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Focusing Skills in a Risk-Endurance Sport

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Thesis

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Degree in Human Kinetics**

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University of Ottawa

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Abstract

Studies have shown the importance of focusing skills at the elite level. For example, Orlick and Partington (1988) found that attentional focus was one of the two most important skills related to high level performance at the Olympic games. However there has been minimal research investigating how athletes themselves perceive focus. Furthermore, the question of how athletes develop focus and what kinds of focusing skills they use in order to eliminate distractions, to keep concentrated on the immediate task, and to get properly aroused for the task at hand has not been fully answered in the literature.

The research objectives of this study on focusing skills among elite athletes in a risk-endurance sport (cross-country mountain bike racing) were fivefold. The first objective was to advance our knowledge on how elite athletes perceive and define focus in relation to their sport. The second and third objectives were to assess what focusing skills the athletes used before and during competition, as well as what kinds of focusing skills the athletes used in training. The fourth objective was to shed light on how the athletes developed and improved their focusing skills. The final objective was to discover other concepts that may have interacted with focus.

The present study provides a clearer understanding of how elite athletes perceive focus and the different dimensions it entails. The findings also present a clearer picture of how focus is developed over the course of an athlete's career. There were both commonalities among the athletes and a uniqueness in the way each athlete perceived and developed focusing skills. These findings may enable coaches and sport psychologists to prevent or work more effectively with potential problems and issues that can hinder a great focus in the sport of mountain biking.

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TABLE OF CONTENTS

ABSTRACT.....	i
ACKNOWLEDGMENTS.....	ii
CHAPTER	
I. INTRODUCTION.....	1
II. REVIEW OF THE LITERATURE.....	6
III. METHODOLOGY.....	12
Fundamental Considerations.....	13
Research Orientation and Underlying Assumptions.....	14
Study Participants.....	15
Interview Setting.....	15
Interview Protocol.....	16
Data Preparation.....	18
Coding and Data Analysis.....	18
Validating the Current Study.....	21
Limitations of the Study.....	22
Table 1.....	24
IV. PRESENTATION OF THE RESULTS.....	25
Defining Focus.....	26
Best vs. Worst Focus-Factors.....	31
Refocusing.....	43
Focus and Training.....	47
Improving Present Focus or Consistency of Present Focus	51
Development of Focusing Skills Over Race Career.....	55
Recommendations for Others on Developing Focus.....	58
Table 2.....	63
Table 3.....	64
Table 4.....	65
Table 5.....	66
Table 6.....	67
Figure 1.....	69
Figure 2.....	70
V. INTEGRATION AND CONCLUSIONS.....	71
Linking Focus to the Attention Literature.....	72
Limited Capacity of Attention.....	75
Selective Attention.....	76
Vision/Perseverance.....	78

Personal Conclusions.....	79
Future Research Considerations.....	84
Table 7.....	86
REFERENCES.....	87
APPENDICES.....	90
A. Ethics Approval.....	91
B. Information Sheet.....	93
C. Consent Form.....	95
D. Interview Guide.....	98
E. Sample Interview Transcript.....	101

Chapter I
Introduction

In sport, as well as other domains in life, the ability to focus has been reported to be one of the most important skills in achieving performance excellence (Orlick, 1996). Focusing skills are essential at the elite level in sport where the demands are high and athletes are often relatively equal technically and physically. Athletes at the elite level have been cited to have superior focusing skills as opposed to their non-elite counterparts (Abernethy, & Russell, 1987; Defrancesco & Burke, 1997; Thomas & Over, 1993; Mahoney, Gabriel, & Perkins, 1987). On the other hand poor performances are often attributed to an inability to deal with distractions, lack of consistent focus on the task at hand or failure to connect with the most essential features of the performance (Orlick, & Partington, 1988; Orlick, 2000).

Focusing is a mental skill that most people draw upon daily to be able to complete any complex task. It is an essential skill for athletes when facing the ongoing challenges of sport. As defined by Orlick (1996), focusing refers to the

“Ability to concentrate totally on what you are doing, seeing, reading, hearing, feeling, observing or experiencing while you are engaged in the activity of the performance. Focusing fully not only allows you to connect totally with what you are experiencing, but also frees you to perform without being disturbed by distracting thoughts.” (p. 8)

Studies have shown that elite athletes are more successful at focusing before and during performance (Mahoney et al., 1987), and that they have a greater capacity to regain focus following distraction in comparison to non-elite athletes (Thomas & Over, 1994). However, previous studies have failed to answer why elite athletes are better at focusing and how they become better at focusing. Although one study with Olympic athletes identified what elite athletes did on site to lead them to an effective focus (Orlick, & Partington, 1988), focus was not looked at developmentally or for the specific components of an individual sport.

Some sport-specific tests have been developed to predict and measure an athlete's attention and concentration skills. For example, the Test of Attentional and Interpersonal Style (TAIS) developed by Nideffer (1981) to measure three dimensions of attention purported to be essential for effective performance, and the Psychological Skills Inventory for Sport (PSIS) was developed by Mahoney et al. (1987) to measure how successful athletes are at concentrating. However, there is evidence that such tests fail to apply to the real world. Furthermore, they lack much practical application in sport because even the sport specific tests are too general and are not applicable to specific skills or conditions in sport

There has also been minimal research investigating how athletes themselves perceive focus. Furthermore, the questions of how athletes develop focus, what kinds of focusing skills they use in order to eliminate distractions, what they do to keep focused on the immediate task, and how they get properly focused for the task at hand have not been fully answered in the literature. What techniques does an athlete use to successfully divide or guide their focus? Does an athlete's focus improve over the course of their career? How and when does an athlete shift their focus over the course of a competition? These are some of the questions the present study hopes to shed light on. By doing an in-depth study with elite athletes' in the sport of cross-country mountain biking, who are required to focus well in order to perform well and safely, it is hoped the literature concerning how focusing skills are acquired and utilized will be expanded.

Given that a specific comprehensive study of the many factors influencing the development of elite athletes focusing abilities has yet to be done, and that no focusing studies have been conducted in a risk-endurance sport, the current study is needed.

In order to help athletes learn good focusing skills, there is a need to explain more thoroughly how athletes develop focusing skills in the context of sport. and to understand more precisely how it relates to athletes' performance. The current study attempts to address a gap in the literature to account for how focusing skills are defined, used, developed and refined by these elite athletes. This study also seeks to serve a practical purpose by pursuing the question of how athletes improve relevant focusing skills.

Based on the assumption that elite athletes have well developed or high quality focusing skills in comparison to their non-elite counterparts (Abernethy, & Russell, 1987; Defrancesco & Burke, 1997; Thomas & Over, 1993; Mahoney, et al., 1987), this study aims to achieve the following objectives:

1. Determine how elite mountain bikers define focusing.
2. Identify the different types of focusing skills used prior to and during competition.
3. Identify focusing skills used for training.
4. Determine how elite mountain bikers develop and refine their focusing skills.
5. Identify other concepts that may interact with focus.

Given the exploratory nature of this study and the advantages and flexibility of the open-ended interview, a qualitative method of inquiry and analysis was found to be most appropriate. A dialogue with these elite athletes created an opportunity to discuss how they perceived focus and how they developed and utilized focusing skills for both training and competition.

The sport of mountain biking was chosen because it is a highly demanding sport, which has undergone no previous research in relation to mental skills. The First World Mountain Bike

Championship was held in 1986, and it became an Olympic Sport for the first time in 1996. Mountain biking is a complex, high intensity sport in which focusing skills are needed for the constantly changing up and down terrain (often at altitude) over rocks and logs, through trees, sand, and mud. It is a risk-endurance sport, which requires unique physical, technical, and logistical demands. An average elite-level mountain bike race is two to two and half hours long, therefore perhaps requiring a prolonged focus. Due to the demanding technical terrain, there is also an element of risk and/or fear in the sport of mountain biking with the potential for serious injury or death.

It is apparent that a strong or well-directed focus may be needed for the many different elements of a mountain bike race. By exploring the way in which elite-level mountain bikers apply mental focus to their training and competition meaningful insight can be gathered that may be applicable to many other sports as well as other domains in life.

Chapter II
Review of the Literature

The majority of previous research related to focus has been done in the motor learning field and is referred to as attention. However, the literature found on attention generated in laboratory studies sport (Posner, & Boies, 1971; Davies, 1982) was not found to be highly relevant to the world of elite sport. Thus the literature on attention is only referred to in the discussion section where it may have some relevance. In the athletic context, focus is the term most commonly used in everyday language by athletes when referring to attention.

Previous Related Research

Some studies have touched on the practical side of the importance of focusing skills. For example, a study on exceptional athletic performance used the Psychological Skills Inventory for Sport (PSIS) on athletes in twenty-three different sports (Mahoney et al., 1987). The elite athletes in the study were found to be; 1) more successful at concentrating effectively before and during performance, 2) more consistently focused on performance (their own performance as opposed to others or other team members), and 3) more highly motivated to do well in comparison to less elite athletes. However, this study failed to answer why the elite athletes were better concentrators and how they became better concentrators.

In a study involving 235 Canadian Olympic Athletes, attentional focus was found to be one of the two most statistically significant skills directly related to high level performance at the Olympic Games (Orlick, & Partington, 1988). As well, the athletes' focus of attention and feeling state prior to and during competition proved to be a significant predictor of Olympic percentile ranking. After interviewing the athletes regarding their pre-event and within-event focus at their previous best international performance, the athlete's focus descriptions were divided into three levels: very effective, partially effective, and ineffective. Very effective focus

was characterized as being fully focused on the task without any distractions and accompanied by feelings of confidence, determination, positive self-talk, power and control. The following quotation illustrates one athlete's definition of very effective focus.

Before the start I was focusing on relaxing, on breathing calmly. I felt activated but in control since I'd been thinking about what I was going to do in the race all through the warm-up. I used the period just before the start to clear my mind, so when we did actually start the race all my thoughts about what I would be doing in the race would be uncluttered. I felt aggressive, powerful, and most of all in control because I knew our crew was capable of performing up to our expectations (p. 126).

Partially effective focus was unlike very effective focus in that it lacked the complete and confident determination of the best focus.

I had a really happy and satisfied feeling because I was happy to be there- it was a beautiful sunny day and my teammates were such a nice group of people. I had no pre-set goals. I just wanted to show well in my match (p. 127).

Finally, ineffective focus was being distracted by things other than what the athlete needed to be focusing on at that moment during the event, such things as thinking about other competitors, things much further on down the course, current scores, standings, and possible outcomes.

I was thinking about things I did wrong in previous games. I was lacking confidence. I was worried about what the coach was expecting from me or what I thought he wanted from me. I didn't really want to play: fed up! (p. 128)

Although this study identified what athletes did on site to lead them to an effective or non-effective focus, the study was a small part of a larger study. Focus was not looked at developmentally. For example, the question of how the athletes learned over the course of their career how to facilitate good focus was not answered. Focus was also not looked at in

conjunction with the specific skills needed in an individual sport, such as the endurance and risk aspects of cross-country mountain biking. The present study will explore what focusing skills the athletes use for the endurance needed in a mountain bike race as well as the sometimes risk taking technical skills.

A specific sport in which attentional focus has been looked at is golf. In a study of elite golfers versus non-elite golfers, the elite ones were found to be more able to focus their attention when playing. They were also found to have a greater capacity to regain focus following distraction, to have greater control of attentional focus and were less liable to give way to negative thoughts and feelings (Thomas & Over, 1994).

Another study on the sport of golf (Boutcher, & Crews, 1987). also shows the importance of diverting one's attention from irrelevant information, such as thinking about technical aspects of the actual skill itself, as a means of reacting more appropriately to one's physiological and mental state before each shot. The golfers were found to focus on well-rehearsed cues in order to reduce the likelihood of focusing on negative self-talk. By learning words and phrases in order to describe a putt in a holistic, global way, it prevented the golfers from thinking or focusing too much on specific parts of a skill, which may in turn prevent a smooth, co-ordinated performance. This may be true in mountain biking, where if one focuses too much on technique (i.e., when to brake, which brake to use, or worrying too about how to make it down an descent or over an obstacle), then too much analyzing may prevent a smooth flow on the bike. Finally, the golfers used routines as a way to continuously achieve the right "set" for the performance of skills, which may take place over several hours. Similarly, well-rehearsed cues or key words may help one's race focus in the sport of mountain biking.

Concerning focus in an endurance task, a study by Gill and Strom (1985) found that subjects (non-elite athletes) were able to perform an extension task longer when they used an external focus (focusing on a collage on the wall) versus an internal focus (focusing on the feelings in their legs). However, previous studies (Nideffer, 1981; Morgan & Pollocks, 1977) have supported the narrow-internal focus for increasing pain tolerance and performance on endurance tasks. The question of how much internal focus versus external focus is needed for an individual athlete to be in their best focus in a mountain bike race will be explored in this study. For example, too much focus on external cues such as the trail and other competitors may cause one to lose focus on their own pace and internal cues. On the other hand, too much focus on internal feelings may cause a loss of focus needed for race tactics against the competition or to ride the changing terrain.

The concept of a flow state in athletics also demonstrates the importance of good focus. A flow state is defined as a new reality, or an altered state of consciousness (Jackson, 1995). According to Csikszentmihalyi (1990), concentration on the task at hand is one of the most frequently mentioned dimensions of the flow experience. While flow producing activities (such as pre-competitive and competitive plans and preparation, confidence, positive attitude, optimal physical preparation and readiness) were found to facilitate concentration, one of the factors found to facilitate flow was maintaining appropriate focus and having good powers of concentration.

When asked about the factors influencing flow in an interview study by Jackson (1995), having appropriate focus was specifically mentioned by 39% of the athletes. Good focus was seen as release of conscious control. Interestingly, inappropriate focus was due to thinking too

much, being overly concerned with what others are doing, worrying about what others are thinking of you, and worrying about other competitors. Inappropriate focus was also a result of being distracted (daydreaming, letting inappropriate thoughts creep in), losing focus of where you are at that point in the competition, and focusing more on the outcome instead of focusing on the segment of your plan.

In order to conduct a specific comprehensive study of an athlete's focusing abilities has yet to be done, a qualitative research design seemed most suited to exploring how elite mountain bikers perceive, develop and utilize mental focusing skills in the athletic context. Although quantitative methods of measuring attention purport to measure certain aspects of attention, they fail to give detailed, practical advice, or to uncover specific techniques used in individual sports such as elite level cross-country mountain bike racing. Therefore, for the purposes of this study, an open-ended interview format was used to shed light on the entire process of how elite mountain bike athletes develop, use, and refine focusing skills. Although the present study is limited in generalizability with respect to other athletes or sports, the interview format brings us closer to understanding and explaining what is specifically required for the development and utilization of good focusing skills in the sport of elite cross-country mountain bike racing. The assumptions underlying the study and a justification for the research design are addressed in the next section.

Chapter III

Methodology

Fundamental Considerations

Before discussing the methods that will be used in the present study, it is necessary to discuss the reasons for choosing a qualitative method. This will be placed in the context of the ongoing quantitative/qualitative debate over which approach is best, given the purpose of research and how best to achieve the purpose of the research.

Throughout the history of scientific research, primarily in the 20th Century, there has been much emphasis on the quantification of research in science. The “hard” sciences, such as chemistry and physics, are most suited to quantification. The less quantifiable sciences, the social sciences are known as “soft”. Until recently, research in science solely focused on proving or falsifying an a priori hypothesis that could be easily converted into a cause and effect relationship. Therefore, the belief that only quantitative data are valid, or of high quality, is held by many.

In recent years, the assumptions of quantification have been brought into question (Denzin & Lincoln, 1994). Qualitative researchers have criticized it for context stripping, and not allowing for other variables that exist in the context that might, if allowed to exert their effects, greatly alter the findings. As well, quantitative research has been criticized for its inability to account for the meaning and purpose behind human behavior, and its inapplicability of general data to individual cases (Denzin & Lincoln, 1994). Therefore, the notion of an objective reality and the notion that hypothesis testing is the only acceptable method of investigation were reconsidered.

As regards to the epistemological standpoint, the relationship of the researcher to what is being researched, a qualitative researcher tries to minimize the distance between him or her self and what is being researched. This leads the researcher to actively report his or her values as well as the value of the nature of information gathered which is personally reported in the first person (Creswell, 1994). For the present qualitative study, an inductive method of inquiry was used, which means possible theories are developed and categorized according to information gathered from the participants. In other words induction in the qualitative method for the present study can be seen as a circular process of describing, connecting, and classifying.

Research Orientation and Underlying Assumptions

The theoretical paradigm, which guided the present study, is a postpositivist approach. Unlike positivists who believe research can find the complete truth, postpositivism believes that any claims about reality must be critically examined in order to understand it as well as possible, although never perfectly (Denzin & Lincoln, 1994).

The researcher asks questions such as, "Do the findings fit with existing knowledge, and with what others have found such as editors, referees, and professional peers?" Replicated findings are seen to be probably true but always subject to correction.

The methodology of postpositivism involves doing research in more natural settings, collecting more situational information, and giving voice to the insider's/participant's view to help determine the meanings and purposes that people ascribe to their actions (Strauss & Corbin, 1990)

Study Participants

In a qualitative study, sampling is purposeful because study participants are selected on the basis of their experience with the phenomena being investigated and their willingness to share their knowledge. As stated by Maxwell (1996), purposeful sampling is a research strategy in which specific people, settings, or events are deliberately chosen in order to provide important information that can't be accessed using other sampling techniques. Therefore, ten of Canada's top ten Union Cycliste Internationale (UCI) ranked pro-elite men and women mountain bike racers, all with much international-level experience (see Table 1), were invited to participate in the present study based on a number of factors. All the athletes were national team members with several years of experience at the international level including World Cup and World Championship races. Four of the athletes were also Olympians.

Interview Setting

Because of their busy schedules, these high performance athletes were interviewed at a place and time of their convenience during the 2000 competitive season between the dates of June 20th, 2000 and August 12th, 2000. All the interviews took place at competition sites in Vermont, USA, Quebec, and British Columbia. Initial contact was made with twelve athletes by e-mail. The objectives of the study were explained and the athletes were informed that the interview would take no more than 90 minutes of their time. Four possible dates were also given surrounding different races that I would be able to meet with them. Ten out of the twelve athletes contacted were interviewed. One athlete did not respond at all, and one found her self too busy to meet with me in the end after initially stating she would.

Interview protocol

The type of interview chosen for the present study was a topical interview. In a topical study, the researcher sorts out and balances the different perspectives of the participants (Rubin, & Rubin, 1995). The format of the interview was a semi-structured, open-ended interview, which aims to gather precise data to code and explain behaviour within pre-established areas of interest (Denzin & Lincoln, 1994). Several main questions were asked, worded in a predetermined fashion, while at the same time allowing for flexibility to probe and explore certain topics in greater depth. In contrast to a structured interview, an unstructured interview seeks to understand the complexity of the subject at hand in relation to the interviewees without imposing any a priori categorization that may limit the scope of the inquiry (Denzin & Lincoln, 1994).

Since the main difference between an interview and a normal conversation is that the interviewer guides the conversation in an interview, several steps were taken to ensure that the questioning remained appropriate as well as guided by me as the interviewer. Some important stages involved building a good conversational relationship for meaningful interviews, mentioned by Rubin and Rubin (1995), include:

1. Creating a natural environment. In the initial stage of the interview it is important to put the participant at ease with some informal conversation or even joking. I began my interviews by asking my participants about how they got into mountain biking racing. This is an example of a non-threatening question, which began the interview by helping the athlete feel comfortable talking to me about him or herself.

2. Encouraging conversational competence. To help ease any nervousness the participant may be experiencing due to being unsure that they are capable of answering the questions, early

questions should be core to the subject. They should also deal with subjects that the participant knows the most about. For example, my first main question was to ask the athletes how they define focus, the core topic of my interview. Following that they were asked to describe a race in which they felt they had their best focus, an event that was easy and fun to recall for the athletes.

3. Showing understanding. The participant needs to be encouraged to be frank and open. To encourage the participant to answer in depth, the interviewer should demonstrate factual and emotional understanding. Good follow-up questions show factual understanding while also letting the participants know that you share their background or have had similar experiences to show emotional understanding. For example, since I am a competitive mountain biker myself, it helped me to establish a good rapport and empathy with the participants. As they answered my questions they were aware that I understood their language and could sympathize with the situations and events that they talked about.

4. Getting facts and basic descriptions. After the interviewer establishes that he/she understands the participant cognitively and emotionally, the answers are followed with probe questions, seeking greater detail. The participant is encouraged to talk at length on the subject at hand.

5. Closing while maintaining contact. When the interview is near completion the interviewee needs to indicate it is ending and to show gratefulness for the time and ideas the participant has shared. The door should also be kept open to continue the discussion or for further questions. For example, to follow up I sent all the participants their interview transcripts so they could make any corrections, additions or changes if they felt it was necessary.

Following the interview (see Appendix D for Interview Guide), a post-interview debriefing was given. In general, the interviews went as planned. All of the athletes were extremely open and willing to talk about their training and competition lives in relation to focus. However, throughout the process I learned more effective means of phrasing my questions in order to facilitate richer answers. Although being a mountain bike racer myself aided me in establishing a good rapport with the athletes, it may have slightly hindered the athletes from going into greater detail. Perhaps because the athletes knew I was very familiar with their “sport and race culture”, they might not have felt the need to explain certain situations or scenarios in as great of detail as they might have otherwise done.

Data Preparation

All interviews were audiotape recorded and transcribed verbatim in order to produce texts which were analyzed. To ensure the accuracy of all data collected, a printed copy of the interview transcript was sent to each participant. The athletes were asked to verify that their thoughts were accurately represented in the texts, and to make additions, deletions or changes to the text if they were warranted.

Coding and Data Analysis

Data analysis in a qualitative study can be seen as a circular process alternating between description, classification, and connection. Thus, the researcher must be comfortable with developing categories, and making comparisons and contrasts (Creswell, 1994). While much work in the analysis process consists of “taking apart” (for instance, into smaller pieces), the final goal is the emergence of a larger, consolidated picture (Tesch, 1990, p. 154). Therefore, my task was to classify and categorize the different types of situations in competitive mountain

biking that require focus. Furthermore, I attempted to classify and categorize how different types of focus are learned, practiced, applied, and refined.

As defined by Miles and Huberman (1984), data analysis contained three linked subprocesses as summarized below.

Data Reduction

Data reduction began with choosing a conceptual framework, research questions, participants and instruments. When the data was available, the audiotapes from the interviews, the data was further reduced by, coding, finding themes, and clustering. During the two-month data collection phase, from June to August 2000, each athlete was interviewed for approximately forty-five to sixty minutes each. The ten interviews were transcribed and the coding and analysis began immediately afterward.

The analysis began by subdividing and coding each interview into the following nine main topic areas, which emerged from the interviews:

1. Defining Focus
2. Best Focus versus Worse Focus - Factors
3. Refocusing
4. Focus and Training
5. Improvements/Changes in Focus over course of Career
6. Areas working on to up Current Performance Level or to Improve Consistency of Present Performance Level
7. How focus in mountain biking has applied to other areas in the Athletes' lives
8. How other areas in the Athletes' lives has helped their focus in mountain biking

9. Recommendations/Advice for others on how to Develop their Best Focus.

Topics number seven and eight were eventually eliminated from the analysis, as they didn't have much relevance to the other main topics. For each main topic I grouped all the relevant quotes from the ten interviews together, called clustering. Then I broke each group of quotes or what I felt were meaningful statements, into different subcategories, which emerged under each main topic. For example, for the main topic of Refocusing, I developed the subcategories of Flat Tires, Crashes, and Additional Thoughts on Refocusing.

After every meaningful statement was put into a category I began to summarize and interpret what the athletes said. I began to make inferences to account for differences and similarities between what the athletes had to say about each topic

Data Display

When the data becomes organized information, it allows conclusion drawing to take place, the second part of analysis. One form of data display is a narrative text, which can become very long and unstructured making it easy for the researcher to jump to hasty, partial, unfounded conclusions. However, displays such as matrices, graphs, networks, and charts make it easier to organize the information so it is immediately accessible and in compact form so more justified conclusions can be drawn. To display the results I created tables to summarize what the athletes had said.

Conclusion Drawing/Verification

The researcher draws meaning from the display as the final step in analysis. To do so several methods are used such as compare/contrasts, noting patterns and themes, clustering, use

of metaphors, triangulation, looking for negative cases, and checking results with respondents (Miles & Huberman, 1994).

Therefore, in contrast to quantitative research, which is guided by more sequential methods, qualitative analysis can be seen as a continuous, iterative or cyclical process. The researcher moves between data collection, data reduction, data display, and drawing/verifying conclusions.

Validating the Current Study

It is important to address what criteria are necessary to judge the quality of the present approach of inquiry. Qualitative researchers have developed their own language to address validity and reliability, traditionally viewed as quantitative research terms. Qualitative researchers have created their own language using such words such as trustworthiness, transparency, and consistency (Rubin & Rubin, 1995).

A study is trustworthy if the accuracy of the transcripts are verified. For example, after conducting the interviews, the athletes were given the opportunity to verify it's authenticity and edit their interview transcript.

According to Rubin and Rubin (1995), transparency means the researcher documented the process of data collection. Details of how the transcripts were made, how they were organized and analyzed are given above.

To be credible, a qualitative researcher must also demonstrate that they have checked out any inconsistencies between ideas and responses. If I was unsure about an inference I verified it with the athlete. There were also very few inconsistencies between responses.

In line with the postpositivist approach of this study, the use of discourse can serve as means of validity. Therefore, the respondents themselves (the athletes), as well as someone with experience and knowledge in the given domain would be competent in assessing the validity or truth of the research findings. To ensure trustworthiness in the present study several steps were taken:

1. The interview guide was developed by the research objectives and information obtained in pilot interviews,
2. Sampling was purposive and designed to include individuals, who could offer numerous perspectives on the subject being investigated,
3. The semi-structured nature of the interview allowed for dialectical exchanges between the researcher and participants,
4. Accuracy of the interview transcripts was confirmed by having the respondents review and modify the text,
5. The research data was organized according to the study objectives (see page 3) in order to facilitate a better understanding of the use of focusing skills by elite athletes.

Limitations of the Study

A limitation of the present study is that it was confined to the sport of Mountain Biking and therefore may have limited generalizability to other elite athletes and sports. The number of participants, being only ten also limits the study. Since only one contact was made with each athlete, the study was limited in that follow-up questions could not be made as further questions arose in between interviews and in preceding interviews. The interview method may have

limitations as to any influences the interviewee may have had on the response, as well as the limit to the number and the types of questions posed. However, it is hoped that the interview format brings us closer to understanding and explaining what is specifically required for good focus in the sport of elite cross-country mountain bike racing.

Table 1

Athlete Profiles.

Athlete	Age (Dec. 2000)	Years of Mtb Racing Experience	Highest Ever World Cup Finish	Highest Ever World Champ Finish	Olympic Experience	UCI Ranking (End of 2000 Season)
1	26	15 (10 road)	4 th	2 nd	14 th (2000)	9
2	27	13	10 th	28 th	-	47
3	26	9	25 th	38 th	-	28
4	24	9	15 th	14 th	-	46
5	31	10	11 th	17 th	-	20
6	24	10	6 th	20 th	-	38
7	30	12	13 th	13 th	29 th (1996)	37
8	34	9	7 th	7 th	8 th (2000)	9
9	28	15 (11 road)	22 nd	33 rd	-	55
10	23	8	8 th	22 nd	9 th (2000)	18

Note. mtb – mountain bike, road – road racing only

Chapter IV

Presentation of the Results

The research objectives of this study on focusing skills among elite athletes in a risk-endurance sport were fivefold. The first objective was to advance our knowledge on how elite mountain bike athletes define focus in relation to their sport. The second and third objectives were to explore how elite mountain bikers develop and refine their focusing skills, and what focusing skills the athletes use before and during competition. The fourth objective was to look at what kinds of focusing skills the athletes used in training. The final objective was to discover other concepts that may have interacted with focus.

To achieve these objectives, each of the ten athletes was interviewed once during the 2000 racing season at one of three different race sites between June and August 2000. The results are presented in the context of the following themes: 1) Defining Focus, 2) Best versus Worst Focus, 3) Refocusing, 4) Focus and Training, 5) Improving Present Focus, 6) Development of Focusing Skills, and 7) Recommendations for Others. The findings led to the creation of a Conceptual Framework, which was designed to illuminate the focusing skills emerging from this study (see Figure 1).

Defining Focus

As all of the interview questions were related to focus, the participants were first asked to define what is focus. After thoroughly reading through and carefully analyzing each athlete's definition(s), focus was found to include five themes.

- 1) An ability to concentrate fully on the job at hand and what you have to do in order to reach your objective (100% Concentration).

As athlete 7 stated, “I am concentrating and all my efforts are aimed toward my racing or a goal that I have”. Athlete 10 mentioned focus is being able to “concentrate on the one thing you’re trying to do 100%”.

2) Eliminating Distractions (No Distractions)

In order to continually pursue a goal and keep the focus that is needed, distractions must be taken care of. Focus involves “eliminating any possible external discomforts or pests” (Athlete 8). It involves not letting other concerns become too overwhelming, “Focus is trying to eliminate a lot of the outside stress like not letting something like media attention get to you” (Athlete 3).

3) Preparing and planning to be your best (Plan)

To achieve an objective within a certain time frame, there needs to be a plan for each step along the way, a “focus on what you have to do in order to get there, the job ahead” (Athlete 1). In order to be able to focus for any task, a certain amount of preparation is needed beforehand. An individual needs to take care of him or herself mentally as well as taking care of logistical concerns, or equipment concerns in order to be prepared to focus fully when the time comes to perform. “The best focus for me is just knowing that I’ve done everything that I have to do to be prepared”, said athlete 4. As athlete 9 explained preparedness, “If you’re focusing for an upcoming mountain bike race you try to get your rest, you try to eat well, try to check out the course and work on any difficulties you are having with the course”

4) Having a vision of where you want to go (Vision)

This dimension means you are focused on a goal. Focusing in this sense is “the ability to look ahead and see where you want to go” (Athlete 1). Or as athlete 4 said, focus is “defining a

specific objective”.

5) Persisting with a specific objective (Perseverance).

Once an objective is set, focus is needed to keep persisting and going after the goal throughout all possible setbacks and disappointments along the way. Focus is “how you keep a specific objective” (Athlete 4).

The five themes emerged from each athlete’s definition of focus. The interview excerpts below provide examples of how the transcripts were coded.

I would define focus into short-term focus like in a race and then a long-term overview of the season when you set up your goals (**Vision**). I would define focus as the ability to look ahead and see where you want to go (**Vision**) and to know how to get there (**Plan**). Whether it is over the course of three or four years or just the next two hours, just know exactly what you have to do (**Plan**). And rather than focus on the outcome, focus on what you have to do in order to get there like the job ahead (**Plan**). Because if you are really uptight about the result, like you have to get this, you have to do that, it usually never happens. I believe your focus is like a sum of all the things that you’ve been through (**Perseverance**). You couldn’t just read about it and say okay, I got it. You have to set the changes in motion by finding out why you can’t do that. Why are you uptight? So then you work on that and hopefully that will be part of the cure. So I just think that focus is the end of a long chain reaction. You have to look back in the chain reaction and go okay, here I’ve been messing up and that’s why I do this, and if you can change that or work on that then over a period of time (**Perseverance**) you could really improve, should improve (Athlete 1).

I would see focus as cutting all the crap out if you will (**No Distractions**). When you are focusing I think you are concentrating on your diet. focusing on a whole range of things from diet to cutting out your social life to mental preparation for your races and relaxing (**Plan**). I guess that would be the four areas. And then during the race you are focused on the task at hand (**100% Concentration**) (Athlete 2).

Focus is trying to eliminate a lot of the outside stress like not letting something like media attention, get to you (**No Distractions**) You have to be relaxed and not get all caught up in it. You can get focused where you are too intense and it just becomes a stress to you. The best focus for me is just knowing that I’ve done everything that I have to do to be prepared (**Plan**) And knowing that, I am

confident and I am focused and unless a mechanical problem happens I will do well (Athlete 3).

Focus is how you keep and define a specific objective (**Vision**) how you can achieve it and say, "I have this objective, now I need to put everything aside from it and manage to achieve that objective" (**No Distractions**). That is the way I see focus, to know what I want to do (**Vision**), to put everything else aside and try to do everything I can in my power to achieve that objective (**Perseverance, No Distractions**). I think it (focus) goes with motivation. That's the main drive. You have to set your goals before starting your training year or season (**Vision**) And once you know what you want to do that gets you the most focused. Then you say after that nothing else matters (**100 % Concentration**). You just tear everything apart. So you need goals and you need to achieve them and take every mean you can to get there. If you don't have any purpose you're just sailing towards who knows what. So many kids, they don't know what they want to do in life. If they knew they wanted to be a veterinarian or whatever then their marks would go up and their motivation for everything would change because they know what they would like to do. To identify what your main goal is (**Vision**) and how you're going to achieve it (**Plan**) is really what I think brings you into the best focus for cycling and everything (Athlete 4).

Focus pertaining to competition is a concentration of physical and mental effort without distraction from the sport you're pursuing at a specified time (**100% Concentration, No Distractions**). I say specified time because I believe it is impossible to have excellent focus at all times. That is why you need to have some distraction and relaxation, whether that be partying with friends, watching soaps, or going fishing, or maybe even a separate focus like work or school, in order to achieve the complete focus needed to reach your maximum potential in your sport. For myself I find regimenting my training really helps me to focus, especially during the event. Leading up to important events, I have a very disciplined and set schedule to follow. When it comes to race day, if I have followed my program to the best of my ability, I feel confident that I have done everything in my power to have a personal best. I enter the race knowing that I can only do the best that I can and can feel satisfied with myself. There are no "should haves, could haves" or questioning about my preparation (**Plan**). Everything is focused to the task at hand, racing my bike to the best of my ability (**100% Concentration**) (Athlete 5).

Focusing to me would mean concentrating upon the race coming up in the immediate future (**100% Concentration**) and just picturing yourself having a good performance. For me, positive thinking helps quite a bit (Athlete 6).

Well I guess there's two parts to focus, focus that you have through normal life and the focus to get you to the race. And then you have race focus which is how

you draw all your energies into one beam and focus it at a single event or a single time period like for a couple of hours of racing **(100% Concentration)**. And you're not distracted by people waving and cheering at you **(No Distractions)**. When you're waving and talking to people you don't have good focus and your energy gets spread around. Good focus is just covering all your preparation **(Plan)** (Athlete 7).

I perceive focus as when I am concentrating and all my efforts are aimed toward my racing or a goal that I have and nothing else seems to get in the way **(100% Concentration, No Distractions)**. It is more clearly defined, almost like with blinders on **(No Distractions)** (Athlete 8).

Focus to me is pretty general. If you're focusing on an upcoming mountain bike race, you try to get your rest, you try to eat well, try and check out the course, work on any difficulties you are having with the course **(Plan)**. No partying or drinking or twelve hour hikes the day before, that kind of thing. Preparing yourself and just eliminating any possible external discomforts or pests **(No Distractions, Plan)** (Athlete 9).

I think focus is being able to block out everything external **(No Distractions)** and just concentrate on the one thing you're trying to do 100% **(100% Concentration)**. For racing, focus is being able to have everything set up so you can just think about the race **(Plan)**. Everything else is just what you've planned out beforehand so it's just routine, your food, your travel, so you don't have any other stresses **(No Distractions, Plan)**. So you can just concentrate on riding **(100% Concentrations)** and you don't have to worry about external things like your bike and stuff **(No Distractions)**. You can think about actually riding in the race **(100% Concentration)**. I think being prepared is a big part of it **(Plan)**, for me it is (Athlete 10).

The aspect of preparing and planning to be your best was summed up well by athlete 7,

It's like collecting energy as you go toward a bigger event. You slowly start conserving your energy in small places. Not even like you're doing it consciously. You might take a few more naps a week before or two weeks before you'll start to think more often about the event that's coming up and then you'll store all this. I guess its like potential energy inside you body, when you get to the event then you have to allow it to escape in a focused channel. So I believe that it's sort of an unconscious thing that happens. You can consciously try to activate it by designing your program to ramp up to an event, and that's the conscious part of it. You build your training, you taper. You're saying these are the events I want to get to but there's an unconscious part I think that happens and I don't think it happens for everybody. It's almost like a natural thing that athletes do anyway.

The athletes in this study expanded upon the previous definitions of focus by adding the dimensions of vision, and perseverance. Having a vision of where you want to go is important for focusing. Vision, knowing where you want to go is the long-term focus while having and executing a plan is the short-term focus, which both entail the dimensions of 100% Concentration, No Distractions, and Perseverance (see Figure 2).

Best Focus versus Worst Focus– Factors

After the athletes defined focus, each athlete was asked to describe a race at which they felt they had their best focus. They each described the events prior to the race which lead to their best focus, as well as what transpired during the race to facilitate their best focus (see Table 2). Leading up to the race the athletes talked about focusing on staying relaxed, practicing positive self-talk and positive thinking (while not over thinking about the race which causes increased nervousness for some), as well as visualizing the course, including their desired feeling and strategies for the race. Good logistical planning and preparation, including knowing where and with whom they would be staying, and preparing their bike were some key factors that lead to the best focus. Once the race was underway, the athletes spoke of the how their focus changes for different sections of the race (see Table 5). For example they spoke about how their focus shifts between their position in the race, their own pace and internal feelings, and self-reminders for how to ride certain technical sections. Feeling good physically before and during the race also helped facilitate good focus.

After describing a race at which they felt they had their best focus, I asked each athlete to give an example of the opposite, a race without good focus, perhaps even a race at which they'd felt they'd had their worst focus ever. Like the previous question I asked them to provide the

reasons that lead up to the race with poor focus. Not surprisingly, many of the factors that lead to a race with poor focus were opposite to the factors that lead to a race with good focus (see Table 3). For example, there was poor preparation and planning leading up to the race. Uncontrollable factors and distractions before the race lead to poor focus, as well as not feeling good physically.

The factors leading to a race with the best focus and to a race with poor focus are discussed further below.

Relaxation, Positive Thoughts, & Imagery

In the week prior to the competition four of the athletes felt staying relaxed was very important for having good focus, “Leading up to the race (a race with the best focus) the time I spent off the bike was really relaxing, we had really good massages” (Athlete 1). Staying positive was key to remaining calm and relaxed for many of the athletes,

I was thinking about getting the good feeling while racing (the week leading up to the race). I’m going to feel good. The best riders in the world are going to be there. I’m excited. I’m with a new team, just the snow ball affect of all those good feelings. I was positive and confident but not cocky (Athlete 2).

To help remain positive and confident, three athletes mentioned practicing the use of key words and positive self-talk. Interestingly, all three athletes were female,

I find that to help focus it is good to have key words that you remember. By using them in training it helps you to remember them during the race so you can key on a word that helps you to spin, reminds you to attack, that you are strong, that you love to climb, these kinds of things (Athlete 8)

As the race goes on, in the technical I’m trying to just relax. I talk to myself all the time, ‘relax’, ‘look ahead’, and ‘let it go’. I say these things to myself all the time (Athlete 5).

I just keep telling myself if this hurts for me, it hurts even more for other people, just go harder. Just do it, stay calm, keep your head up, look ahead, stay smooth, focus on the next section, big hill coming up, just go hard. There is a downhill

right after so you can recover in the downhill. It's not the time to go easy. And just constantly pushing myself, motivating myself to take the pain (Athlete 3).

Another way to stay positive before and during the race was through the use of imagery as mentioned by athlete 2, "I use mental imagery, like what it would feel like to put on the leader's jersey on the podium." Five athletes also mentioned using mental imagery to prepare for the focus needed during the race,

It helps to do positive imagery before the race but not necessarily the morning of, or even the day before, but the weeks up to and including. When you're in that level of pain that is associated with racing and you need to go into your next zone this positive imagery can come up as opposed to negative thoughts. I kind of put myself into a deep relaxation and then what I do is imagine myself riding and riding things well. And it's a feeling as well as an image. It's not just an image or a word. It does have a feeling with it, a more aggressive feeling as opposed to a fear feeling. With a fear feeling you kind of hold back and you kind of back away. Where with an aggressive feeling you're more forward and aggressive and willing to attack the situations or obstacles (Athlete 8)

I visualize whenever I am just sitting around. I think about all the different parts of the course and how I'm going to ride them, go through the feelings I'm going to have before the race and at the start. Like just picturing staying relaxed and not getting upset if things are not going the way I want them to. I try to see how I'm going to start knowing that its going to be harder at the end of the race and so I get ready for that (Athlete 10).

I visualize the first lap if I know the course, if I know what it looks like, just to visualize myself (doing it) ahead of time so its not like an alien situation that I'm suddenly in and it becomes stressful (Athlete 3).

I'll start to do some visualization once I really start to know the course after practicing it four or five days. And that's maybe how I get mentally prepared (Athlete 4).

Outside of doing imagery, six of the ten athletes also felt for them it was important not to think too much about the race during the week beforehand,

I don't think about the race or the training leading up to the race until I actually get on my bike (Athlete 1).

That is how I approach a big event, just to get as physically fit as I can and not to think about the big event too much. I make sure I know it (the upcoming race) is there, what my goals are, and to only think about the day-to-day going into it (Athlete 3).

A way to be really focused on the race is to be there on the race day but not before, not to over amp. You did all you could leading up to the race. Now all you have to do is think about something else (in the week before the race) and then when you really get to the race then you can start doing as you should (Athlete 7).

Before I'm trying not to think about it too much. I'm a nervous type person so I don't like to get myself too worked up for it, wasting energy being stressed out about it (Athlete 5).

Thinking too much about the race sometimes can have an adverse effect,

If you think too much about a big event coming up, you get excited but then you get a little stressed. I seem to turn thinking about it too much into something negative and then it becomes pressure. Then I just lose energy because my body is stressed and it's a waste of energy (Athlete 3).

If I start to think about a race too early in the week then it just builds up into neurological fatigue (Athlete 4).

Focus During the Race

The athletes spoke about the types of thoughts they have and what they are focused on during a race where their focus is good. Athlete 5 spoke of being on automatic once the race is underway,

I am on automatic mode once the race starts. The first five minutes I am focused on getting a position and after that its like I'm not focused. It's almost like I'm unfocused, or I'm focusing so hard that I'm not thinking about focusing. It's all automatic. It's not as deliberate as the preparation up to the race.

Every mountain bike course is unique in the difficulty of the terrain and the amount of ascending and descending. For both ascending and descending the athletes spoke of the importance of focusing on staying relaxed, even more importantly for descending. To stay relaxed on a descent athlete 1 said, "I try to keep breathing. When there's some really tight

descents where I feel it's a little dangerous, I just remind myself to keep breathing because sometimes I find myself holding my breath and going oh, oh, oops. Something as simple as breathing you can forget sometimes." The athletes mentioned self-reminders that they used to maintain their best focus in downhill sections. For example they focused on things such as keeping to the most efficient lines picked during preriding, staying smooth, looking far ahead, not panicking, remembering to let it go (relaxing and letting the breaks go), and to keep pedalling.

Although the athletes spoke of how their focus changes or shifts slightly for ascending versus descending, they also all agreed that the technical riding part of the race should be somewhat automatic. "I'm not really thinking about the riding very much during the race because hopefully I've had enough time to ride the course and think over the sections beforehand so its just automatic and routine riding during the race", said athlete 10.

There is also a constant shifting between internal feelings and the external things happening in the race, such as the changing terrain or the jockeying for position with other riders. The athletes believed that in their best races, for the majority of the time, they are a more focused on their internal feelings and pace rather than externally focused on the other competitors.

However, the race is still a thinking race and involves some external focusing. Four athletes felt it helped them to focus when they were given time splits and therefore knew how far behind or ahead they were of their competitor. As stated by athlete 10, "I'm really focused on getting the time splits from different people to see how much the time gaps are closing, if I'm gaining and how many places I'm going to be able to move up. That's what I'm thinking about

most during the race.” Athletes also spoke of their strategy, and how their focus shifts throughout the race. Athlete 7 summed it up as follows:

The start of the race is a combined effort, it’s internal and its external. Its external because you need to watch what’s going on around you, you need to watch the people you are racing. But it’s internal because you need to be more aware of your own effort. If you get caught up in the external you can blow your engine. Or if you get caught up in the internal and the race can ride away from you, and you won’t ever see it again. So the first thirty-five to forty-five minutes of a race is a much more precarious place. And in ten to thirty minutes you really assess it. You’re still calculating who is having a great day, who is going hard, who’s going to blow up. And at the end of the first lap you really make an assessment. Was that too fast? Was that too hard? How long was the first lap? It’s a thinking race but meanwhile you’re in complete oxygen debt. Anaerobically you’re punched. So you have to also be looking inside and deciding what kind of day you’re having. You’re watching everybody else but you’re also reading all your meters and levels. Then you get into the body of the race which is how am I going to pace myself to and cater to my strengths so that I can win or do the best I can. I think some people get carried away with all the emotion or they get into worrying at the beginning and either they are not internal enough, or they get too caught up in the external with the racing going on.

Planning and Preparation

There was a consensus among the athletes that in order to reach and maintain their best focus, the events leading up to the competition, their preparation and planning in the weeks and days beforehand, played a critical part in how mentally focused they would be during the race. Athlete 1 stated, “Good preparation, knowing that when you start on the line that you haven’t forgotten anything, your bike is perfect, you’ve done as much as you possibly can, nothing is bugging you, that helps me focus.”

Logistical preparation was a key factor in aiding the athletes in having the most focused mindset before a race. Arriving at the race site early, getting to know the course well, and

making sure one's bike was working properly are examples of the kind of controlled preparation that helps facilitate good race focus,

I was there (at the course site) eight days before the race so all I had to do was think about the time trial, the dirt crit (short dirt track criterion race). I get onto the course, get into the feeling on the bike, the feeling of the pedals turning beneath my legs. Getting towards the race I get on the course again and again, getting the feeling as if I'm in the race, trying each section out (Athlete 2)

I make sure my bike is good, working well. I got there about eight days before the race and made sure I knew the course like the back of my hand. I was constantly redoing every section. There was one day where it was horrible conditions, raining and there were people crashing all over the course. I was like, this might happen during the race so I'm going to go out there and test it out (Athlete 3)

I get to know my course, know my opponents so when I get to the race I know what's going to go on and I'll be able to deal with the race at the same time (Athlete 4).

When I got to World's I was mainly just focusing on the course but I still didn't think about the race (actually racing) until the actual race day. I just think about how I'm training on the course, what I need to be able to do to do this course fast. Like do I have to run here? I want to be able to feel comfortable and I want to be able to actually visualize the whole course in my mind. And drinking is something I actually practice when I'm preriding. Like when we ride past the feed zone I drink. Any spot in the course when I'm preriding that looks like its gonna be a drinking spot then I practice drinking. Then when you're racing its more of an automatic thing because you've already practiced) (Athlete 5).

When I'm preriding the course usually I decide what areas are good for attacking, standing up, sitting down, doing certain things with the bike. going smooth, all these things. And then it's just a matter of reminding myself before the race starts and then remembering that during the race. And even different strategies per lap, how hard I'm going to push, deciding what the goal of the first lap is going to be, second, third, fourth, and following through on that (Athlete 7).

When a big race is coming up I start focusing and preparing for it as soon as I can. So I will look up all the information I can on where the race is and the course and the village so I know everything I can about the site so it feels familiar when I get there right away. And for that race (a World Championship) I was one of the first people to arrive on site, as far as the Canadians. I got there about ten days before. The first couple of days I was there I was able to ride several laps of the course and get it memorized in my head. So I didn't have to worry about figuring out the

course for the rest of the time I was there. I could just focus on resting and training properly (Athlete 10).

A race with good focus often grew naturally out of good preparation beforehand. A race without good focus was often linked to poor preparation leading up to the race or not respecting the preparation patterns that have worked for you. Not arriving early enough, not knowing the course well enough and other uncontrollable factors or distractions that took place before the start often interfered with a good race focus. Four athletes gave examples of situations that interfered with good focus:

It is usually because of things that happen leading up to the start. Every time I think back to a race that went really bad, it really has been for me a physical problem that started it, whether I was sick or not rested. And the things that are most frustrating that can set me off are the things that are out of my control like travel, jet lag, and sometimes diet depending on where you are and what they feed you. So the things that are out of your control really bother me. It would be really great if you could have everything just like at home but it won't ever happen so just try and go with it. Stay relaxed and hopefully things won't bother you too much. (Athlete 1)

I flew in the last minute. I thought, I'm going to the Nationals, its nothing so I'll fly in Friday night, with seven hours of flying, totally last minute. I got there and don't go out for my usual steak and rice or steak and pasta. I went out for some East Indian food. I wasn't taking it seriously mentally, or physically obviously because of the whole travelling and then eating wrong and then cruising around. Then we go warm up on the course and I was like ah, I just need to do a lap and it was super technical. I was unprepared in every possible way and I brought it on myself and I didn't even see that. Then the night before the race I didn't ice my legs so every single thing I did wrong to not have the focus for the race. It was everything I did before the start line that led to me not having the right focus. (Athlete 2)

I went in too late. I went too hard both days before the race. I should have gone a lot easier. I felt good but I went hard anyway because I felt good. I arrived Thursday night and the race was Sunday so I had Friday, Saturday, and then the race Sunday. And the other thing was that the night before I left, I left a lot of things to the last minute. I like to have things prepared the day before the race, well this was the day before I was leaving for three weeks. Basically I had way too much stress before I travelled so I didn't sleep at all before I travelled and I

didn't sleep at all when I was travelling. And then I forgot a whole bunch of stuff when I got there. Sometimes it's just the littlest things. I did do some things right as well but I got to race day and I was going, 'Ahh, I didn't do enough' or 'I did this' or 'Did I did get enough sleep?' where I was questioning yourself. I was thinking and sort of defeating myself a little bit before I even started the race. (Athlete 5)

You go into a race and for whatever reason, maybe you were at home having the wide beam focus, and the next thing you know you're at the race. You see everyone and you're talking. You prerede with other people. You're not thinking about the race and your strategy. So you go into the race and you find yourself racing and not really focusing or not really thinking about what your strategy is going to be. And I find that is when I get a little bit lost, I just end up riding hard as opposed to having a strategy. I end up just riding and not really having a goal, just sort of floating with the group. And that's due to having zero focus leading up to the race, just forgetting to narrow the beam. You may not warm up as well. But I've had this happen at major competitions as well. For whatever reason, it seems to be just another race and I end up all of a sudden on the start line and I kind of go, "oh, oops I forgot something major." And you can have a really good race on some of those days too because you're not stressed. But in most cases you tend to not (Athlete 8).

Physical Readiness Influences

Before the race there are many factors that the athletes consciously prepare in order to be as focused as possible going into competition (see Table 4). Such preparation included preparing their bike and water bottles, choosing the correct tire selection according to weather conditions, getting to know the course and opponents, keeping themselves as relaxed as possible, and controlling their diet and amount of rest. However once the race was under way, getting into and maintaining one's best focus seemed to be a mixture of physical readiness, mental readiness and the ability to stay on task for the duration of the race. As athlete 5 stated, "To get everything to come together on race day is so hard. There are so many factors. So you've got some factors that are within your control and some that are not. So everything that is within your control you have to try and make positive and prepare."

The extent to which one was physically prepared, healthy, fit and rested shortly before the race, and how good they felt physically during the race was very much linked to having good mental focus for six of the athletes,

If I compare a bad race, my focus was gone because my body was gone. It didn't matter how strong my brain or my mind was. I could finish. I could dig. I could plummet emotional depths. I could draw all the mental focus I wanted but I wasn't going fast because my body was gone. I was too fatigued to be able to concentrate. And that might be my thing. I need to have physical reserves that will allow me to dig deep. When there is no room for extra thinking and you're just struggling to make the time or the speed or to hang on to the wheels in front of you, you can't think about anything else. All you can think about is stopping. I think when I'm not fit and my results are not as good, my focus is not as good. Its like not being fresh, you don't have the ability or extra strength to draw your energy. You don't have the confidence. Your confidence and focus are tied together (Athlete 7).

I went in really well focused, did everything right at the beginning, went in really very well prepared mentally, prepared to do just the best race of my life. Then for whatever reason my body physically was not up to par, and I realized that in the first ten minutes that I wasn't having the race of my life. Its very, very frustrating because mentally you're expecting yourself to do really well, but physically there is something up and you're not. In the race situation all you know is that instead of winning maybe you're fifteenth And from there you can then spiral downwards pretty quickly because then if you lose your mental and on top of that you can just continue to have a bad race. One of the things I use for my mental imagery and stuff is about challenges. So that would be an example of a time where I would cue into myself and tell myself I love a challenge. And obviously this is going to be a challenge to finish the race in a respectable position and to try and turn that around and bring it back. (Athlete 8).

Its not like as if I was riding a motor cycle where I'd know that it would just be a matter of how mentally prepared I was, how I was reacting. If you go in a mountain bike race and you're not there from the start, like you can't open the throttle then there's nothing happening. So to be focused for me its not just mentally. It has to be there physically. Then after that you can improve your end result by being more concentrated on the task. If you want to attack, then you can go but if physically you're not there then there's not much you can do. So I see more of a physical implication, not being ready for it, that made the difference in focus rather than something psychological (Athlete 4).

I think it's (a bad race) a combination of both, feeling bad physically and mentally. There have been times where I get sick the day before or the day of the race. And you go and there's nothing. You're trying so hard and you can't get your body going. It says no, we've shut down, we're working on the fever and that's purely physical. And then you have to really dig deep just to finish. But mentally it's not so much whether you have a bad race or a good race. I think mentally it's whether you have a good race or a really excellent result, going beyond. Because you get to a certain plateau and to get beyond that or to get to the next level, everything has to be in place. So when you have a really shitty race then it's probably a physical thing. But the difference between having a good race and a great race is the mental for sure (Athlete 5).

Everything that could go wrong physically went wrong pretty much. I had bad allergies along with racing at 8000 feet altitude. I had had a mild concussion from a bad crash three days before the race, therefore my body wasn't 100% and it also wasn't the best course for me. I said I'm going to do the first lap steady, stay in the top 25 or 30, then just boom, open it up and move up. I was never able to open it up. I just kept going backwards. I kept trying to go hard but I couldn't and my breathing was just getting worse and worse. Then I went into a full on asthma attack and I finished the race with maybe seventy percent of my breathing. Everything was going lactic. I'd never had so much lactic acid in my arms. When I finished the race I was just like I didn't want to admit to myself that my body had failed. I actually never felt good the whole week. The whole week I was there I was like, man I'm feeling really crappy but that's okay, I'm a little tired from the travelling, don't worry I'll be fine the day of the race. I just need to do a good warm-up. And I did a good warm-up. Then as the race was going on, with the dust, with the pollen that was there, my body just shut down at one point in the race and that was it, the end of it (Athlete 3).

If my legs are feeling good when I'm doing some hard training in the week leading up to the race, that helps me to go into the race positive. Things that lead to not having good focus are when my body is not feeling good or when I'm not in good position. (Athlete 6)

In the race when I'm in a good position then it is easier for me to focus. Feeling good physically and riding good technically helps me to focus. (Athlete 1)

Two athletes brought up situations that can bring you down or up, and the role thoughts can play in relation to losing focus:

If you're not performing well at all then it's basically a downward spiral because you're feeling bad. Then you just totally lose focus and you just think about quitting or what you're going to eat for dinner. My thoughts go off the race

totally. Oh, I just can't wait for this to be over. Please give me a flat tire, stuff like that. How you're feeling leads to what kind of thoughts you start to have during the race. They go hand in hand. If I'm feeling good, then happy thoughts are with me when thinking about the race. If I'm feeling bad, then bad thoughts (Athlete 6).

I've had races sort of fall apart where you crash and you try and get back up and get going and you crash again, and it gets worse and then you lose concentration. You just try and get on your bike and go, you're not even thinking or anything. You're not relaxing. Your heart rate is going higher and you're going anaerobic trying to get up the hill or going down. You just lose it basically. Everything just scatters and you're all cut up, and it just falls apart and eventually you get to a point and you just say, oh fuck it (Athlete 9).

Post-Race Focus

Five of the athletes spoke of taking time to evaluate the race afterwards. They spoke of analyzing what went well, what went poorly and what they could do to improve next time whether it be in race preparation or race strategy and pacing.

After the race I think it's important to look back on your race. If you had a really good race it's really important to look back and see what you did well. Even if you did do well (had a good result), maybe you performed poorly and everyone else performed even worse. Even if you won, you still may have been able to improve on things. And then if you didn't do well in the race, (it's important to think about) your perception that things went badly, why was it that you didn't do well. Was it your focus? Was it what you ate? Was it the course? Maybe the course wasn't right. Were you too excited? Things like that. Or maybe it was just that you did have a good ride but your pacing was really bad. There's so many things involved. I think it's important to go back and look at it. But I also think that has to be done quickly and then to move on. Get information from it and use it but move on (Athlete 8)

After the race I really like to look at all the time gaps to the position where I finished and go through the race in my head. I look for all the places where maybe I lost a little time or I maybe could have pushed myself a little harder. I'll really go through the race and try to think of all the places where I could still improve in the course or in my strategy (Athlete 10).

Refocusing

In the sport of mountain biking racing there is a high probability that something will happen which will cause the racer to suddenly be brought to a complete stop momentarily in the middle of a fast paced race. The most common occurrences that can temporarily cause the racer to be sidelined are 1) flat tires, 2) other mechanical problems with the bike, or 3) a crash. In these situations, the racer is instantly forced to refocus their thoughts and energy from the race to an unexpected flat tire or a painful crash and then shift focus again to get back to the race again.

Flat Tires

When it comes to something like a flat tire, the athletes stressed the importance of practicing how to change a flat tire before it occurs in a big race. When faced with a flat tire during a race, the athletes emphasized the importance of remaining calm, easing back into the pace of the race slowly, and staying positive about the rest of the race.

What I've learned is that you have to start back slowly, not to go crazy right off the bat getting your legs huge and full of lactate. So you just start easy again and try to be relaxed about it. Okay, I've lost so many positions but hopefully I can come back. You have to try and look at it in a positive way like I just got a rest, I had something to drink, stretched out, I don't know. No there's really no positive way to look at getting a flat tire but I guess you can try (Athlete 1)

Basically I find that you just have to slow everything down. You have to turn the adrenaline switch off. You might have it (adrenaline) going when you're changing your tire but when you hop on the bike you have to rethink. Sure you could punch it and make up the time by doing the fastest lap out of anyone on the course which is usually what happens. But you have to breathe deeply and just slow it all down. Start going back at it and get the positive feelings from the course. Because if you hop on the bike and you got the adrenaline going, you become erratic. You're not focused on the task at hand and what's in front of you and the trail. So I find that if I just slow it down and even though I may have lost ten spots or something just slowly work on picking people off, each person in front of you as a goal, to slowly reel them in and just drop them (Athlete 2).

Just stay calm if you're fixing a flat. It doesn't help much if you pull your tube out of your pocket so hard that your CO2 cartridge goes flying. Just think about what you're doing and when you put your wheel back on your bike make sure it fits in between the brakes. You can even practice that before and put your self into a race situation. By practicing a flat tire change, you get faster and faster at doing it and then once you get into a race you don't even have to think about it because you already know so well how it goes that you do it all instinctively (Athlete 4).

You have a flat and you're like ok, you take your gloves off, you have to do all these fine tuned things. This engine's pumping with huge amounts of blood, volumes of oxygen, and you have to stop and basically rationalize a series of events. I think it (getting a flat tire) helps sometimes to focus you, and when you get going you jump back on your bike and you can say, okay I need to build slowly, this could be a benefit to me. I've had a rest. I'm going to chase that person, really focus on getting one person at a time. Moving back to that position you were in. A lot of times your scope of vision is like you have blinders on, you see that wheel in front of you, that's all you're seeing. And then once that wheel is going, you look forward to the next goal, the next person, and you leap frog (Athlete 7)

Now it's automatic, you get a flat, ok I take my gloves off. I try to ride it as long as I can, pull my gloves off and get my tube ready and get everything ready so when I stop I can go right to changing the flat. I try not to think about the guys that are passing and all the time that I'm losing, how much farther the leaders are getting away from me. I try not to think about that stuff. I try to just focus on getting the flat changed, and maybe getting back in the top ten or top twenty depending on what kind of race you're at. Reset your goals and anything you do better than what your reset goals are is great and you keep going for it. I always try to come back a little slow when I get back on the bike from a flat or a crash. Because you're legs have just been standing around not working and you can't just jump on and go 100% and try and get back into it. You need to sort of work back into it a little bit. That will pay off big time in the long run (Athlete 9).

Crashes

A second common situation that can suddenly throw one's focus off the race momentarily is a crash where you are thrown off your bike and possibly end up in some pain. Athlete 4 described what it is sometimes like to crash during a mountain bike race, "For like half an hour it's as if you're just sitting in a chair and someone is hitting you with a crow bar. On top of the pain, you're also sitting on a bike with a heart rate of one-hundred and eighty". After

crashes you can keep on going but sometimes it can be questionable whether it is wise to continue. After one athlete finished a race in which she'd received a mild concussion she described the following,

After I got off my bike I couldn't walk, I couldn't stand straight, and I had a hard time speaking. I could think the words but they weren't coming out of my mouth. And I knew I'd hit my head hard. I could have really screwed myself up. It took probably a week for my speech to come back to normal. It was funny. You get into that state of mind where you are just like man, no matter what I'm just not going to give up, I'm just going to keep going, and your body just keeps going. I mean when you stop you just collapse but hey, you did it, so you know you can do it again (Athlete 4).

Athlete 7 also described a situation where it was questionable whether to continue,

With a lap to go it started to rain. I went down this chute, I slid out and I planted my face on this reporter's knee. I cut my eye and I had blood streaming down my face. Because a head wound is small it was bleeding like crazy. I stopped and I asked a race Marshall, "How bad is it? Can I keep racing?", because I couldn't see. He said it was okay. As soon as I finished I went across the line and they stitched me up. I had three stitches and I was like 27th or 31st. I was quite amazed.

Although fixing something like a flat tire takes more time out of the race, the athletes also talked about the importance of slowing down for a moment to refocus after crash. In a race there is the pumping race adrenaline which is telling you to get back going as fast as possible. The athletes spoke about the importance of slowing down their breathing in order to refocus and get back into the rhythm of the race again, as well as taking the time to make sure you're not seriously injured anywhere,

I've had many times where something will happen and it totally blows you off. It could be a person crashing into you, could be just a crash, could be a mechanical. What I've done is I have a key phrase which is, "I love a challenge", and when I start dwelling on it, I just say to myself, "I love a challenge and ya, just go for it!". In Mazatlan I crashed really hard on the first lap. I was in second, right with Alison, and I just lost it and did a huge superman right down the descent. I got back up, got back on the bike, and the whole drive train was all wrapped around itself. So I unwrapped it, got back on the bike again and the seat was just totally bent right out of whack. So I was getting on going, "oh no, what am I going to

do?”. And then I thought, “No, I love a challenge” and then I just attacked and that was it. I just ignored it (the seat) for the rest of the race and then looked at it at the end. It’s interesting when you can do that and keep that from affecting you. Ya, you’re a little bit sore the next day but I still finished fourth (Athlete 8).

With a crash your heart rate just goes way high. You know that whole ten second motion of about to crash, to crashing, to fully off your bike, to rolling around, to picking your bike up, you’ve held your breath for ten to fifteen seconds so your heart rate has gone up, your adrenaline is pumping. You just gotta get on and just refocus. Focus on slowing down your breathing and realizing that it is not the end of the world because its not. You’ve still got the rest of the race (Athlete 2).

You’re not as confident after (a crash), especially if you land on your head, you’re a little bit, woohoooo. But its important to then grab your focus again and just continue on with the race. Now mind you, if you’re so hurt that you can’t continue then it’s important that you realize that as well. Which I’ve done as well too, just continue on in the race and the later on something terrible will happen because of that crash and then you have no choice (Athlete 8).

With a crash you don’t want to just get up and go right away. You want to get up and make sure your important body parts are there. A lot of times you hit your head so you’re a bit stunned and you get back on your bike and you fall over again right away because you’re kind of spinning a little bit. So you just sort of get back up, shake your head a little bit, look around, make sure everything is okay, touch your legs, make sure they’re still there, that you can still feel them. So you get back on your bike and remember that spot because you will hit it again the next lap (Athlete 9).

I think you expect to fall especially in some muddy races and that’s usually not a problem. Its only the unexpected crashes which just kind of catch you by surprise which can kind of knock the wind out of you. But normally I’m so focused on keeping going that you can just bounce back up and get right back into it. Its only if you knock the wind out of yourself, or hurt yourself really badly for the first couple of minutes it’s a little harder to keep pressing forward. You just kind of have to keep your rhythm going until you start feeling normal again. And then you can get back into pushing harder (Athlete 10).

Some athletes expressed their thoughts on the topic of refocusing. The ability to refocus during a race was related to one’s experience with racing, one’s attitude towards the race, and the importance placed on the individual race. Athletes 7 and 9 talked about evaluating the importance of the race,

We race so often that a certain percentage of races get written off to I don't care. Sometimes you learn how to focus your energy so hard that nothing gets in your way. But you need to be able to turn that off and say you should save this for a better time. Sometimes you just want to win a race so bad that no matter what happens, crashes or mechanicals, you'll try and fix it and get going again. Its unfortunate in mountain biking because sometimes a mechanical can just end your day, whether you like it or not. Some things you just can't fix on the trail. Sometimes you can just say screw it. I'm just going to go for it, see where that takes me, because the day might already be a write off. I lost too much time changing my tire to win so I'll see how fast I can ride that uphill. I'll see how fast I can ride that downhill and maybe it will payoff. Maybe it won't. It's a gamble so it depends on how important that race is. If it's a selection race for the National team, or Olympic team, or World's team or whatever, you have to realize how important the race is in the overall picture in order to sort of make that call because some races just don't matter. Other than that you just try and stay calm and put a positive spin on whatever is going on (Athlete 9).

Athlete 4 had a slightly different perspective in that he didn't believe in giving up on a race, no matter how important or unimportant the race was to him,

It (refocusing) is fairly hard. I think it always comes back to its not over til it's over. I'm always telling myself that. I've never not finished a race because of me. It's always been because of a double flat tire or a broken bar or whatever so you can't finish. So I think that's a good attitude and that gets you through a lot. But definitely you have to refocus. As soon as you have any little thing go wrong, at the level we're at now, there goes the win. You have to say I'll try and do as best I can with what I have today. And there are two approaches to that. Some people just say that's it. This race is not worth anymore. Like some people are going to win and not finish. For many people that's their style and I respect that. My style is more I'll finish it no matter what, except if I really can't. You have to say well, that's the situation and I'm going to deal with it, and I'm going to get over it and finish this race. Its just too bad it happened for my end result (Athlete 4).

Focus and Training

When asked about how training focus compares to race focus, the athletes felt they practiced the kind of focus needed for racing in several different ways. For example, athletes 1, 3, 8, and 10 mentioned ways in which they practiced race focus in training. Practicing race focus included pushing oneself to suffer like one would in a race during training, simulating race

situations during interval training, practicing positive key words and self-talk in training to be used in racing, and visualizing feeling strong in upcoming races while training. Athlete 7 summed how focus is practiced in training, “In training you put things together in small packages and then you put those packages into bigger packages until you get to the race.”

For example, if you're doing intervals and you've been working on your pedal stroke, and you've been thinking 'push pull' as in circles. You need to remember that in races so in your training rides during your intervals you just say those to yourself, “ok, push pull, push pull” or during your interval you say “attack, attack, or focus”, “I'm strong”, “I'm good, I can win”, or “aggression”. If you say these key words as you're doing your interval; number one, they should help your interval go better because you're getting into your race zone and two, it becomes a little bit more innate in that hopefully the key words will come naturally when you're racing hard. I find that when you're racing hard there is very little blood flow going to your brain. You almost have to brainwash yourself beforehand to actually think of stuff and to overcome the negative feeling of, “oh I don't feel very good”, or “this is a hard hill”, or “its really hot today”, or “I should be beating that person”. All those negative things need to be off set by the positives. I have positive phrases that I've made up for myself and they are very general, mostly about working hard and keeping focused and pushing, or attacking, or going as hard as I can. I sat down and I made these phrases, had a little bit of help maybe and then slowly I have to use them in practice. And that takes time because I have to remember that you want to use them in practice, and then I have to physically do it during practice. And I forget if I don't keep reminding myself. So it's hard work. As then as you do it again and again it becomes more natural. That's why you kind of need to start at the beginning of the year. Its not something where you just on a Friday can get psyched up for Sunday's race, and then Monday to Thursday don't ever think about the things you've done. It's something that you really have to practice. Well most people do. For some people it just comes naturally. (Athlete 8).

I think that race focus compares to training. I like to know a couple days ahead how my training is going to be so I can mentally prepare for that and plan my day, where I'm going to ride. I mean I'm not worried about the kind of details there are when preparing for a race. For a lot of my training rides I repeat different loops and I keep a record of my times to see if I'm improving. That's what I focus on during my rides to keep it going. I think I do a lot of focusing for racing in training. While I'm training I think about all the races I have coming up, and just going through them in my head as much as I can which motivates me for my training. I think about all the races I have coming up and just try to visualize how

I want to be doing at those races, visualize feeling really strong in those races while training (Athlete 10).

I'd say that you practice the race focus in training. I mean you could call it race focus but it's the same basic idea. When you start suffering or you have to go hard for a certain amount of time you know you're always putting out the most. It hurts obviously and you feel it and you keep pushing and pushing. So if you're getting good quality training in, that is the goal hopefully, and you're in that zone and you're pushing yourself hard, so your training prepares you for the race (Athlete 1).

I practice race focus strategies for some specific workouts, like during intervals. For an interval I'll pretend I'm in a race. I think I'm going hard but I can go harder and I have to pass that person. I just focus on a little section, so the next five minutes of this interval I have to go as hard as I can, this is it, this is the last five minutes of the World Championships and this is winning or losing type of thing. I recreate, or I simulate a high stress situation and just push myself to just hurt like no other and I just tell myself that I can hurt more. I'm even harder on myself sometimes in training. In training I tell myself to just stay in the zone, either my heart rate zone or my leg speed, focus on that and say man, this is like a race. I'm not here to go easy, it's going to hurt, it's not going to be fun. I'm going to hurt and just make it real. For me I need to make it real, be aggressive and get that edge that I get in races. I'm very intense when I train. But as soon as it's over I will be fine. But during a five-minute interval, for that five minutes don't fuck with me. It's just like this is like a race, this is like the World Championships, don't throw a joke when you're riding beside me, or don't fuck around, this is serious, this is real. I'm probably more aggressive when there is someone there training with me but if there is not someone I will try and simulate the same thing, the same environment and visualize that it is a race, that there's people around me, people cheering (Athlete 3).

Others athletes found that race focus could be simulated in training on in certain situations. For example, long, hard training rides can be used to simulate some of the preparation needed for a race. Some mentioned it was like practicing focus if they were using a race for training. However it is important to note that in some segments of training the goal is to go easier.

The whole focusing for racing is different than the training I'd say for me. When I go train there is a feeling of feeling good, like when I'm ready to peak for a race but that's different because usually I'm not training through that portion. But say

I'm in a three week training block, there's no racing, the way I focus is just this is my job, its going to really suck. This is what I have to do to make money to be able to do what I do, to travel. I think a lot like that. Positive reinforcement. Okay, I've gotta do this this week and its going to be even harder next week but I'm going to see good form the weekend after and then I'm going to have those positive feelings. Have a good race and feel good about myself and maybe get some money (Athlete 2).

Sometimes if I'm doing some big epic ride and I'm doing it with other top riders, then I kind of like go well gee, we're going to be out there, its going to be hard so I'll do all the things. I make sure I don't eat too close beforehand, that I eat enough. I make sure I bring water, I make sure I'm drinking. So it is kind of like practicing. But I don't go out on a solo ride and go okay, I'm going to go through all the stuff like before a race because its not like race. Whereas if I go out with other people and its going to be intense or if I do practice races that are races but they're not important to me, that's sort of like similar. Because if I do something wrong I'm not going to be disappointed because it was for practice (Athlete 5).

Athlete 6 brought up how racing is much more emotional than training which makes racing difficult to simulate in training. Therefore training races are a means of simulating the emotional component of racing,

The training, it seems to be totally different from the racing because you don't get the feelings involved that you do with racing because racing is quite emotional. Leading up to the race there's a lot of hype and excitement around. When you're at home by yourself there's none of those feelings involved so it's a totally different feeling. It's harder too (to focus for training than racing). When I'm at home a lot I'll just do training races and stuff instead of doing the training. Training races help me get motivated and focused for training because you can get a better simulation of the race instead of being by yourself and trying to duplicate it. Its good to go to just a small regional race and you can still get the feeling. There's a lot of people around and you get people to push you to a higher level because sometimes when you're by yourself, you'll do a workout and you'll just be like ugh, I don't want to do this. But when you're around other people, they're pushing you to dig deeper and race hard

Athlete 9 stated, "I race so much that I don't need to do it (practice focus) in training. Certain races I maybe treat as training so you can look at it that way." Interestingly this athlete also mentioned the difficulty of training for refocusing,

I don't really train for that re-focusing. So much can happen on a given day and some people expend all their energy and all their focus, all their time, all their money towards that single day, and something can happen. You can have a flat and it's over, it's done or if you crash...It's so hard to simulate so you just race and race and race and hope for the best. You have a certain amount of control but there's no way that anybody can control everything. Some days everything comes together and some days everything falls apart. That's basically the way it works for me. And you just sort of hope for more days where everything comes together and you can channel all your energy so that something will come together more often. You don't want to just leave everything to luck and chance but some things you can't control. You're prepared but there are too many variables (Athlete 9).

Improving Present Focus or Consistency of Present Focus

When asked if they felt they presently had good mental focus, four out of ten athletes responded with a confident yes, while the remaining six were still hoping to improve their mental focus in one way or another. For example athlete 2 thought he could have better mental focus when dealing with an injury, athlete 3 wanted to improve upon not being so easily distracted and reacting emotionally to situations, and athlete 9 thought his mental focus could be better at big qualifying races.

Furthermore, when asked if there were any areas they were working on to improve their mental focus, either to increase their present level of performance or performance consistency, nine out of ten athletes mentioned specific things they were working on or would like to work on. Three out of the ten athletes mentioned wanting to improve their confidence in their preparation, their training and their technical and physical racing ability,

I think you're always trying to work on your confidence. There's always a bit of doubt coming into races whether you feel like you're going to do well or not. I'm not sure how you work on that all the time. Another part you can always work on is just maintaining focus throughout the middle of the race. There's always a time in the middle of the race where there's a little bit of a lull. You sometimes let down a little bit and start thinking about how much longer the race is and thinking I'm not feeling too well, and working on being able to just focus on pushing

through that and being confident right until the end. I don't think it (confidence) is something you can consciously work on during a race. I think you can work on just getting ready, visualizing, knowing that you're going to have those kind of feelings during the race. Just recognizing that it is going to happen, and coming into a race with confidence is fairly....confidence can be a very fragile thing. Its just comes with experience, having confidence that you've been training well and have taken care of your preparation, and other things (Athlete 10).

I'd like to know that the training I do is the best training in the whole world and that's all I need to focus on, and that will make me fast. But that's not likely to be. I think to make your focus 100% you need to believe in what you are doing. But so many athletes are assaulted by doubt by other programs and other sports and other things, but they are just distractions. If you just do whatever you do with 100% belief and focus, I think you'll be focused and you'll be fast because you're adhering to one track and you have to believe that and believe it right. So again your confidence, your belief or your faith is going to allow you to have a better focus. You're not distracted. The more distractions you allow, the less I think you can focus. You're just basically filled with doubts. Did I do it right? Did I do it wrong? Is there someone else out there doing it better? And if you think about it that while your racing (you're dead)....If you're only thinking about the course and the feeling in your body, you're pretty much as focused as you can get. What else is there right? You're trying to make your body go as fast as you can and you're dealing with the obstacles that are right in front of your face. That's pretty much the ultimate focus (Athlete 7).

I'm working on the whole realm of confidence in technical skills as well as fitness, that I am a good racer. Because I feel like I need a lot of recognition from others in order to believe that. I think I should be able to know that myself just from seeing everything. I don't think its good to depend on other people saying, 'you're a good racer, wow you're fast'. I think it is just a daily thing, keeping that whole positive thing. You read about it. There's some people that pretend they are an animal or this and that. I don't know exactly but just always trying to put things in a positive light instead of thinking I can't or I won't or I'll never, to change it, to try and turn it around. It's a slow process. I've read a lot more books. There are quite a few books about mental training for athletes in general. Just with that and the whole putting yourself with positive people that you know you get along with. That's a huge thing (Athlete 5).

The seven other athletes were all working on very individual aspects of focus in order to improve their performance. The answers varied from working on technical skills and diet, mental focus for riding in the rain, analyzing races better and applying more mental skills and tools,

keeping training routines during the race season, training better, to increasing motivation to push

100%:

I think it's really important that consistency is there, that you're always focused and always doing the same thing. This is better than having a really good day and then three races where you just have zero focus. I've always been very consistent so I want to keep it that way. But I want to be able to work on my focus so that I can reach that prime focus where I go above and beyond my capacities and reach that one hundred percent more easily. I think it (consistency) comes with practice and through working with a Sport Psychologist to find out reasons why. I think there are some key reasons why I chose the other path, not necessarily because it hurts, and I need to overcome these things inside my head by working on those. And then working on basic motivation. If your motivation is good then the intensity of your training is good. If the intensity of your training is good, your fitness and performance will be at a higher level. But all that starts with motivation. And I think before all that is focus because if you're not focused, you're not going to have the motivation to ride. So I think it's all intertwined (Athlete 8).

For me to ride technically well more consistently would be the best thing I could do right now to improve my performance. I think my preparation there is the problem. I'm not doing enough technical riding in my actual training. I always avoid doing it because I don't like doing it alone. It's mostly during racing that I ride single track. I know I'm capable of doing it because I've done it and after a few days I improve a lot. Diet I think is also a really big thing. I'm learning this year a couple things about my diet. Things like allergies or tolerance to certain foods is huge because I think after all the years of shovelling huge amounts of food through your body, your organs and your digestive system have done a lot of work. I'm in my tenth year now of cycling. So I'm just starting to figure out a lot of stuff out and going good. My body is developed. I'm developed as much as I'm going to be now at twenty-five but also I have to consider that I've been doing it for ten years. You have to take care of yourself. You have to eat well, sleep well. God knows you've seen the posture on some of these bike riders after ten years. It's not attractive. So it's a bit of a compromise there. The years help you but if you don't take care of yourself they can hurt you too (Athlete 1).

I'm actually trying harder to like riding in the rain, just in my training. I feel I've got to improve my attitude with the whole weather thing. The last two weeks I've kind of buckled down a bit like in Vermont this week riding with (top male rider), it was rainy. Ya we're going riding. I was like ya but its raining. I don't mind if the rain starts during the racing but if its raining when I'm warming up then I'm like oh my god because I'm already soaked. I feel that I've got to work harder in my training for me to be able to focus better while riding in the rain. That's a

simple thing to say but I've got to get a little bit more stoked mentally I think for me to keep on progressing because right now I'm in this little plateau and I don't want to be there anymore. I want to keep going. Setting higher goals for myself might be the way to bring me out and have one good ride. One really good ride would help me out a lot (Athlete 2).

I need to be able to analyze things a little bit better maybe, but not overanalyze because sometimes you can overanalyze. What I need to work on is finding out what works for me as far as mental preparation. I worked with a Sport Psychologist a little bit this winter and worked on a lot of good stuff. I probably need to work a little bit more with someone just to help me develop some routines, like two weeks before, a week before, the week of, the day of a race, just stuff like that. So I'm kind of in the middle of that right now. To be focused I need to stop questioning myself. That means I know I have to be fit, or if I'm not fit, know that and accept it. I need to know the course well, know my legs. I have to have no unanswered questions. If I have an unanswered question I focus on it too much and it becomes a distraction (Athlete 3).

I've found that when I'm training, like in January, February, I have weight lifting three times a week, intervals three times a week, and volume. Now because I'm racing and I have to recover from it, I don't stretch as much. I let go of so many things with the travelling that that can be what brings me down slowly. That can explain why my shape was so good at the beginning of the year and now it's coming down. So I'm starting to think of a way to get back those quality routines back during the race season. But its also bad to have a routine because it gets even more boring, and more like work. Its like we're so concentrated on riding that we don't go hiking, we don't go visiting. All we do is get ready for the weekend and I don't think that's good. I think that could be another thing that I could change from now on until the end of the year, just to have more fun and be a little more relaxed (Athlete 4).

I think I'd like to become a better bike racer. And I just think that comes with time and the amount of training you put in, that sort of thing. I don't really know if my focus will help that or change that at all but I'm always looking to further my position in races and racing in general so its an ongoing thing, trying to make it to the top. I think increasing focus or performance just comes from the knowledge you gain through racing, the knowledge you gain through all the training. Because each year I find myself getting a bit better. It just takes so many years (Athlete 6).

Development of Focusing Skills over Race Career

Eight of the ten athletes have been mountain bike racing nine to twelve years. Two of the athletes have been mountain bike racing four and five years but they both were road bike racers for five to ten years before switching to mountain bike racing, which has many skills that are transferable to mountain biking. Now that the athletes are at the professional level, some talked about how their focus has changed and progressed from their beginnings in the sport until now. When racing is your job there can be more pressure put on your placing. "There's more pressure for placing and outcome now. There's no security so you're fighting for a job" (Athlete 2). As athlete 7 succinctly summed it up, "It's a natural progression, when your hobby becomes a job, you then go to positioning. Then you go to money and you waver back and forth. But you have to do it in the end because you enjoy it."

Athlete 4 talked about the changing demands he's faced throughout his career,

It went from fun riding to professional riding. The sponsors want me to do well. The CCA wants me to go do this race and this race and I don't have much say. The other thing is that races are just so much harder than they used to be. If I compare racing Quebec Cups as a junior to racing World Cups as a senior in 2000 where the calibre is just crazy, the whole racing aspect is definitely different. There are so many more variables to take into account from travelling logistics, media, and having everything ready for the race. You have to think one month in advance to get registered for a World Cup. You have to figure out where you're going to sleep and who you're going to go with. So it's more of a job now than it used to be.

Athlete 9 described how his focus has changed in races as he has improved as a racer,

When I first started racing mountain bikes it was like, my god am I going to be able to stay on my bike? Am I even going to be able to ride the stuff that these guys are riding? And then when I figured that out, it was like ok well my technical ability is pretty good and I can survive the races with these guys. Then I was more focusing on who I'm racing against, how I can beat them, or if I could beat them, finding out their weaknesses, just through knowing them, whether they be climbing or descending or abilities in different weather conditions. I know

people don't like certain conditions and who likes what conditions, who goes good in what conditions. I can sort of focus on them by either trying to stay with them if I'm not too sure what's going on, or trying to stay ahead of them if I'm pretty confident you can beat them. So definitely it (my focus) has changed since I started. Where before I was more concerned about finishing or completing an event, now I'm more concerned about winning.

The pressure and enjoyment levels can also change over the course of an athlete's career.

Athlete 1 talked about how he felt he'd come full circle in this respect,

I'd say its almost come full circle because when I started racing I really didn't think much about it (the race) leading up to it. When I was a junior I wasn't worried about the outcome. I was just there to go my hardest. Now there to perform when I'm on a big team. On these bigger successful teams when you're around a lot more of the successful athletes I learn more and more that they're not so worried about the results and that they just come. So that rubs off and I've learned to be more relaxed that way. It's always harder when you're trying to make a break through when a breakthrough is all you need. So I guess it sort have has come full circle again for me from junior until now. I felt less pressure when I first started too because it just wasn't serious. Then there was that struggle period in between where I was feeling like ah, I have to get a better result and justify why I'm doing this. Now I feel like its okay, its relaxed and results are still coming. I always try my hardest every time I race. I don't ever drop out or give up during a race ever because I know how that makes me feel after. I just feel horrible so I always make a point to finish every race, to give it every effort and then you feel a lot better about yourself.

In response to the question of how their mental focus has improved or changed over the course of their racing career, some very unique answers were given as well as some common ones (see Table 6). Some examples of the unique changes in focus included the aspects of learning to redefine what 100% is, increased sacrifice while maintaining balance, better preparation, better relaxation and self-perspective skills, knowing how to analyze better, and racing smarter were given by four athletes,

I've done a lot of different things. It's funny how I think when you first start racing you push yourself, but you push yourself maybe to ninety percent and the more you race and the more you learn about yourself, the more often you can push yourself to one hundred percent. I can't push myself one hundred percent

easily and I don't do it every race. So when I do it's a really good race for me. I think when you hit a certain pain level, your body just tells you that's it. And in most cases its kind of like you hit a V in the road and you subconsciously make the decision of whether to go harder or whether to slow down or keep the same pace. I think if you subconsciously chose the safe route then you're not going to blow up. You'll probably finish the race in a respectable position but what you need to do if you're not winning is chose that other option which is to go that extra two or three percent and risk failure. Because it's possible that you could blow a gasket and not finish the race or all of a sudden have to crawl back. But if you do succeed you will probably really succeed through having pushed yourself that two or three percent more than you would have. I think its really hard for me to make that decision and more often that not, I subconsciously take the safer route for whatever reason that is, whether it's a confidence thing, or a motivation thing, or just lack of wanting to go. That's why I say my mental focus is only a seven or an eight because right now every race I don't know when I'm hitting that V. It's not until after the race is over that I look back and I think, "Ok, I could have gone harder there", or "I probably should have decided to go harder there when that person attacked, I should have counter-attacked", things like that. And a lot of times its just telling myself, "don't think, just go." I think when I first started I never rode one hundred percent during a race. It was always the safe race. Even though physically, you're exhausted at the end of the race, you don't have the ability yet to push yourself that hard. Whereas now I think I realize that there is a distinction and I have been able to go beyond that. I think when I began was like kindergarten and now I feel like I'm in university. And it's just the finer points of all aspects of the focus I've improved upon (Athlete 7).

All the little things I've just totally sacrificed, like my social life during the season. I know how to bring myself up out of the dumps a little bit better. Before if I'd had an injury, I'd just probably end up almost quitting. It would just be a terrible, terrible time for weeks and weeks and weeks. At least with this (injury) I can bring myself up a little bit. And being able to try and just forget about it and realize its just racing and mountain biking and there's other things in life to enjoy too. Now there is also more focus on the diet and preparing your body during the off season. Stretching and all the little things you slowly piece together. And preparation, that's the big thing that I've focused on, like getting to a little race three hours early. Like why the hell would I want to be in the middle of nowhere three hours early? But then you can make the adjustments to your bike. You can sit. You can relax. I used to go to a race last minute and then you don't have time to stretch. You don't have time to rub or put oil on your legs or your bike is out of whack. That leads to a mechanical. It's like going to school. It's basically an education system. Each year you learn something different. I'm still learning stuff now. All that info helps (Athlete 2).

My focus has improved since I began racing with the experience I've gained. Every year, after every season I take a step back and analyze what I did good, what I did bad, what I need to work on, how I'm going to work on it. So I've definitely improved but you are always learning, always improving, and always changing, and then modifying (Athlete 3).

I'm just so much more relaxed now. I can sleep the night before a race. There are things that you know but you don't necessarily believe. But I feel like I've really come to believe that as long as I do everything that I can up until the day I race that if the race doesn't go well then I'm going to be disappointed. I can only go as fast as I can go. I used to compare myself with other people a lot more than I do now. Now its like more about me and what I can do. And by training well and preparing well and having the confidence I really believe it. So that helps me to focus better. You can't control what others are doing. You don't know what their life is like, if they've done EPO the night before or had their dog die. It's the whole thing of the things you can control and the things you can't control. Just focusing on myself. I can't control others so how can I prepare myself? I have to look at myself and look at the levels where I've been at and where I'm going. (Athlete 5).

My strategy has changed a little bit. I think now that I'm getting closer to the front of the pack and racing for the top spots, more tactics come into play. Before I was just moving up through the middle of the pack where people aren't fighting as hard for position. Once you're near the front people will fight a lot more for position so you have to play your cards more at the right time to push by a person. I know more when to pass a person and how hard to push by them, to try to defeat them mentally or physically. I've become more focused on position because as you get closer to the front, the positions become a lot more critical and meaningful. Before I'd just be moving up as hard as I could the whole time. Whereas now sometimes I'll sit behind a person and draft them for awhile to conserve a bit of energy. I'll wait until a more technical section to try and go by them and get a bit of a gap on them so they can't get back on my wheel and conserve some energy by drafting (Athlete 10).

Recommendations for Others on Developing Focus

The final question posed to the athletes asked if they had any advice for someone up and coming in their sport on how to develop their best focus. The athletes recognized that developing focus is an individual pursuit, but they also offered advice that can definitely speed up the process. Most advice centred on the aspects of learning through trial and error, learning proper

race preparation and keeping a healthy perspective as to why you compete in the sport. Athlete 1 felt that apart from some basic advice on bike preparation developing focus is a very individual journey,

I would personally not give them advice. I would stay away from that because I really believe that it's really important for them to figure a lot of things out for themselves. When I think about anybody who has been over coached and over taught, especially at a young age, a lot of them have just quit. They just pack it in. Because if you don't make those decisions for yourself and learn for yourself then I think you're going to deprive yourself of a lot of self-confidence coming from figuring stuff out for yourself. I really believe that. There are things that I would say to a junior like common sense stuff. Check your own tire pressure or make sure your bike is running good, just preparation stuff. But you can't tell them how to live and to party or not to party or whatever. They have to figure that stuff out. I think it is a very individual thing. The way people learn and the way they develop is very personalized. At a junior age I didn't have much guidance. But interestingly enough you look at somebody like Greg LeMond and actually his life experience, because I read his book and I know a fair bit of history about him. He learned a lot for himself. He did a lot of things on his own and was more of a free spirit, kind of a corny cliché, but he did a lot of that. So he developed into a super champion but it's tough at a young age. I mean everyone has got talent. You've got talent. I've got talent. We've all got talent but it's how you come out of a few years of bad riding or whatever. Sometimes you just don't improve for a few years for whatever reasons and it's how you come through that (Athlete 1).

The remaining athletes also felt developing focus was individual but they also had several suggestions to give such as preparation advice, visualization techniques, learning through talking to others, not comparing yourself to others, reading books on sport psychology, and the importance of learning through trial and error,

I think it is individual (developing focus). I mean I have lots of suggestions for juniors and I've helped out a lot of juniors. I tell them what to focus on and then I think that might develop their ability to focus. I talk about preparing, about diet, and how that will help them. And I think by just telling them that they think about that and they focus in on my great words of wisdom (smiles). I think that helps build their confidence and focus. Maybe not. I don't know what I'd have to develop focus. I mean I might suggest breathing exercises when they're sitting at home. We have this sports psychologist that come to talk to us to think of your breaths as waves and relaxing. And then labelling your self, like I'm a wolf. I

think that's a good way to teach somebody about focus. Start off that way, the breathing and relaxing, and thinking of yourself as a racer, what animal you'd want to be when your out on the course and then how that would work with your racing (Athlete 2).

It's so individual. I think that you just need to find and experiment. Don't take a small race totally for granted. Partly take it like it's a big event because if anything happens in there, being good, bad, whatever you're gonna need that experience further down the line. So just take every chance and talk to people, not being afraid to talk. Like not thinking shoot the man, shoot the woman and you can do it all yourself. Pick someone's brain, it's not a bad thing and a lot of people want to share it. If someone came up to me and asked me questions I'm going to be more than happy to share some of my experience so not to be afraid if you have questions to ask them (Athlete 4).

Well, like I said, go through things methodically. Get a pattern on how you prepare step by step for a race and follow that. It takes a bit of time because you'll learn through trial and error what works best for you. And I think visualizing the course and the whole positive thing is really important. And the biggest thing I can say when I see people coming up is not to compare themselves to others. It's like when you talk about heart rates. You can't compare my heart rate to a top male rider's heart rate. You have to look at where you are at one point and where you are at the next point. Because you don't know how other people are feeling and where they are at. You know where you're at. That's what you want to know, where you're at, what you wanna be, what you gotta do and not anybody else. It's like anything when you establish small goals and then it's just whatever, like when you get your house tidy you feel great. When you get something finished by breaking it up into small tasks. Well you can break your race prep up into small tasks, and then when you know that you've done everything that you can up to that day and not think about anyone else. Then you'll start to reach goals and as long as you don't set your goals too high, and you feel confident and good and it's kind of a circle (Athlete 5).

Well, I think to me, I would recommend reading a book on psychology, and there are some even specific to cycling that help. Or reading this thesis. And it gives you ideas and stuff and helps you learn that the way that you're thinking is not the same as what everyone else is doing and that maybe there are little things you can do to tweek it better. But maybe you find out that what you're doing is amazing and fantastic and you'll have the confidence to keep it. And it's sort of a trial and error thing. That's what nice about training. A lot of times you can try the stuff in training or training races (Athlete 7).

Developing focus first of all seems to be trial and error, for me anyway. You know yourself to a certain extent. You know what you need. You know what you

want. You know what you're like but you don't always know what works for you because sometimes something that you might like, need, or want might not necessarily work for you. An example would be racing in the rain. I don't like it but I always go good in it because like I said before people get discouraged. Knowing what works best and its really trial and error. What you think might be good might not always work. You have to figure out too specifically things that you like or don't like to happen on the race day or getting prepared for a race or the days prior, the weeks prior, the months prior. Its kind of one of those things that you just figure out, sink or swim type thing. It's the way I've sort of done it because nobody has ever come up to me and said, well to win this race you need to ride the course three times. You'll try something whether its stupid things like going to bed early to get a better sleep the night before the race. But in my experience, the night before the race it doesn't matter how many hours you sleep. It's the week before that really matters. Because whether it is nerves that are keeping you up or whatever, one night of bad sleep is not going to be that big of a deal. If somebody asked me for help, say a junior rider coming up. How can I focus on this race? I'd just tell them to be prepared. Get all your stuff together so that the morning of the race you're not freaking out looking for whatever or fixing your bike or doing whatever but as far as being super specific I wouldn't know what to tell them I wouldn't have a clue (Athlete 9).

Well I think a lot of it is just paying attention to making sure you have everything ready to go. So when it comes down to the last day or two before the race, you'll be able to just relax and not worry and stress, or waste energy running around and doing things before the race. You can just relax, visualize the racecourse and your race (Athlete 10).

Athletes 3, 6, and 7 emphasized keeping the proper perspective.

And don't get too caught up into it (cycling). Cause it is only cycling and it could be your life. Keep perspective. It is bike racing and it's a lot more pleasurable if you make it fun. You need to take as much experience from others and from all the road races as you can and then try and keep it fun. I mean it can't be fun all the time but not to be scared of having a fun moment or having a fun day. And keep perspective on it. You've got two legs and two arms. Having a quadriplegic neighbour definitely put a lot of perspective on stuff for me. So maybe sometimes find something to bring you back down to earth if you think you are not totally there or if you could get too caught up into it, go back in the real world for a couple of days and just keep perspective (Athlete 3).

I would say that you have to really remember why you're doing it. You're not doing it to make money. You're not doing it to be great. You're doing it because you enjoy it. If you chose to be great or to make money, you chose the wrong sport. Particularly with mountain biking, you need to do it because you love it. I'd

say that you need to be patient and when you can honestly say that you've done everything in your powers to prepare, and you're confident about that, then all you need to do is to focus on allowing your effort to.....It's like when you prepare for a test. When you put your pen on the paper its time to focus. All of that knowledge you've learned just comes out in your pen, and it's the same thing with a race. If you didn't read any books you have nothing to focus on. So you need to do all your homework, and all of your research, and have all the ability and faith that you've prepared properly. Then your focus it all through your bicycle and that's your focus (Athlete 7).

Just stay calm because there is no point on wasting energy being nervous. I tell people that at the end of the day, it's just a bike race. Perspective, and staying calm (Athlete 6).

Table 2

Summary of Factors Mentioned that Contributed to the Athletes' Races with their Best Focus.

Best Focus Factors	Number of Athletes
Good bike preparation	7
Rode course several times before race	6
Mental Imagery	6
Positive self-talk in race	6
Didn't think about the race beforehand except while training	5
Knew who competition was going to be	5
Felt good physically leading up (week or two before)	5
Focused on how feeling during race as well as on where competition is	5
Focused on staying relaxed before race	4
Arrived at race early (several days before even)	4
Reflected on what could have improved upon after race	4
Stayed away from people that cause stress, was in comfortable environment	3
Ate well week before race	3
Had a race strategy	3
Stayed relaxed climbing and descending	3
Received time splits, aware of position in race	3
Liked the conditions	2
Had time alone before race	2
On automatic mode in race	2
After focused on recovery liquids and food	2
Goals were set ahead of time (beginning of year)	1
Spent time at home before race	1
Quality training leading up, worked closely with coach	1
Trained with a partner leading up, helped to motivate	1
Set realistic goals for fitness level	1
Liked the dry weather	1
Liked the extreme heat	1
Liked the high altitude	1
Was in good position during race	1
Kept a steady pace in race	1
Trained alone leading up	1
Thought positive/confident thoughts before race	1

Table 3

Summary of the Factors Mentioned that Contributed to the Athletes' Races with their Worst Focus.

Worst Focus Factors	Number of Athletes
Negative thoughts and feelings during race	6
Physical problems during race	6
Arrived at the last minute	3
Insomnia, problems sleeping	3
Not organized enough (bike prep, race prep)	3
Uncontrollables that happened before the start	2
Uncontrollables that happened during the race	2
Didn't know course well enough	2
Thinking about race too much beforehand, overexcited/stressed	2
Not feeling aggressive enough or confident enough during race	2
Not "up" enough for race	2
With people didn't get along with	1
Overconfident	1
Ate different food than usual the night before	1
Didn't follow usual routine night before race	1
Not recovered mentally/physically from previous racing	1
Expectations were too high	1
Not concentrating on the trail enough	1
Not performing to expectations	1

Table 4

Pre-Race Focus.

	Long-Term Planning (months to year before)	Short-Term Preparation (week or more before)	Pre-Race (few days to day before)
Common	-Have a vision (dream goal) -Physical training plan -Develop imagery skills -Bike mechanical skills (i.e. How to change a tire) -Nutrition plan -Develop individual focusing techniques -Practice key words, pacing, preparation in training/training races	-Where to stay? -Positive thoughts -Imagery -Getting rested for race -Know competition -Learn about race site -Relax -Food while travelling -Time spent thinking about race	-Develop race strategy -Learn course, work on difficult sections -Imagery of course -Relaxation -Bike handling skills needed? -Target good spots to drink? -Proper bike preparation for conditions -Deciding when to arrive at course -Preferred time spent alone -Preferred to be with others
Differences			

Table 5

Race and Post-Race Focus.

	Race Focus (while race in progress)	Refocusing in Race (after a flat tire change or bad crash)	Post-Race (evening and day or two after race)
Common	-Key words -Time splits -Technical sections automatic -Breathing -Pacing (Heart Rate) -Position -More internal focus than external -Motivating self-talk	-Calm breathing -Start back slowly until back into rhythm again -Evaluate seriousness of injury (crash) -Stay Positive -Reset Goals? -While changing a flat, focus on what you're doing (not on the race going by)	-Talk about race with others -Analyze and take lessons -Recovery
Differences	-Different athletes focus better in different weather conditions	-Somedays better to save effort for another day -I'll finish no matter what. -Own phrase, ' I love a challenge'	

Table 6

Development of Focus.

Beginning Focus	Changes/Improvements	Present Focus
-More for fun	-Waiting for a breakthrough (sometimes a struggle period)	-Professional rider
-Less pressure		-Sometimes pressure from sponsors
-Provincial Cup Races		-World Cup Races
-Fewer set routines	-Learning what routines work best leading up to race	-Preparation is more in advance
-Goal to finish	-Developed race strategies	-Goal to win, more tactics, results important
-Technical skills focus	-Better complete preparation	-Refining diet
	-Better able to relax before race	-Gaining confidence (in preparation, in skills, in training)
	-Better post-race analysis	-Consistency of reaching 100% effort/focus in race
		-Riding technically well more consistently
		-Keeping focus while riding in rain
		-Applying mental training routines
		-Keeping quality training routines in race season
		-Taking lessons from each season to continually improve training and racing

Figure Captions

Figure 1. Conceptual framework of the focusing skills used by elite athletes in a risk-endurance sport emerging from the present study.

Figure 2. Conceptual framework for the definition of focus by elite-athletes in a risk-endurance sport.

Defining Focus

- vision
- plan
- 100% concentration
- perseverance
- no distractions

Focus Skills in Training

- quality training where simulating race pace
- mentally prepare (and plan) for training
- visualize feeling strong in upcoming races
- practice key words/phrases
- stimulate high stress situations

Refocusing Skills

- remain calm
- ease back into pace of race slowly
- stay positive
- practice changing tire beforehand
- slow down breathing
- take time to check for injury
- know when to quit

Focus Skills Prior to Race

- good bike preparation
- practice riding course
- mental imagery
- know competition
- stay relaxed
- arrive at site days before
- develop race strategy
- eat well week before
- time spent alone
- positive/confident thoughts
- set realistic goals
- quality training while working closely with coach

**Focusing Skills of
Elite Athletes in an
Risk-Endurance
Sport**

Focus Skills to Improve

- confidence in prep
- confidence in technical /physical race ability
- technical skills
- parts of diet
- motivation in rain
- ability to analyze race
- applying more mental skills/tools
- keeping routines during race season
- increasing motivation to push 100%

Focus Skills During Race

- positive self-talk
- focused on internal feeling as well as competition
- focused on staying relaxed while climbing and descending
- know time splits and position
- race on automatic mode
- keep a steady pace

Development of Focus Skills

- fun to professional riding
- increased pressure on place
- smarter racing strategy
- increase in sacrifice while maintaining balance
- better race analysis skills
- redefining 'pushing 100%'
- better relaxation skills
- better (self) perspective skills
- better preparation skills

Advice for Others

- learn what works for you through trial and error
- practice breathing and relaxation exercises
- talk to and learn from the pros
- keep a healthy perspective
- prepare for race methodically, ahead of time
- visualize course
- don't compare yourself to others
- race because you love it

Focus Skills Post Race

- analyze what could improve upon
- focus on getting in recovery liquids and food

Concepts that interact with Focus

- motivation
- uncontrollable variables (mechanicals, weather)
- nervousness/pressure

Level 1 - Long-Term: Vision
(100% Concentration; No Distractions; Perseverance)



Level 2 - Short-Term: Plan
(Conc; Dist; Persev)

(Conc; Dist; Persev)

(Conc; Dist; Persev)



Note. Vision – Dream Goal (i.e. To qualify and place X in the 2004 Olympics)

Plan – daily, monthly, yearly training goals
-seasonal racing goals, logistical preparation for races

100 % Concentration – exerting best mental and physical effort
-focused solely on the task at hand

No Distractions – getting rid of negative distractions
-eliminating outside stresses
-emotional control in unexpected situations

Perseverance – through injury
-through temporary loss of motivation
-through disappointing results

Chapter V
Integration and Conclusions

The research objectives of this study on focusing skills among elite athletes in a risk-endurance sport were fivefold. The first objective was to advance our knowledge on how elite athletes perceive and define focus in relation to their sport. The second and third objectives were to assess what focusing skills the athletes used before and during competition, as well as what kinds of focusing skills the athletes used in training. The fourth objective was to shed light on how the athletes developed and improved their focusing skills. The final objective was to discover other concepts that may have interacted with focus.

Linking Focus to the Attention Literature

In regards to the athletes definitions of focus, the dimensions of concentrating fully (100 % Concentration) and eliminating distractions (No Distractions) directly correspond to Orlick's (1996) definition of focus. In the attention literature Posner and Boies (1971) have applied attention to three areas: 1) in the context of alertness or arousal, 2) as a limited capacity or resource, and 3) in the context of selectivity. These areas parallel Davies' (1982) three mechanisms of attention: 1) an alerting or sustaining mechanism, 2) an intensive mechanism, and 3) a selective mechanism. The three areas link to and are supported by some of the findings of the present study (see Table 7).

Posner and Boies (1971) found that attention in the context of alertness or arousal refers to developing and maintaining optimal sensitivity and readiness for responding to competitive situations. Similarly, Davies (1982) stated that the alerting or sustaining mechanism of attention is related to expectations at the beginning of an activity and is needed for maintaining an activity at an appropriate arousal level. In the present study insights were given into the different types of focus needed throughout the race. These can be inferred as being the types of focus needed in

order to maintain the appropriate activation or arousal level for each individual athlete. In order to prepare for “optimal readiness” for the race, and to maintain the “appropriate arousal level” throughout the race, the athletes talked about how they planned out ahead of time how they would focus for different points of the race. For example, athlete 10 described very well how the focus changes over the duration of the race,

Part of my race strategy is to start off at an even pace and not go out too hard. So right off the start you have to worry about getting a good position. In any race during the first thirty seconds I try to move up a little bit and then just focus on relaxing and not getting caught up in using any excess energy fighting someone for position after that. Because its just a waste of energy at the start to try and gain one or two spots when at the end you can make it up no problem. So the first lap or two of any race I just try and focus on staying relaxed, just spinning and not wasting energy. The way I race I'm really focused on maintaining a steady pace and watching my heart rate. And then as the race moves on, its usually easier to move through people which helps because when you're passing people you feel a lot better. Towards the latter point of the race it is important to keep pressing and not slow down to the pace of the people you are passing. I have to try and focus on maintaining my pace and moving forward as much as I can towards the end.

Concerning internal versus external focus, there is a constant shifting back and forth. It is important to pay attention to both as described by athlete 7,

The start of the race is a combined effort, it's internal and its external. Its external because you need to watch what's going on around you, you need to watch the people you are racing. But it's internal because you need to be more aware of your own effort. If you get caught up in the external you can blow your engine. Or if you get caught up in the internal and the race can ride away from you, and you won't ever see it again. So the first thirty-five to forty-five minutes of a race is a much more precarious place. And in ten to thirty minutes you really assess it. You're still calculating who is having a great day, who is going hard, who's going to blow up. And at the end of the first lap you really make an assessment. Was that too fast? Was that too hard? How long was the first lap? It's a thinking race but meanwhile you're in complete oxygen debt. Anaerobically you're punched. So you have to also be looking inside and deciding what kind of day you're having. You're watching everybody else but you're also reading all your meters and levels. Then you get into the body of the race which is how am I going to pace myself to and cater to my strengths so that I can win or do the best I can. I think some people get carried away with all the emotion or they get into worrying

at the beginning and either they are not internal enough, or they get too caught up in the external with the racing going on.

Athletes can prepare themselves for the shifting of focus that goes on during a race as described by athlete 8,

When I'm pre-riding the courses usually I decide which areas are good for attacking, standing up, sitting down, doing certain things with the bike, going smooth etc. Then it's just a matter of reminding myself before the race starts and then remembering during the race. Even different strategies per lap, deciding what the goal of the first lap is going to be, second, third, fourth, and then following through on that in the race.

The athletes also spoke about different types of focus that they consciously shifted into for different parts of the race. For example, the athletes mentioned the importance of remaining relaxed while climbing, and more critically, while descending,

Its good to stay relaxed while climbing and descending but I'd say even more importantly when you're descending. I try to keep breathing. When there's some really tight descents where I feel it's a little dangerous, I just remind myself to keep breathing (Athlete 1).

As presented in the results, the athletes also used such skills as positive self-talk and self-reminders as focusing techniques throughout the race. There is a continual shifting between how the athlete is feeling internally (i.e. heart rate, target pace), where the competition is in relation to them (i.e. position, time splits from leaders etc.), when it is important to eat or drink (i.e. its more important to focus on drinking in the heat), and what to focus on for descents (relaxing, looking ahead, breathing) or climbing (staying relaxed, keeping pace).

Limited Capacity of Attention

The use of attention as a limited capacity or resource found by Posner and Boies (1971), which parallels Davies (1982) intensive mechanism of attention, includes studies on the limitations humans have in performing two or more tasks simultaneously. This relates to how an

athlete's focus can be more divided at the beginning of their career in comparison to ten years later as a professional. As athlete 10 mentioned,

When I first started I had to focus a lot more on just getting to the race and making my bike work perfectly. Now that I'm on a big team I don't have to worry about that, I'm able to just focus entirely on feeling good for the race.

This study also demonstrates how the limits of attention or focus can be extended with experience. For example athlete 9 talked about how, when he first started racing, all his attention was focused on staying on his bike, and whether he would be able to technically ride the whole course. When his technical ability improved enough, it enabled him to focus more on fine tuning his strategy depending on who the competition would be and what the weather and trail conditions would be. Athlete 10 also talked about the focus needed for technical skills in the beginning,

I think the first two or three years when I was still improving on my technical skills it (technical riding ability) was more of a focus but now I think after two or three years I was at a sufficient level for all the big races. There's nothing that's going to really scare me or break my focus mentally on the race courses; it's all fairly routine in the races.

The same athlete talked about what he was able to shift his focus too once he didn't need to focus so much on his technical riding,

I'm not really thinking about riding very much during the race because hopefully I've had enough time to ride the course and think over the sections beforehand so it's just automatic and routine riding through the course during the race. I'm more focusing on drinking and getting the liquids down, how far in front of me the next people are and maintaining the gaps. I'm really focused on getting the time splits from different people to see how much the time gaps are closing, if I'm gaining and how many places I'm going to be able to move up. That's what I'm thinking about during most of the race.

The limitations of one's attentional focus also relate to Boutcher's (1992) notion of automaticity. This study confirms his assumption that people are able to accurately report their

attentional focus across varying situations, and that attentional processes can be described accurately through self-analysis and language. Boutcher also suggested that for expert performers, much processing has become automaticized and not accessible to self-report. However, this study found that although skills that once required much attention, intensive effort and awareness by the athletes, became automatized at the level they are at now, (i.e. Technical riding skills, tire changing skills), they were still able to self-report these processes by reflecting on their initial experiences in the sport as illustrated by the following quote from athlete 9,

I remember the first time I flatted I was trying to fix it and I was having so many problems with my gloves getting all wrapped in the tire bead and all this crazy stuff going on. Now it's like automatic, you get a flat; Ok I take my gloves off. I try to ride as long as I can and get everything ready so when I stop I can go right into changing the flat.

With regard to the limitations of attention, an athlete's focus can only be spread so far at certain times. For example, as the athlete advances and gains experience in their sport, less focus is needed for the basics, although they should never be forgotten, and more focus can be given to refining and finding ways to continually improve or get the next edge. An expanded amount of energy or capacity for focusing could be a major reason why research has found that elite athlete's are more likely to use mental training. Because they are advanced enough, much of their daily life has already become a routine, and they can put more of their focus into something like relaxation and imagery training. It may be too overwhelming for the beginning athlete who may already feel stretched to the limit, to try to incorporate such training tools right away.

Selective Attention

The third area of the term attention looked at by Posner and Boies (1971) was in the context of selectivity, which refers to the process of attending to certain information, while

ignoring other irrelevant information. This is equal to Davies (1982) selective mechanism of attention, that allows avoidance of irrelevant or disturbing cues, or Orlick's (1996) definition full focus, which means one is free to perform without being disturbed by distractions (Orlick, 1996).

Nideffer (1990) categorized distraction as anxiety, neuroticism, or negative affectivity. All the athletes in this study experienced anxiety or negative affectivity at one time or another in their career. They developed different focusing skills to combat distractions, anxiety, negative thoughts and negative feelings. For example, the athletes have developed precise and methodical preparation skills for racing in order to combat distracting anxiety and build confidence as illustrated by athlete 10,

I think it's just being completely prepared and knowing exactly what's going to happen that gets me in a relaxed state, getting all the anxiety out of the way by knowing the whole course, knowing my bike is working well and having planned out my strategy for the race.

Selective attention also plays a role in the learning of new skills and relates to the notion of automaticity or automatic processing, which requires little attention, effort, or conscious control. Through practice and experience, the skills developed have the potential to become automatic more easily. A comment by athlete 5 supports Moore and Stevenson's (1991) finding that once skills are so well learned that they require little attention or effort, one develops automaticity and can trust in their own psychomotor abilities,

If you stress out or you're thinking too hard, that's when you start to make mistakes. When I just let the ten years I've spent developing my skills go by instinct, then it flows a lot better for me.

The present study indicates that as the athletes gain increased mastery of skills, whether technical skills or anxiety reducing skills, this enables them to shift to another level of focusing

and to other areas that may need work. This may suggest a hierarchy of focusing skills and raises some interesting questions. For example, are there “lower” level technical and physical skills as well as “lower” level mental focusing skills? Do both areas progress from lower to higher? Do all elite athletes master all of the “lower” level technical skills so well that they are free to develop the “higher” level mental focusing skills? Do focusing skills progress concurrently with physical skills? Is it a holistic approach, or do some of the skills come into play only after the “lower” level mental or physical skills are developed in a hierarchical manner?

From what the athletes in this study have said, it appears that as the technical skills become automatized, it frees more of the mind or conscious awareness and allows their attention to shift more easily to other factors. For example, their selective attention becomes more fluid because their technical and/or mental skills only require small amounts of fine-tuning at the elite level, and don’t take as much energy away from their present focusing ability. In short, it may be that the better one is at focusing, the faster one can shift back and forth, or from internal to external more easily and with less effort.

Vision/Perseverance

The athletes in the study expanded on the previous definitions of focus by adding the new dimensions of vision, and perseverance. Having a vision of where you want to be or where you want to go is an important element of focus and overall performance. Vision is the long-term focus or reason for persisting while having a race plan is the short-term focus for executing the performance. Having a vision appears to be key to the long-term aspect of focus, having a reason for “hanging in there” and “sticking to it”. It is important to keep the vision of where you want to go, to maintain the perseverance required to reach the long-term vision.

The athletes in the present study have described the many improvements and refinements they have made concerning their focusing abilities. The demonstrated improvements and developments the elite mountain bike athletes have made with their focusing abilities supports the findings of previous studies that have found elite athletes to have superior focusing in comparison to non-elite athletes (Abernethy & Russell, 1987; Defrancesco & Burke, 1997; Mahoney et al., 1987; Thomas & Over, 1993). The athletes in this study provided many descriptions of focusing in highly effective ways and were committed to the continued improvement and refinement of their focusing skills.

Personal Conclusions

The present study, I believe, only began to touch on what focus is and all that it entails. Focus, and in particular competition focus, is the sum total of an athlete's prior training and preparation. Athlete one said, "Focus, I believe, is like a sum of all the things you've been through." An athlete begins with goals, short term and long term training goals as well as competition goals. With these goals in mind the seeds of motivation are in place. Athlete 4 mentioned the importance of motivation,

I think it (focus) goes with motivation. That's the main drive. You have to set your goals before your training year or racing season. And once you know what you want to do that gets you the most focused.

Then the day by day focus is needed. Focus is needed to manage every aspect of a high performance athlete's day with continual concentration and energy put into planning ahead while keeping their long-term vision in mind. Gaining focus is a continual learning process as an athlete learns about their body and what helps to make them feel good and be in their best focus. Answers are sought to questions such as how much sleep do I need every night to feel my best

and to be able to put my best effort into all my training? What kinds of foods do I need to eat everyday in order to meet my individual nutritional needs? What additional activities will I be involved in outside of my training and how will they impact my training and racing? Athlete 7 touched on the fluidity of the word focus,

Focus is an interesting word. It's like a focal point of so many aspects of sport. You're talking about the mental focus but its interestingly tied to the physical preparation. And then everything else is all percentages and pieces of the puzzle. The focus is just what comes out when the puzzle is all put together. It might not be the right puzzle. You can change your pieces around and try a new focus, a new combination. But it is what shows up at the race when you've done all your homework and all your preparation, and all your distractions are put aside.

As focus develops certain things become automatic and more instinctual over time. For example, the athletes talked about how changing a flat tire becomes instinctual and automatic after enough practice. Other examples of "pieces of the puzzle" that can become automatic are going to bed in good time, eating well and remembering to take certain supplements every day, and adding certain elements into training such as stretching. Less concentration is needed to focus and perform well after a certain amount of practice. Even as training intensity increases over an athlete's career, the ability to focus for longer periods of time can increase in training and racing. When beginning mountain bike training it takes much more concerted concentration and focus just to learn the basics. The athlete needs to focus on how to take care of their bike by learning what tools to use, how to clean it, how to dress for different weather on training rides, and how much to eat and how to drink properly while training and racing. Through continued practice, certain aspects of preparation routines become habit and there is an increased energy or ability to fine-tune one's performance focus. Increased ability to focus refers to an athlete's

ability to learn what to focus on, or not to focus on, during training (and competitions) in order to get the most quality training done.

Focus is also very individual for each athlete. Going into a competition some need to surround themselves with others in order to distract themselves from their own nervousness.

Athlete 8 talked about the importance of knowing how one focuses best,

I think one has to first decide if they are an internal focuser or an external focuser. And to do that you have to just try both and see which one feels better. I think an externally focused person will get way too excited if they think too much and become way too nervous. So they need to have external things around them to distract them from the race situation, and then they can just go. For an internal focuser, like myself, if I'm distracted then I'll just lose my concentration and forget my strategies. The nervousness and stuff seems to help me. So I think that's the first thing that someone would have to do. And I think its interesting because we travel a lot together as teams. It's interesting to realize that other people perform better under different circumstances than me. For example, my team mate Mary, she is more of an external focuser. So the two of us then therefore can't really spend a morning too much together. If I don't talk to her then she'll just be too nervous and if she talks to me then I'll forget what I'm doing. So we know that about each other so its helps us which is kind of neat.

Some athletes like to be by themselves to focus internally on what their race strategy will be. Through racing and reflection the athletes learn what focusing techniques help them to stay positive and focused in all sorts of different race situations such as a bad start, a crash, a mechanical problem, and weather conditions such as muddy or dry, cold or hot.

Focus is also about finding individual balance in the athlete's lives. For example, one athlete might find they focus best by being a full-time athlete, if given the opportunity and support to do so. Others might find they focus best while pursuing other interests such as a school or a career concurrently. How much one wants to divide their attention or how good they feel about dividing their attention is individual. One athlete might value balance, which to them

means they'd sacrifice some of their focus devoted to their sport to pursue other interests at the same time. Athlete 2 talked about the importance of balance to him.

I think I have a really good balance and that's the way I approach the sport. I'm not very serious and in the off season I'm not that serious. I've got a lot of friends outside of cycling and I'm glad I have that because if you make this (mountain bike racing) your life you can miss out on a lot. I haven't missed out on anything growing up, the teenage years, and in my twenties. And I see what some of the guys have missed and how they deal with society. Like you look at (top male rider), at the bar at the Worlds, no one to talk to. He can't talk to anyone, no social skills. He's burned everyone's bridges, no one to hang out with.

Others might feel they want to focus solely on their sport and be very strict about participating in anything else that might take their focus off their sport. The same athlete above believed great focus would mean great sacrifice,

I think the person would sacrifice anything for whatever he's doing. Like we're talking great focus, the guy with the best focus, like the top male riders. They'll do anything. Like I know for a fact, (top male rider), he won Nappa, a really fast guy, the guy lives for his bike. It's all focus. He doesn't do anything...he doesn't stand on his legs...he pretty much goes around in a wheel chair if he's gotta go somewhere. Like everything is devoted to make his legs faster and to make him faster. Everything is related to how it will affect his race. Every single day of that guys year is planned out, rest days, everything. He's eating....he wouldn't dare think of eating a tenth of a chocolate bar or a coke. All he does...he's focusing on everything that makes him a champion. I'm sure he does psychological preparation too to relax himself, mental imagery for thinking about the next race, the next task at hand, the next interval. He sacrifices everything and that's what makes him a great champion.

Great focus also means one is fully committed to their sporting goals as well as fully confident in themselves, as illustrated in the following quotes by athletes,

A great focus would be to just be totally confident in yourself. If you don't feel 100% not to panic and just deal with that. So a great focus would be to just trust yourself. A great focus would be to be so confident in yourself that nothing will stop you, and being confident in yourself comes from a whole bunch of stuff that a person has figured out that they need. Therefore they've done everything they've had to and they're just focused and calm because they are totally

confident and they know what they can do. I think that would be the ideal focus (Athlete 4).

I think great focus is having self-confidence but recognizing your limitations. If someone has that, they are confident in their abilities that they've already got but recognize the things they need to work on. (Athlete 5)

Someone who has great focus is completely relaxed. At the race they are not fidgeting at all at the start line or jumping around. You can see they're just completely calm and ready to race. They're not running around before the race stressing out about different things. They're just very calm and methodical and ready to race (Athlete 10)

Optimal focus was also described by two athlete as similar to Jackson and

Csikszentmihalyi's (1999) definition of flow: a state of consciousness where one becomes totally absorbed in what one is doing, to the exclusion of all other thoughts and emotions.

My best performance I believe I have had such focus that I am actually performing instinctively and subconsciously. If you actually asked what I was thinking I would say my head was empty of thought. When this happens, it is the ultimate focus (Athlete 5).

You need to love what you're doing, love mountain biking, enjoy it, and focus on that, focus on the course, focus on being the best you can. If all those things are met then I believe that you can show up and you can attack a course, and be almost like Zen or in the zone where your focus is where you don't hear anything. You don't see anything. You're just following that wheel, or you don't even see that, you just see the course. You don't even see the time. Your ride is completely effortless. The hills aren't even there. That's sort of the perfect focus (Athlete 7).

So focus comes back to an individual's goals, how much do you want to achieve the goal(s) you are pursuing? Your focus is what you'll put your energy into, and in turn your motivation is the cornerstone of your focus. Are you willing to put aside any other goals such as school or career goals in order to fully pursue your sporting goals? Are you willing to put in the hours and hours of training? Are you willing to have much less time to spend with friends and loved ones? Are you willing to be disciplined with your body in your eating and sleeping habits?

Perhaps it can be said that training for sport and competition is one of the best discipline teachers and best focus teachers in life.

In conclusion, it was incredibly fun and enlightening to hear what each of the ten athletes had to say on the topic of race focus. Thanks to each of them, we have gained a better understanding of the nature of focus in sport, specifically in the sport of mountain biking, and the many variables involved along the road to developing one's best focus.

Future Research Considerations

It has been an eye-opening experience to look at how focus is perceived by elite athletes in the sport of mountain biking. This study has explored how focus is defined in the sport of mountain biking, and what kinds of focusing skills are needed for reaching one's potential in racing, and training. However, although much was learned, much remains to be learned.

Suggestions for future research include:

1. Investigations centering on focusing skills in other individual as well as team sports, at different levels would allow further refinement to the dimensions of focus presented in the present study.
2. It would be useful to explore in greater depth how focus for training compares to focus for competing, and how focus in training could facilitate focus in competition.
3. The ways in which athletes felt they had improved their focus could be explored in much more depth. Some athletes felt having good focus is an inherent quality. This raises the question of early learning of focusing skills or possibly a predisposition for having a good ability to focus.

4. Future studies could also be centered on how athletes at the elite level make the final refinements in focusing skills to move from the elite level to the level of world leaders.

Table 7.

Dimensions of Attention/Focus.

Posner & Boies (1971)	Davies (1982)	Present Study
Alertness or Arousal (readiness for responding)	Alerting or Sustaining Mechanism	Ability to Consciously Shift Focus (throughout race)
Limited Capacity or Resource (when doing simultaneous tasks)	Intensive Mechanism (how attention is divided)	Limited Capacity increases with experience
Selectivity (attending to relevant information)	Selective Mechanism	Distraction Control

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Appendix A
Ethics Approval



Université d'Ottawa • University of Ottawa

Cabinet du vice-recteur
à la recherche

Office of the Vice-Rector,
Research

HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD

CERTIFICATION OF ETHICAL APPROVAL

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board has examined the Application for Ethical Approval for the research project Focusing Skills in a Risk-Endurance Sport (File H04-00-08) submitted by Danelle Kabush. The REB found that this project meets appropriate ethical standards as outlined in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards and accordingly gave it a Category Ia (Approval). This certification is valid for one year from the date indicated below.

Lise Frigault

Protocol Officer for Ethics in Research,
for the Chairperson of the Health Sciences and Science REB
Valerie Whiffen

MAY 11TH, 2000

Date

FILE NUMBER: H04-00-08

Appendix B
Information Sheet



Université d'Ottawa • University of Ottawa

Faculté des sciences de la santé
École des sciences de l'activité physique

Faculty of Health Sciences
School of Human Kinetics

INFORMATION SHEET

I am conducting a study for my Master's thesis at the University of Ottawa, Faculty of Health Sciences, Department of Human Kinetics. For this study I will be asking for the participation of elite level mountain bike racers. I am asking you to participate in this study due to your experience in the sport of mountain biking. The study will involve one interview per participant of approximately 45-90 minutes long.

The purpose of this research is to explore how focusing skills are developed and applied in mountain biking. We are interesting in seeing what types of focus are needed for the different elements of mountain biking and whether there are common ways that athletes develop their focusing skills.

We are asking that you read the consent form below and indicate whether you are willing to participate in the study, and return these forms as soon as possible.

If you have any questions or require further information please refer to the names and numbers found on the consent form.

Your time and cooperation is greatly appreciated.

Sincerely,

Danelle Kabush
Graduate Student

Terry Orlick, Ph.D/
Supervisor

Appendix C
Consent Form

,



Université d'Ottawa • University of Ottawa

Faculté des sciences de la santé
École des sciences de l'activité physique

Faculty of Health Sciences
School of Human Kinetics

CONSENT FORM

This research is being conducted by the the following persons. If for any reason you would like to contact one of us, the following information should provide you with the means to do so:

Dr. Terry Orlick
Associate Professor
School of Human Kinetics
University of Ottawa
Phone number: 562-5800 ext. 5272

Danelle Kabush
Graduate Student
School of Human Kinetics
University of Ottawa
Phone number: 562-5800 ext.
4281

Whenever a research project involves humans, the written consent of the research participants must be obtained. This does not imply that the project necessarily involves a risk. In view of the respect owed to the research participants, the University of Ottawa and the research funding agencies have made this type of agreement mandatory.

I, _____, am interested in participating in the research conducted by Danelle Kabush under the supervision of Professor Terry Orlick of the Department of Health Sciences, School of Human Kinetics at the University of Ottawa. The purpose of the research is to explore the focusing skills of elite-level mountain bike racers.

My participation will consist of one interview session, conducted in English, lasting approximately 45-90 minutes during which I will be asked about my focusing skills related to mountain biking. The interview session has been scheduled for a time of my convenience during the 2000 mountain bike season. I will be asked to answer approximately 10 questions in an audiorecorded interview conducted by the researcher. I understand that the contents will be used only for the researcher's Master's thesis and any related publications. My confidentiality will be respected as no names will be printed on any of the interview transcripts of the published thesis. Furthermore, all transcripts will be kept in a locked room accessible only by the graduate student and advisor conducting the study.

I understand that since this activity deals with mental skills in sport, there is minimal potential for any harm.

I have received assurance from the researchers that the information I share will remain strictly confidential. Anonymity will be assured in the following manner. Only the graduate student, and the professor will have access to cassette tapes and interview transcripts.

Tape recordings will be kept for three years following the study and then destroyed.

Any information requests of complaints about the ethical conduct of the project may be addressed to the relevant University Research Ethics Board, The Health Sciences and Science Research Board of Ethics, or by calling the Protocol Officer for Ethics in Research: Lise Frigault Room 302, Tabaret Hall, 562-5800 ext. 1787.

There are two copies of the consent form, one of which I may keep.

If I have any questions, I may contact the researcher or her supervisor:

Researcher's signature: _____

Date: _____

Research Participant's signature: _____ Date: _____

Witness of Person responsible for research subject:

Date: _____

I wish to receive a summary of the findings of this research which will be available in December at the following address:

Appendix D
Interview Guide

INTERVIEW GUIDE - FOCUSING

Preliminary stages: (a) introductory comments, i.e. tape recording and information sheet
(b) establishing rapport.

Warm-up question: Tell me how you got into mountain bike racing.

- Q1. Describe what the word focus means to you in the context of mountain bike racing?
- Q2. Describe a race in which you felt you had your best focus
probe for: pre-race feelings, preparation, strategy
thoughts during race
environmental factors (ie. conditions, technical difficulty of course, other competitors)
- Q3. Describe a race in which you felt you did not have a good focus
probe for: pre-race feelings, preparation, strategy
thoughts during race
environmental factors (ie. conditions, technical difficulty of course, other competitors)
- Q4. Describe what helps you get into your best focus (in a race/ while training)
probe for: imagery use
focusing on certain thoughts or key works
controlling distractions (internal, external)
- Q5. Describe some examples of race situations that required you to re-focus or shift focus
probe for: mechanical problems
crashes (with possible slight injury)
focusing through pain
different weather conditions
changing terrain
- Q6. Do you feel you have a good mental focus? Has it improved since you first began racing?
 If yes, how so? If no, why not?
probe for: what was focused on at start of career versus present
fear/anxiety when beginning versus any present fears/anxieties

- Q7. Can you think of any ways in which you would like to improve your present focusing skills in order to up your present performance level or consistency?
probe for: consistency/duration of best focus in race
- Q8. Can you think of any other areas in your life that have contributed to your present focusing/concentration skills?
*probe for: previous sport experiences
 school, career experiences*
- Q9. Can you think of any areas in your life that have benefited from the focusing skills you've gained through sport?
probe for: school, career, relationships (ie. communication skills)
- Q10. In your opinion what constitutes a great focus?
- Q11. Do you have any recommendations for other athletes` of how to develop their best focus?

Wrap-up question: Is there anything we didn't cover that you would like to add?

Debriefing: (a) discuss impressions of the interview session

Appendix E

Sample Interview Transcript

Tell me how you got into mountain biking

Well I first started just riding off-road for the first time with a friend in England with a friend who had a mountain bike. I had a ten-speed and we rode some trails. It was kinda fun and I thought his bike was really cool. That was in grade eight when I went to England and when I came back to Canada, and was in grade nine, I decided to buy a mountain bike and started riding some trails. A couple of my friends were into racing and I went to a race with them and thought it was pretty fun. So then I started doing some local races, then provincial, then national and built up from there.

Tell me a bit about what focus means to you, how you would define it

I think focus is being able to block out everything external and just concentrate on the one thing you're trying to do 100%. For racing being able to have everything set up so you can think about the race and everything else is just what you've planned out beforehand so its just routine, your food, your travel, so you don't have any other stresses. So you can just concentrate on riding and don't have to worry about external things like your bike and stuff. You can think about actually riding in the race. I think being prepared is a big part of it, for me it is.

Can you tell me about a race or a few different races where you felt you had super good focus and describe that race beforehand, during, and after?

One race that I can think of where I had really good focus was the 1999 World Championships. They were in Sweden, and its always the big race of the year that you're going to focus on. When a big race is coming up I start focusing and preparing for it as soon as I can. So I will look up all the information I can on where the race is and the course and the village so I know everything I can about the site so it feels familiar when I get there right away. And for that race I was one of the first people to arrive on site, as far as the Canadians. I got there about ten days before. The first couple of days I was there I was able to ride several laps of the course and get it memorized in my head. So I didn't have to worry about figuring out the course for the rest of the time I was there. I could just focus then on resting and training properly. I could think about the course and visualize the rest of the time I was there building up to the race. I'd visualize whenever I was just sitting around. I'd think about all different parts of the course and how I'm going to ride them, go through the feelings I'm going to have before the race and at the start like just staying relaxed and not getting upset if things aren't going exactly the way I want them too. I try to see how I'm going to start and knowing that its going to be harder near the end of the race and so I get ready for that. Then just the nervousness of being at the start line. At that race I was really able to have a nice set up at the start where I could warm-up on my trainer right next to the start line. It was really important at that race because it was really rainy and cold out. So it was really important to get a good warm-up and stay warm. So we had a nice porch right next to the staging area where everyone lines up at the start. So I was able to warm-up and see everyone and exactly where I wanted to be. And when we were called up I was able to have a nice warm jacket and pants on and stand right on the start line and not worry about getting cold, and my coach took it off about thirty seconds before we went so I was nice and warm and ready to go right from the start. And I started off good and the race went well from there.

Well part of my race strategy is to start off at an even pace and not go out too hard. So right off the start you have to worry about getting a bit of position. In any race in general the first 30 seconds I try to move up a little bit and then just focus on relaxing and not getting caught up in using any excess energy in fighting anyone for position after that because it is just a waste of energy at the start to try and gain one or two spots when at the end you can make up that time no problem. So the first lap or two or any race I just try and focus on staying relaxed, just spinning and staying relaxed and not wasting energy. And then as the race moves on its usually easier with my race strategy to start slower and move through people which helps because when you're passing people it makes you feel a lot better. But towards the latter point of the race its important to keep on pressing and not slow down to the pace of the people you are passing. I have to try and focus on maintaining my pace and moving forward as much as I can up until the end.

What are you focused on in different sections of the race?

Well I'm not really thinking about the riding very much during the race because hopefully I've had enough time to ride the course and think over the sections beforehand so its just automatic and routine riding through the course during the race. I'm more focusing on drinking and getting the liquids down, how far in front of me the next people are and maintaining the gaps. I'm really focused on getting the time splits from different people to see how much the time gaps are closing, if I'm gaining and how many places I'm going to be able to move up. That's what I'm thinking about most during the race.

Do different courses and conditions affect your best focus?

The course can but I think the main thing that would disrupt my focus is mechanical problems with the bike. Well flatting is an obvious one, but just the main thing that can distract you is if things start going wrong with your shifting, your gears, your chain can start skipping. That can really distract you and you start thinking more about your bike instead of the race. Of course crashes can set you off. If it's a bad one, its hard to get right back into it and keep moving forward instead of thinking about how sore you are here or there.

In a race with your best focus what do you focus on?

Well I'm not really one for details. I really like to look at all the time gaps to the position where I am and go through the race in my head and all the places where I maybe lost a little time or I maybe could have pushed myself a little harder at the start. Or I'll really go through the race and try to think of all the places where I could still improve in the course or in my strategy. That's one thing I often do before races as well is print off the list of all my competitors to see where they are, and where I'm going to start, results from previous years, stuff like that.

As far as feelings you were saying your best focus is when you're most relaxed because everything is taken care of. Are there certain words you use or tell yourself to get into that relaxed state?

No, I think its just being completely prepared and knowing exactly what's going to happen that gets me in a relaxed state, getting all the anxiety out of the way by knowing the whole course, knowing that my bike is working well and having planned out my strategy for the race.

What about a race where you did not have a good focus, opposite of Sweden, with the same kind of questions. What happened before the race that led to it not being one with good focus and during the race what happened?

I think it's mainly, it would be races where I didn't get there early enough and didn't really know the course, what to expect. I think a lot of my worst races are obviously just having mechanical problems. It's really distracting and frustrating when you're riding in a decent position and something goes wrong with your bike. It can really throw you off because you feel like you're ready to do well but things that are out of your control happen with your bike or you flat, get a flat tire.

So it's usually something that happens in the race? Have you had a race where stuff that went on before threw off your focus?

Well, usually for all the big races I'm really prepared but I think the ones where my focus isn't as good are just the lower level races where I do races provincially where I don't really think about the race at all before and I just go there to do the race and get some training in. It's hard to get up mentally for those races especially if the race is just a local race that doesn't mean anything and say it's bad weather or something, it's hard to get your focus on for that race to do well. There's not as much motivation to do well.

The biggest thing that makes you lose focus are mechanical problems?

Yep, that are out of my control.

So let's go to that now. Can you describe some examples of race situations that require you to refocus or get back into things and what you do with certain mechanical problems or crashes?

Well one example I can use is the Canadian National Championships in 1999 in Ottawa. It was a four lap race. I was having a really good day, I was feeling great. I was able to start and was with the leaders right from the start which was a little unusual because I usually start a bit slower and move up towards the end. But I was feeling great and riding with the leaders and about halfway through the race my chain wrapped up and went to my rear wheel and bent my derailleur and at first I thought my race was over and I was just really disappointed and distraught. I was in the lead group of about six and I just lost all those guys. I tried to bend my derailleur back a bit and got going again. My gears were skipping all over the place and I was getting pissed off. I guess I was really angry that I had this problem when I was feeling so well. I was sure I was going to do really well in the race. I just kept going and had to stop a couple of times to try and bend the rear dropout on my bike, try and fix my gears a bit, but it happened that my chain was bent, but I just kept going anyway, and my chain was skipping around and I was still really frustrated but I was able to start riding with a group of guys in fifth and sixth and I just kept going, stopped a couple more times to try and fix it but even with my problems I was catching back up to the group. And then I realized that I might be able to keep going and finish the race, and at first I thought I wasn't going to be able to finish so I'd just hang in with these two guys who were in fifth and sixth and then the last lap I realized that I could go even harder so I just went for it the last lap.

and was able to move up to third. So I went from thinking that I was completely out of the race to the end where I was able to salvage quite a good result.

How do you think that happened? By catching back up and gaining confidence?

Just by keeping going and realized that even with my problem I was able to keep riding strongly. By sticking in and I guess just not dropping out right away.

And what happens if you get something like a flat? How do you refocus to get going again?

Well, after racing for awhile, hopefully it is just instinct to know what to do with a flat. It's still really disappointing when you flat but once you're practiced you just go through a routine and you can fix it in two minutes and still get back in the race. You just have to be completely relaxed and accept the fact that you flatted and there's nothing you can do about it. The only thing you can do is fix it as fast as you can.

And what about after crashes, have you had any where it's a struggle to get back into it mentally?

Not recently...well I think you expect to fall especially in some muddy races and that's usually not a problem. Its only the unexpected crashes which just kind of catch you by surprise which can kind of knock the wind out of you. But normally I'm so focused on keeping going that you can just bounce back up and get right back into it. Its only if you knock the wind out of yourself, or hurt yourself really badly for the first couple of minutes it's a little harder to keep pressing forward. You just kind of gotta keep your rhythm going until you start feeling normal again. And then you can get back into pushing harder.

So can you describe what helps you get into your best focus in a race?

I think its just knowing as much as I can about the race, about the race site, my competitors, and the course just so there are no surprises for me which on race day are going to throw me off. So just getting to the course, getting the course in my head and going through my whole race day from start to finish beforehand, just through all my warm-up, getting my bottles ready, knowing exactly what I'm going to be doing on the race day, knowing where the start and finish are, where I'm going to warm-up. So its just all going through a routine on race day. Then I can just think about riding leading up to the race and not worrying about the details around me just leading up to the race. I can just focus on thinking about the race.

And what is that routine?

Usually on race day I get up first thing in the morning and go for a little jog. I just kind of jog and loosen up all my joints and muscles, swing my arms and legs around, get loosened up and think about the race. Then I come back and have my normal breakfast which is usually some pasta, and then just try to relax for awhile. I usually try to get up the course about an hour and a half beforehand and get into my race clothes. And I usually like to take a trainer to the course so that I can warm-up undercover close to the start area. And I'll usually have all my bottles ready. I'll have some extra bottles for before the race to drink and for after the race. I get in my last drink about half an hour before the race so I don't have to worry about feeling like I have to take a piss right on the start line. And then just warming up, keeping my legs moving, try to warm-up

as close to the start as I can and then just going to the start and even though I have to stand around for a bit, don't worry about it, just relax and think about the start from there.

So in your best focus are you more focused internally like on your feelings and heart rate or are you more externally focused like on the terrain and other competitors or is it kind of shifting between the two?

When you say internally you mean? Say that again.

How your body is feeling, what your heart rate is doing...

Ya I think I'm a lot more internally focused. I like to just be completely focused on myself. I don't like a lot of distractions around before the race. I like to stay relaxed. I'm just thinking about myself and how I'm feeling.

And once in the race?

I'm really just the way I race I'm really focused on maintaining a steady pace and watching my heart rate. And I'm not too involved in the tactics of a race. I'm just trying to focus on riding my own race, especially in the cross-country. In the short track race, which is the shorter race, there's a lot more tactics so I'd be a lot more externally focused on what the other competitors are doing. But in a long cross-country race I know that I'm going to do the best if I just focus on my own race, and keep a steady rhythm.

So are you aware of others at all and their positions?

Ya, for sure I'm paying attention to that and that keeps me.....the motivation is seeing time gaps in my placing and hopefully seeing those time gaps decrease and my position move up.

How does the race focus you've been describing compare to training situations? Is it similar?

I think somewhat. I like to know a couple days ahead how my training is going to be so I can mentally prepare for that and plan my day, where I'm going to ride. I mean I'm not worried about the kind of details there are when preparing for a race. I know a lot of my training rides I time them and do similar loops in training to see my times and watch to see if I'm improving all the time. That's what I focus on during my rides to keep it going.

So in that sense do you train or practice the kind of focus you need for racing in training?

A little bit. I think I do a lot of focusing for racing in training. While I'm training I think about all the races I have coming up, and just going through them in my head as much as I can which motivates me for my training.

What do you go through in your head?

Just thinking about all the races I have coming up and just trying to visualize how I want to be doing at those races, visualize in my training feeling really strong in those races.

Do you visualize feeling really strong for training as well?

I don't find I do that much, no.

Do you feel in general that you have a good mental focus?

Yes. I think you have to to get anywhere near the top level in any athletic sport. There are so many things that can go wrong on race day, so many external variables that you have to deal with, bike mechanicals, so many things you have to get prepared on race day, your bottles and all the variables of what can happen with the course, preparing whether its going to rain, choosing your tire selection, getting your bike ready.

Do you feel your mental focus has improved since you began racing? If yes, how so? If no, why not?

Yes, I think just through the experience of racing you know how to deal with so many different situations with weather and just having different mechanical problems you learn how to deal with them. And small ones just become routines so that they don't break your focus at all.

So what differences have you noticed about what you focused on in racing at the start versus racing now?

Well I think now I'm able to focus a lot more just on the race which has helped because I have a lot more support from my team than when I first started. When I first started I had to focus a lot more on just getting to the race and making my bike work perfectly. Now that I'm on a big team I don't have to worry about that. I have all the best equipment so that it helps take away a lot of the stress so I'm able to just focus entirely on feeling good for the race in my training.

Has your race strategy changed?

Yes, a little bit. I think now that I'm getting closer to the front of the pack and racing for the top spots a little more tactics come into play. And before I was just moving up through the middle of the pack where people are fighting as hard for position. Once you're near the front people will fight a lot more for position so you have to play your cards more at the right time to push by a person. I know more when to pass a person and how hard to push by them, to try to defeat them mentally or physically.

So now you're more focused on position?

Well, the closer you get to the front, the positions are a lot more critical and meaningful. Before I'd just be moving up as hard as I could the whole time whereas now sometimes I'll sit behind a person and draft them for awhile to conserve a bit of energy and wait until a more technical section to try and go by them and get a bit of a gap on them so they can't get back on my wheel and conserve some energy by drafting.

What about technical focus when you first started compared to now? As your technical has really improved how does that focus change?

Well I think the first two or three years when I was still improving on my technical skills it was

more of a focus but now I think after two or three years I was at a sufficient level for all the big races. There isn't really anything that challenging so its all fairly routine in the races. There's nothing that's going to really scare me or break my focus mentally on the race courses.

So what did you originally do when there was things that scared you?

Just like try to make myself ride them until they....first you ride them and you get a bit of adrenalin and it scares you a bit but I think when I first started riding I rode with a lot better riders and I just followed them and I rode really tough things. And after awhile they don't seem like a bit deal anymore. And you just get used to riding difficult things and you're able to relax and just ride them.

So if there's no fear of technical things anymore are there any other fears or anxieties at this point?

Just anxiety about having.....you can prepare as much as you want but sometimes things are out of control and some days you just don't feel good and some days you do feel good, and you just hope that on the race days you feel good. All you can do is take care of your preparation for the race. Besides that, its out of your control.

In your opinion what constitutes a great focus?

A great focus I think is....well I guess someone who has is great focus is completely relaxed. At the race they're not fidgeting at all at the start line, or jumping around. You can see they're just completely calm and ready to race. They're not running around before the race stressing out about different things. They're just very calm and methodical and ready to race. Is that what you mean by that question?

Ya. So you're saying that great focus is just being really relaxed and calm?

You know exactly what you're doing. You're not surprised by anything and you just go through the race like you've already done it.

Do you have any recommendations for other athletes in order to develop their best focus?

Well I think a lot of it is just paying attention to making sure you have everything ready to go so when it comes down to the last day or two before the race, you'll be able to just relax and not worry and stress, waste energy running around doing things before the race. You can just relax, visualize the race course and your race.

Is there anything you're working on right now related to focus to either up your present performance level or consistency or performance?

I think you're always trying to work on your confidence. I think that's just something that comes with training well and getting those races behind you. There's always a bit of doubt coming into races whether you feel like you're going to do well or not. I'm not sure how you work on that all the time. Another part you can always work on is just maintaining focus throughout the middle

of the race. There's always a time in the middle of the race where there's a little bit of a lull and you sometimes let down a little bit and start thinking about how much longer the race is and thinking I'm not feeling too well, and working on being able to just focus on pushing through that and being confident right until the end.

So is that something you can't consciously work on, but rather comes just through racing experience?

No, I think you can work on just getting ready, visualizing, knowing that you're going to have those kind of feelings during the race.

Just to recognize that that is going to happen?

Ya, and coming into a race with confidence is fairly....confidence can be a very fragile thing. Its just comes with experience, having confidence that you've been training well and have taken care of your preparation, and other things.

This question is two in one: First are there any areas in your life, either previous sport experiences, or school, or relationships that you think have added to the focus you have in mountain biking? And then has mountain biking helped you focus better in other areas of life?

I think there's been a lot of different sporting experiences that have helped contribute to my success in mountain biking. Just picking up a lot of different things, work ethic and dedication I picked up a lot in basketball. A lot of the mental aspects of basketball, shooting, a lot of confidence, and the practice that goes into shooting, being able to relax is a key part in shooting. In shooting focus is a huge part from basketball which has helped. A lot of different learning how to push yourself has helped a lot.

Such as...

Influences from different coaches that have helped me out. Working with a training program and learning how to work with coaches.

Before mountain biking?

Track and field, working with training programs and working on technical skills, hurdling was one of the ones I was involved in. Hurdling, or in the many different sports I've done, just focusing on different skills involved with sports has helped to improve those technical skills, how to focus on improving those skills has crossed over to mountain biking in improving my technical skills. Analyzing the movements in the different sports and figuring out the most effective ways to do those different things. And the second question, how has mountain biking transferred over. There's a lot of different things you can take away from sport to your life. There not necessarily particularly from mountain biking but they're just the focusing. I think a lot of the time management that is needed to be able to train, many hours on your bike, how that can be done I think is an effective skill. And I think a lot of the outside things, dealing with other people, and taking care with others needs involved in mountain biking, with sponsors, there's

communication skills that transfer over to the business world. Other things that can be taken away from mountain biking is just dealing with difficulties and problems from the racing, like how you deal with problems in life effectively. Just staying calm and figuring out the best way to deal with the problem at hand.