on. It's just like everything's kind of meshed and you're just doing real well.

You just feel good, you're not sore or stiff and you don't feel weak. And if you're doing a difficult move, you move through it well. If all these things click, together, you're having a blast...having fun.

In Jackson's (1996) study the characteristics of control, confidence and complete absorption proving central to athlete's descriptions of both peak performance and flow. For all informants in this study, flow comprised an integral part of a peak performance. While generalizability of the many interactive links between dimensions and constructs in the meaning-perspectives of rock climbers has limitations, discussion of data pertaining to these cross-linkages can be argued as having relevance to psychologists working alongside any athlete if our aim is one of understanding the factors which characterize successful performances.

### Enjoyment and Optimal Experiences

The characterization of enjoyment has undergone modifications so as to retain its tendency to differentiate between the constructs of optimal experience. In flow, enjoyment is believed to vary from moderate to high levels, whereas its intensity is proposed to increase in peak experiences (Privette, 1986). Although enjoyment most frequently figured as an after-evaluation of a positive experience in flow, in this study it was also found that enjoyment can sometimes be experienced during the course of a peak experience when skills possessed far outweigh challenges posed, thus allowing a time for reflection:

It was really, really cool. It was crack climbing, but I think there was a layback and an overhang--just all kinds of stuff. So it was a really nice route to do. And we climbed it pretty easily.

It wasn't the grades that made it a better than average day, it was the climbs themselves. I'd never been on rock that was quite like that before and it was really fun to climb on.

If it's a pretty easy route, I'm just totally enjoying climbing. It's not totally mentally engrossing--I mean I'm still only thinking about climbing, but I'm enjoying just climbing.

Such data appear to support the recent proposal that enjoyment could be more profitably conceptualized as the process of flow (Kimiecik & Harris, 1996). However, it should be noted that these peak experiences incorporating flow were reported as situations where the individual's skill far outweighed the challenges posed by the climb. In situations where a balance of challenge and skill was perceived, enjoyment figured as an after-evaluation of the experience. Thus data from this study emphasize the necessity for cognitive evaluation of the experiential components of the flow state prior to an affective response. This finding does not support the proposal of Kimiecik and Harris (1996) and instead is more aligned with the relationship of affect to specific cognitive and/or physiologic factors proposed by Wankel (1997). Enjoyment as the process of flow does not account for the complexities of personal and situational variables reported by informants. In order to adequately conceptualize the affective components of optimal experiences, consideration needs to be given to social contextual variables and in particular, an individual's goals and expectations when engaging in sport activities.

Enjoyment In (or After?) Flow. There is no doubt that rock climbing was enjoyable to all informants, yet different attitudes existed as to what constituted an enjoyable experience, reflecting different experiences of flow in relation ability level and/or motivational orientation. Whatever their motivational orientation, enjoyment was reported

by all informants as a post hoc evaluation of a positive experience or outcome. The focal intensity necessary for the effortless execution of moves was often found to deny possibilities for an affective interpretation during the experience itself. Indeed, results led to a querying of the juxtaposition of a merging of action and awareness, where moves are effortlessly executed without a requirement for overt cognitive activity, and enjoyment--the cognitive interpretation of the affective nature of the experience. Loss of self-consciousness and the merging of action and awareness both indicate a lack of evaluatory potential with the intensity of focus necessitated by the activity of rock climbing also providing no opportunities for self-reflection. Time for reflection was distinctly *not* associated with most flow experiences reported by the climbers in this study. As mentioned previously, activities like running and hillwalking may not only contain opportunities for reflection to occur during feelings of flow, but also allow the participant to revel in the feelings of enjoyment produced. However, the high levels of commitment necessitated by rock climbing activities in order to avoid possible serious consequences to the physical self, allow for reflection only at the end of the experience, or in situations of submaximal challenge:

I don't think, "Wow! This is really great" because I'm so focused into what I'm doing that my mind doesn't retreat back to analyzing the situation at the time.

When I get done with a route--the few routes that I can think of where I really experienced what you want to call flow--you get done and you go, "That was beautiful! That was indescribably beautiful."

I think enjoyment, as far as that event, was an afterthought. When I look back on it I say, "Wow, I really enjoyed it!"

I didn't sit there and evaluate it. I think it's almost the memory of looking back on it that I enjoy.

But I think that to do a climb at any grade, you would have to be able to take that information and process it--kind of almost unemotionally. Kind of detach yourself emotionally and just take information in, process it and make a decision. I mean the emotional side came after we were down.

Indeed this retrospective interpretation often seemed unrelated to the actual climbing experience.

I enjoyed it when I had gotten through a move--I didn't necessarily enjoy it when I was struggling through a move.

At the time, it's horribly, horribly hard...but when it's all over, you have a reward and you think back to yourself, "Wow! I'm gonna do that again" and you forget that at that exact moment, there had to have been all this exertion. But when it's all said and done, because of this satisfaction, it pales.

From the meaning-perspectives of informants, enjoyment only figured as the process of flow when challenges were low in comparison to skills possessed and when the individual's goal perspective was orientated to factors other than outcome. Instead, enjoyment appeared unrelated to the fear, pain and strenuous muscular effort involved in facilitating the necessary focal intensity for climbs with greater subjective challenge. Taking into consideration aspects of competence and control, confidence and self-determination, how much of the flow construct can be explained using a model of intrinsic motivation with the addition of a post hoc affective interpretation of affect? Kimiecik and Harris (1996) proposed a re-conceptualization of enjoyment. In their paper, enjoyment was considered as a process involving flow, intrinsic motivation and achievement. This proposition will be discussed in greater depth in the following section which discusses the participation motives of informants in the light of Csikszentmihalyi's (1975) findings and

explores their relation to the constructs of flow, intrinsic motivation, peak experience and peak performance.

### Motives for Participation

The motives for participation in rock climbing identified by Csikszentmihalyi (1975, p. 29) are shown below, the first two reasons being thought to reflect a true intrinsic motivational orientation:

1. enjoyment of the experience and the use of skills
2. the activity itself: patterns, actions and the world it provides
3. friendship, companionship
4. development of personal skills
5. measurement of self against own ideals
6. emotional release
7. competition--measurement of self against others
8. prestige, regard and glamour

A summary of participation reasons described by informants is shown in Table 3 and in general, responses from this sample closely echoed Csikszentmihalyi's (1975) findings. Responses coded as participation motives were those resulting directly from the question: "Why do you climb?", or "What are your reasons for participating in climbing?", or from the ensuing discussion. The total number of subjects citing reasons from within a category does not always tally with the number of raw data themes represented due to further endorsements made by the same subject in several cases.

Table 3

## Informants' Reasons for Participation in the Activity of Rock Climbing

Participation Motives	The activity itself	Enjoyment of the experience	Friendship, companionship	Development of personal skills	Measurement of self against own ideals	Emotional release	Sensation seeking
Endorsements							
Beginning Climbers	<i>being outside</i> (1)	<i>fun</i> (3)	<i>meeting people</i> (2)	<i>novel challenge</i> (2) <i>conquer fears</i> (2) <i>independence</i> (1)	<i>satisfaction</i> (1)	<i>stress reliever</i> (2)	<i>because it's dangerous</i> (2)
Intermediate Climbers TR	<i>being outside</i> (3) <i>remoteness</i> (2) <i>movement</i> (1)	<i>fun</i> (2)	+ve: <i>lifestyle</i> (1) <i>interesting people</i> (2), & -ve: <i>crowd avoidance</i> (3) <i>interesting people</i> (1)	NA	<i>mental aspect</i> (1) <i>mastery</i> (1)	NA	<i>the risk</i> (2) <i>adventure</i> (1) <i>new places</i> (1) <i>challenges</i> (2)
SP	<i>being outside</i> (2)	<i>fun</i> (1) <i>enjoying hard work and its rewards</i> (1)	<i>avoidance</i> (3) <i>interesting people</i> (1)	<i>self-reliance</i> (1) <i>physical challenge</i> (1)	<i>success</i> (1)	<i>strenuous, but relaxing</i> (2)	<i>new places</i> (1) <i>challenges</i> (1)
Advanced Climbers TR	<i>being outside</i> (1) <i>aesthetics</i> (1)	<i>enjoying hard work and rewards</i> (1)	-ve: <i>my own domain</i> (1)	NA	NA	NA	<i>challenge</i> (1) <i>adventure</i> (1)
SP	<i>being outside</i> (2)		<i>because husband did</i> (1)	NA	NA	NA	NA
Total informants endorsing	11	8	7 (positive) 4 (negative)	6	4	4	10

Key: TR- traditional climbers SP- sport climbers



The most strongly endorsed reasons given by this sample were likewise the enjoyment of the experience and the nature of the activity itself. However, the enjoyment experienced was found to bear more relation to an “emotional release” and thus receives further attention later in this section.

Friendship and Companionship. Friendship and companionship figured most often in the reports of those of intermediate ability:

Climbing would be fun in itself, just climbing rocks, but when you interact with the people and talk about it and reminisce about things you did, it just makes the experience all the more enjoyable.

It's the entire environment of going camping, eating, cooking out, drinking beer, doing a couple of climbs.

Conversely, four informants spoke of the solitude of the climbing experience, a facet that could be categorized as part of the “activity itself: patterns, actions and the world it provides”, yet as reasons for participation, the endorsement of friendship opportunities and solitude stand in striking juxtaposition, perhaps representing differing needs for relatedness among informants in their definition of self-determined behaviors.

Although endorsing the friendship aspects of the climbing experience, conflict between climbing participation and family life/significant other relationships was often articulated:

If I knew I was going to die tomorrow, I'd go climbing today. I feel guilty about that because of my family...there should be other things that are more important.

My wife doesn't really like me getting into those scary situations, so I can't really tell her what it's like.

Four of the five beginning climbers recognized a compatibility between their philosophies and those held by members of the subculture they were entering. This recognition enhanced the likelihood of their continued participation:

I think it's probably a trait in the few people that I've met climbing that they seem to be fairly independent...but I think that's an appealing part of climbing.

The people who really love it, love to see other people do it. If you just meet somebody and you don't have anybody to climb with they're like, "Oh yes, come climb with me"! Friendship and companionship were not mentioned by advanced participants when asked directly about their reasons for climbing, yet figured as a poignant aspect for two of the four informants in this category when talking of their flow experiences. Although seemingly more related to descriptions of a peak experience, these interactions were articulated as an integral part of the flow experience under discussion:

And I felt we knew exactly how the other one was feeling and thinking and everything clicked. I've never felt closer to anybody in my life.

Noticeable amongst elite climbers was a lifestyle that revolved so completely around participation in the sport that chosen friends were most likely to be participants themselves.

#### Development of Personal Skills and Measurement of Self Against Own Ideals.

The "development of personal skills" was seen by most as a reason for continued participation. The learning experience of beginners was likely to be influenced by verbal instructions and vicarious experiences, whereas internalized strategies for exploring the possibilities of a single move were articulated by advanced climbers. However, the "measurement of self against own ideals" was endorsed by only four informants, all categorized as within the advanced-beginner to inexperienced-intermediate range:

Climbing has taught me a lot that I can bring out in my personal life. When you're frustrated or stressed out, to slow yourself down, to realize where you are, what

you're doing--to think it through, have positive self talks. All those types of things have really made me a stronger person.

It feels pretty empowering because I'm working against myself...it's just me and what I'm doing at that moment--pushing myself.

I've found a challenge that I enjoy and I feel like I'm making progress towards meeting that challenge.

This perhaps reflects their continued exploration of the sport as an effective medium for personal expressiveness (Waterman, 1990) whereas in more experienced climbers these important decisions had already been made and behaviors integrated with self-concept.

Emotional Release. As a participation motive, a more overt form of emotional release was articulated by four beginning and inexperienced intermediate climbers:

It's like this adrenaline rush that snaps and all of a sudden every emotion that you have in your body is going to come through at one point or another.

Actually, I was pretty nervous on the first climb. But for the rest of the day I was pretty relaxed. I was just exhilarated. I felt really good. I felt very happy. It felt like crap when I was up there shaking. So...when you got the last clip, you're like, "Yes! Yes! God that felt good!"

It's packed full of emotions. There's relief when you make it up to the spot that you wanted to get to and there's really scary parts when you know you have to let go.

However, stories of epic traditional experiences and peak performances in sport climbing were punctuated regularly by expressions of intense emotion:

Didn't have any trouble with it, but just got a total rush out of the exposure. You barely start climbing and you feel like you're 700 feet off the ground. And it's just amazing--it really puts you out there.

I had so many emotions come out on that climb. I did everything from get angry, to laugh, to cry at the top.

For experienced climbers, especially those participating more often in sport climbing activities, the average climbing day offered instead a chance to experience a less intense form of flow, seemingly initiated by the act of perfecting individual moves on a particular project. For all informants, the successful completion of a project would encompass a more intense experience of flow, the end result being intense, positive emotions:

That was a do-or-die situation. It was all up to me. That was just really neat--sitting up there and going, "Wow! I did that!" Major elation--I didn't care if I climbed anything else for the entire rest of the weekend.

Very scary till I made the clip and then it felt great.

While I was climbing it, it was fear, but when I got to the top it was more of a rush like, "God, I did it!"

Competition. Csikszentmihalyi (1975) expressed surprise at the appearance of competition as a reason for participation in relation to flow. This may have been strongly influenced in his study by the inclusion of a sample of team sport players, as competition was not endorsed as a participation motive by the informants in this study. However, for some beginning climbers, positive affect was intensified if they could see that they were succeeding in comparison to other beginners. Thus a greater level of ego-involvement figured in their experience of flow, this being related to their motivational orientation to the activity of climbing:

It was exhilarating because you were succeeding and people knew you were succeeding...and everyone's eyes were on you--it's kind of like your ten second moment of glory.

There were three females, who had a lot of natural ability, who don't have a lot of fear, you know--they're beginners but they've done quite well and I was the only female that tried it.

In most sport climbers, feelings of ego-involvement were antecedent to the flow experience. The contingency of their self-esteem was reported as leading to increased motivation to "succeed", although this ego-involvement, if continuing to exist while climbing, was reported to detract from, interrupt, or even prevent flow experiences:

It becomes a lot harder to climb if you have to stop and think about people around you...you're concentrating more on that than climbing and doing it for yourself.

The people I know at the gym, who seem to be more into indoor climbing--that are into power climbing and the showmanship of the sport instead of really getting in tune with what you're doing.

The reason I don't climb well when I'm following or top-roping is because I'm self-conscious, worried about what other people will think.

Sensation Seeking. The nature of climbing includes inherent risk. This can be the perceived risk of the beginning climber, or real (but calculated) risk for climbers operating in the traditional mode. However, some climbers endorsed a seeking out of risk over and above that pre-supposed by the nature of the activity itself as a participation motive. This category of sensation seeking represents the attraction to situations of perceived incongruity between task demands and physical or mental capabilities documented by Kohn (1987) and Zuckerman (1979; 1988).

Challenge appeared as a raw data theme within various categories and contextual information was crucial in deciding the placement of the various endorsements. However, in the case of the beginning climber, it was not felt appropriate to define the contextual underpinnings of their participation motives, the documented effects of climbing mode being ambiguous at this stage. In other informants this proved an interesting analysis and the contents of Table 3 represent a framework which was used to guide the interpretations

of other findings. With regard to informants' experience or ability in the sport, participation motives revealed a changing emphasis as the individual developed a "passion" for the activity.

### Participation Motives and Motivational Orientations

Advanced climbers' reports of early experiences were found to bear little relation to those of the beginning climbers interviewed. To explore this, a question was asked directly of some informants and during the analysis of other interviews, as to whether their orientations to the sport were influenced by the amount of effort they had invested in the activity. This application of social exchange theory (Homans, 1961) reflects a cost/benefit analysis where rewards obtained from participation are compared to personal effort (time, energy and money) that the individual invests in rock climbing activities:

I never feel that I have to enjoy it because I've spent the money on it...I have to spend the money on it because I enjoy it!

Yet comments from Teresa indicated a work-like attitude to climbing as a result of her heavy mental and physical commitment to the sport:

I've never climbed for fun, except for that first year. That's just the way I am. I want to be the very best that I can be.

I started out climbing three days a week to what led up to training six hours a night, four days a week.

This aspect also received support from discussions with beginners. Although finding little compatibility with such descriptions in relation to their climbing, they recognized from their experience in other areas, that this had the potential to occur when more money and time had been invested:

I get mad at myself if I don't get out three or four times a summer to go camping, 'cos I feel like, "God, I've spent all this money and it's just sitting there!" So yeah, it could be a pressure [in relation to climbing]--but not yet it hasn't.

However, others denied feeling any pressure from such external behavioral controls.

Instead, personality variables were seen to mediate once more with these hypothetical effects:

No. Just because I've got the stuff doesn't mean I'm going to keep doing it. I don't think I'm a very materialistic person, so just because I have things to climb, I'm not going to go out and climb. I don't think that has anything at all to do with it.

As could perhaps be expected, such responses were given as a result of probing their motivations and were not offered independently as participation reasons. However, other, slightly less extreme versions of Teresa's sentiments occurred regarding issues of fitness and training in those informants with an orientation towards sport climbing. In these responses, external pressures appeared to have been internalized in relation to possibilities for demonstration of increased competence:

You get this good and you have to create better skills, more endurance, more power.

I feel like I have to climb in the gym every week to keep in condition. To keep my hands with these calluses!

More typically however, this sense of introjection was absent from reports received. The majority of goals and goal orientations pertaining to reports of the flow experience, were found to be above the threshold of autonomy (Whitehead & Corbin, 1997), thus indicating a self-determined extrinsic, or intrinsic orientation. For example, traditional climbers also described reasons for "having to" climb:

[Climbing in the gym] It's something I'm doing to pass the time, to stay in relatively decent shape for next season. I guess it's like a quick pacifier for the need and the want to make smooth movement.

All I want to do is climb anywhere and anytime that I can.

I hate being indoors. I have a hard time with it, even though it means getting in shape in order to climb better outdoors.

These sentiments convey a sense that the activities were self-chosen, although with somewhat instrumental ends, and represent examples of identified regulation.

Flow and Intrinsic Motivation. In this study, characteristics of flow were closely paralleled by the reasons given by informants for continued participation (see Table 3, p. 126), thus supporting a close relationship between these two constructs. In relation to self-determination theory (Deci & Ryan, 1985; 1991), the data again support a correspondence of flow with intrinsic motivation. All informants, excepting beginning climbers (who had a tendency to view control externally) spoke of the intuitive nature of their movement and their control therein. Self-determination theory also proposes that intrinsically motivating activities lead to increased feelings of competence and autonomy, which in turn result in feelings of positive affect and self-fulfillment. This received most endorsement from intermediate and beginning climbers:

I suppose it gave me some reinforcement to continue--because I'd struggled and actually succeeded.

I enjoy feeling competent at something. The feeling of mastery.

It makes me feel so much better about myself and I feel like I can do just about anything after a day of climbing.



More advanced informants and in particular, those engaging most often in sport climbing activities, were already in possession of a vocabulary of basic movement skills. These informants seemed prepared to accept longer practice/training periods without experiencing their definition of success in order to eventually attain the performance that would result in these feelings of competence and fulfillment, their goals having perhaps become more integrated with their sense of self (Deci & Ryan, 1991; 1995). However, throughout these periods, advanced climbers were still experiencing positive affect resulting from their self-determined behaviors:

It's horribly, horribly hard. But when it's all over, you have a reward and you think to yourself, "Wow! I'm going to do that again" and you forget that there had to have been this exertion.

Maybe I've done the climb six times, but in the middle of it, I found a more efficient way to do this one move...to me that's an accomplishment.

Self-Efficacy and the Interpretation of the Challenge-Skill Balance. Self-efficacy is the situation specific form of self-confidence pertaining to the individual's beliefs about what can be accomplished with his skills (Bandura, 1977). This is proposed to result from appraisal of past performances, vicarious experience, verbal persuasion and emotional arousal levels. All informants talked of the relevance of one or more of these categories in this respect:

For me, watching people climb any route is beneficial, 'cos that's how I learn.

Not just my past performance, but my partner's as well. I knew that he could solidly lead a percent of our climb without any trouble.

Somebody encouraging you to try, even if you don't make it--that helps tremendously.

I feel it's a good sign if I'm nervous ahead of time--feeling a little bit sick.

My friend down below was like, "Go for it !"

However, the relevance and form of these influences was dependent on orientations to rock climbing as well as on the ability or experience of the informant. Thus these factors may well be best considered in relation to their mediating effects on the perceived balance between challenges and skills.

As discussed previously, beginners tended to be more susceptible to verbal persuasion and vicarious experience, being without their own frame of reference:

Since I'm new to the sport I'm judging myself on whether I can learn. I can look around and see what other people are doing and I really want to learn to do it myself.

When they support me and they're just like, "You did great. That's good." That kind of encouragement is good.

More advanced climbers were well aware of their optimal arousal levels and thus less likely to be influenced by external indicators of competence:

I have to be willing to say "No, I think mine's going to work for me" and that's a matter of confidence. I'm not saying I don't want people to help me out, but I do want to try and solve the problem myself.

Both of us felt very confident in our abilities, so when people said, "That's a really hard climb; you'll have to aid through it," we still felt that we wanted the challenge--we were ready for that.

I hate getting beta [information on how to complete the climb] from people 'cos I enjoy the problem solving aspect in climbing and so I get really irritable if people sitting there go, "OK. So put your left hand over here."

When competition was involved, some informants reported higher optimal arousal levels.

However, more usually, these levels were reported as lower and generally under the climber's control:

To do a climb at any grade, you have to be able to take that information and process it--kind of almost unemotionally.

If I'm nervous, or don't feel well, or I'm scared about something and I don't feel I can control that, then I definitely don't climb well.

I find that when I'm stressed, I don't climb as well 'cos I don't think about what I'm doing and what my body's doing. I don't let everything work together.

Flow and Self-Determination. Rock climbing as an autotelic activity, incorporates many of the antecedents thought to empower the achievement of a flow state (Deci & Ryan, 1985). However, data suggest that the presumption of an automatic accrual of self-actualizing and other positive effects given the presence of situational antecedents should be examined further.

An attraction to challenge was posited by Deci and Ryan (1985) as being characteristic of an intrinsic motivational orientation. In later work, this can be seen as related to the need for competence (Deci & Ryan, 1995) and the goal of accomplishment (Vallerand et al., 1992). Such an attraction to challenges congruent with their sense of self was emphasized by every informant:

One is the allure and two is the challenge.

That's one of the prime areas--challenges, of climbing big routes.

That's the part of climbing I enjoy--when the variables change. How do you respond? How do you handle yourself?

Yet the subjective perceptions of risk were only seen to facilitate flow experiences for beginning climbers. Greater levels of experience seemed to act to define the challenges posed and allow an informed choice to be made regarding experiences sought.

Another salient variable appeared to be a person's task- or ego-orientation towards the activity (Duda, 1993). These orientations are reflected to some extent in the emphasis placed on the two variables thought to define autotelic activities from Csikszentmihalyi's (1975) list of participation motives. In advanced participants however, a more complex situation was found to exist. Teresa, who exhibited both externally regulated and mastery orientations dependent on situational demands, strongly endorsed both the problem-solving and the competitive nature of rock climbing while mentioning often the friendships she has formed through participation in the sport. Neither relaxation, risk or creativity figured in her experience.

Because that's a big part of accomplishing a hard route, being willing to get on it and forcing yourself to say, "I can get through this, memorize it, think about it"

I decided I wanted to own this sport, I wanted it to be mine and so for four years, I poured myself into it.

I don't want to do it, but I need to get my attitude into gear otherwise at the end of the day, it's not gonna be a good day.

Flow occurred as a reaction to the intensity produced by a certain level of challenge and skill. As the balance of challenge and skill increased, so too did the intensity of involvement and the level of flow experienced. Although movement-related flow experiences were reported in her interview, these were almost always in relation to her peak performances, where a more focused form of social comparison was evident.

Paul, another advanced climber, saw friendship, relaxation, problem-solving and risk as important motivations for climbing and factors figuring in his flow experiences. He articulated a task-orientation to participation in the activity:

I think I climb because I enjoy the focus, the concentrating so much on something that nothing interferes with the focus.

To me that's an accomplishment because it was something I learned, but now I can use it on another climb.

Although antecedent variables surrounding Paul's experience of flow differed from those articulated by Teresa, its components showed the same tendency to differ regarding relevance and intensity, dependent on the subjective balance of challenge and skills. This finding provides further support for the findings of Massimini et al. (1987) and Csikszentmihalyi and Larson (1987).

I can get that feeling on a 5.9, but I can achieve it even more on a 5.11, because I have to concentrate more.

I feel that the higher my concentration level is, the better I'm climbing, the better experience I'm having. That's what I'm trying to achieve.

Two of the three complete beginners in this study did report some recognition of the flow experience and cited several characteristics with respect to their own limited climbing experiences. These informants also reported a task-orientation to the activity, whereas Jacob, the only informant failing to experience any semblance of flow, possessed a clear ego-orientation to most activities undertaken. This particular aspect will be discussed in depth in the following section however, the interaction between personality and situation in the facilitation of flow experiences and its pertinence to athletes of varying ability levels, is proposed as a profitable future research direction.

#### The Effects of Social Comparison on Flow

An intrinsic motivational orientation to rock climbing does not account for all reported incidences of flow. Whether acting to facilitate flow, or forming a barrier to the

experience, external regulation in the form of overt competition sometimes figured prominently in the reports of informants:

“Well gawd! They couldn’t do it but I can do this! That is a really neat feeling that I can do something that this person can’t do!”

The main times I’ve experienced a flowing sensation is when I’m not competing against somebody.

This ego-orientation was adopted by informants when forced into close proximity with other participants and therefore occurred most frequently in indoor climbing situations and led in most to a denial of possibilities for flow:

I guess that it’s intimidating when you know that it’s someone who just started climbing two months ago and they’re doing climbs that you’re doing!

Outside they’re more enjoyable because in the gym, things seem a little bit more competitive.

If I was out with Joe, I wouldn’t be afraid to use my knees and stuff...but I would be embarrassed to do that, even if I know that’s what would make me feel best at the time, because I really worry about what other people think!

Indeed, solitude figured as a frequently reported motivation with respect to traditional climbing:

The degree to which there are other people around inherently lessens the value of a given climb. It’s always better to be alone.

There were no crowds--and I realized that was one of the things I liked best. However, some social comparison concerns were evident in the reports of those engaging most often in traditional climbing (notably Paul and Karl) regarding their responses to specific situational challenges:

It was a difficult climb and we didn’t have to use any aid, which was something we were quite proud of ‘cos we had heard that most people did.

Well there is an element of competition in adventure. It's sort of the climber against all the odds.

I know we did really well because we did the climb in nine hours, car-to-car and most people do that climb in 12 or 13 hours.

Self-determination theory would suggest that behaviors would show less evidence of ego-involvement and social comparison as they become more integrated with the climber's true self, thus consideration will now be given to the influence of ability level and length of climbing experience on external forms of regulation.

Beginning Climbers. As discussed previously, the nature of rock climbing, coupled with the inherent risks perceived by the beginning climber, necessitate a complete absorption in the activity. Although well aware of their abilities in relation to other participants, these comparative thoughts did little to deter this focus on the task in hand:

If people are around, I'll notice. I'll know that they're there just because I feel they're like, "Oh, a woman climbing! Check her out." Then once I'm on there, it goes away because I'm into my own deal.

Once you've started climbing, you kind of get rid of them. But then as soon as you fall or make some stupid move, you're like, "Oh god, I hope they're not watching me!"

Goal orientations again figured prominently, some beginning climbers showing clearly a goal of "getting to the top", whereas others possessed more process-orientated goals:

Usually I try not to make it the top if it's a little bit harder climb, but I always set some sort of goal that I want to do, otherwise it's not as much of a great feeling when you get to the top.

I try to pick the climbs so I can practice these maneuvers. I don't just try to get to the top, that's not the important thing. The important thing to me is to try to use the available rock there to try and practice--to be able to make the moves.

The bragging and self-depreciating comments ("I wasn't very good I guess") which punctuated Jacob's interview responses at regular intervals were products of his continual engagement in a process of social comparison--an aspect reflected in his attitude to most activities in which he engaged:

I was the first one to go up and everyone was kind of watching to see which way you would move. I guess I proved it could be done.

I guess it's some sort of admiration people have. They see a motorcycle and if it's a nice bike, they have a tendency to separate you from the rest of the crowd. Therefore you're standing out a bit more than the average Joe.

It could be argued that for beginning climbers, social comparison is a necessary and potentially positive orientation given their lack of knowledge concerning technical possibilities for overcoming difficulties posed. In this respect, vicarious experience could function as an indicator of appropriate targets for their focus. However, the orientation adopted during most flow experiences was intrinsic, evidenced by a focus on mastery of the task in hand. Thus although the situation is more complex than merely exposing individuals to challenging situations in order for flow to be experienced, if social comparison can be eliminated or at least downplayed, the situation becomes increasingly conducive to flow for beginners.

Ego-involvement resulting from proximity to other participants was described by most beginning and intermediate climbers as having detrimental effects on their experiencing of flow. Thus it would seem reasonable to suggest that this is one situational aspect which can be easily addressed if one's aim is to foster optimal experiences in new participants to the sport. However, other factors, including those pertinent to the



*suggestability* of the climber in relation to the acceptance of the situational aspects invoked by the instructor (i.e. the perceptions of challenge and risk and the likelihood of a flow experience) would benefit from future research.

Experienced climbers. To examine the extent to which regulation of behavior occurred on an internal or external basis in the more experienced climber, the informants' definitions of success were looked at in relation to flow experiences and enjoyment articulated. Findings are summarized in Table 4. Interestingly, definitions of success, which were used as indicators of an informant's task- or ego-involvement, appeared to be transcended by the flow experience itself, this being seen to retain a stable core of characteristics. It is also worthy of note that several climbers expressed a duality in their goal orientations, holding process or outcome goals dependent on situational context:

I don't feel emotion until I get to the top. If I make it without a fall then I feel great. But I don't feel great until I've made it--then I feel great. Or sometimes I might even fall, but I might feel good about it because I had a really good effort on it, or I accomplished something that I hadn't before.

Ego-orientations have been exposed as barriers to both intrinsic motivation and flow in previous research (Duda, 1993; Duda & Nicholls 1992; Jackson & Roberts, 1992), yet for some informants, overt competition and social comparison concerns figured as useful antecedents to the achievement of a flow state, for example:

I think I sometimes get like, "If she can do it, I can do that!"

These people are really well respected and for some reason maybe their presence actually inspired me....I don't know what it was except that I can remember, just pushing myself

If I'm climbing and another guy's climbing, I like to try and climb as hard or harder than they are--without being a jerk about it.

Table 4

Definitions of success and flow for each informant as categorized by ability level and experiential background

<b>Informant &amp; climbing level</b>	<b>Definition of success</b>	<b>Flow to the informant</b>
* Jim (Beginner)	practice; learning; accomplishment	singleness of mind
* Linda (Beginner)	accomplishment	rhythm (not yet achieved); burst of energy
* Jacob (Beginner)	getting to the top and everybody knowing it.	correlated well; oblivious to all around you
* Bridget (Experienced sport climbing beginner)	overcoming fear; challenging oneself, being seen to complete climb; flow	smooth; calm; dancing; it clicks; success
* Cindy (Experienced traditional beginner)	conquering rock; getting to top	euphoric self-motivation; instinctive; fluent; empowering.
* Jack (Intermediate sport climber)	gym: hard climb  outside: fun with friends (everyone completing climb); freedom	being on; fluid movement; a rush; accomplishment
* Joe i. (Intermediate sport climber)	doing something you have failed/ haven't done before	focus; feeling of freedom

Table 4 (continued)

Definitions of Success and Flow for Each Informant as Categorized by Ability Level and Experiential Background

Informant & climbing level	Definition of success	Flow to informant
* Carol (Experienced intermediate traditional & sport climber)	sport: getting to the top; but prefers problem solving in trad. climbing	doing things naturally; a rush; an out of body experience; not thinking, just moving
* Simon (Experienced intermediate climber)	challenges overcome; being on	being on; feeling of power; being tuned up
* Karl (Experienced intermediate traditional)	aesthetic climbing with friends; feeling "spooked" and continuing to climb	spooked; a rush; aesthetics
* Joe ii. (Experienced intermediate sport & traditional climber)	improving; climbing well on hard routes; flow	smooth; no hesitation
* Erin (Intermediate/advanced traditional)	fun	close to the line; music; flowing; smooth
* Lynn (Intermediate/advanced sport & traditional climber)	--	gym as quick pacifier for the need for smoothness
* Paul (Advanced sport & traditional climber)	the experience (sometimes the best are failures); inside: good effort; learning something	everything clicks; bombs could go off; stoned.
* Teresa (Advanced sport climber)	accomplishment; excelling	effortless; floating; centered; separate reality

Interestingly, a recent study by Moneta and Csikszentmihalyi (1996) found the positive effects of a balance between perceived challenges and skills to be more applicable in social contexts where achievement plays a major role. A natural link between sport and competitiveness could be argued as reflecting informants' social experience of sport in the USA, yet the majority of respondents took time to distance themselves from the idea of team sports. Such overtly competitive experiences appeared to have little in common with the individual focus on self-improvement that climbing offered them:

When sport is overly competitive, it's hard for people to just go out and have fun. Maybe that's one of the reasons why I like to go climbing, because it's different.

There's nothing you're competing against except the rock and 9.8 meter a second that way [Points downwards and laughs]...so it's a really personal experience.

It just feels pretty empowering because I'm working against myself--it's not competing against somebody else.

However, in most male climbers interviewed (with the exception of Erin and Joe), their decision to relate only those experiences encountered on climbs with a technical rating of 5.10 or above could be taken as evidence of an external orientation where the importance of self-presentation was paramount. This grade represents an experienced intermediate undertaking which, for many, actually figured as their pinnacle of achievement in technical terms. In comparison, Teresa talked openly of a perceived link between sport and competitiveness, articulating her enjoyment of competitive team sports and her desire to excel in rock climbing. Bridget, another former team sport enthusiast, related all of her flow experiences to situations in which she had felt the need to prove herself and had done so successfully:

The instructor kind of made me feel that I didn't know what I was doing, that it was beyond my ability. And so I kind of had that rubbing around in my head and so I was like, "I'm going to prove him wrong"...and I did it without falling.

They were having problems with the move and I was able to do it. That made me feel really good because I was able to do it in something like two tries.

Typically more experienced sport climbers, although very concerned about performance in relation to grades, possessed a more focused social comparison and were able to use the resulting heightened arousal productively in the completion of a climb.

Interestingly, the three experienced climbers who articulated only task-orientations to the sport were those who engaged more frequently in traditional climbing. These climbers found experiences of failure in top-roping or sport climbing situations to have debilitating effects on their motivation to perform at the level to which they were capable:

I've been in three competitions and I've decided that I don't like competing! I don't like being judged. I don't like knowing other people sit there and watch me and evaluate how I am doing...letting me know that I did a bad job, or that I should have gone one more higher.

The reason I don't climb well when I'm following or top-roping is because I'm self-conscious--worried about what other people will think.

"Maybe I won't have a problem with the climb, but if I do get into trouble and start freaking out, well they're gonna be here and man! Man! It's gonna be bad."

This was attributed by most to a lack of "competitive instinct". A possible interpretation could be that of a lower preferred level of arousal, however, three informants (Lynn, Paul and Carol) discussed these debilitating effects in relation to gender:

There weren't a whole lot of competitors because women climbers generally under-rate their climbing ability--whereas men climbers generally over-rate their climbing ability!

I'm not saying women aren't capable of doing it, but I think that it's more difficult for them to make that decision because of their societal training.

For other women (notably Bridget and Teresa), concerns about being compared negatively to other climbers figured as a challenge which enabled them to achieve their optimal arousal level and facilitated both a peak performance and flow. This proved particularly poignant if they perceived a threat of being compared negatively to other women climbers:

Sometimes it's a challenge. If you see that she can do that over there--"Hey! I'm just as good a climber as her, I'm going to do the same thing."

A reported conversation which took place between Teresa and her ex-husband exemplifies the facilitative use of the pressures of comparison:

"Do you think women can climb as well as men?" "Well, I'm not sure" "Peter, do you think that women can climb 5.12?" "Well some women can." He really didn't say it, but I don't think he thought they could and I remember sitting there and thinking and all of a sudden, I decided within myself, "I can climb 5.12--I know I can."

Eklund (1994) reported that temporary self-doubts experienced by collegiate wrestlers did not necessarily rule out the possibility of a peak performance, these doubts often turning to confidence during the match. Perhaps the externally regulation experienced by Bridget and Teresa and the self-doubts of the collegiate wrestlers interviewed by Eklund all figured as facilitators of the necessary arousal level in order to perform optimally. Indeed, the attainment of a peak performance was found to be the major motivation for experienced sport climbers and was reflected in the strong ego-involvement typically felt in relation to the activity. Self-determination theory (Deci & Ryan, 1985; 1991) would suggest that behaviors would show less evidence of ego-involvement and social comparison as they become more integrated with the climber's true self. Flow has been

linked with this true intrinsic motivation (Deci & Ryan, 1985; Duda, 1993), yet data from this study showed overt competition and social comparison to figure as useful antecedents to the achievement of a flow state for some informants.

### Methodological Issues

Many of the method issues discussed in this report have related to the artificial segregation of data from the individual context in which they reported. This is evident in measurement/questioning techniques, analytic procedures and theoretical underpinnings guiding research aims and objectives. Many of these concerns have pertained to the nature of data collected and the ensuing process of analysis and thus have previously received attention alongside the discussion of relevant data. This section gives further attention to issues involved with the measurement of flow, including those pertaining to the use of retrospective recall as a means of data collection.

### Quantifying the Flow Experience

Flow is a global construct and this study has shown that constraining the experience to the nine erstwhile accepted dimensions can lead to interpretations that ignore the variety of individual and situational parameters that influence the occurrence of this optimal psychological state. Antecedents which might facilitate flow on one occasion may have no such effect on the next. Additionally, a pertinent issue which has not been addressed in previous research is the question of which experiences can be interpreted as flow and which fall some way short of the mark. Is there a quorum of characteristics which must be present before flow can be assumed, or does it depend on the subjective quality of the experience?

In this study, affective concomitants of the flow experience other than enjoyment have been highlighted. Although enjoyment has often assumed the role of a central characteristic in flow studies, research which has used the ESM (Csikszentmihalyi & Larson, 1987; Massimini et al., 1987) has taken the balance of challenge and skill at a subjectively high level as indicative of the flow state. In these studies, all persons rating the situation at an above average level in terms of this balance are categorized as being in flow, and all others as not experiencing this optimal state. These studies, and the attempt of Jackson and Marsh (1996) to quantify the flow experience ignored the implications of subjectivity which have arisen from studies utilizing qualitative methods (cf. the work of Csikszentmihalyi, 1975; 1990). In relation to possible questions raised by my reporting of fear and anxiety as possible antecedents to the flow experience, it is of interest that the study of Jackson and Marsh (1996) also found a low correlation between enjoyment and flow, reporting only a moderate second order factor loading when relating enjoyment to their higher order factor of "global flow".

It is arguable that in order to generalize reliably from qualitative data, another method (usually quantitative) must be applied. However, it is imperative that any such change in technique must not be accompanied by a change in that which is being measured. Validity must be retained when constructs are taken from qualitative studies and applied nomothetically. Interestingly, while many similarities exist between the interpretations of this study and the work of Jackson (1992; 1996), her later work in validating the Flow State Scale, (Jackson & Marsh, 1996) effectively ignores the subjective nature of the flow state (see chapters 2 & 3 for discussion).



### Factors Effecting Recall of Performance States

The validity of retrospective introspection used in qualitative research into sport performance has received some criticism (Brewer et al., 1991). Poor recall is often cited as a reason for what is seen as the dubious validity of retrospective accounts. Yet this seemed less applicable in this setting, perhaps due to the intensity of the experience. Climbers in this study seemed to recall even intricate details of climbs that had to them constituted an optimal experience. Affective components of such climbing experiences appeared particularly memorable, as demonstrated by their vivid recall:

It's funny how clear I can recall this now that we're talking about it. I don't remember looking at the top until I got to the last bolt before the anchor. I felt like I was looking about three feet ahead of me. I'd make a move and move up a little bit and just kind of scan and then kind of work another move. My tongue felt like a cotton ball and I was just sweating. I mean it was a warm day, but I was just like drenched in sweat because I remember keep chalking...more chalk, more chalk... so I think fear seems a strong enough word to explain what I was feeling!

The first clip there was about 30 feet up and so I was just very nervous about getting on it and it took me a couple of tries to like actually get my feet off the ground. I got to that first clip and went, "Hey cool, I did this first clip, I feel really good!" and went up and couldn't find the second clip! It was like way out to my left side 'cos I'd climbed straight for about 20 foot...I was just freaking out and I was thinking, "It's 20 feet down! I can't downclimb that!" And so I pushed myself... and I went across and got that second clip. Made a big sigh of relief and went, "Wow! I did it!" And up at the top, you sit on like you're sitting on a camel. It's probably about a foot across and it's a big hump...that was just like really neat, sitting up there and going, "Wow! I did that!"

One factor believed to influence the recall of performance states is the provision of inaccurate performance feedback. Brewer et al. (1991) conducted a series of three experiments designed to assess the effect of performance feedback on the reporting of psychological states experienced. The clinical experiment involved a rotor-based task in

which bogus feedback was given to participants, this being found to significantly affect their retrospective reports. However, generalization to this study was found to be limited due to the clear cut nature of performance feedback in rock climbing:

If you can't climb this foot of rock, then you can't climb it...you can never get up a climb by mistake--you can't do it!

Obviously, this quote may initially sound as if getting to the top represents the only goal of climbers thus casting doubt on previous arguments which have outlined the existence of a plethora of individual goals. However, reports of informants indicated that modern climbing is increasingly about the *quality* of movement over rock. Whether the climber's goal is task-related (perfection of a particular technique or sequence of moves) or ego-oriented (getting to the top in front of important others,) if you are unable to complete *one* individual move, then you are unable to continue towards that particular goal. It is important to note here that feedback can be positive (or even negative) to varying degrees to the more experienced climber dependent on how a successful move was completed. However, in beginning climbers, verbal persuasion effects were found on reported levels of self-efficacy regarding their ability to complete the move or climb:

That has a lot to do with it...when they support you and they're just like, "You did great. That's good." That kind of encouragement is good.

When I was hesitating before making the next move, he was very encouraging...telling me that I could make it and that's what helped me keep the confidence to make the moves.

In all other climbers, individual criteria for a successful outcome appeared clear-cut and internalized. Social comparison with other climbers has the potential to promote or demote the importance of the each ascent, particularly with reference to gender and ability

factors (see also Definition of Terms). However, with regard to the individual moves which characterize the success criteria in those adopting a task-orientation to a climb, it is doubtful that bogus performance feedback could have altered their perceptions of the experience.

However, other criticisms of retrospective introspection (Brewer et al., 1991) were found to be relevant to this study, elite climbers reporting past optimal experiences approximating their present experiences--autobiographical accounts that were not echoed in the narratives of beginners themselves.

Delignieres, Famose, Thepaut-Mathieu, and Fleurance (1993) conducted a study into climbers' perceptions of the difficulty ratings given to climbs. Using a sample of expert climbers, it was found that the accuracy of ratings improved as the actual difficulties increased. This was seen as an indication that climbers' expertise was confined to the range of difficulties that they were most used to encountering. Thus although retrospective data appeared reliable in terms of recent optimal experiences, less assurance can be given about that which pertained to older events. This again casts doubt on the reliability of data pertaining to psychological states reported by the ex-National figure skaters studied by Jackson (1992) and on some retrospective accounts received in this investigation, i.e. those involving a large temporal separation between actual performance and time of recall.

### Study Limitations

Responses to *all* interview questions are open to self-presentational processes where experiences are romanticized in order to convey specific impressions (Leary &

Kowalski, 1990). Additionally, the provision of socially desirable responses remains a possibility. The methods used in this study exposed idealized versions of early experiences presented by more experienced climbers thus casting some doubt on the use of retrospective data collection in studies of optimal experience. Reflecting these concerns, consideration was given to factors which may have influenced these reports throughout the data analysis process. Although accepted as a limitation of data obtained in this particular study, it is worth noting that data reflecting such issues have been discussed relatively uncritically in other studies (e.g., Jackson, 1992; 1996; Privette & Bundrick, 1991).

The format of an in-depth, unstructured interview enabled much data pertaining to the emotional concomitants of flow to be obtained during this study. However, it is recognized that the present study's contribution to the discussion of affective components of sport performance has limitations. The most salient of these limitations being the design of the study to explore the meaning-perspectives attached to the flow state and not its emotional concomitants *per se*. The contribution of emotional states to the determination of sport performances is not well understood or extensively researched thus studies designed primarily to explore these affective components are necessary in order to extend the knowledge base. Instead, the results of this study have revealed several interesting interpretations and uses of emotional responses, raising questions which, when considered in the light of existing positions (cf. Kimiecik & Harris, 1996; Wankel, 1997) highlight the need for further deliberation prior to any convincing theoretical proposals.

## CHAPTER VI

### CONCLUSIONS

The existence of flow, an optimal experiential state, received further support from this investigation. Furthermore, aspects of flow were recognized by all informants, a total immersion in the activity of rock climbing occurring regardless of ability level or experiential background. This subjectivity of flow is captured eloquently by Teresa in the following comment:

5.7 to a 5.6 climber is the same thing as 5.13 to a 5.12 climber. Quit looking at the numbers, look at the effort it takes to do whatever it is you need to do. If it requires you to pull it all together and flow when you're only 5.7, that's because that's what's difficult...it's a totally individual experience.

#### Beginning Climbers

Interactions with others significantly effects the challenge/skill balance perceived by beginning climbers in relation to a particular climb. This usually takes the form of encouragement and social comparison as the beginning climber's knowledge of the challenge posed and skills possessed does not allow internal adjustments to be made. The only goal that the beginning climber is able to make is one of "getting to the top," yet if interactions with other climbers enable the individual to adopt a task-orientation to the climb, with learning goals, or goals of personal challenge, the focal intensity derived from engagement in the activity itself can lead to flow being experienced.

In order to obtain the necessary focus to facilitate flow, "fear" appears as a prominent pre-requisite, the flow experience itself often appearing as an involuntary "letting go" of mental control and just "going for it." If successful, the resulting movement experience is accompanied by an intense emotional response and is interpreted as a peak experience involving a loss of self-consciousness, an involuntary merging of action and awareness, intense focus and a sense of time alteration. Flow is less often experienced as smooth, non-hesitant movement in the beginning climber.

To beginning climbers, flow is a "singleness of mind," "a burst of energy," "success," "empowering," and "fluent." This "euphoric self-motivation" resulting from such an experience enhances their intrinsic motivation to continue in the sport.

### Intermediate Climbers

Intermediate climbers evaluate the balance of challenge and skill using past performance accomplishments and failures. Figuring here also is the influence of weather and aesthetics of a climbing site or particular climb. Again these influences stem from past experience, these factors having the potential to significantly alter the perceived balance of challenge and skill and hence the climber's motivation to engage in the climb. Verbal persuasion is less likely to figure as a motivating factor although social comparison can result in the necessary level of emotional arousal to perform well on certain climbs. This figured more frequently in indoor climbing experiences.

Definitions of success and goals for climbing reflected the task-orientation adopted by most, these including: problem-solving, overcoming challenges, aesthetic climbing with friends and improving. Interactions with others were important in defining a successful

day's climbing. In such peak experiences, enjoyment resulted not only from their own climbing experiences, but also from watching their friends succeed in overcoming the challenges posed by the climb.

Focus on the climb led to experiences of flow which were facilitated by a sense of control resulting from an increased movement vocabulary and concurrent internal feedback. Flow occurred as an integral part of peak performance although some peak experiences--usually those involving environmental variables or interactions with friends, were described as being without flow. These were still evaluated as enjoyable on reflection whether or not the physical and/or mental challenges were successfully overcome. A sense of fulfillment resulting if informants felt that they had successfully overcome the obstacles.

Flow to intermediate climbers is "being on," "being tuned up," when movement is "fluid" or "natural"--this feeling of "power" being seen as a "rush" and even an "out of body experience."

#### Advanced climbers

By this stage of extended involvement with rock climbing at a high level of performance, the balance of challenge and skill had become internalized. Verbal persuasion and vicarious experience were not reported as being factors influencing perceptions of competence. This was influenced more strongly by past performance and perception and control of emotional arousal. At this level, the differences in motivational orientations held by informants also served to distinguish between modes of climbing most frequently experienced. Sport climbers did not endorse the holding of any perception of danger. Instead, focus was often reported as the result of a conscious decision. Equally,

focus was reported to figure as a barrier to flow if the climber was unable to achieve or maintain the level of focus deemed adequate through experience. Sport climbers with predominantly ego-orientations also regarded this as the place where self-imposed social comparison affected the flow experience in a debilitating way.

Traditional climbers however, regularly experienced perceptions of real danger which were found to result in the same tensions as discussed in relation to the beginning climber. When these feelings of danger were of sufficient intensity, the “letting go” of mental control often led to a flow experience. Interestingly, such climbers were more able to experience flow on climbs where technical challenges were low because their definitions of success were not so narrowly defined. In comparison to sport climbers, who often defined success as “accomplishment” and “excelling,” traditional climbers emphasized the whole “experience,” the “fun,” and “learning,” (sometimes even that resulting from failure).

Flow, to elite climbers, is characterized by descriptions of movement--“effortless,” “smooth,” “floating,” “like music.” This state was reported to occur when “everything clicks” and figured as a “separate reality” where “bombs could go off” and yet the climber would retain the feeling of being “centered.”

#### Summary of findings

Findings are summarized in Figure 1 in what is hopefully a more readily intelligible schematic format, suggestions being made as to directions for future research in order that theoretical sophistication might occur.



The components of Jackson's (1995) proposed model of factors influencing the flow state in elite athletes received much support in this study. However, it is felt that the listed antecedents and barriers to the flow state which resulted from her investigation can be more profitably seen as derived from, or mediated by, other psychological processes in a complex interaction in order that the flow state be achieved. Figure 1 depicts a suggested interaction of the many antecedent variables articulated by the population of rock climbers. It should be recognized that these variables can also interact to prevent or disrupt the flow experience.

Two mechanisms which warrant further investigation are the mediating roles played by control and internalized feedback in refining the nature of the climber's focus such that an optimal experiential state can be attained. Data from this study suggest that the necessary level of focus is characterized by a sense of control without any active pursuit of this goal and that internalized feedback is a mechanism by which this can be achieved. However, a question remains as to integrity of this proposal when the beginning climber can achieve a similar level of focus with such a novel stimulus that would not suggest the existence of internalized feedback mechanisms.

### Conceptual Issues and Future Research Directions

#### Peak Performance, Peak Experience, and Flow

Microflow (Csikszentmihalyi, 1975) is undoubtedly a feature of certain everyday experiences, yet these minor episodes of flow cannot readily be categorized as peak experience or peak performance. In this study, microflow was cited in instances such as the pleasure of being with friends on a sunny day, however, these were often integrally

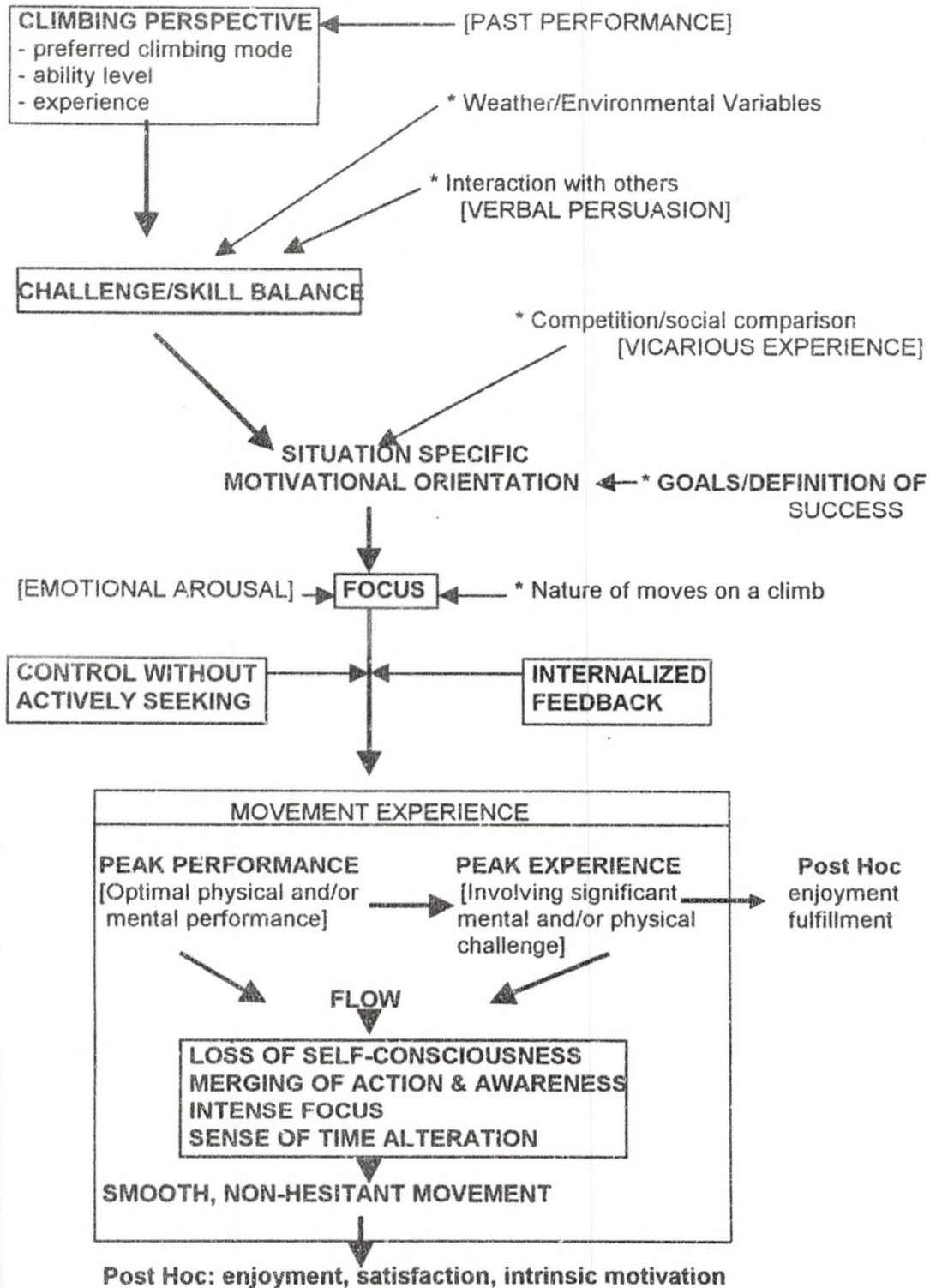


Figure 1. Schematic overview of findings from this study

linked with either a flow or a peak experience and formed part of the more complex picture, or even an antecedent to the resulting experience.

Although flow was seen as an integral part of any peak experience or peak performance in the articulated memories of informants, differences in interpretation appeared to relate to their definitions of success. The holding of an orientation regulated by external factors, led to a distinction between a peak performance (seen as necessitating a flow state) and a peak experience, which perhaps incorporated some degree of microflow.

In contrast, task-orientations appeared to result in a merging of all three experiences in the meaning perspectives of informants. Peak performances were found to be defined by the overcoming of mental as well as physical challenges and always resulted in positive affect, hence their definition as a peak experience.

Thus, in the minds of informants, the perceived links between constructs were plentiful. In order to understand what constitute optimal experiences for athletes, research would benefit from less separation of the existing constructs pertaining to optimal experience. Although theoretical clarification figured as an aim of this study, the results have added further complexity to the construct of optimal experience rather than supporting the discrete qualities of existing theories. In addition, there is a need to continue exploration of the social contextual effects that have been found to influence perceptions of the challenge-skill balance (Moneta & Csikszentmihalyi, 1996). Such research should include the assessment of an individual's goals and expectations which serve to influence each sport encounter.

### Enjoyment and Flow

Enjoyment has always been considered integral to the flow experience yet this investigation revealed that in the majority of instances, enjoyment resulted from a post-hoc evaluation of a positive experience or positive outcome. Although alluding to post-flow possibilities, the work of Csikszentmihalyi (1975; 1990) left the temporal positioning of affective components open to the interpretation of future researchers. Indeed, flow, peak experience and peak performance were differentiated by Privette (1986) using the characteristics of enjoyment found to be associated with each state. Further evidence to suggest the need for a re-positioning of the affective component within the flow model was given by descriptions of flow which occurred during peak experiences. In these instances, skills possessed by the climber far outweighed any challenges posed by the climb, allowing time for reflection during the experience and contingent feelings of enjoyment were expressed. Thus, enjoyment only figured throughout the process of flow when challenges were low and skills were high. More usually, enjoyment figured as a post-flow affective interpretation. This proved particularly pertinent when the subjective balance of challenge and skills was high and the outcome was successful i.e. during peak performances.

Reversal Theory (Apter, 1982) provides one conceptual framework which could help guide future research aiming to unravel the complexities involved in the investigation of affective states. Felt emotion is proposed by Apter (1982) as having no intrinsic meaning (pleasant or unpleasant) until mediated by the individual's experience of the situation. Thus, reversal theory incorporates aspects of motivation, emotion, cognition and

personality and seems then to present a more inclusive theoretical starting point which may serve to address linkages proposed by this report.

### Intrinsic Motivation and Flow

The link between intrinsic motivation and enjoyment has been well documented, with some authors positing a conceptual similarity between intrinsic motivation and flow relative to the positive affective characteristics of each (Mannell, Zuzanek, & Larson, 1986, Deci & Ryan, 1985). In this study, flow received endorsement as a motivational variable, often being reported as the main experiential reason for participation in the sport. In fact, the reasons for climbing closely echoed flow characteristics indicating a close relationship between intrinsic motivation and flow. However, in expert sport climbers, a more work-like orientation was adopted, reasons for “having to climb” focusing neither on enjoyment or task-related variables. This introjected regulation would suggest the need for further study in order to assess the conceptualization of flow as intrinsic motivation. The finding that introjected regulatory processes, where the participant is motivated by anxiety avoidance or guilt reduction (Ryan, 1995), were sometimes concomitant with flow suggests (as was found in this study), that emotions other than enjoyment may well be antecedents to the flow experience.

### Flow, Motivation, and Social Comparison

Data from this study indicated that the interpretation of emotional arousal was dependent on the individual's goal for the particular climb. Situationally, ego-orientations (Nicholls, 1984; Ames, 1984) were most often reported in relation to sport climbing and competition experiences where the goal became one of *pushing the numbers* and where

the increase in overt evaluatory components and introjected regulation, led to greater physical rather than mental involvement with the climbing being undertaken. In fact, descriptions of flow engendered whilst climbing with outcome-related goals and an awareness of comparative factors, tended to emphasize a more physically orientated experience, movement factors being articulated more consistently than any mental or affective components. For some informants, in certain situations, this was found to facilitate a peak performance involving the characteristics of flow. It is postulated as a necessary antecedent in some cases such that the optimal level of arousal might be obtained.

Mastery-orientations were articulated as predominant by most informants, although such orientations were dynamic, and dependent on many interacting situational and personal variables. Task-orientations were characterized by an emphasis on improvement, aesthetics and challenging oneself and functioned more frequently as the necessary antecedent for flow, this orientation extending into and being integral to the flow experience itself.

Mastery-orientations are well-documented as being conducive to the enhancement of intrinsic motivation (Nicholls, 1984; Duda & Nicholls, 1992; Deci & Ryan, 1995); however, data from this study make it impossible to say definitively that the encouragement of a task-orientation in beginners is always possible. Findings also highlight the need for consideration of personality variables and their mediating effects on the learning environment. However, if one's aim is to encourage the adoption of a task-orientation in beginning climbers, data from this study suggest that top-roping experiences

in close proximity to other climbers (this being representative of a typical introductory indoor session) appear more likely to engender social comparison concerns.

Social comparison concerns, or stresses relating to social evaluation are argued to result in various self-presentational behaviors (Leary, 1992; James & Collins, 1997). The concurrent feedback reported by experienced climbers, seen as resulting from the nature of rock climbing activities, would not appear to represent an environment where feedback from others would be necessary to legitimize their identities. Yet in this setting, an abundance of impression motivations and other external regulatory forces, were reported, particularly in relation to sport climbing activities. Although given the label of ego-orientations in this study, these goals were not necessarily outcome related, often pertaining to concerns about the impressions given to important others in a domain perceived to be a valuable contributor to the individual's sense of identity. Conversely, an inability to cope with social evaluation stressors resulting from self-presentational concerns was reported by some informants as a barrier to both flow and peak performance. With the notable exception of Teresa, *all* other female informants and two male informants, who climbed traditionally, spoke of their lack of a competitive-orientation as a barrier to flow in circumstances where a more overt form of social comparison existed. Perhaps relating to optimal arousal levels, rock climbing represents a challenging domain for researchers interested in self-presentational concerns, gender relations and the effects of socialization on the interpretation of situational aspects and consequent goal choices.

### Methodological Concerns and Implications for Future Research

In summary, methodological concerns relate to the apparent lack of concern with the relative nature of the flow state shown in recent sport research and the choice of nomothetic methods of analysis which serve to mask the individual's perspective. The validity of data collection methods warrants further consideration. In particular, future research must give consideration to the artificial segregation of overlapping theoretical bases which have been used to guide previous research; the leading nature of questions used in interviews and self-report measures, the lack of social context explored and the validity of retrospective reports.

A criticism of this study might focus on the breadth and complexity of definitions, ensuing arguments, and resultant propositions. However, this figures as a deliberate attempt to retain meaning-perspectives of informants. Reflecting concerns regarding the artificial segregation of overlapping theoretical bases, this perspective involved a critical look at previous research methods used for data collection and analysis. The results of this study lend support to the suggestion that application in sport settings by psychologists needs to take into account instances where peak performances and experiences are not differentiated from flow. Instead, flow was found to comprise an integral part of the experience, and to some, one of the intrinsic motivations for further engagement in the activity. Likewise, antecedents and barriers need to be viewed not in isolation, but as part of an interactive picture where each factor influences the next, if application is sought in the coaching setting.



Climbers seemed to recall even intricate details of what, to them constituted an optimal experience. However, the autobiographical accounts of elite climbers regarding their early experiences, stood in stark contrast to the fear articulated by most beginners. Although retrospective data appeared reliable in terms of recent optimal experiences, less assurance can be given about that which pertained to older events. Idiographic profiling of individual athletes over the course of a competitive season would dissipate some of the concerns regarding the validity of retrospective reports and would allow the investigation of emotional states pre-performance, during performance, and post-performance. This longitudinal approach would allow exploration of optimal performance states in various situational contexts and the investigation of links with differing performance outcomes.

In summary, three major issues emerged as a result of this study, with both methodological and conceptual implications for future research:

Firstly, enjoyment has always been considered integral to the flow experience yet this investigation revealed that in the majority of instances, enjoyment resulted from a post-hoc evaluation of a positive experience or positive outcome. Enjoyment was only reported in descriptions of flow which occurred during peak experiences, where skills possessed by the climber far outweighed any challenges posed by the climb. Thus evidence from this study suggests the need for a re-positioning of the affective component within the flow model.

Secondly, in relation to both the affective and motivational dimensions of flow, data from this study indicated that the interpretation of emotional arousal was dependent on the individual's goal for the particular climb. Beginners' perceptions of risk *were* found

to be conducive to their experiencing of flow, yet further research is needed into the interactions between personality and situation which lead to the facilitation or denial of flow possibilities. The *suggestability* of athletes of varying levels of ability, this being seen as an indication of their acceptance and internalization of situational aspects invoked purposefully by the coach/instructor, may represent one dimension through which to explore such mediating variables.

Finally, I feel that the question still remains as to which characteristics constitute flow? Is there really a quorum of central characteristics which delineate for research purposes, a flow experience? If attempting to quantify the flow state, care must be taken to retain the perspectives and concerns raised through the wealth of qualitative data collection and analysis. In such a global construct, this is not without difficulty and thus a more profitable line of research, arising directly from the results of this study, would appear to be further consideration of the many interactions and cross-linkages between constructs pertaining to optimal experiences in the meaning perspectives of individual athletes. Such an idiographic approach should include an investigation of social contextual variables and their influence on the athlete's interpretation of emotional arousal and of the challenges posed.

APPENDICES

## APPENDIX A

## INFORMED CONSENT FORM

Dear

You are invited to participate in a qualitative investigation of optimal experiences, using rock climbing and its participants as the focus of an interview study aiming to ascertain the extent to which these positive experiences differ in climbers of varying ability levels and experiential backgrounds.

A rock climber myself, previous research done in this field has provoked my interest and raised as yet unanswered questions which form the focus of this interview study, one of the requirements of my Master's degree in Physical Education from the University of North Dakota. The interview period itself will be between one and two hours, arranged at your convenience, although we can continue our discussions for as long as you wish and a mutual exchange of telephone numbers will facilitate any communication that is deemed necessary by either party.

The format will be very informal and yet anything said, whether the tape recorder is running or not, will have the possibility of being on-the-record. Transcripts of the interview will be sent for your perusal prior to any analysis of the content, to enable you to insure that the document contains a correct record of your verbal responses. Every attempt will be made to maintain confidentiality and your identity will not be discernible in the final written document or any subsequent publications.

Your decision whether or not to participate will not prejudice any future relationships with the University of North Dakota and should you decide to withdraw at any stage, you remain free to do so, equally without prejudice.

Any queries that you may have regarding this investigation are welcomed, whether during the scheduled interview time, or at some later stage. I may be contacted at the HPER Dept., Box 8235, University of North Dakota, Grand Forks, ND 58203 : daytime telephone no. (701) 777 2943.

I have received a copy of the consent form and having read all of the above, I willingly agree to participate in this study explained to me by Helen Hooper (principal researcher).

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Signature

---

Date

NAME	DEMOGRAPHIC PARTICIPATION INFORMATION	CLIMBING BACKGROUND *	LIFE SITUATION	IN STUDY
Jim	Male, single, 31 years.	Beginner--top roping, twice indoors and twice outdoors. Rovers' club member.	Ph.D. Chemical engineering, Research and development post for 3.5 years.	Interview in restaurant. Follow up letter.
Linda	Female, single, 20 years.	Beginner-- infrequent top roping with boyfriend, Joe in city and CO (2 yrs.) No indoor climbing.	Student--Psychology major.	Interview in cafe. Follow up letters.
Jacob	Male, single, 24 years	Beginner--one ropework and rappel session, one outdoor climb with ROTC.	Student--Criminal Justice and Aviation.	Interview in dorm. Follow up in person.
Bridget	Female, single, 25 years.	Experienced beginner--10 months sport climbing indoors and outdoors at city crags--top roping at Mt. Pleasant.	Athletic site coordinator for High School; YMCA fitness consultant; Ropes Course. Facilitator.	Interview in own home. Follow up letter and 2nd hand contact via other participants.
Cindy	Female, single, 20 years.	Experienced beginner--one season top roping outdoors--city crags, Mt. Pleasant, Lander, Devils Tower	Clothing dept. coordinator at outdoor store.	Interview at workplace. Follow up letter.
Jack	Male, single, 26 years.	Inexperienced intermediate--1 yr. sport climbing at gym and city crags	Counselor; substitute teacher Ropes Course facilitator. Shares house with Simon.	Interview in own home. No further contact as moved from State

PARTICIPANT DEMOGRAPHIC INFORMATION

APPENDIX B

NAME	DEMOGRAPHIC PARTICIPATION INFORMATION	CLIMBING BACKGROUND *	LIFE SITUATION	IN STUDY
Joe i)	Male, single, 20 years.	Inexperienced intermediate--1.5yrs. sport climbing--city crags and Mt. Pleasant.	Student. Recent move to Colorado but Linda and family in city.	Interview at Crag south. Phone calls to arrange 2nd interview.
Joe ii)	Male, single, 21 years.	Experienced intermediate--2.5 yrs. sport climbing. (as above + CO and competition success). Starting to lead traditional routes.	Student-- Political Science major, Colorado.	Interview in cafe. Follow up letters.
Karl	Male, married, 26 years	Experienced intermediate--CO, NV, WY, MO, Mt. Pleasant, Heron Lake, Equador. Mountaineering and ice climbing, boulders by choice.	GTA in History dept.--Latin America. Lived in mid-west for 2.5yrs.	Interview over lunch. No reply to follow up letter.
Simon	Male, single, 25 years.	Experienced intermediate--7 yrs. sport climbing--gym, city crags, NV, Needles. One traditional climb.	Supervisor in print shop, shares house with Jack.	Interview in own home. No follow up as left the State.
Carol	Female, single, 24 years.	Experienced intermediate--3.5 yrs. sport and traditional climbing--city crags, NV, Needles, Mt. Pleasant, Devils Tower, Heron Lake. Some competition success but prefers traditional climbing.	Works part-time for city insurance company.	Interview in bar nr. TRF. Follow up letter and personal contact.

NAME	DEMOGRAPHIC PARTICIPATION INFORMATION	CLIMBING BACKGROUND *	LIFE SITUATION	IN STUDY
Lynn	Female, lives with partner. Gatekeeper. Interviews. 28 years.	Experienced intermediate/advanced. Started traditionally. NM, Yosemite, Needles, NV, WY, Heron Lake, Mt. Pleasant. 5.12 sport climber.	Just completed post-graduate teaching cert.--plans to move to NV with partner.	Personal contact.
Erin	Male, married, 42 years.	Experienced intermediate/advanced. Mt. Pleasant, Heron Lake, CO, NV, Yosemite, city crags. Trad. by choice, sport for convenience and fitness.	Runs bike dept. in outdoor store.	Interview over lunch. Follow up letter.
Paul	Male, married, 33 years	Advanced--15 years climbing. Trad.--Mt. Pleasant, Heron Lake, Yosemite, Devils Tower. Sport--city crags and gyms.	Resoling business for climbing shoes.	Interview in cafe. Follow up via personal contact.
Teresa	Female, divorced, 32 years.	Advanced sport climber. 1 yr. because husband did, 4 yrs. intense training and competition. Leads 5.13. Climbing wall at house, gym, NV, Needles, CO.	Special Educ. teacher; horse-riding teacher from home shared with Lynn. Part-time Masters degree.	Interview in own home. Follow up letters and personal contact.

\* **CLIMBING BACKGROUND** incorporates information regarding preferred climbing mode, ability, and geographical locations encountered during their involvement with rock climbing.

## APPENDIX C

## INITIAL INTERVIEW SCHEDULE

Describe purpose of study and the open-ended nature of the questions--(if I appear not to be interacting that's because...)

- a) Asking about experiences whilst out climbing NOT how you feel now.
- b) Take your time to recall rather than guess.
- c) Whole experience, not just one part. Think about your time spent on and off the rocks, roped and unroped, your interactions with the group, the whole environment.

(Use of comments a) through c) throughout interview.)

---

- Name, age, outdoor and educational background, climbing experience.
  - Describe the feelings you experienced and what you thought about during your first climb.
  - Describe your optimal experience in climbing so far--one that was the most personally satisfying or one which you would like to remember for the rest of your life.
  - Can you rate the challenge posed by this climb on a scale of 0 (easy) to 10 (extremely difficult)?
  - Can you rate your personal skill level using the same grading scale at the point when you undertook this climb?
  - Are you familiar with the term flow?
- 

- It is a term sometimes used to describe optimal experiences and is characterized by such things as...

complete focusing of attention  
 knowing clearly what you're supposed to do  
 mind and body in perfect unison  
 being in control  
 easy to keep your mind on what you're doing  
 really enjoyable experience  
 deep but effortless involvement  
 getting direct feedback as to how well I'm doing  
 not being self-conscious  
 time alters (slows down or speeds up)  
 being at the cutting edge (between my ability and the skills I am performing)

- Discuss each individually.



- How often have you felt these things ?
  - What were the most important factors to be present before you felt this way?
  - Was it a feeling you felt you could control?
  - Can you name any possible barriers to you feeling this way?
- 

- Was talking about these experiences useful in any way?
- How could this interview have been improved?
- Did the questions or the presence of the recording equipment, inhibit your responses at all?

## APPENDIX D

## SECOND INTERVIEW SCHEDULE (PILOT PHASE)

- Reminders: People present?/neutral/don't lead/don't combine questions/ get them to summarize.
- Probes: silence, uh-huh, nod/smile, repeat q., specifics, "I'm not sure exactly what you mean?", "What else do you feel?", "What was it about (X) that makes you feel that way?"
- Cues: HOW easy/hard/strong etc., (compared to what?), HOW OFTEN?

(A question in brackets is only to be asked where applicable)

---

I'm going to ask you to talk about the nature of your experience in climbing. What it means to you. So unless I stipulate, I want you to think about the whole experience, not just one part. Think about your time spent on and off the rock, roped and unroped, your interactions with the group--the whole environment. If I appear not to be interacting... I'm going to ask you to describe the nature of your experiences whilst climbing-- not necessarily how you feel now. Take your time to recall rather than guess.

(These things to be reiterated when necessary, throughout the interview.)

---

- Name, age, outdoor recreation background/climbing experience.
  - (From your experience, describe a typical climber to me.)
  - What makes you climb?
  - Describe your first climbing experience/a good climbing trip...(feelings, what you thought about, why was it good?)
  - Describe your optimal climbing experience(s) so far. The one(s) that are personally satisfying and which you want to remember for the rest of your life.
  - (What descriptive term would you use to describe this intense involvement?)
  - Rate the challenge posed for you by these climbs on a scale of 0-10, 0 being the least challenge? What was the technical grade?
  - Rate your experience/skill level when you undertook this climb, (not afterwards when you were sitting in the bar!)
  - Are you familiar with the term flow? (To what extent?)
-

- It is a term sometimes used to describe optimal experiences in an activity...
  - a) How would you say these experiences were characterized in your climbing? (Talk further about the ones mentioned) How often? All the time? When? (quality, quantity, concurrent or afterwards?)
  - b) Read list of characteristics, then ask to talk about his/her experiences of each one... How often do you feel like this? Exactly as described? (or are some of the individual aspects more predominant?) Are there any other aspects not listed?
  - Is it combined with enjoyment?
  - Does it always occur with an optimal performance?
  - What are the important factors to be present before you feel this way/experience these things?
  - Is it a feeling you could control?
  - Can you name any possible barriers to you feeling this way?
  - (Use of repertory grid to determine differences in the way antecedents/barriers make a person feel.)
  - (What do such things as stress and challenge provide for you?)
  - (Can you describe the characteristics/skills of the beginner/intermediate/elite climber?)
- 
- Was talking about these experiences useful in any way? How did it make you feel?
  - Could the interview have been improved?
  - Did the questions/equipment inhibit your responses at all?

## APPENDIX E

## THE ROCK FACTORY INFORMED CONSENT FORM

You are invited to participate in a qualitative investigation of optimal experiences, using rock climbing and its participants as the focus of an interview study aiming to ascertain the extent to which these positive experiences differ in climbers of varying ability levels and experiential backgrounds.

A rock climber myself, I became aware of the existence of The Rock Factory and some members of the climbing community there have since agreed to participate in what is essentially an interview study as part of the requirements for my Master's degree in Physical Education at the University of North Dakota. As the owner of the facility, I am requesting your permission to observe climbers at The Rock Factory during the time period of the 13th - 19th March, 1994. I will be watching and listening for descriptions of what constitutes a good climbing experience to the climbers present at the wall.

At no risk to the climbers involved, this information will be used in my study to enhance that received from interviews, therefore the identity of the gym and the participants will not be revealed to safeguard those involved. Your decision whether or not to participate will not prejudice any future dealings with the University of North Dakota and should you decide to approve my observational period, you remain free to withdraw your permission at any stage, equally without prejudice.

Any insight that you could give me into the things I observe would be greatly appreciated. Likewise, any queries that you may have regarding this investigation are welcomed, whether during my time at The Rock Factory, or at some later stage. I may be contacted at the HPER Dept., Box 8235, University of North Dakota, Grand Forks, ND 58203 : daytime telephone no. (701) 777 2943.

I have received a copy of this form and I give permission for Helen Hooper (principal researcher) to undertake the outlined observation. I have read all of the above and agree to the conditions indicated.

---

Signature

---

Date

## APPENDIX F

## FIELD NOTES- REMINDERS AND PROTOCOL

## a) General Field Notes

- Record my developmental thought process and the incidents that have precipitated this.
- Journal of project from conception to completion, including exciting events, frustrations and barriers.
- Practical notes.
- Addresses, contacts.
- Some conversational and interactional data--mostly from the beginning of the study.

## b) Participant Observation Notes:

- Notes from observation, face-to face interaction, telephone conversations and interactions/events occurring whilst participating in the activity. (The latter ones will consist of salient events or summaries, written up after the event has occurred.)
- Try to find space and time to write up all observational notes before much time has passed.
- It may be applicable in places to have a tape recorder running.
- Cover story: researching better than average climbing experiences and to add context to my interviews...
- Two sides to notepad; one for observational data that could have been recorded by anyone else watching and that doesn't include any value-judgments or assumptions and opposite, space to write in assumptions and possible interpretations.

## APPENDIX G

## THIRD INTERVIEW SCHEDULE

Use PROBES not further questions.

Follow up any AMBIGUITIES.

What is the interviewee's AGENDA?

DON'T COMBINE QUESTIONS: How much? When? How good?

Follow up every comment made regarding flow. (I sort of know what you mean but.../repetition cues/ prompts/rephrase comment.)

DON'T be judgmental.

Use of a familiar word--QUESTION IT! (Don't assume it means that which you presume it to.)

If someone asks me what I think, turn it back to them in a conversational tone.

Use of on-site interviews as another form of purposeful sampling. (Does proximity to a climbing experience aid or impair the individual's ability to recall flow experiences?)

[Comments in square brackets represent thoughts, ideas and additional/rephrased questions which occurred throughout the main interview phase of the study].

---

Demographics and orientation (goals, lifestyle)

- First name, age, occupation, education, outdoor recreation and climbing background.

- Why do you climb? What are your reasons for participating?

- Describe a climber to me?

- How would you describe your abilities/experience in climbing? Does this place you in a novice/expert/intermediate category? How do you think these would be characterized?

[ On a continuum from beginning climber to competition climber/experienced climber, where do you see yourself? ]

### Main Interview

I'm going to ask you about the nature of your experience in rock climbing. What it means to you. Unless I expressly say, I want you to think about the whole experience, not just one point. Think about your time spent on and off the rock, roped and unroped, your interactions with your partner/friends/the group--the whole environment. If I appear not to be interacting...

These feelings may not be the way you feel now, but I want you to take time and recall the nature of your experience whilst climbing. (REITERATE WHEN NECESSARY)

[Not always necessary to say all of this--sounds a little patronizing when faced with the level of analysis I am experiencing.]

-Describe, in as much detail as you wish, your first climbing experience/a better than average climbing experience. [Doesn't elicit flow]

\*Personal--feelings, thoughts, inner experience, physical exertion

Situational--what was going on before, after, during; the weather; environmental variables; conversations with friends.\*

- Describe, in as much detail as you wish, a climbing experience that was personally satisfying and which you want to remember for the rest of your life.

[\*\* better after this question]

- Did you have any goals during this time?

- In this situation, how competent did you perceive yourself to be?

- How challenging did you feel the climb to be?

- Were there others around? Describe them to me? Did they make a difference to how competent you felt/how challenging you thought the situation was?

- Were your emotions running high? Could you/did you control them? Did this effect how you felt about the climb?

[How much does vicarious experience/past performance/emotional arousal/verbal persuasion effect choice of climb and confidence? Explore these ideas.]

+Did you freely choose to climb that day/ do that climb? + [ use ++ in a more applicable place]

- What descriptive term would you use/do you use to describe such experiences?

[only works if a good descriptive account has been elicited with the initial questions.]

- Are you familiar with the term flow? What do you think it refers to? [Good question]

How much do you know about it? Do you relate to this description of an optimal climbing experience?

SHAPE INTERVIEW DEPENDENT ON FAMILIARITY WITH THE FLOW CONSTRUCT.

- How often do you have these experiences? [Use later in interview]

- How are they characterized in your climbing? (Quality/quantity/concurrent or afterwards. Probe deeper into ones mentioned.) [Use after questions above]

\* If unable to come up with ideas, use Jackson's (1992) cues:

My attention is focused entirely on what I am doing.

I know clearly what I am supposed to do.

My mind and body seem to work in perfect unison.

It doesn't take an effort to keep my mind on what is happening.

I get direct clues (feedback) as to how well I'm doing.

I have a deep but effortless involvement.

I am not worried about losing control.

I am not self-conscious.  
 Time seems to alter (either slows down or speeds up).  
 I really enjoy the experience.  
 I am at the cutting edge between my ability and the skills I am  
 performing.  
 I am in control.\*

[Use \*\* as a desperate measure, or discuss afterwards possibly]

- Or read one of these four examples and ask how applicable each one is to his/her best experiences:

Here is how other athletes have described their experiences at such times (Jackson, 1992):

"My mind isn't wandering. I am not thinking of something else. I am totally involved in what I am doing. My body feels great. I don't seem to hear anything. The world seems to be cut off from me. I am less aware of myself and my problems."

"My concentration is like breathing. I never think of it. I am really quite oblivious to my surroundings once I get going. When I start I really do shut out the whole world. Once I stop I can let it back in again."

- Or use examples from climbers in pilot study:

"You feel good...you're not sore or stiff and you don't feel weak, and just like, when you're doing a difficult move, you move through it well. If everything clicks, you're having a blast and you've got so much energy"

"It's sort of like a Zen experience. All the rest of the world drops away...you're sort of totally focused, but without a lot of intensity. You glory in the feel of your muscles working so smoothly. Your body's just in tune and flying."

---

- Control has been mentioned in some of the work on flow--what does this mean to you? Does it figure in these experiences for you?

[Good line of questioning]

\*- What have been your major achievements in rock climbing? Have you experienced flow in these moments of superior performance? Was this a moment of highest happiness and fulfillment? Is this always characteristic of your flow experience? Are your best performances always enjoyable? At the time? [Does knowing the moves help elicit flow?] How well do you perform when you are in flow? Do you ever experience flow when you perform badly? How do you judge whether a performance is good or bad? Does it exist when you're doing something you perceive as easy? [Is it the technical grade?] Can this be enjoyable? How does this make you feel? [Is climbing a feeling thing?] When you experience flow, what characterize the situational/personal context? What if you have to climb? [Free choice here?] What if others are present who you feel a need to impress? Who are unexpectedly climbing better than you? If you personally feel dissatisfied with



your climbing, regardless of who else is there? [Explore social comparison.] Does your mood effect the competence you feel to be able to successfully undertake a climb? If you're feeling really positive/slightly down, how does this effect your climbing experience? How much time/money have you invested in the sport? Do you feel any pressures--social, financial or otherwise, to find enjoyment in the sport? [search for negative case scenarios.]

\*

[\*\* Order and whereabouts in interview unimportant--go with the flow]

- Lifestyle [questions to be asked as and when appropriate/applicable]

Are there any other areas in your life where you experience this flow feeling? Differences? Similarities? (Both in feelings/thoughts and personal/situational variables).

- At what age did you start climbing? The reasons you gave for engaging in rock climbing, are these reflected in other aspects of your lifestyle? Have you noticed any change in the reasons you have for engaging in certain activities since you started climbing? Does this in any way reflect your general personality or is it purely related to your climbing?

[Other climbers: do you see them in the same social situations? Friends because of outlook/tastes?]

- Going back to the beginner, intermediate, expert thing--can you characterize a *typical* example of each from your experience.

-----  
Thank informant.

Obtain address and telephone number to enable further questions (if willing to continue his/her involvement with the study!) and to enable a copy of the transcript to be sent.

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