

LIFE AT THE EXTREME: AN INVESTIGATION INTO THE EXPERIENCES
OF PROFESSIONAL SAILORS COMPETING IN A
FULLY CREWED AROUND THE WORLD
OCEAN RACE

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ABSTRACT

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This research used a qualitative exploratory approach to investigate the experiences of professional sailors who competed in a fully crewed around-the-world race known as the 2005/06 Volvo Ocean Race (VOR). Specifically, the following areas were examined: (a) the various environmental, technical, and interpersonal demands that make the VOR an extreme sport, (b) the impact of these demands on the sailors' performances, (c) the strategies used by the sailors to maintain high levels of performance, and (d) the sailors' reasons for competing in the race.

Participants were 15 professional sailors, ranging in age from 23-49 years (M age = 35.9 years; SD = 7.4), who competed in the 2005/06 VOR. After receiving approval from the Temple University Institutional Review Board, the

researcher recruited participants who were subsequently required to provide informed consent to participate in the study. Using a semi-structured interview format, face-to-face interviews were completed with three sailors in Miami, FL, and with nine sailors in Valencia, Spain (three interviews with individual participants, one interview with two participants, and a focus group with four participants). Three interviews were completed via telephone. All interviews were transcribed verbatim. Each transcript was then analyzed through an inductive open coding process.

Data analysis revealed nine major themes (*Background, Skiffs on Steroids, Boat Breakdowns, Managing Self, Pressure, Tragedy, Extreme, Team, and Reflecting*) with associated subthemes, and three dimensions (*Resonance, Edgework, and Performance Capacities*) with associated subdimensions. A framework for understanding the experiences of the sailors was conceived in the form of a model depicting the dimensions of resonance (a passion for adventure and the VOR in particular), edgework (a desire and ability to perform in high-risk, life threatening situations), and performance capacities (team, individual, and boat). The model suggests an interplay between the

dimensions of edgework and resonance, against which is set the performance dimension.

This study is the first to take a glimpse inside the experiences of ocean racing sailors who compete in fully crewed around-the-world races. Findings confirm the widely held belief that the VOR is an extreme and unique event in the world of sport.

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Finally, this research is dedicated to every sailor who set out to race around the globe and never returned.

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CHAPTER 1

THE PROBLEM

Introduction

From summit attempts to sky diving and motocross, sport enthusiasts and adventure seekers are more interested than ever in finding innovative ways to push the limits of human performance (2000; Creyer, Ross, & Evers, 2003; Olivier, 2006). As reflected in and as a result of increased television coverage, such as Extreme Sport Channel EXPN (Extreme Sport Network), many of these sports are becoming mainstream attractions (Burke & Orlick, 2003; Creyer et al., 2003). Highly challenging and dangerous by nature, these activities are labeled "extreme" or "high risk" because even momentary lapses in focus or judgment can result in severe injury or loss of life (Kajtana & Tusak, 2004; Lyng, 1990).

Ocean Racing

Formal competitive sailing has been ongoing for more than a century, with the first transatlantic race occurring in 1866 (Johnson, 1972). The modern form of ocean racing has evolved into a blend of high stakes adventure and

extreme sport that pushes the limits of human performance unlike any other sporting event (Mundle, 2002). Since the early days of ocean racing, many sailors have lost their lives and numerous near misses have been reported (Dewar, 2006). The most notable examples are the 1979 Fastnet Race (Around Great Britain), the 1996 Vendee Globe (non stop, solo, unassisted, around the world), and the 1998 Sydney Hobart Race (Australia).

Ellen MacArthur is one of the most recent examples of a sailor who has achieved international recognition for her ocean racing accomplishments. She finished runner up in the 2001/02 Vendee Globe, and in 2005 was the fastest person to sail around the world alone, non-stop and unassisted. Sailing a 75' long sailboat with three hulls known as a trimaran, she made the journey in just over 71 days (Dewar, 2006). In 2005, MacArthur was granted the title of *Dame* by the Order of the British Empire in recognition of her sailing achievements (BBC, 2005). She has won many international achievement awards and received considerable recognition, largely as a result of the global public's ability to follow the moment-to-moment drama that unfolds during these races via satellite communication and the Internet. In 2001 she only narrowly lost the United

Kingdom Sport Personality of the Year to European football star David Beckham (BBC, 2001).

The Volvo Ocean Race

The 2005/06 Volvo Ocean Race (VOR) is the focus of the current study. Originally known as the Whitbread Round the World Race, the origins of the VOR can be traced back to the early 1970s. The first race was held in 1973/74 and involved 17 boats from several different countries. Although three sailors died in the first race after being swept overboard, sailors were not discouraged, and the race has continued to be held every four years (Mundle, 2002). From the earliest days of the race, it has been seen as one of the pinnacles of achievement by sailing enthusiasts (Dewar, 2006).

No longer an amateur event, the sailors who compete in the VOR are made up exclusively of teams of professional sailors and support staff. The programs are funded through multi-million dollar corporate sponsorship packages. As is the case with all professional sports, the VOR requires a substantial time commitment from the sailors. Many of the programs have their core teams established two to three years before the start of the event (Mundle, 2002).

Not only is it one of the most demanding ocean races, the VOR is arguably the event with the highest profile

(Dewar, 2006). Since the automaker Volvo became the title sponsor of the event for 2001/02, the race has been marketed aggressively with positive results. The 2005/06 version of the VOR, dubbed *Life at the Extreme* by the race organizers, was highly successful. It attracted a cumulative audience of 1.8 billion viewers while the website attracted in excess of three million unique visitors over the eight months of the race (VOR, 2006). This exposure is largely due to the fact that waterproof and impact-proof cameras were attached to different points on the boats to act as web cams. As a result it was possible to closely monitor the progress of the sailors at any point during the race. Emails and video footage were received from the boats via satellite and posted to websites several times each day. In addition, computer software with high resolution graphics were developed for the website which allowed audiences to track the progress of the boats along the route in relation to each other and also in relation to major weather systems (Dewar, 2006).

The 2005/06 edition of the VOR began in Spain and finished in Sweden eight months later. This race involved seven teams of 10 professional sailors competing on state-of-the-art 70' long sailboats. The format for the race involved a series of nine legs varying in length between

400 and 6700 nautical miles, for a total of 31,350 nautical miles. Teams were awarded points in one of three ways: 1) reaching certain pre-determined points on the individual legs of the race, 2) final position at the completion of each leg, and 3) placing during the 20-25 mile inshore races which were held between legs during the stop-overs. The team with the greatest number of accumulated points at the end of the eight month journey was declared the winner (VOR, 2006).

Performance Demands

This section consists of an overview of various aspects of the race, including (a) demands of the race, (b) the implications of those demands for performance, (c) the strategies used by the sailors to maintain high levels of performance, and (d) the overall motivations of the sailors. Because these various components of the race are intertwined, the information is not presented in a strict categorical manner.

The challenge of competing in these races has been summarized succinctly by renowned sailing author and journalist Rob Mundle. Referring to the 2001/02 VOR, he stated, "There's probably no other sporting contest on the planet that takes so many competitors so often to the brink of life and death situations as the Volvo Ocean Race"

(Mundle, 2002, p. xiii). In relation to the 2005/06 VOR, Mundle describes the race as follows, "Imagine a sporting contest where the participants are under a level of mental and physical endurance akin to a soldier on the front line of a war zone" (p. 2).

It is not difficult to argue that the conditions faced by VOR sailors are extreme. During this race, the sailors will twice cross the equator, through an area commonly known as *the doldrums*. The sailors experience several days of extreme heat and light and variable winds that immeasurably test their patience. At the other extreme, the northern and southern Atlantic legs of the race are very hostile environments, characterized by freezing temperatures, 100-foot waves, icebergs and hurricane force winds.

Contributing to the extreme nature of the race were the innovations in boat design for the 2005/06 edition of the VOR. Constructed of ultra lightweight materials, these new boats were designed to carry a great deal of sail area. By sailing standards, this design translates into extremely fast passages across the world's most remote and unforgiving oceans. The fastest 24-hour run during the 2005/06 VOR produced an average speed of approximately 30 miles per hour (WSSRC, 2006).

Sailing in technically evolved boats has an impact on the physical, tactical, technical, and mental demands of the crews. The violent motion and deafening noise onboard these modern boats when surfing at high speeds on large waves for hours on end results not only in speed records being broken, but also in injuries, equipment failures, sleep deprivation, dehydration and, unfortunately, the occasional loss of life. Similar to Formula-1 racing drivers, sailors on these modern boats are often faced with balancing the integrity of their personal safety with the need for beating their rivals to the finish line. As stated by one sailor from the 2005/06 VOR, "These boats are miserable in a lot of conditions—you can't sleep, you can't eat, you can't do anything. It's just a result of speed" (Crowfoot, 2006, p. 47).

The resulting toll on the sailor's body can be costly. By the time the boats had reached the halfway point in the race, at least a dozen major injuries had been reported, including hand, knee, back, elbow, chest, shoulder, and leg and foot injuries (Sheahan, 2006). Tragically, by the end of the race, one sailor had been lost at sea and one boat sank after a severe structural failure.

Another implication of the highly technical nature of the boats is that the various roles for each sailor have

become highly specialized. For example, the navigator must have well-honed tactical skills as well as high levels of physical endurance to withstand the stress of long periods without sleep. The person responsible for changing the sails must be technically skilled and physically powerful. Because these powerful boats are limited to 10 sailors per crew, the sailors are assigned secondary roles such as medic, electrician, or mechanic.

Sailing requires a high emphasis on tactical and strategic skills as compared to many other sports (Perry, 2000). As evidence of the importance of decision-making during the race, the strategies and tactics are the sole responsibility of the skipper and the navigator. Highly influenced by computer generated weather models, the decision-making on these races can be extremely difficult. The unpredictability of the winds and ocean currents adds a realm of uncertainty and risk management. As suggested by one of the race skippers, in order for a team to be successful, "Skipper and navigator must have a symbiotic relationship, based on trust" (Crowfoot, 2006, p. 49).

The psychological domain is one of the most important skill sets for ocean racing sailors (personal communication, December 20, 2005, Jeff Brock, professional sailor and 2001/02 VOR competitor) and includes attributes

such as mental toughness, resilience, determination, perseverance, focus, composure, courage and a positive attitude. This psychological domain also includes emotions experienced during the race such as fear of injuring oneself or dying. As stated by this 2005/06 VOR competitor, "There are times when you go forward to run the sheet and you look ahead and think, if we bury the bow now I've got no chance to hold on. I've got two kids these days, it really makes you think" (Sheahan, 2006, p.65).

Similar to Tour de France cyclists, VOR competitors must be able to stay focused for the duration of the entire event as well as for the individual stages. The sailors must also have highly evolved concentration skills to stay focused while sailing for extended periods of time in extreme conditions. As stated by one 2005/06 VOR competitor:

It requires focus to stare out through your visor or fireman's helmet at the instrument display on the mast for extended periods of time. At night, these numbers are all that you have to drive by. The fun part is when the instruments are under water and all at the same time, you are driving, trying to hang on, not crash the boat and figuring out where you want to be pointing after the wave. (VOR, 2006)

As this is a team event, the sailors must be able to negotiate interpersonal conflicts in order to sail the boat to it's highest potential. The stress of sailing together

in a confined space, for as long as 18 days, in an intensely competitive and demanding physical environment, often brings tensions to a head. As a result it is common for crew changes to be made during the stopovers.

Although there is ample anecdotal information about the stresses and strains that sailors must cope with during the VOR, there is a shortage of information concerning the strategies the sailors use to maintain a high level of performance.

According to Bunting (2005), the effects of sleep deprivation on the sailors' performances have been studied extensively through the work of chrono-biologist Claudio Stampi. Although the information has not appeared in peer reviewed journals, the majority of the top sailors pay several thousand dollars to work with sleep specialists like Stampi in order to reduce their 24 hour sleep needs by as little as one hour (personal communication, Derek Hatfield, Canadian Round the World Sailor, December 14, 2005). It appears that only a single article on ocean racing has been produced from the perspective of sport medicine (Spalding, Malinen, & Allen, 2002).

Examining the psychological aspects of ocean racing, a large-scale study of the BT Global Challenge Round the World Yacht Race took place in 2000/2001 (Dulewicz, Higgs,

& Cranwell-Ward, 2002). Quantitative and qualitative methods were used to assess the skippers of the boats on such attributes as emotional intelligence and leadership abilities (the crew members were amateur sailors and therefore did not participate in the study).

It appears that VOR team physicians often incorporate indicators of mental well-being into the general examinations of the sailors (VOR, 2006). VOR Medical Advisor Timo Malinen (personal communication, April 22, 2006) and former VOR and America's Cup team physician Dr. Anne Allen (personal communication, April 12, 2006) have identified the need for research into the psychological demands of ocean racing. Due to the lack of sport psychology support provided for these sailors, both clinicians have reported that they have informally taken on this role. An extensive review of sports medicine literature recently verified the lack of knowledge concerning the psychology of competitive sailing (Allen & DeJong, 2006).

Many of the VOR teams hired sport science personnel to prepare, maintain, and monitor the fitness of the sailors. Physiotherapist Sam Brovender has worked with professional athletes from a variety of sports, and after working with

VOR sailors, believes that competing in the VOR is more difficult than climbing Everest (Sheahan, 2006).

Anecdotal information would suggest that extreme sailing has an addictive appeal for many sailors. As explained in an email posted on the 05/06 website VOR, this type of racing is not appealing to everyone:

The guys on our boat are driven individuals, who, like me, want to feel exhausted once they step off the boat at the end of the leg. You tell stories of what goes on out at sea; the waves, the high winds, the damage, the living conditions, and people look at you as if you are insane . . . I know that it takes a certain breed to withstand the hardships of what happened, but the reward at the end is worthwhile. (VOR, 2006)

Around-the-world racing, and extreme sport in general, is increasing in popularity with participants and spectators alike. Advances in design and construction technology have resulted in high performance boats that are capable of much higher speeds than ever before. As a result, the mental, physical, technical, and tactical skills required to compete in ocean races have changed and increased considerably. Yet despite tens of millions of dollars spent on technical and logistical support for VOR campaigns, there does not appear to be any research available examining the experiences of the sailors.

Statement of the Problem

This research used a qualitative exploratory approach to investigate the experiences of 2005/06 VOR competitors. Specifically, the following areas were examined: (a) the various environmental, technical, and interpersonal demands that make the VOR an extreme sport, (b) the impact of these demands on the sailors' performances, (c) the strategies used by the sailors to maintain high levels of performance, and (d) the sailors' reasons for competing in the race.

Research Questions

The following research questions were examined in the study:

1. How did the sailors become involved in the race?
2. How did the highly developed and technically evolved boats perform?
3. How did sleep deprivation affect the sailors' abilities to carry out their jobs, make decisions and relate to each other?
4. What were the most dangerous aspects of the race?
5. What aspects of the race were the most fearful, and how did the sailors deal with their fears?
6. How did the sailors balance the need to survive with their competitive drive?

7. What aspects of the race did the sailors find most difficult and most enjoyable?

8. How did the sailors prepare themselves during different times of the race?

9. How were the sailors affected by various overarching issues during the race? Specifically what was their experience of the following:

a. Significant speed advantages by one of the competitors,

b. Equipment failures,

c. One of the boats sinking during the race,

d. One of the competitors drowning.

10. How did the sailors learn and adapt to various circumstances?

11. How did the sailors communicate their frustrations? To whom did the sailors talk in order to deal with adversity?

12. What mental strategies did the sailors use to cope with the extreme conditions?

13. What were the factors that enticed the sailors to do this race?

14. How did the sailors process their experiences after the race was finished?

Limitations

The limitations of the study were as follows:

1. The study was retrospective in nature. Interviews were conducted 10 to 12 months after the completion of the VOR. As a result of this time delay, sailors may have been better able to articulate their overall feelings of the race, but less able to articulate in an intimate way the specific events that occurred during the race.

2. The number of sailors who compete in the VOR is small and they spend a great deal of time together over the eight months of the race. This made ensuring their anonymity difficult. Participants may have been unwilling to speak critically of sponsors, teammates, or other competitors.

3. It is assumed that participants provided accurate accounts of their experiences.

Delimitations

The delimitations of the study are as follows:

1. The participants are representative of a unique group of sailors who competed in the 2005/06 VOR.

2. Interviews were conducted in person and telephone by the researcher.

3. Interviews were conducted between March 10, 2007 and September 15, 2007.

Definition of Terms

Abandon Ship. Evacuating a boat that is about to sink.

Aft. Referring to the back of the boat.

Boom. Horizontal spar attached at the bottom of the mast, extending aft and used to support the mainsail.

Bilge. The lowest part in the interior of the boat, under the cabin floor, where small amounts of water often collect.

Bilge Pump. Manual and electric pumps located in the bilge of the boat, used to pump excessive amounts of water out of the boat.

Bow. The front of the boat.

Bowman. The sailor who has the responsibility for the area of the boat forward of the mast.

Bulb. See "Keel bulb."

Canting keel. See "Keel."

Harness. (Sometimes known as safety harness or life harness) A strong light-weight harness made of nylon webbing and worn by offshore sailors to keep them connected to the boat in case they are washed overboard.

Head. Nautical term for toilet.

Hull. Outer shell of a boat.

Cockpit. A protected area at the aft end of the boat where sailors steer the boat and trim sails.

Daggerboard. A long blade or foil that can be lifted up and down into the water to help a boat track through the water.

Downwind. The direction a boat travels when the wind is coming from behind the boat.

Forestay. Mast support wire leading from the top of the mast down to the bow. Also used as a connection point for the jib.

Hanks. The mechanisms used to attach a jib (sail) to the forestay.

Headsail. Aka jib. The sail that is connected to the forestay, in front of the mast.

Jib. Smaller sail in front of the mast supported by the forestay.

Jibe. (aka Gybe) A maneuver whereby the boat changes course so that the stern swings through the wind, causing the sails to move from one side of the boat to the other.

Keel. The heavy appendage attached to and extending down from the bottom of the boat into the water; used as righting moment to keep the boat upright and for helping the boat move forward.

Keel (Canting). A recent development in boat design that provides a significant advantage by allowing the keel to be swung to windward (therefore increasing the righting moment).

Keel bulb. The large torpedo-shaped piece of lead (3,000 lbs) that is connected to the bottom of the keel.

Keel pin. A large metal pin used as a pivot point for the canting keels.

Keel ram. A powerful hydraulic mechanism used to swing a canting keel from one side to another.

Kiwis. A term used in reference to a person who calls New Zealand home.

Kite. Sailing term used to refer to the spinnaker (the large colorful sails that can be used when the wind is coming from an angle behind the boat).

Knot. Method of attaching pieces of rope to each other or to another object. Also refers to the speed of a boat (one knot is one nautical mile per hour).

Luff tape. The forward edge of a sail is called the *luff*. The reinforcement piece attached to the luff is known as the luff tape.

Mainsail. Large sail set behind the mast and attached to the boom.

Main sheet. The primary line or *sheet* used to control the mainsail.

Mast. Vertical spar that holds up the sails.

Nautical mile. The unit of distance used on marine charts (maps), equal to 1.15 miles.

Ocean racing. Sailing competitions that cover a large expanse of open water.

Padeye. A strong, low profile strap (usually made of a strong metal or alloy) that is securely fixed to the deck of sailboats. Sailor's can use pad eyes as attachment points for the tether of their harnesses, or to secure sails to the deck.

Pit. The middle area of the boat where the control lines for many of the sails are located.

Physiotherapist. A person who practices physiotherapy. Also known as a Physical Therapist.

Professional sailor. Full-time professional racing is a relatively new phenomenon in the sport of sailing. According to the International Sailing Federation (ISAF), sailors fall into one of three categories depending on the amount of money earned through sailing endeavors. The sailors who participate in the VOR are known as "Cat Ones" (Category 1), because their primary occupation is racing sailboats (ISAF, 2004).

Ram. See "keel ram".

Reef. A feature of a sail that allows it to be made smaller.

Roller furling sails. Sails that are stowed (furled), by the use of a rotating forestay that rotates to let the sail in or out.

Rudder. A blade or foil near the transom of the boat that extends down into the water, used to steer the boat.

Shrouds. Mast support wire leading from the top of the mast down to the sides of the hull.

Southern Ocean (leg). The body of water surrounding the Antarctic continent is known as the Southern Ocean. The Southern Ocean leg refers to the segment of the race between New Zealand and Cape Horn.

Spinnaker. A large colorful sail set in front of the mast, made out of light material and used for sailing when the wind direction is from behind the boat.

Starboard. A nautical term referring to the right side of a boat when facing forward.

Righting moment. The mathematical formula for righting moment is weight multiplied by distance. Increased righting moment usually translated into more power for the boats.

Stack. When sails are not in use, they are stacked on the windward edge (rail) of the boat as righting moment.

Occasionally the sailors would sit on the *stack* for comfort and to further increase the righting moment.

Starboard. A nautical term referring to the right hand side of a boat.

Starboard Tack. A boat is considered to be on starboard tack when the wind is reaching it on the starboard side first.

Stern. The back end of the boat.

Survival Suits. A waterproof and well insulated full length suit used to prevent sailors from drowning and/or hypothermia in the case of falling overboard. Because these suits are bulky and therefore inhibit mobility, they are only worn when conditions were very dangerous.

Tacking. Changing direction (usually about 90 degrees) by steering the bow of the boat through the wind. Tacking (or performing a tack) involves changing the sails from one side to the other.

Tacking duel. When one boat is trying to pass another when sailing in an upwind direction, the trailing boat will initiate a long series of tacks in rapid succession. This is done in order to escape being trapped behind the other boats wind shadow.

Transom. Part of the hull extending across the stern.

Trimmer. Refers to a crew member who specializes in adjusting (trimming) sails in order to make them most efficient.

Watch. Crew members on a sailboat are often divided into smaller teams known as *watches*. At specific intervals during the race, these watches of sailors on the boat are responsible for the sailing (*watching*) of the boat, usually for between two and four hour hours at a time.

Watch captain. The person in charge of a watch.

Wipe out. When the sailors lose control of the boat, it is said to "wipe out" or that they "wiped the boat out."

Wooling kites. This job refers to the tedious task of tying small pieces of wool around spinnakers that are about to be hoisted (launched). This is done so that the sail does not fill with wind before it is fully hoisted. After the sail is hoisted and begins to fill with wind, the small pieces of wool break apart so the sail can fill entirely with wind.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this chapter is to provide the reader with an overview of literature that relates to the sport known as ocean racing. This involves research from a broad range of disciplines with the intent of identifying and informing the research questions for this study. The chapter is divided into sections starting with a description of the various categories of ocean racing, followed by a review of the following areas: (a) psychosocial perspectives of high risk and extreme sport, (b) applied sport psychology, and (c) sports science and sports medicine in sailing.

Categories of Ocean Racing

The category of sailing known as *ocean racing* has several subcategories depending on the type of boat, the number of crew, and the format of the race (Dewar, 2006). The boat types can be divided according to the number of hulls; single-hulled boats are called *monohulls*, boats with two hulls (popularized by the Hobie class) are known as *catamarans*, and three-hulled boats are known as *trimarans*. Within each sailing event, these categories can be further

broken down into the size of the boat, which ranges between 20 and 100+ feet. The number of crew on board the boat also reflects different categories. Races that have boats sailed by only one individual are known as *solo* or *single-handed* races. *Double-handed* races refer to races with boats that have only two sailors on board, while boats with more than two sailors are referred to as *fully crewed*. There are also different types of races according to the routes sailed; *around-the-world* races are an example of one such category of ocean racing. Around-the-world races are further subdivided into *non-stop unassisted* if the race is continuous, or *multi-stage* if the race has stopovers in various ports. The goals of the race are also a determining factor in the categorization. *Record attempts* refers to one boat sailing a specific course as fast as possible. Other races have multiple competitors, in which case the goal is to beat the other competitors. Records are also often established within the context of multi-competitor events. Many of these races are monitored by the World Speed Sailing Record Council (WSSRC), and records are continuously being updated. Examples include transatlantic voyages, circumnavigations, or 24-hour records within these events.

Psychosocial Perspectives of Risk

Definitions

High-risk sports, or extreme sports as they are more recently referred to, have been defined in various ways. Kajtna and Tusak (2004) suggest that the term *high-risk sport* became accepted terminology to describe seemingly dangerous leisure activities. Widely known as a pioneer in this area, Breivik (1995) (as cited by Kajtna, p.96) suggest that high-risk sports include "any sport where one has to accept a possibility of severe injury or death as an inherent part of the activity."

Several other researchers have put forward similar definitions, with slight variations. In an ethnography of the sky-diving culture, Celsi and Rose (1993) suggest that a defining characteristic of high risk sport is that "death is recognized and accepted by the individual as a condition of action" (p. 20).

Celsi and Rose (1993) use the term *voluntary high risk consumption* to refer to any activity where there is a risk of physical or *psychic* injury (where psychic refers to the disappointment one would feel due to failure to execute the skill). Creyer et al. (2003) make the distinction between risky leisure activities, whereby risk is a desirable

trait, versus detrimental risk, which results in maladaptive outcomes such as crime or drug use for example.

Lyng (1990) borrows the term *edgework* from the journalist Hunter S. Thompson to refer to activities that have an underlying feature involving "a clearly observable threat to one's physical or mental well-being or one's sense of an ordered existence" (p. 857). In Lyng's work, the term *edgeworker* refers to individuals who challenge the boundaries in their respective domains.

The term *extreme sport* will be used throughout this study to refer to voluntary activities (not including armed conflict) that involve competition against other individuals or teams and are characterized by (a) highly evolved domain-specific technical abilities, (b) the requirement of exceptional physical and emotional strength and stamina, and (c) an omnipresent risk of serious physical injury or death as a result of environmental factors.

Psychological Perspectives

According to Slinger and Rudenstam (1997), psychologists in the 1930s were the first to take an interest in gaining an understanding of why people choose to partake in activities that involve a high level of risk. The focus of these early studies was on the pathology

underlying such activities. Slanger and Rudenstam also recognize that current views suggest a certain amount of risk-taking in leisure and sport is beneficial for some individuals.

Lyng (1990) suggests that two relatively distinct areas of research have been established in the context of high risk behavior. The personality disposition model has been concerned with investigating personality traits, while the intrinsic motivation model has focused on the factors that draw people to high risk behavior such as a desire for experiencing a thrill or the need for an adrenaline rush.

Along the lines of the personality predisposition model, Kajtna and Tusak (2004) suggest that the majority of studies have used questionnaires to assess personality traits of those who pursue high risk sports to determine if there is a common characteristic such as sensation seeking that typifies such athletes. This has resulted in the development of tools used to measure concepts such as these and other personality traits thought to be related to risk taking behavior. Using inventories such as Zuckerman's Sensation Seeking Scale (SSS-V) (Zuckerman, 1994), Arnette's Inventory of Sensation Seeking (AISS), and other similar scales (Cogan & Brown, 1999), research has been carried out amongst the general population (Zuckerman,

1979; Zuckerman & Kuhlman, 2000) and in sport domains (Chirivella & Martinez, 1994; Cronin, 1991; Freixanet & Gomai, 1991; Robinson, 1985) to ascertain whether there is a trait that leads to risky behavior.

According to Kajtna and Tusak (2004), findings generally support the notion that individuals who participate in high risk sports are high in sensation seeking and also tend to be extroverted. Conversely, while sensation seeking and a related factor known as impulsivity have been shown to be linked to participation in antisocial forms of risk taking (such as drug use and problem gambling), Llewellyn and Sanchez (2007) suggest that this does not appear to be the case in socialized activities such as high risk sport.

Motivation. Researchers in the field of high risk sports suggest that there is a shortage of literature addressing the relevance of individual differences such as motivation and self efficacy (Kajtna & Tusak, 2004; Llewellyn & Sanchez, 2007; Slanger & Rudestam, 1997). Recent studies have been interested in dissecting the nature of the high risk sport experience to determine how motivation influences the tendency to engage in the activity. Lipscombe (1999) used a qualitative approach to examine the motivational role that peak experience played

for skydivers. Findings from Lipscombe's study confirm that the peak experience was the most important reason for continued participation. Creyer et al. (2003) used surveys of mountain bikers to explore the factors linked to participation and continued skill acquisition. Findings from this study reveal that risk was a positive and therefore motivating component of the experience.

Using experience sampling methods whereby participants report their subjective feelings periodically during an event, six mountaineers were monitored during a Himalayan expedition to investigate the quality of their experience and the participants' risk perception at different times (Delle Fave, Bassi, & Massimini, 2003). The study reveals that the mountaineers experienced flow states periodically during their climb. These positive emotions were reportedly motivating factors to partake in the riskier sections of the ascent. The authors point out the difference of focusing on the challenges and opportunities experienced by the mountaineers rather than the risks involved with the activity.

Slanger and Rudenstam (1997), unsure about the role of sensation seeking as an underlying predictor of participation in high risk sport, conducted a study of athletes from four different sports (rock climbing,

kayaking, skiing, small plane piloting) and rated the athletes into one of three groups (extreme, high, and moderate risk). The goal of the study, to ascertain the role of self-efficacy in relation to levels of risk taking, included the use of instruments to measure sensation seeking, physical self-efficacy, general self-efficacy, repression/sensitization, and death anxiety. Qualitative methods in the form of structured interviews were used to complement the quantitative data. Comparisons of the results from the three groups demonstrate that self-efficacy was the strongest predictor of a person's likelihood to take risks. In other words, when individuals felt confident in their abilities, they were able to focus all their energy on the task at hand as opposed to being distracted by thoughts concerning the potential negative outcomes. Data from the interviews reveal that 68% of the high risk respondents viewed the danger involved as a "calculated risk". Additional findings suggest that taking risk in one area of individuals' lives did not correlate with risk taking in all aspects of their lives.

Llewellyn and Sanchez (2007) undertook a study to critique the view that risk taking populations are homogeneous and to explore the role of individual differences such as self-efficacy on high risk behavior.

One hundred and sixteen rock climbers from Britain were recruited and assessed using the Impulsiveness Sensation Seeking Scale (Zuckerman 1994) and Slinger and Rudestam's Physical Self-Efficacy Scale (1997). These measures were compared to the frequency and difficulty of the climbs the participants typically engaged in (solo frequency, leading frequency, and difficulty) as well as demographic information such as age and sex. Significant results indicate that higher levels of self-efficacy and being male were strong predictors of the likelihood of taking risk. The hypothesis that older climbers would take less risks as compared to their younger peers was not evident, nor were high scores on impulsivity or sensation seeking precursors to risk taking. The authors also conclude that rock climbers do not constitute a homogenous group.

Sociological Perspectives

Stranger (1999), citing Elias (1986, p. 26) exemplifies the importance of the social perspective: "Studies of sport which are not studies of society are studies out of context" (p. 266). Fortunately several research studies have addressed the social factors that contribute to the ever-growing interest in high risk sport and leisure.

Stranger (1999) used various observation methods such as participant observer, survey research, interviews, and semiotics to explore the embodied experiences of individuals from the Australian surfing culture. Findings from the study suggest that one of the most significant appeals for the surfers was the thrill attained while pursuing increasingly higher levels of difficulty as their skill levels increased. According to Stranger, "Typically, surfers do not *consciously* strive to increase the level of risk—it is simply a by-product of chasing the most intense thrills" (p. 268). Other lines of thought pursued in this study involve ruminations on the role of high risk activities in triggering flow states and transcendent experiences. The irony of the ever increasing popularity of high risk activities despite the efforts of postmodernity to create a safer society is discussed, as is the significance of the aesthetic experience.

Using a sociocultural approach informed by a marketing-consumer perspective, Celsi and Rose (1993) used ethnographic methods to study individuals from the skydiving culture. Specifically, their goal was to "explore the context and phenomenology of the high risk experience, and to examine the dynamics of motivation, risk, and benefits attained through participation" (p. 2).

This framework was used to consider similar domains such as rock climbing and BASE jumping (parachuting off fixed objects such as Buildings, Antenna, Spans such as bridges, and Earth such as cliffs).

Central to Celsi and Rose's (1993) standpoint is the interaction of three environmental variables that combine to create a society that is conducive to risk taking. The first element is the mass media, which is responsible for an explosion of information exchange and therefore a more homogenous Western identity. The second factor is social specialization, which has had the effect of removing the sense of satisfaction individuals would feel if they were more integral to the fruit of their labor. In other words, it refers to the tendency for people in post industrial society to feel disenfranchised. The final variable is the role that technology plays in the creation and evolution of the much improved and safer equipment that is used in many high risk sports.

The following conclusions emerge from Celsi and Rose's study (1993): "Motives, initially normative and externally derived, evolve to motives of efficacy, identity formation and transcendent experience. A related pattern of risk acculturation coincides which results in the normalization

of the initially frightening behavior. The high-risk identity results from these dynamics" (p. 21).

Research conducted by Lyng (1990) utilized a social psychological perspective to examine the phenomenon of high risk sport. One reason the author undertook the research was to explore "The contradiction in American society between the public agenda to reduce the risk of injury and death and the private agenda to increase such risks" (p. 852). Lyng was also interested in why risk taking is integral to the well being of some individuals. It was also deemed important to move beyond reductionist models of motives and personality to consider an individual's perception of his/her environment.

Lyng (1990) offers the concept of edgework to describe "the problem of negotiating the boundary between chaos and order" (p. 855), which he believes is central to a comprehensive understanding of why people engage in high risk sport. Adopted from the journalist Hunter S. Thompson, and initially applied in the context of sky diving culture (Lyng & Snow, 1986), the concept of edgework has been shown to apply to a variety of domains. According to Lyng (1990), only activities that have "a clearly observable threat to one's physical or mental well being or one's sense of an ordered existence" can constitute an

edgework activity. Lyng (1990) also suggests that a defining characteristic of edgework is the use of technology to push performance limits, something that is common place in many of today's high risk activities. As stated by Lyng (1990), "Individuals must sometimes push themselves to the outer limits of human performance in order to reach the performance limits of the technology under their control" (p. 858).

Lyng (1990) also refers to specific performance capacities that allow edgeworkers to stay in control of themselves and their equipment in highly chaotic and seemingly impossible situations. Specifically, it is having "the ability to avoid being paralyzed by fear and the capacity to focus one's attention and actions on what is most crucial for survival" (p. 859). Lyng suggests that edgeworkers perceive this quality as an innate survival instinct and a special form of mental toughness.

In describing the sensations experienced in edgework activities, Lyng (1990) describes feelings of self-determination, self-realization, or self-actualization, where "individuals experience themselves as instinctively acting entities, which leaves them a purified and magnified sense of self" (p. 860). The concept of edgework dispels the notion that risk-takers are irresponsible and careless

in their actions. Rather, edgeworkers work tirelessly to ensure there is a great deal of safety and control in their environment. Although these activities may appear impulsive in nature, they are in fact highly controlled and rule bound. As Lyng suggests, "What they seek is the chance to exercise skill in negotiating a challenge rather than turn their fate over to the roll of the dice" (p. 863).

Public debates. Although participation and interest is growing rapidly in high risk and extreme sports, these activities are not above scrutiny and criticism from the general public. While not a specific interest of the current study, it is important to realize that high-risk sports do have their detractors. In the sport of ocean racing, several situations have arisen that required the mobilization of search and rescue teams in order to save individuals whose lives were in danger (Lundy, 1999). Detractors point to the millions of dollars of taxpayers' money that is spent, not to mention the risk to rescuers' lives. For example, why, they ask, should the Australian Coast Guard use its resources to rescue a sailor from a foreign country whose life becomes endangered in its jurisdiction? Debate continues as to whether the benefits of extreme sport outweigh the danger to the participants

and the impact on taxpayers who pay the price for rescue operations (Celsi & Rose, 1993; Olivier, 2006).

Only one relevant article was found addressing the psychophysiological aspects of performance in extreme environments. A recent review article addressing the impact of extreme environments (cold, heat, altitude) on mood responses suggest that changes in environmental conditions are more likely to have an impact initially on the psychological functioning as opposed to the physiological state of performers (Lane, Terry, Stevens, Barney, & Dinsdale, 2004). Upon reflecting on the literature, Lane et al. (2004) suggested that moods can be drastically altered by training and competing in adverse conditions. They believe that there are personality types that are more adversely affected than others, that prior experience with the conditions can compensate for the negative impact, and that strategies targeting the effects of environmental conditions can help minimize the performance deficits.

The review also suggests that changes in mood are transactional (Lane et al., 2004). For example, if a sailor becomes disheartened due to seasickness, this may reduce self-efficacy, thereby reducing commitment to the task at hand. In other words, low effort can lead to low

performance, which in turn leads to unproductive moods. In order to gain a better understanding of the impact of environmental conditions on performance, the authors developed an interactional model, which recognizes the interplay of environmental factors, personal factors, and situational factors as they relate to mood responses and ultimately performance. In summary, the authors state that "a cogent body of knowledge on mood responses in adverse environments among athletes does not exist" (p. 886), yet it is unclear whether the authors are interested in situations where athletes find themselves in truly extreme conditions. They ascertain that "it is important to note that competition rarely takes place in truly adverse conditions, but tends to take place in conditions on the periphery of extreme environments" (p. 887).

Applied Sport Psychology

For 25 years or more, sport psychology researchers and practitioners have been focused on gaining an appreciation and understanding of the roles that emotion and cognition play in the production of skilled performance (Hays & Brown, 2003; Murphy, 2005). Major areas of focus have included investigating the characteristics of highly successful performers (Starkes & Ericsson, 2003), the processes and mental skills underlying these performances

(Gould, Dieffenbach, & Moffett, 2002), and the ways in which mental skills can be taught and/or enhanced (Halliwell, 1989; Moffat, 2003).

Although applied sport psychology has recently become accepted into the regimes of mainstream elite athletics, there are few instances of applied sport psychology involvement in high risk or extreme sport. One of these few examples is a study investigating the use of mental skills by high altitude mountain climbers (Burke & Orlick, 2003). Ten climbers who had completed at least one ascent of Mount Everest participated in this qualitative study. Participants were asked about the mental skills used in relation to the preparation, ascent, and descent of the mountain. Themes which emerged regarding mental skills used during the climb were compared to mental skills used by elite athletes from conventional sports. For the preparation phase, the climbers reported using in-depth planning, visualization, and strategies for developing mental strength. The ascent phase was characterized by mental toughness, focusing, short-term goal setting, trusting in the support team, and drawing on experiences of past climbs. The descent phase included mental strategies similar to the preparation and ascent phases. Seven of the ten participants reported feelings of empowerment in their

day-to-day lives as a result of successfully accomplishing the climb.

The findings from Burke and Orlick's (2003) study confirm the notion that the proper mental focus and mindset are critical for successful campaigns in extreme conditions. According to the authors, the findings lend support for Orlick's Wheel of Excellence. This model consists of the following seven components: commitment, belief, positive imagery, mental readiness, full focus, distraction control, and on-going learning. These mental strategies were found to be consistent with those used by astronauts and elite surgeons.

Mental Skills for Extreme Sport

According to the definition adopted for this study, one of the critical components for a sport to be considered extreme is the requirement of mental strength and stamina. Within the field of sport psychology, mental toughness, resilience, and hardiness are probably the most relevant. As the VOR involves teams of sailors, group dynamics and cohesion would appear to be highly relevant.

Mental toughness. As cited by Goulby and Sheard (2004), Leohr believes mental toughness consists of the following attributes: (a) high self confidence, (b) the ability to control negative energy, (c) high levels of

attentional control, (d) imagery control, (e) perseverance, (f) feelings of passion, and (g) an unyielding competitive drive.

In an attempt to provide a clearer notion of the concept of mental toughness, an investigation using focus groups and individual interviews with internationally accomplished athletes was undertaken by Jones, Hanton, and Connaughton (2002). Results of their study resulted in the following broad definition:

Mental toughness is having the natural or developed psychological edge that enables you to generally cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer. Specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure. (p. 209)

Several specific characteristics of mentally tough performers emerged from the study, each of which was ranked in relative importance (Jones, Hanton, & Connaughton, 2002). Upon close scrutiny, several of these characteristics would seem to have particular application for ocean racing. For example, the second ranked attribute was "bouncing back from performance set-backs as a result of increased determination to succeed" (p. 210). This theme involved "a combination of behavioral persistence, resilience, and enhanced motivation" (p. 210) that helped

the performer accept the inevitability of performance setbacks. In relation to the concept of rebounding from failure, participants were quoted as saying "yeah, we all have them [setbacks], the mentally tough performer doesn't let them affect him, he uses them" (p. 210), and "missing a two-footer is difficult to get over, but you have to come back, and stronger" (p. 210). The sixth ranked attribute was "regaining psychological control following unexpected, uncontrollable events (competition specific)" (p. 211). Another participant in the study was quoted as saying "it's definitely about not getting unsettled by things you didn't expect or can't control" (p. 212).

Hardiness. Long recognized as a key component of resilience by researchers such as Maddi and Koshaba (2005), the concepts of hardiness and mental toughness were investigated in a joint manner to determine their relation to performance in rugby athletes (Goulby & Sheard, 2004). Leohr's Psychological Performance Inventory was used for measuring mental toughness, while hardiness was assessed using Maddi and Khoshaba's Personal Views Survey (PVSIII-R). The three subscales assessed with the hardiness instrument were commitment, control, and challenge. The higher skilled players in the study scored significantly higher in all three of the hardiness subscales, but not

consistently higher in the mental toughness categories. These findings led the researchers to call for further research into the role of hardiness and also to suggest that sport psychologists should consider interventions consisting of hardiness development.

Resilience. A study undertaken to examine the concept of resiliency was completed by Schinke and Jerome (2002) involving an intervention aimed at enhancing the resiliency of elite athletes. Schinke and Jerome suggest that by closely examining the post-performance attributions of athletes, predictions can be made regarding their future success or lack thereof. The intervention was based on three optimism skills—which were introduced as a subset of the larger resiliency training program—stability, locus of control, and pervasiveness. The likelihood of an athlete to respond with resilience was assessed using the Attribution Style Questionnaire. The three steps used in the resiliency training were the assessment of personal assumptions, disputing strategies, and de-catastrophizing.

Teamwork. There are many definitions of what constitutes a team. From a business perspective, “a team is a system . . . whose parts interrelate and whose members share a common goal” (Syer & Connolly, 1996, p. 7). The importance of effective teamwork for successful sailing

performances is similar to that of other sports, as explained by three-time America's Cup winner and Olympic Sailing Gold Medalist Russell Coutts:

The '92 (America's) Cup was where I learned the most. I took a lot of lessons about how to structure a team a little differently and what to put emphasis on. In '92 we had some excellent people involved and when you looked at the team I believe it was a team probably capable of winning, but for whatever reason it didn't really perform and didn't make the right decisions at the critical moments. That was probably the biggest lesson—it was all very well to have a good group of people but somehow you need to form them into a group that makes good decisions and works together. (Coutts, 2002, p. 3)

Group dynamics. Carron and Hausenblas (1998) describe group dynamics as “an umbrella like term that sport psychologists use to describe a host of group factors they regard as being critical in determining the fate of teams and their performance” (p. vii). In a chapter addressing the issue of group size on overall team performance and productivity, Carron and Hausenblas discuss several influential factors on the quality of group dynamics such as leadership, communication, adherence, and cohesion.

In a study described as phenomenological in nature, researchers endeavored to elicit definitions of team norms from the athlete's perspective (Munroe, Estabrooks, Dennis, & Carron, 1999). A number of athletes (87 males and 53 females) ranging in age from 14-25, from high school to

national levels of competition, were interviewed. Norms were defined as "generalized expectancies of team members regarding behaviors that should or should not be performed" (p. 175). One of the major themes emerging was related to productivity in competition, practice, and during the off-season. Findings from this study suggest a difference between cultural values such as cheating and team norms such as productivity.

Sports Science and Sports Medicine in Sailing
Olympic Classes

The majority of research within the realm of sports science has been conducted with Olympic class sailors, addressing physiological demands (Blackburn, 1994), biomechanics (Mackie, Sanders, & Legg, 1999; Shephard, 1997), prevalence of injury (Allen & DeJong, 2006), and tactical and strategical knowledge (Araújo & Rocha, 2000; Guthrie, 1998).

A study investigating the mental profiles of 12 successful Olympic class sailors from New Zealand was undertaken using structured interviews (Legg, Mackie, & Park, 2005). Results indicate that high levels of encouragement in their sailing careers was critical. Having an extremely high level of commitment to their goals was a common theme, as was the ability to remain open and

flexible in the face of competition stressors. Learning from mistakes and implementing effective plans for performance deficits was important, as was meticulous preparation.

Describing experiences as a sport psychologist with the Canadian Sailing Team at the 1988 Olympic Games, Halliwell's (1989) work represents one example of research in the psychological domain. This study provided little sport specific knowledge regarding the mental skills involved with sailing, instead focusing on describing general stressors that would be common to any Olympic sport (refocusing, distraction plans, etc).

Ocean Racing

A recent article written for a human resources and business audience examined the leadership styles of skippers in the BT Global Challenge Round-the-World Yacht Race 2000/01 (Dulewicz et al., 2002). This particular race is sailed by teams of 17 sailors, with each team sailing one of 12 identical boats. The significance of the identical boats is that it effectively isolates the variables of teamwork and effective leadership as primary predictors of performance. The study consisted of a quantitative phase collecting self-report data to assess emotional intelligence, competencies, and personalities,

and a qualitative phase using interviews to explore "the characteristics needed for leadership in a complex environment" (p. 13). Among the findings it was revealed that:

The more successful skippers tended to be more emotionally intelligent and, in particular, had higher interpersonal sensitivity than those who brought up the rear. In terms of personality, they had better emotional adjustment and a lower need for affiliation (social contact) (Dulewicz et al., 2002, p. 34).

From the qualitative analysis of over 550 interviews with skippers and crew over the course of the race, the authors suggest that "The winning skippers appeared to need self-confidence, self-belief, a strong set of values and an ability to cope with their emotions" (Dulewicz et al., p. 36), while a successful skipper stated, "It takes more than management to get the full commitment of the team" (Dulewicz et al., p. 36).

Documentary style books chronicling experiences of sailors competing in the most high profile races provides an excellent resource about the demands and insights of ocean racing. The majority of these works have been written due to weather related catastrophes that befell boats and claimed the lives of competitors (Knecht, 2001; Lundy, 1999; Mundle, 2000; Zimmerman, 2002).

Non-academic Sources

Examples of the application of mental skills in competitive sailing are available from non-academic sources such as newsletters (Guthrie & Wharton, 2006), magazines (Dagley, 2003) and books (Beggs, Derbyshire, & Whitmore, 1993; Perry, 2000). Noted sailor and author Dr. Stuart Walker addressed the psychology of competition from a psychodynamic perspective (Walker, 1980), while an industrial/organizational overview of the highly successful New Zealand 1992 America's Cup campaign focused on various aspects of team development (Mazany, 1995). A relatively in-depth psychological approach to ocean sailing was provided in the early 1980s, outlining various topics such as perceptual and attentional demands, seasickness, social interactions on boats, and motivational factors of the ocean-going individuals (Stadler, 1987).

Summary

While there is substantial research and support for sport psychology interventions in mainstream sport, studies examining the psychological demands of extreme sports are scarce despite the increased popularity of extreme sports.

Ocean racing is an extreme sport with a high element of physical risk. It is a demanding activity, requiring strong decision-making abilities, well developed mental

skills and emotional control, and advanced technical skills, in addition to physical strength and endurance. Although a significant amount of time and money continues to be devoted to developing and applying new technologies for the maximization of boats and equipment performance, sports science appears to have received limited attention particularly within the domain of ocean racing (Brovender, 2006).

CHAPTER 3

METHODOLOGY

The purpose of this study was to investigate the experiences of professional ocean racing sailors who competed in a fully crewed, around-the-world sailboat competition, known as the 2005/06 Volvo Ocean Race (VOR). This chapter is presented in the following sections: (a) research design, (b) participants, (c) procedures, (d) trustworthiness and validity, and (e) data analysis.

Research Design

This study used qualitative methods to gain an understanding of the experiences of 15 of the approximately 70 participants who competed in the 2005/06 VOR. Several sport psychology researchers have articulated the usefulness of qualitative methods as a means of capturing the richness and complexity that embodies the sport experience (Cote, Salmela, Baria, & Russell, 1993; Kerry & Armour, 2000; Sparkes, 1998; Streaan, 1998). Also known as an interpretivist approach, qualitative methods put an emphasis on the discovery of deep contextual meaning, which is seen as necessary to gain an understanding of the lived

experiences of participants (Glesne, 1999). As suggested by Maxwell (as cited by Sparkes, 1998; Stetler, Sparkes, & Hunger, 2003) qualitative methods are particularly appropriate for gaining an understanding of a) the meaning for the participants in a study, b) the context in which the experience takes place, c) the spontaneity and novel situations that arise in the sport environment, d) the processes that are occurring as the events are transpiring, and e) developing causal explanations.

Because all the sailors competed in the same event (sailing roughly the same route), their experiences were similar. However, it was not unusual for boats within several miles of each other to be experiencing dramatic differences in terms of weather, wave patterns, and currents. The use of qualitative methods allowed the researcher to capture and embrace this richness (Glesne, 1999).

Participants

The individuals who competed in the 2005/06 VOR were financially compensated for their services by the teams' corporate sponsors, and as such were considered to be professional sailors. As is the case in the world of professional sailing, the crews in the VOR are multinational and do not reflect the nationality of the

company sponsoring the teams. As a result of the diversity within the crews, the sailors interviewed were representative of nine different nationalities.

In order to be eligible to participate in this study, the sailors must have completed at least six of the eight legs of the overall race. As the lone female sailor did not complete the requisite number of legs to be eligible for this study, all the research participants were male. Similarly, as all the competitors were Caucasian, no non-Caucasian participants were available to be selected. The participants ranged in age from 23 to 50 years. Because the researcher was only fluent in the English language, participants who did not have a conversational level of English were not eligible to participate in the study. Fortunately, all of the participants contacted had good use of the English language.

Procedures

Sampling

A purposive sample was used to recruit 15 of the 70 sailors who competed in the 2005/06 VOR. Participants were recruited with the help of three professional sailors who were well known to the researcher. In some instances, introductions were provided in person, and in other cases email addresses and cell phone numbers were provided of

individuals deemed to be open to participate in the study. In four instances, snowballing sampling was used as a means of gaining access to other participants.

Instrumentation

Using the “researcher as instrument” (Glesne, 1999), a semi-structured open-ended interview format was used for the data collection (Patton, 1990b). An interview guide (Appendix A) was established with the input from an expert panel (Appendix B) and from insights gained by a pilot interview with one of the members of the expert panel. This individual has been a professional sailor for more than 15 years and competed in each leg of the 2001/02 VOR. Over the years he has competed in and had podium finishes in almost every major ocean-racing event. The pilot interview lasted approximately 90 minutes and was recorded on a Macbook laptop computer using Audacity shareware. In addition to the questions from the interview guide, the researcher used probing techniques such as “can you tell me more” or “can you explain further” to elicit more in-depth responses.

Access

As previously indicated, individuals were contacted through a network of professional sailors known to the researcher through his own sailing endeavors. The first

three interviews took place in Miami Beach, FL, during March of 2007 where an international multi-class regatta was taking place. Because the researcher was also taking part in the regatta (in a different class of sailboat), participants were interviewed after racing for the day had finished.

The second interview site was in Valencia, Spain, at the America's Cup Marina. This venue was selected because several of the sailors who had competed in the VOR were living in Valencia and working for America's Cup teams. The researcher was able to visit Valencia for eight days while enroute to the Spanish island of Palma to work as a sport psychology consultant with the Canadian Sailing Team. Before arriving in Valencia, the researcher contacted one of the professional sailors previously known to him who was living in Valencia and competing on one of the America's Cup teams. This person provided several potential contacts and introductions for the researcher. Upon arriving in Valencia, the researcher purchased a cell phone, SIMM card, and several hundred minutes of local cell phone time in order to communicate with the potential participants. In this way, the researcher was able to carry out five interviews; three were with individual sailors, one was with two sailors, and one focus group with five sailors.

Three of the interviews took place in the lounge areas of America's Cup compounds; two took place in a bar/café located in close proximity to the marina.

The final stage of the data collection occurred via telephone. Participants were contacted via email to initiate contact and determine their suitability and willingness to participate in the study. This was followed by an email with a description of the study and an explanation of the 60-90 minute time commitment required to participate in the interview. If the individual was willing to participate, another email was sent to arrange a time for the phone interview.

Data collection

Data were collected through single session interviews conducted face-to-face and via telephone. The researcher conducted all interviews, which lasted between 35 and 65 minutes. All interviews were recorded with a digital voice recorder (Olympus WS-100). For the telephone interviews, a handset-recording device was used in conjunction with the digital voice recorder. All audio files and electronic and printed copies of the transcripts are presently stored in a locked cabinet in the home office of the researcher. All data will be destroyed five years after the completion of the study.

Informed consent. Before starting the face-to-face interviews, participants were required to sign a consent form indicating their understanding of and willingness to participate in the study (Appendix C). Before beginning the telephone interviews, participants were required to provide non-written consent where each participant was read a statement by the researcher describing the objectives of the study and outlining how the interview was conducted (Appendix D). The participants were informed that their choice to participate in the interview constituted their consent to take part in the study.

Confidentiality. Due to the small number of sailors involved in the race and the uniqueness of this particular race, it is difficult to protect the anonymity of the participants (for example, only one boat sank during the race). However, all efforts have been made to ensure the anonymity of the sailors through the use of pseudonyms and by disguising aspects of the race that could identify people.

Trustworthiness and Validity

According to Guba and Lincoln (as cited by Koch, 1994), a study is deemed credible when the description of the research process is documented in a faithful manner in such a way that readers can easily follow the manner in

which each theme was derived from the descriptions. Similarly, Giorgi (as cited by Pollio, Henley, & Thompson, 1997), believes validity refers to "whether a reader, adopting the same viewpoint as articulated by the researcher, can also see what the researcher saw, whether or not he agrees with it" (p. 53). In order to address the concern expressed by Sparkes (1998) regarding the social construction of validity, a detailed account of both the experiences of the researcher and the research process has been documented within the methodology section.

Bracketing

Dale (2000) believes that "the bracketing process in phenomenological research does not involve a total absence of presuppositions, but a consciousness of presuppositions" (p. 22). Pollio et al. (1997) believe that in this way, the researcher's preconceived notions about the phenomenon under investigation are allowed to surface. For the purpose of this study, the bracketing process consisted of a bias statement and a discussion about personal context.

Bias statement. According to phenomenological researchers Pollio et al. (1997), bracketing involves rigorous reflection and description of the researcher's biases in relation to a particular study; in this way, the researcher's preconceived notions about the phenomenon

under investigation can be revealed. What follows is a first person account of the researcher's bias statement:

I am a 40-year-old white male of European descent who was born in the mid-western United States. Shortly after my 10th birthday, my family immigrated to the Canadian maritime province known as Nova Scotia. I am currently in the fifth year of a PhD in Kinesiology at Temple University, residing with my wife and baby daughter in a small village approximately 15 miles outside the provincial capital city of Halifax. I am employed by the Canadian Sport Centre-Atlantic to provide sport psychology services to the Canadian Olympic and Paralympic Sailing Teams. I also spend 50-60 days a year working as a professional sailor in the Etchell and International One Design fleets.

I think that sailing must be in my blood, because I started close to 30 years ago on Lake St. Clair, a small lake situated between two of the Great Lakes in the mid-western United States. My father had been going to sea as a merchant seaman since he was in his mid-teens and had recently taken up sailboat racing as a leisure pursuit. As a boy of only seven years old, I remember tagging along on every sailing trip I could.

My early years were spent exploring the coastline and racing sailboats along the shores of the Canadian Maritime

Provinces and New England. While most youngsters were taking sailing lessons in small boats in protected harbors, I was competing with my father and his friends in overnight races in the foggy and stormy North Atlantic. Before I reached my 16th birthday, I had experienced my fair share of seasickness.

Since then I have experienced sailing in almost every context. Racing small dinghies, cruising with my family as a young boy, competing in long distance sailing events, campaigning Olympic class boats, coaching Paralympic competitors, racing professionally with some of the wealthiest people in society, restoring and sailing classic wooden boats, serving as expedition leader in experiential education programs with teenagers, and presently working as sport psychology consultant with the Canadian Sailing Team are all examples of what I mean when I say that I have been immersed in the world of sailing.

Sailing is also a common thread in the fabric of my family. My younger brother is a professional sailing coach; his wife is a former Olympic class sailor from Canada. My wife has a commercial and tall ship sailing background. My wife and I live on the water in a small former fishing harbor that is just a stone's throw away from the open ocean. Upon reflecting on my personal

history, it seems only natural that my dissertation interests should be focused on the sport of ocean racing.

Stranger (1999), citing Rock (1979), suggests that a researcher "is best able to chart those areas in which he or she is already an accredited member" (p. 266). During my interviews I struggled with whether this notion is accurate.

I looked forward to interviewing these sailors, while at the same time I found myself somewhat intimidated. When and if the participants learned that I had a sailing background, was it likely to improve the level of communication? I also wondered if there could be other dynamics that would arise as the participants formed their opinions of who I was? How much would I disclose about my sailing experience in order to prove myself as not being a total outsider? Did I want to come across as an accomplished sailor, or as a researcher with a sailing background? I even contemplated what kind of attire to wear, in the end deciding against any clothing embroidered with sailing related material, opting for a more casual mode of board shorts, flip flops, etc. When friends from the sailing community discover that I am conducting research with VOR sailors, they often ask me if I would be interested in competing in the race. Being a humble

person, I am often taken aback by such statements; I generally don't perceive myself to be a sailor at that level of proficiency. However, I do believe that the limited time I have spent as a professional sailor allowed me to understand how to approach the sailors and how to interact with them.

Personal context. I find it serendipitous that I have several personal connections with the VOR. A close friend I have known for more than 20 years competed in the 2001/02 VOR. I have had numerous occasions to ask him about his experiences and his candid accounts are what compelled me to focus on this race. Several of the competitors in the 2005/06 VOR are sailors whom he knows well from the 2001/02 race, therefore providing me with access to potential participants.

The 2005/06 VOR was convenient for me from other perspectives. As the race was taking place I was able to follow the event and familiarize myself with the teams and observe how the race played out. I traveled from Halifax to Baltimore to spend three days in April of 2005 to attend one of the North American stopovers. This was a critical point for me as it provided an opportunity to familiarize myself with not only the boats, but also the atmosphere created by the race. Another long-time acquaintance was

crewing on one of the boats during the inshore races and was able to provide some key introductions. He also gave me a guided tour of the boat that was the eventual race winner. Although I did not have a chance to go sailing on one of the boats, I believe the visit to Baltimore brought me much closer to imagining what it might be like to participate in the VOR.

My immersion into the VOR was enhanced further by frequent viewings of an 11 disc set of DVDs (860 minutes) obtained from the VOR race organizers. A book documentary of the race also served as an excellent source of further information (Mundle, 2006). One of the coaches I worked with on the Canadian Sailing Team had also been a coach for one of the VOR teams. We had many discussions while bobbing around in coach boats, or while having a few beers on occasion. These off-the-record discussions were invaluable to gain an understanding of the VOR.

Further understanding of high risk environments was gained by reading books by noted authors of ocean racing (Knecht, 2001; Mundle, 2000, 2002) and mountain climbing (Bonnington, 2000; Krakauer, 1990, 1996) among others (Stark, 2001). Another useful exercise was interviewing a close personal friend about a recent harrowing ice-climbing experience he had in the Rockies.

I was feeling nervous before and after the first set of interviews in Miami Beach. It was strange being at a regatta site and not being one of the competitors. I felt like an outsider when I arrived at the regatta site and while I waited for the sailors to come ashore after the day's racing. This was a much different feeling than if I were one of the competitors or perhaps working as a sport psychology consultant. Although I am paid for the sailing that I do, it is not the primary means by which I make my living. And although I have competed with teams at this level, I have not done so for a number of years.

I returned each day for three days until all three initial interviews were completed. After each interview, I played back each audio file to be certain that the quality of the recording was good and to reflect on the information that was being collected. I also took time to make field notes about my feelings after the interviews. After the first set of interviews, I was worried about "going native." I was conflicted about wanting to come across as a naïve researcher so that certain observations would not go unnoticed and/or taken for granted. On the other hand, having status as a competitive sailor is how I was able to gain access. I wanted to make a good first impression, yet

at the same time I was worried about looking like a complete amateur.

The interviews in Valencia were more relaxed, for several reasons. The interviews occurred after the work day had finished for the sailors. Because the teams were not in a competitive phase of the America's Cup, all the sailors seemed fairly relaxed. The proximity of the America's Cup team compounds and various cafés provided quiet places where the interviews could take place. I also found myself less distracted because I was in Valencia for the sole purpose to conduct the interviews, as opposed to being in Miami, where I was also competing during the day-time. Two of the interviews took place with more than one participant, which may have helped them and myself feel more relaxed.

Methodological Log

As suggested by Dale (2000) a methodological log, or what Sparkes (1998) refers to as a reflexive journal, was maintained throughout the course of preparing the study through to the final analysis and finished manuscript. This logbook includes a variety of the researcher's thoughts, reflections, questions, biases, doubts and apprehensions, decisions, reasoning, and actions. Entries were made in the log beginning with the writing of the

proposal and continued until the final manuscript was completed. All email correspondence between the researchers and the participants has been filed. Koch (1994) refers to this type of record keeping as "building the decision trail" (p. 976), believing that it is critical in establishing rigor and trustworthiness.

Hermeneutic Circle

In the process of analyzing the data, a researcher often works with a smaller segment of the whole interview. A hermeneutic circle procedure ensures that the researcher maintains perspective with the data by relating the pieces back to the whole of the interview. Pollio et al. (1997) liken this process to the task of reading a book, where the text is read, comprehended, and then finally understood to the extent that one can explain in simple terms what has been read. This process was followed during the coding procedure; any concept or phrase coded within a particular train of thought was not removed from the overall context. While somewhat repetitious, this process ensured that the context was not lost in the process of breaking the transcripts down into more manageable pieces of information.

Member checks

Dale (2000) believes that the ultimate test of the validity of an interpretation is to ask participants to review and provide feedback on the transcripts of their interviews. Guba and Lincoln (1985) refer to this process as member checking. After the transcripts were deemed to be accurately transcribed, they were returned to the participants via email attachment. Participants were asked to review the transcripts to ensure the accurate portrayal of their experiences, and also to ensure that any information deemed confidential was excluded. Unfortunately, none of the transcripts were returned to the researcher. In some instances the email addresses were no longer in operation.

Triangular Consensus

According to Guba (1981), triangular consensus refers to having more than one researcher engaged in the coding process at any one time. A Canadian Level IV certified sailing coach was enlisted to help in the coding process. This individual has a good understanding about offshore sailing, having delivered large race boats across the North Atlantic and North Pacific oceans. Although this person did not review every transcript and coding document, several hours were devoted to reviewing segments of the

coding that the researcher was somewhat uncertain about. Once the analysis was completed, a document with the findings was emailed to four different individuals for feedback. One individual was the person used for the pilot interview, another was a sport medicine physician familiar with the race, the third person was a former Olympic class sailor, and the fourth person was a current Olympic class coach with offshore sailing experience.

External Audit

In order to further bolster the validity of qualitative research, researchers suggest soliciting feedback from and interaction with researchers not immediately familiar with the research area (Glesne, 1999; Guba, 1981). For the purposes of this study, a graduate student in Health Promotion provided feedback for the auditing process. This person was knowledgeable about boats and the ocean, but not competitive sailing. This individual was asked to review sections of transcripts in order to evaluate the appropriateness of the coding categories and coding process. An individual with a PhD in exercise and sport psychology was asked to provide feedback on a sample of the transcripts and the final analysis; this person had little to no sailing experience.

Data Analysis

Before beginning the interview transcriptions, each participant was assigned a pseudonym in order to protect their anonymity. The researcher transcribed three of the interviews verbatim. However, the researcher has had past incidences of hand and wrist pain due to excessive amounts of keyboard use. As a result, the remaining interviews were transcribed verbatim through the paid services of individuals external to the study. After receiving each transcript, the researcher re-played the interviews while reviewing the transcripts to check for any misunderstandings related to jargon, and also to decipher parts of the tapes that were inaudible.

Open Coding Procedure

The data were analyzed inductively, meaning that the themes and patterns emerged during the various stages of coding and analysis (Patton, 1990a). As suggested by Glesne (1999), a document known as the *coding key* was developed during the course of the open coding process. Each coding category was assigned a short abbreviation known as a *tag*, which was placed next to the corresponding concept, phrase or sentence in the transcript. The initial coding key was revised and updated as more codes were created and others were grouped together.

The coding key had six columns that were meant to enhance the reliability of the coding process (Appendix E). The first column was called Tag and included the shorthand representation for the tag (e.g., ADV). The second column, code, contained the full name of the code (e.g., adversity), the third column contained the definition of the code (e.g., great difficulty), the fourth column included any sub types for each code (e.g., gear failure), and the fifth column contained one or two quotes from the transcripts that were representative of the code. The final column was used to record where other similarly coded phrases could be located. For example, a quote from Participant 1, lines 45-52 of the transcript was entered as P1:45-52.

The initial open coding procedure identified 40 codes. Five drafts of the coding key were developed before arriving at the final version. This was accomplished after approximately 10 transcripts were coded, indicating a saturation point had been reached.

The final stage in preparing the data for analysis involved transferring all similar codes from each participant into a separate document known as a code document. Every phrase or segment of conversation of each individual transcript with the same labels was copied and

pasted into this document (e.g., every segment of each transcript with the tag ADV and the code adversity was copied into a code document known as adversity).

Organizing the data in this manner allowed the researcher to verify that the codes were labeled reliably within and across transcripts. It also aided in the grouping of codes from lower to higher order themes.

CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of this study was to gain insight into the experiences of professional ocean racing sailors who competed in the 2005/06 VOR. The following 14 research questions were posed to narrow the focus of the study:

1. How did the sailors become involved in the race?
2. How did the highly developed and technically evolved boats perform?
3. How did sleep deprivation affect the sailors' abilities to carry out their jobs, make decisions and relate to each other?
4. What were the most dangerous aspects of the race?
5. What aspects of the race were the most fearful, and how did the sailors deal with their fears?
6. How did the sailors balance the need to survive with their competitive drive?
7. What aspects of the race did the sailors find most difficult and most enjoyable?
8. How did the sailors prepare themselves during different times of the race?

9. How were the sailors affected by various overarching issues during the race? Specifically, what was their experience of the following:

a. Significant speed advantages by one of the competitors,

b. Equipment failures,

c. One of the boats sinking during the race,

d. One of the competitors drowning.

10. How did the sailors learn and adapt to various circumstances?

11. How did the sailors communicate their frustrations? To whom did the sailors talk in order to deal with adversity?

12. What mental strategies did the sailors use to cope with the extreme conditions?

13. What were the factors that enticed the sailors to do this race?

14. How did the sailors process their experiences after the race was finished?

The results and discussion are presented in the following sections: (a) Demographics, (b) Themes, and Subthemes, General Dimensions and Subdimensions, (c) Discussion of Research Questions, (d) General Discussion, and (e) Recommendations for Practitioners.

Demographics

Fifteen professional sailors were interviewed for this study between March 10, 2007 and September 15, 2007. Three face-to-face interviews took place after racing at a regatta in Miami Beach, FL, between the dates of March 14-17, 2007. Nine participants were interviewed face to face in Valencia, Spain, between the dates of April 10-15, 2007; one of these interviews took place with two sailors at an America's Cup Team compound, one involved four sailors also at an America's Cup Team compound, and three were conducted individually at a bar/café near the America's Cup Basin. The three remaining interviews were conducted individually via telephone between the dates of September 10-13, 2007.

Similar to the makeup of the professional sailing sub culture (Crawley, 1998), all of the competitors who completed the 2005/06 VOR were Caucasian males. As such, no females or non-Caucasians were interviewed. The participants represented nine different nationalities and ranged in age from 23-49 years. The average age was 35.9 years with a standard deviation of 7.4 years. At least one crew member from each team was interviewed. Each position on the boat was represented in the sample, including five bowmen, two skippers, one navigator, one watch captain, and six driver/trimmers. Nine of the sailors were married

before the race started (three with one child, and six with two children). Only three of the participants had not competed in a VOR prior to the 05/06 race; they were selected as part of a team that consisted exclusively of sailors less than 30 years of age. The other 12 sailors had previous VOR experience; five had completed two races, one had competed in four, one had competed in three, and five had completed only one VOR. The most experienced sailors had accumulated in excess of 500,000 sea miles over the course of 20 years of professional sailing.

Themes and Subthemes, Dimensions and Subdimensions

This section consists of an in-depth examination of each of the nine themes and 28 subthemes that emerged from the data, with supporting quotes from the participants, followed by the three general dimensions and subdimensions that provide the framework for the data. The order of presentation of the data is a reflection of the sequence of events as they occurred during the race (themes and subthemes), and the relationships among the themes. For example, by presenting information about background, followed by the characteristics of the boats, a sense of the demands imposed on the sailors can be better understood. The general dimensions and subdimensions are

presented after the themes and subthemes to demonstrate the relationship among the themes and subthemes irrespective of how the race unfolded.

Theme #1: Background

This theme incorporates information about the sailors' backgrounds and motivations for pursuing the goal of competing in a VOR. When asked about how they became involved with the VOR, most of the sailors spoke about how their earliest sailing experiences laid the groundwork for their passion and desire to compete in ocean racing:

Kevin has been sailing professionally for 20 years and has accumulated in excess of 300,000 miles at sea. He discusses how his birthplace affected his love for ocean racing,

I grew up sailing in a country where you're subject to adverse conditions almost every time you leave the dock, it's quite a rugged coastline we have and there's always good winds, big swells and big waves, and you know even a hundred mile race up and down the coast here can turn into a drama, so I think that's where I get my offshore background from and that's why I probably like offshore sailing as much as I do. Not to say that I don't like inshore sailing as well. I probably like both of them the same but I do like that type of sailing point to point where you're leaving one place and arriving in another, whether it's different countries or different parts of the coastline.

Jack has sailed professionally for approximately 20 years and estimates he has accumulated in excess of 500,000

sea miles. In this excerpt, he describes how his early sailing experiences influenced his decision to become involved in ocean racing:

My first Volvo was in 1985 so it's a long time back, so I started offshore racing when I was about 16-17. Basically I didn't have enough money to race dinghies, and then I got one chance to sail a big boat, and then just from one came the other; I did a long race to New York and then I did a race from Rotterdam to the Azores and back, and then there was a guy who said, "Okay, we're going to do a sponsor with a big company." And he made me a watch captain and that's how I came into it. I was very young, no experience, and it was like "Okay, here we go boys!" (chuckle).

Although Jack made early attempts at a formal training program in the merchant marine, he didn't enjoy the experience:

I did nautical school, but straight away I knew when I did nautical school, even though it was very interesting, just the personalities there just didn't fit me at all, then I got the opportunity for sailing, so I said okay, I'm going to do the round-the-world-race.

David became involved with ocean racing because he was a sail maker and because there was a high profile ocean race in his country every year:

Well in Australia it's a little bit different if you're in the marine industry. For example the Sydney-Hobart Race is a really big deal so as a sail maker, one it's good to be there, but two, for me if I had a good customer I'd only have to do a couple of races before Christmas and do the Sydney-Hobart and he'd be really happy. But it's a huge deal in Australia; actually in the marine industry it's kind of hard not to do it.

For Craig, it was as a young sailor watching a video of one of the early around-the-world-races that precipitated his dream of one day competing in the race:

I grew up sailing on my family's boat, at the yacht club on the lake. I pretty much remember seeing the footage from the Fisher Paykle and Steinlager in the Southern Ocean, I remember seeing that on Wednesday night video night at the yacht club. I was maybe 16, I remember saying to my buddy "That's me right there." And pretty much from then on for the next ten years I was slowly working towards doing the Whitbread, like I chipped away at it, I didn't just flat-out for me at that point it was unattainable, I couldn't see the steps, that was the romantic vision. In some ways I was ready to give up whenever along the way, you know what I mean, I couldn't see enough of the steps to know it was possible, but I was hooked on it enough to get headed that way, I remember specifically thinking, "That looks really cold but really fun, icebergs and shit." So then I started working towards it and I thought, "Okay, I gotta go down and learn how to sail big boats." So I moved to California, just picked up two duffle bags and a mountain bike and moved to Huntington Beach and started sailing offshore.

Darren's experience was similar to Craig's. A videotape of one of the early around-the-world races was the catalyst for his dream of wanting to one day do this type of race. Although he was older than Craig when he watched the video, he had similar recollections about realizing his dream to compete in the VOR:

I was doing my second transatlantic delivery. Because I started on cruising boats, I didn't do that much racing when I was a kid, I did a bit of dinghy racing and on weekends on bigger boats, but I was a commercial diver for many years before I was doing this. Then I was on holiday and I went to Europe and then a mate of mine said, "Oh, we're sailing across

the Atlantic, do you want to come with?" So I said, "cool" and I jumped on. So we were going across the Atlantic and it was blowing, there was this massive storm in the North Atlantic, like the biggest storm I have ever seen, you know ever, and I thought it was pretty normal! And so the whole crew was petrified, puking and everything and I thought, "Yeah that's pretty cool." So I was off watch and for some reason couldn't sleep so I went down below into the big lounge with TVs, so I put this DVD on of the Whitbread in the middle of the storm because I had heard about the Whitbread obviously you know for years but had never actually seen any footage!

He goes on to explain how it took time and

perseverance for him to finally realize his dream:

Well it's like Craig said, there was a connection but not really. In the back of my mind I said, "Yeah, that's cool, I would like to do that." Didn't really know how or what to do about it or who to speak to so I just carried on doing what I was doing and then slowly it sort of went that way, it takes a long time, I mean if you come from a racing circuit environment Olympic whatever for sure, I wouldn't say it's easier but for sure you have the skills, if you don't then you've got to be prepared to go through the steps, it's like any job, putting in your time.

Lewis was one of the youngest participants in the race and the 2005/06 VOR was his first circumnavigation. He

knew from an early age that he was interested in the VOR:

I just got into the race because it was something I wanted to do really, and the opportunity came up so I sent out a few emails, spoke to a few people and I just got involved that way really. But my reason to do the race to be honest was it was always something to do and I watched it from afar as a kid and I thought that's the kind of sailing I want to do when I'm older, so to get the opportunity, it was good.

Fred was one of the younger competitors in the race, and although he had competed in other well-known ocean racing events in multihulls, he had a yearning to compete in the VOR. He had a more difficult time getting a position on a boat, but eventually his persistence paid off:

It was something I always wanted to do. The Jules Verne around-the-world type racing was more what I really wanted to do, which I did before and then once I had done that I really wanted to give the Volvo a crack, and I just really pushed and pushed and pushed to be in the Volvo. I found it extremely difficult to be in the Volvo but I finally managed to get on the starting line with a late program, but it was just the same way as any other sailor out there, freelances himself around and push and push and push until you finally get in there, I just had a passion to do it and I wanted to be there and I wanted to be one of the 70 sailors who would be on the start line. It was interesting, within 18 days of the start of the race I eventually got in there.

For Ted, the around-the-world-race had a strong history with the country where he grew up sailing. He remembers as a young boy watching the boats arriving and leaving port and how that caused him to pursue a position on one of the boats:

It's kind of a funny one because I started off as a dinghy sailor, and years ago, I think it was 1995 I think it was, I met a Kiwi guy who did the 81/82 race and America's Cup, and I did a regatta with him, so I mentioned to him that I would be quite keen to do the Volvo, as a kid I'd always went out because the boats always came to Auckland, so we saw it since I was about seven years old sail every four years. So I mentioned it to him and he said, "As luck would have

it I'm just about to do it, so I'll give you the skipper's number and give him a ring and I'm quite sure he would be quite happy to have you." He was in a co-skipper's role at that point so that's how it happened.

Theme #2: Skiffs on Steroids

The second theme, called *Skiffs on Steroids*, contains descriptions of sailing the boats. One subtheme identified was *Performance*, highlighting the technical descriptions of the purpose designed and built boats for the 2005/06 VOR (Also known as Volvo Open 70s, or VO70s). The second subtheme, *Crew Demands*, describes the challenge of sailing the boats, which was made more difficult due to the fact that the rules limited each team to only 10 sailors for the offshore races and 11 for the inshore races.

Performance. When sailors think about high performance sailing and "pushing the envelope" they often conjure up images of boats called *skiffs* (exciting light weight racing dinghies that have a large sail area). In fact, many sailors and observers of the race made comparisons between skiffs and VO70s. Kevin used the metaphor in his interview: "Yeah, just like big skiffs, skiffs on steroids . . . that's essentially what they are." Alan also made reference to the similarities: "The power to weight ratio is the same as an 18 foot skiff, on these

things and that kind of boat sailing around the world, that was pretty impressive.”

Kyle provided an account of the thrilling nature of the boats:

The sailing is unsurpassed, you can't find an adrenalin rush like that on any boat. Jumping out of airplanes would be a rush, but doing it day in and day out and being completely on the edge, it's an experience that not many people get to do.

Dwayne echoed these sentiments and shared his experiences about the levels at which the boats were being pushed: “Well they were fresh boats and no one has ever sailed a fully cocked carbon boat at that level around the world . . . we were sending our boats into frigging orbit man!”

Kyle points out that it was necessary to have leading edge technology on the boats to attract sponsorship and audiences. There was however a price to pay for this type of boat:

Well the boats are brutal to sail—they are much more physically demanding than anyone ever anticipated—the race organization wanted to make the race more (pause) I'm trying to think of the word . . . appealing to the public—you know, longer, bigger, more demanding and of course reduced the number of crew, so all that compounded down to sailing with really having your hands full 90% of the time.

As is the case with open classes of sailboats, the sailors were given certain tolerances within the design

rules. This often involved a careful consideration of risk versus reward, in many cases this translates into reliability versus speed. As David stated:

They were always pushing the boat because we had no limits on keel weight, so every kilo saved on the boat went to the keel bulb and made the boat faster. With a rule like this everybody tends to push too hard.

Although the boats were difficult to sail, several sailors were quick to point out that the boats were at many times enjoyable to sail. As suggested by Alan: "The seamanship was pretty challenging There were certainly some times when you were scratching your head about how you were going to deal with some of the situations, but most of the time they are a great machine." Alex was one of the primary helmsmen on his team. He concluded, "Once everything is going they are actually very easy boats to sail, particularly in regards to helm loads and stuff like that."

Despite the "extreme" billing received by the boat and race organizers, it was interesting to note that some of the sailors discovered that the sailing became fairly routine. As suggested by David,

It got kind of . . . not mainstream, but you're doing 25 knots all the time and I remember the first couple of times I was on a boat, it was like "Shit this is incredible!" Yes, it's exciting but it becomes a little bit blasé.

Crew demands. This category consisted of comments that the sailors made regarding difficulties and stress that they faced while racing the boats. The difficulty created for the crews sailing the boats was the result of a combination of being shorthanded and the boats being difficult to control at times.

Dwayne made the connection between the impressive sailing characteristics of the new design of boats and the effect on the sailors:

The 70s are 70 feet long, and 20-25% more powerful, and 20% of the crew have been removed, the boats are 20% faster, and they got way more sail area. So these boats can really, really go fast and hard, and they can beat the shit out of you as well. Which we found out!

Many of the sailors who competed in this race had also competed in the previous VOR and were able to make comparisons to the older style of boats used. Ted's team quickly realized during a training run that the new design of boats was different than anything they had previously experienced:

We got halfway across (the Atlantic) and said "Shit this is not on, we just can't do this." Even though we had very good drivers, we realized the boat was better than the humans, it was too much, too much stress.

Alan describes an incident that helps to explain the difficulties of sailing the boats with a relatively small number of crew,

A couple of days out of Cape Horn we were out of control planing, and I am in the pit and Jeff is steering and every single person—navigator—everyone is on the bow clipped in, trying to heave this frigging sail down . . . everyone had to be involved no matter what.

Fortunately the teams had designed the systems on the boats to take into account the shortage of crew. In many cases that meant applying technology developed by single and double-handed sailors. Alex provides a good example, "We had a lot of roller furling sails, and then we took the luff tape off the headsail and put hanks on so that you could drop sail without fear of them washing away."

Alex spent a great deal of time steering during the race and he makes the following observations regarding the difficulties involved:

Speed was an issue, it was quite uncomfortable at times on the helm when you took off down a wave in the middle of the night because a little tiny adjustment on the steering wheel would really change the boat quite a great deal, so it required you to be a lot more accurate . . . you really had to pay attention to what you were doing.

One of the issues that created a considerable danger to the sailors was the high speed at which the boats traveled, occasionally exceeding 40 knots (45 mph). Alex

provides a snapshot of life on board the boats under these more extreme conditions:

There's water pouring over you and under you and every time you sit down you get swept back down the deck. The bowman goes up on the bow to do something and you lose sight of him for a while, or he turns around to look at you and shines the torch in your eyes and you can't see the numbers (instruments showing speed, wind angle, compass heading) anymore.

The sailors who work on the front of the boat are exposed to the greatest danger due to waves washing over the deck. Craig is a bowman and he had this to say about the demands of his position,

The single biggest problem is when the boat is on fire—going through the water at 25 knots and lugging a 125 kg sail that is wet. A lot of the time you're up on the bow alone. You have to drag it forward without getting swept back, at an angle, and keep the new and the old sail on the boat, it's pretty brutal.

In conclusion, Dwayne sums up the bitter-sweet experience of sailing a V070, "Yeah, we enjoyed ourselves; it was tough, it was very physical and emotional, you know if you get a chance to spend time on a Volvo 70 when it's lit up, you won't forget it!"

Theme #3: Boat Breakdowns

There were many breakdowns during the 05/06 VOR, and while breaking masts, sails, rudders, booms, and other equipment is commonplace during ocean races such as the VOR, the structural failures with the keels presented new

difficulties. A contributing factor to the frequency and severity of the breakdowns was that the V070s were first generation boats; much of the trial and error evolution that normally takes place with innovative ideas didn't occur. As a result, many of the boats had inadequately designed and/or constructed canting systems for the keel.

The information presented in this theme represents the emotions the sailors experienced as a result of the repetitive equipment failures, with the subtheme *Coping* referring to the ways the sailors stayed focused. The subtheme *Composure*, speaks to the attributes that are essential to problem solving in dangerous situations.

Coping. One boat in particular had a large number of breakdowns. Kyle describes his experiences as a team member on this particular boat and how the keel failures were impacting the race: "This last one was different with the new class and with the fact that our boat kept falling apart, it put a new set of demands on the whole crew."

In this quote, Craig describes the uncertainty that arises when there is doubt about the integrity of the equipment:

God, being on boats that are breaking is a pain in the ass! It's unsettling and you don't know whether you should be racing or just trying to get to land safely, whether it's just a small thing that you can fix or

whether it's a small thing that can lead to worse stuff.

Craig goes on to explain that because the keel is such a critical part of the boat, problems in this area have significant repercussions: "That type of problem is hard to get your head around. It's all made to work good or it's fucked, there's not a lot in between . . . It's a hard mentality to keep pushing."

Dwayne describes the frustrations he often felt, particularly after being asleep off-watch when decisions were made in his absence. Uncertainty such as this made it difficult for him to focus:

Are we racing? Because I want to race too—I thought we had all decided that we were sinking, and now we're racing—so should we race or should we stop, are we just gonna try and push it, is that the deal? Because if that's the deal then okay, lets fuckin' shake hands and push as hard as we can until the son of a bitch rips off, whatever!

However, as he points out, it's easy to see how the situations arise. Here Craig describes a typical scenario:

You are all on different schedules, you all have different emotions, you all had different experiences about what you heard—whether you heard the noise when it broke, or whether you were asleep. Waking up and just hearing that there is a problem—that's different than if you heard the metal break . . . you know you heard something bad break. It depends on your point of view and what your opinion is of what's wrong with the boat and how to proceed.

On the other hand Darren's campaign had the most time of all the programs to prepare. This was a major factor for their success in the race:

We had the luxury of starting the campaign early and doing a lot of training and testing of the boats so we broke all of those things before the race. We had some issues but not that serious. We could fix everything on board . . . we sailed the boat 100 percent all the way around.

David describes the disappointment his team felt with the extent of their continual breakdowns. Their team was performing well and capable of a podium placing if the boat held together; however performances on several legs were affected by the equipment failures:

We'd all put so much time into it . . . everybody puts time into their boat, but it was more the time we had to put in just keeping ourselves sort of in a good frame of mind to keep racing and do a good job and . . . it's not just a pride thing to show that we could sail but it was just more, we always knew there was something there.

Composure. The sailors' feelings of frustration and disappointment as a result of the breakdowns were understandable. However, due to the seriousness of the breakdowns there was little time for dwelling on disappointment when their lives were hanging in the balance. Brad describes how his team responded to a near-

sinking situation that caught the team off guard early in the race:

The disappointment gets pushed to the back of your mind when you're trying to get the boat back under control, get the water out of the boat and make the best of a bad situation. It was unbelievable mate. That was more dramatic than getting off (abandoning) the boat for sure.

Ted supports this notion of composure as an important character trait: "I think you have to be a pretty solid character, not much fazes you and no matter what situation you're in, you're at the top of your game."

As Darren explains, the teams have to be self-sufficient. It is important that everyone on the crew is able to think clearly in difficult situations: "There's no point (in panicking) because you're on your own. Obviously you can hope that the other boats are going to come and help, but the attitude that you should have is that you are on your own."

In this quote, James guides us through his process of coping with an adverse event and why there is a premium on poise:

Well there are times when your arse is in the fire and you've got to try and break it all down, otherwise you're not going to solve the problem. There's no room for panic on those boats so you've just got to slow things down and keep under control. Once you've got the situation in good place you can start then going, "How do we go forward?"

Alex provides insight about why it is important not to become fearful of the dangerous situations that the sailors encountered:

You've got to get on with them and when it's over you've got to laugh about it, you know because you can't do much else. If you get someone who was like, "Oh fuck, we could have died there." then that would be the end of it.

Jack, one of the skippers on the boat, describes a similar approach to dealing with setbacks:

You have to laugh it off sometimes. It's very annoying but what can you do? You can get totally depressed, but I'm totally opposite than that—I say, "Fuck, it's not in my own hands", so just carry on and forget about it, just move on to the next step.

Theme #4: Managing Self

The theme called *Managing Self* was made up of discussions reflecting the importance of mentally and physically taking care of oneself. Subthemes include (a) *Sustaining* (how the sailors took care of themselves during the race), (b) *Injuries* (information about injuries incurred during the race), (c) *Preparation*, (how the sailors prepared themselves for going to sea), (d) *Acclimatize* (the adjustments that they went through at the beginning of the legs), and (e) *Sleep* (the reasons that made it difficult to sleep and how they coped with lack of sleep).

Sustaining. When asked what words of advice he would give to a sailor who had not yet competed in the race, Kevin, as well as other sailors, emphasized the importance of taking care of one's self:

It's easy to get injured on one of those boats, harness is the number one thing, and not just harnessing for the sake of falling over, but being thrown into things. And think about the loads that the boat has . . . you want to learn the boat as quickly as possible, but take care of yourself.

According to Ted, managing the race in terms of how hard the sailors pushed themselves and the boat was important,

In the last race getting the boat around the racetrack was a management exercise—slow down and back down, but you push as well. And trying to make sure that the crew's safety was assured . . . that was a big part of it, we realized that early on.

Several of the competitors spoke about the difficulty of remaining aware of how one was feeling and being able to take the appropriate steps to remain functional from a physical and mental perspective. Food and hydration were two examples used by several of the sailors to demonstrate this point. In this quote, James highlights the importance of maintaining good nutrition during the race and the difficulty involved: "Managing yourself is pretty hard . . . if you can keep the food going in at least you can deal

with the tiredness. If the engine is still running, if you've got food in the tank, you'll be okay."

On Fred's team, organizational structure was lacking and resulted in poor preparation. Although he took extra food on board for his personal consumption, he still lost weight, "The food intake on our boat was particularly badly run and we had everyone lose weight on the second leg, in fact I lost 10 kgs in the second leg in three weeks."

For some of the sailors it was more the matter of not feeling hungry than having access to food. As Kurt said, "You just don't get hungry, so you're not hungry so you think, oh it's almost easier to not eat, but you've got to force yourself to eat." James had a similar experience: "You gotta keep on the guys . . . you can really damage your kidneys pretty badly . . . it's hard because they're working hard and they're stressed."

Dwayne links motivation and drive with adequate nutrition and hydration: "The competitive psyche is something that has to be revved up all the time, because guys will wander off in their own thoughts, and you daydream, so keeping up blood sugar and drinking is important."

It is also difficult to keep the crew free from illness. After one member of the crew became sick, it

often spread to the entire boat. As explained by Fred: "We had difficult first night because of our lead up to the first leg, everybody went down with croup once we got on the boat . . . the whole boat was down."

One of the veterans of the race, Kurt suggested that experience played a role in being able to take care of yourself properly. In his view, it was important to know how to focus your mind:

Occasionally the young guys would show more signs of duress, and I think the more you've been through it you know how to set your mind on infinity. We won't stay out here forever, so it's one watch, you just focus, you put all your attention on the boat, boat speed, time to drink . . .

For the navigators on each boat, balancing their responsibilities for making tactical decisions with the need to rest and be able to think clearly was critical. As indicated by Brad: "It's a hell of a lot of managing yourself really and managing the pressure, just making smart decisions not only about the tactics, but just not beating yourself up about it if something goes wrong."

Injuries. Because the boats were undermanned in comparison to the demands of the boats, having everyone as functional as possible was critical. As Kevin remarked, this meant having a strategy for helping to protect each other, "Watch out for your crew mates as well, because

there's only 10 guys on board and it's really hard to sail those boats with a passenger, it's a huge burden to have a guy down."

The sailors often found themselves sailing at high speeds that created precarious working conditions. As a result, traumatic injuries were much more prevalent.

Dwayne emphasizes this point,

And we all get hurt on these boats, everyone gets hurt, everybody. On the old boats a few people got hurt. On these boats everybody gets hurt, from the front guys to the back guys, and you get hurt bad and you can get hurt real bad.

Although on Kyle's boat there were no injuries that prevented sailors from continuing in future legs of the race, nonetheless there were incidents that were serious:

We had injuries caused by water rushing over the deck and guys getting swept around, hitting into dagger boards, and shrouds, and getting wrapped around the mast and steering wheels and that kind of thing, so we didn't have any major trauma with blood, broken arms and legs, and we had some broken ribs—and actually we did have a broken arm, yeah, but nothing that was life threatening.

Kevin's team made a point of being careful on the boats, at least to the extent that nobody was exposed to serious injury,

We were always very cautious about that . . . whereas some of the other teams were injured and some of the teams lost people for the entire race. I know one of the boats lost one of their bowmen, smashed up his shoulder so badly he never made it back on board, he had to do all the rehab. Guys on another team, they

wrapped a guy around one of their dagger boards and he was done for the rest of the race.

Preparation. In an attempt to maintain fitness and ensure injury prevention, one of the teams hired a full-time physical therapist/personal trainer. Crew members from this team benefited a great deal from these services, "We had by far the fittest crew, when we came in port for like five days we had to run the real hard regime recovery program and then we had a break after that, I think that worked out so nice." The skipper of the team that hired the personal trainer felt that they could have done more to help with the preparation of the sailors, although in hindsight he was skeptical about sport psychology:

Sailors are very strange people and because the guys who are doing it, most of them have done it (the race) before so they know most of the in's and out's . . . it might be helpful for some of the guys. I'm pretty sure 80% of the guys would say that's bullshit—they just go in with that attitude.

James acknowledged that things have progressed considerably in terms of the sailor's lifestyles:

The first thing we did when we get in was get absolutely rotten drunk for couple of days, and now you can't really do that, you really suffer hard! So finally we are becoming a little more professional with the mind and body, it's taken a while!

Although there appeared to be very little formal mental preparation involved for the sailors, having their boats prepared was of the utmost importance. The veterans

of the race placed considerable emphasis on this aspect, as told by Darren:

If you leave any stone unturned, if you take a chance anywhere it will come back and bite you—that's the lesson in experience. You've got to check and double check everything because if you don't, it will bite you in the ass every time.

James put a premium on being organized:

You got to have people beside you that you trust to know that it's going to be absolutely perfect, and that that gear is going to be on the boat. Because if you get out there and someone says, "Where is the Phillips head screwdriver?" and you're like, "Oh shit, were screwed!" So simple things like that.

According to James, big-picture preparation was an important precursor of this race. Executing the plan should be the focus of the sailors once the race begins:

Once you get into the race you should just be executing a well thought out plan, that's really the key to that race—you can be developing but it should all be done by the time you start—to go around the world you should just tick the boxes . . .

Darren gives his perspective about how he got ready to start a leg of the race: "Personally, like I said before, if you're in the job and this is what you do, that's part of being prepared." For him, getting ready consists of a simple but well developed routine:

I don't think I do anything special. Maybe one thing that you should do is make sure that everything that you were supposed to do ashore before you left, make sure that you get that done, so that you are not out there worrying."

Craig takes an informal yet pragmatic approach to preparing himself to go to sea:

If I am on my own, I am on my own. If my girlfriend is there then you have your last night together, but I don't do anything weird like intentionally slowly distancing yourself from anyone you are close to. Just drink beer, shag, live life until you leave. And when you leave you leave, and when you are back, you are back.

Acclimatize. Difficulty adjusting to life at sea was something that many of the sailors experienced. According to Darren the first 12 hours were the most difficult. For this reason, he supports the benefits of having selective memory:

It's a good thing to forget, to have a short memory (laugh), because if you remember all of the bad things you'd never do it again. It's such a radical change from what you were doing. It's a pretty hard period to adapt.

Craig suggested that getting through the discomfort in the early stages is important so you can start enjoying the race:

And that's when the race gets fun, when you break through that stuff ... you're trying to stay dry and trying to get sleep and then you actually have a couple of hard days and then you just can't stay dry and you can't get enough sleep, and you give up and you just get on with it.

For some sailors, including Ted, the excitement associated with the lead up to the start of the race made it difficult to sleep for the first few days after leaving

the first port, Vigo, Spain: "I think when we first started the race, actually for the first four days actually, because you're so hyped up on adrenaline, like everything you have been doing for a year just builds up to this."

According to Fred, this adjustment period was part of every race that he had done. He also talked about the feelings he experienced during the end of the leg:

I personally go through the same cycle, you're excited to leave and then you leave and then you take a little time to get into it and then you're happy and then it stops and you're like, "I'm ready for this to be over."

Brad gives his account of the adjustment period that for him began gradually as the beginning of the leg approached, "Mentally I think for me it starts in the days leading up, you've got so much stuff to do and think about, packing and moving, you're really focused on just getting to the start line." For some of the sailors, the activity around the build up and the start of the leg can be overwhelming. As stated by Brad,

It's not actually till the gun goes and you're out and you do the first couple hours of the race—and it's busy and you go round marks, and the spectator boats . . . and then after a while you of get out on the ocean and you say "Oh yeah, okay, I'm here."

Alan reports a similar experience: "You're still pushing, you might be doing a tacking duel off the coast

with the other boats so you're not really sleeping, you haven't really separated enough."

Sleep. The subtheme called *Sleep* included insights about how sleep affects the sailors and also how they try to manage the inherent lack of sleep during these races. There are several issues as to why the sleep quality is poor, one of which is the physical discomfort when the boat is sailing in high winds and big seas. As Kurt describes, "It's like trying to sleep in the back of a pick up, it's super loud and it's going down a bumpy road and you're like, "bam! boom!"

Because the lack of sleep affects people differently, each sailor has his own ways of being able to get to sleep. Kevin recognizes this point and doesn't feel the need to have any specific techniques for slowing his mind down in order to get to sleep:

Yeah, and it's how each individual handles it as well. Like I know I can handle it well, for some reason I don't know why, I don't even know that it requires practice but I know that I can handle it quite well.

When asked to reflect on how sleep deprivation affects the sailors' ability to carry out their jobs, Kevin remarked:

It's funny because when you're up on deck you think, "I'm fine, I'm wide awake." But if you put someone that had just had 12 hours sleep on a perfectly nice bed on board, he would think otherwise. I'm sure he

would be like, "What are these guys thinking?" But I think as a group you're all on the same level . . . it's like being drunk and arriving at a party and you're the only sober guy—so I think that you're all on the same level, it's kind of hard to comprehend how it affects you.

One of the difficulties with trying to get to sleep is that the sailors can sense how the boat is performing even when they are below deck. In addition, being short-handed means they could be called on deck at any moment if there is a significant change in wind direction or velocity. As a consequence, it could be difficult to stop thinking about what might happen next. This was the case with Darren:

For me, the sleeping thing is mostly about being able to relax when you go down below, go downstairs in your bunk, to just like switch off instead of thinking the whole time, "Oh what was that? What was that noise? Oh the wind is shifting—oh fuck we're going to be waking up in twenty minutes".

Ted's testament echoes that of Darren's:

So you know when things are going as they should be, and you can hear it because you're trying to sleep in your bunk or something like, this is not quite right and all of sudden it comes right again and that it's what you're used to, the flexing of the hull and that sort of thing. You know straight away, everything is fine or everything is not right, or you can tell, you can tell who's on the helm when you're lying in your bunk at speed because they had different rudder movements—some guys use a lot of rudder and some guys don't.

As Kevin suggests, being off-watch doesn't mean you can totally relax:

Yeah, yeah . . . the adrenaline is pumping, you're thinking about the guys on deck and what they're having to go through at that time it does take a long time before you're able to relax. I think what ends up happening is you end up so exhausted that you end up falling asleep no matter what happens. And you can feel the boat lurching, you feel all the lurching that it's doing and the odd movements and you know . . . at the same time at the back of your mind, you could be called on deck at any second so you're thinking about, "Okay, where are my boots and where is my harness?" Certainly there's a lot going on in your mind at the time and it's very hard to shut off.

Jack takes the point of view that being able to relax is knowing that your teammates are up to the task of sailing the boat competently:

I think it's always a matter of trust. Whether there is trust in the group, then you can go to sleep. I've done a lot of ocean races where you can just feel who's driving, like when you're laying in your bunk, but when the trust is there I think it takes a lot of the pressure off.

Two of the participants explicitly stated that they do not use caffeine to stay awake in fear that they would not be able to sleep when the time came to get in their bunk. Kevin decided to completely remove caffeine from his diet:

So, I just know that I can't and I don't need coffee . . . I don't drink coffee much anyway, but I weaned myself off caffeine now because you know that in four hours time you're back in the rack and you don't want to be thinking, "Oh, it's that cup of tea that I had that's keeping me awake." Even if it's psychological.

Kurt reiterated the point:

If you get in your bunk and you are so jacked from the watch that your metabolism is through the roof. I try to talk guys into not using caffeine offshore—it's a

diuretic that keeps you elevated when you are trying to come down. Some guys use it and they are just tough hard cases and it doesn't faze them.

One of the sailors, Kurt, talked about a pro-active approach to getting rest after he researched circadian rhythms. Here he gives an account of his philosophy regarding sleep:

I know how to meditate, and I studied sleep, there was a sleep doctor coming in and talking during the last one and so I actually went to these sleep consultants to learn about the body's rhythm, and all humans cycle in twenty minute cycles When you know you've got to come up on watch, you know the Volvo keeps you at a much higher level, so if you learn how to meditate, you get down there and even if you only have twenty minutes, you don't have to go unconscious, you just sit in one spot and drop your metabolism, you don't actually go to sleep. You just drop your metabolism.

For this sailor, relaxation techniques were more pragmatic than using stimulants: "If you don't use caffeine and come off watch there's a couple of things; there is relaxation breathing and if you get good at it you can be out in a manner of four deep breaths and you're gone."

Once the sailors finally fell asleep, the time was very valuable to them. For Craig, he would avoid waking up unless he specifically was needed on deck:

Oh yeah, I get to the point when I'm down below that unless someone actually grabs me by the sleeping bag and says my name right in my face, not much else to wake me up, from screaming and yelling, fuckin' whatever, you just . . . if they really need me they will yell my name.

Alex suggests that it's not the lack of sleep alone that presents the problem, but rather when it is taken in context with the other difficulties the sailors are exposed to:

Well, I think it's just the whole compounding thing basically because from the time you leave until the time you get back you're incredibly sleep deprived, you know you're operating in conditions that are extreme, in that it's typically hot or cold, it's not often that it's a good temperature. Half the time you're in the dark, most of the time the food is pretty bad, although that got better as things went on, and so you know you're under extreme conditions most of the time.

Many of the sailors in this race had young families at the time of the race. Some of the participants spoke about the difficulties of falling asleep thinking about their young children. This was a factor that they did not have to deal with in the past. Here Kevin gives his opinion of why he would not be upset if future VORs did not include the dangerous Southern Ocean leg:

I think about these things because now I have a growing family. I think in the first race I ever did I was married but I didn't have kids. The next race my son was seven weeks old when I joined the team and he was two when I finished the race, so obviously you're thinking about them more.

Alex has competed in this race four times. Here he talks about what makes the race difficult for him and specifically how it affects his ability to sleep:

Well I think the problem is that the downsides in the past, when it was windy and you weren't sleeping or whatever, you would sort of think about, well I don't know what you would think about—I don't remember, but in the last race you were more likely to be thinking about your kids and your family and you would say, "Hang on, what am I actually doing out here in this stuff?" And there were so many good times in the past that it hadn't been an issue, you would just stop thinking about the bad and off you would go, but this time those times started to be a little more of the things you remembered and you know you start to think, "Well maybe I'm sort of beyond that."

Theme #5: Pressure

For these sailors, pressure stemmed from several sources. The subthemes reflect these stressors and include (a) *Expectations*, including self-imposed pressures, (b) *Responsibilities*, highlighting role specific stressors, (c) *Advantage*, discussing the dominating performances from one of the teams, and (d) *Sponsorship*, which encompassed ideas related to media attention, finances, and audiences.

Expectations. Because the VOR represents the pinnacle of sailboat racing, it also attracts the most competitive personalities and self-imposed pressures. As Dwayne points out, "Personalities run hot. A lot of these guys have egos; some of them are world champions. Most of us are Olympians, and Whitbread winners, egos run hot and there is pressure."

Kyle shares his experiences of his team hailing from the country where the race started:

Oh yeah, the press were on to that in the beginning. The fact that we had done a lot of practice before hand and were one of the favorites for sure, so it was pretty tough in Spain, being asked that question day in and day out from different people, trying to still stay focused and respect your competitors.

Because the race attracted many nationalities amongst the crews, the sailors from each country were particularly keen to have good finishes in their respective homeports. David was one of the sailors in this position: "I really wanted to have a good leg. My house is just at the entrance to the bay and I was really looking forward to it . . ."

Dwayne goes on to describe what he sees as the greatest psychological barrier in the race:

The thing about this race is the peaks and valleys that you go through, the mood changes are high because you have got to report every six hours, and you gain an inch or you lose an inch . . . and there are valleys to be bridged—to heal the wounds when you're getting your arse kicked!

The stress caused by the environment wasn't always due to an excess of wind and waves. Light wind conditions also created stress for the sailors and in particular on Ted's boat:

We were on a light air leg going around Britain and we were worried about coming last on that leg, so we wiped the boat out and it was stressful because if we

did get any breeze then we wouldn't have been able to fix the problem. So even though the race had been won, for us it was hard . . . if it had been another day or another week it might have been different.

Responsibilities. Invariably every position on the boat involved a high degree of stress. However, some roles had greater responsibilities than others. Ted describes the pressure involved with being a designated leader for one of the watches:

I wasn't a watch captain in this race, but the responsibility can weigh heavy on you. Obviously you're trying to look after the guys. More often than not the skipper is down below doing a lot of the tactical stuff with the navigator, so you try to keep the boat going quick, but you don't want to fuck up at the same time.

Alex was a watch captain and here he describes the feelings he experienced during one of the more difficult night watches:

There's also times when you're lying awake for four hours downstairs, knowing the boat is on the edge and you come up on deck and it's dark, and you're simply cringing knowing that in however long the driver's going to go, "Hey, I can't drive anymore do you think you can do the rest of the watch?" So now you're given the helm and you're thinking, "Well shit, I don't feel any more comfortable than you do." But you're the guy that has to do it.

Each of the boats had one person who was the designated medic on board in case of medical emergency. James held the medic's position on his boat and he describes the pressure that came with his job:

At times you're responsible for people's lives on the boat . . . you're just an average Joe-blow that shares the winches with the boys now and then, and then all of a sudden you're sitting there with a syringe in your hand, and you knock someone out if you do it the wrong way—you gotta make split second decisions and you make the wrong one you kill him!

Brad was a navigator on one of the boats, which meant he was responsible for knowing the position (latitude and longitude) of the boat and interpreting weather reports to help the skipper decide the best plan of attack. Here he describes the challenges he faced:

Especially with everyone working their hardest on deck, pushing the boat. And you're making the decisions that affect all of the nine people—you can make a shit decision even though they did a great job of sailing the boat, so there's a lot of pressure.

In regards to the navigator's role, Ted recognized that the better the boat was performing, the easier it was to make tactical decisions: "I guess you have to have thick skin, but the pressure is more on depending on how you're going as well." In other words, a fast boat could offset poor tactical decision-making and vice versa.

Terry was one of the skippers. Here he describes the collaborative nature of his relationship with the navigator and the stresses faced:

A lot of pressure, but the way it works out is in the end we would take decisions together. I am not a navigator or a meteorologist but I understand quite a lot and in the end we were doing the big decisions together, which I think helped a lot.

Alex related his thoughts about the sources of pressure for navigators: "The stress that they go through because they have to make big calls, for something that is not yet a science. We still have so much to learn about meteorology."

As suggested by Craig, some of the skippers on the VOR boats have reputations as being very intense individuals, which can make it challenging for the entire crew but in particular the navigators:

My experience has always been pretty interesting because I have sailed two times with our skipper and he's really intense, it's hard to find a navigator that he can sail with. He is so intense, not that he can sail with but that you feel there is a balance that he is taking input and the navigator is not too intimidated to speak up. He is a real power house of a skipper, and it's hard to find a balance, it's impressive watching him balance it out, those guys have to grunt up and toughen up and deal with it or crack, those guys have another whole load because he's a real power house personality, so seeing those dynamics is pretty interesting.

Equipment advantages. According to many of the sailors, one of the teams had a significantly faster boat in the predominantly windy conditions. This put pressure on the other boats to push the limits harder than they would have liked to in most instances. Dwayne reflects on the effect it had on their boat:

It's hard once you realize that there are boats at times one and two knots faster than your own and there

is nothing you can do about it. It takes a long time for you to realize it because you refuse to accept it, you try to fight and find different ways, but once the boats are measured in, there are not drastic enough changes that you can do to the boat. So you have to be a bit more aggressive in your strategy and the way you approach the race. You start to take more risks navigation-wise and you push that much harder and you just break more gear, so it's a bit of a vicious circle.

Recalling how the skipper of his team dealt with the variances in boat performances, Dwayne stated:

He is competitive, but he's a realist and if a boat goes past you at three-quarters of a knot faster and sails through to leeward of you, he can read that and he's like, "Well okay, that boat's gone, now we are racing the rest of the fleet."

David recalls how in his opinion the pressure impacted his team's performance particularly after the boat was unable to finish the first leg of the race: "Getting the boat shipped, getting last minute people to work on board, flying them all in, it was very expensive. We felt the pressure that we had to come first or second in this leg."

David also recounted how his team attempted to compensate for the advantages of the other boats, ". . . we sort of panicked a little bit, thinking, 'Well we've got to try and make the boat stiffer to somehow reduce their advantage.' So we went for the largest ram and the biggest bulb."

Sponsorship. This version of the VOR attracted considerably more sponsorship dollars and larger audiences than previous editions of the race. Ted recognized the importance of corporate involvement: "I think it was a really important part of it. I mean we lived and died on the sponsorship—if a sponsor could get more marketing and more publicity then they are likely to come back."

If a particular country had a boat entered in the race, a stopover for the race was arranged for the boat's home country. Although this created opportunities for sponsorship exposure, it brought immense pressure for the sailors during stopovers to their respective nations. Terry describes his experience as a South American sponsored team:

And then all the confusion in Rio with all the sponsors we had, there was a lot of sponsors on the boat, a lot of sports sponsors, they are very important but it's a lot easier if you have only one. Making a lot of sponsors happy is even more difficult so it was very hard especially the stopover in Rio.

Recalling the scene during the in-port race in Brazil, Terry commented on the large spectator involvement and the pressure his team felt:

There was 70,000 people watching the race, there was people standing on the bay watching the race. . . . It was hard, we were penalized so we were last at one stage, and we managed to finish in fourth, which was very fortunate, finishing last was going to be very bad!

In many cases the skippers were highly accountable for the fiscal operations of the programs. Jack was one of the skippers and he had this to say: "Budget of course is a huge thing . . . if there's no money you can't run back to the sponsors and say, 'Give me some more, we've run out unfortunately.'"

Jack spoke about the pressure he felt from sponsors when the boats were in port:

It didn't take too much away from the sailing as such . . . but in the in-port race it was just full power on, not only the media but as well budget and that kind of thing so that was way too much.

Theme #6: Tragedy

The man overboard and drowning of one of the sailors was a reminder of the ever-present danger that has stalked sailors since the earliest of times. This theme, called *Tragedy*, illustrates the sailors' recollections of the sailor fell overboard and drown. Subthemes include (a) *Man overboard*, describing the weather conditions and the details of the incident, (b) *Mortality*, containing reflections on the inherent dangers in the race, and (c) *Affected Team*, referring to the experiences of the lost sailors' teammates.

Man overboard. Terry gives his assessment of the difficulties involved if someone fell overboard when the boat was traveling at high speed:

When the boat was going fast, you just had to look behind the boat to see how fast the boat was going, it takes a long time to maneuver the boat with 10 guys when you have the chute up, so you just couldn't afford to fall in the water.

Kevin recollects the conditions during the night that the sailor was lost:

I remember being on watch, just prior to that, when the sun went down and it got dark and it got windier, and every wave was breaking and it was pitch black . . . it was getting to the stage of the moon cycle where there wasn't any, and it was really, really dark.

As were many of the sailors, Kevin was skeptical about the chances of recovering the man overboard:

I remember being woken up and it's not the nicest way to wake up being told you have to go look for someone who's fallen off another boat, your heart immediately just starts pounding . . . I remember thinking as I came on deck, just standing up and looking around, "There's no way . . . he'll be one lucky bastard if he's found and he's found alive."

Terry's team realized the chances of finding the sailor were remote. They knew it would take several hours for them to reach the search area and so they held out some hope that he might be able to stay alive in the water:

We knew there was very little chance of finding him . . . we knew if he had a survival suit he could last for up to six hours they say, because it would take quite a long time to get there, a lot of time to look for him.

All of the participants spoke about the range of emotions they experienced that night as the drama unfolded. Upon hearing that the person had been lost overboard, recovered, but not resuscitated, Alex recalled: "We really went through the full range of emotions that night—lost him, found him—didn't know he died and then found out he died, and then found out who it was."

Alex shared these thoughts about the dialogue on his boat:

You're pretty shocked, and then you start running through who it could be, and then in a bad way you think, "Well I hope it's not so-and-so", and then after a while you think, "Well don't be stupid, that's not good for anyone." Then we found out who it was and we thought "Oh my god, he's the only guy on the boat with kids and I think he was the only one married as well." And then you say well, "That's crazy because his life is not worth any less or more than anyone else on board."

Terry's understanding of the incident was that there were two things that contributed to the sailor being washed overboard, one of which was not wearing a harness, "Sometimes we didn't have our harness on, but he was sitting on the stack so then he didn't have the protection on the rail, so there were two bad things there."

Mortality. Many of the sailors remarked how easy an accident such as this could have happened, and although

disappointed, they were not surprised. Kevin could empathize with the situation:

But it so easily happens—the worst thing you can be at night is not harnessed in. But you can see how it happens, the sun has just set, it's just got dark, the wind has just picked up, you don't want to swap out one of your best trimmers and your best drivers and you want to keep them on for a bit longer and see what the wind does and settle down and . . . you can see how it happened for sure.

Alex reasoned that it was only chance that an incident such as this hasn't happened more frequently or recently:

"I think it's more about good luck than anything else that someone hasn't been lost in recent years . . . it's not because we've been particularly smart or clever . . . it was going to happen and it will happen again."

Craig had a similar interpretation of the incident:

That poor guy got hit by the bus, he was out on the boat and he fell off the boat and he drowned. But I didn't think of it as some stupid sailing accident. It was almost just a bad luck deal like if I got hit on my scooter tonight going home. I put it more into that category rather than something you can pick apart that you could have done better or worse. It was just shit ass luck because to do what we do we are all exposed to that.

Upon discussing the drowning incident, Ted brought up a recent experience that highlighted the role that chance plays in these incidents:

We were racing in the North Sea Race a couple of weeks ago, we lost a guy over the side in the middle of a lighting storm, in the middle of the night, and we managed to pick him up. He was only in the water for

10 minutes, no strobe light or nothing. We came back and started looking, and then lightning just lit up the sky for ten seconds and there he was, and we picked him up. That was far out, it was weird.

James sums up his general feeling as one of the more experienced sailors:

You know they lost a guy which is a reality everyone lives with in the race, and quite frankly it can happen to you anytime, and so for me I've lost a few friends and characters, you sort of realize and understand that.

None of the sailors interviewed was blind to the fact that someone could lose their life during this race. Alex makes the comparison to mountain climbing:

Well it is, and you know people who climb Everest, and the people who, we all like to sort of think that it's not a big deal and it's not going to happen but we all know in the back of our minds there is a very, very, very serious risk in doing it.

Darren and Dwayne explained how they managed the risk associated with ocean racing: "I mean you know that is part of the race as well as that it's not a zero risk, it's not safe." Dwayne qualifies the statement: "But we all know that, and we have all been training for it for so long that we reduce the risk to a level that we are happy to at least go."

Ted is one of the more experienced sailors in the race. When asked about how this incident impacted the way

that he approaches events such as these, he had this to say:

Well I mean it can affect you, I guess all of us have ended up at the end of the tether, when you're hooked on more than once. I guess if you weren't clipped on at those times then you might have been gone. It does weigh on your mind all the time.

Darren, one of the more experienced bowmen, talked about how the tragedy affected him:

No, I think that every time you hear of a story like that especially so close, you take it in. I think I was a little bit more careful and probably will be from then on, probably not as careful as I should be, but still a bit more careful than I was before, so it does sink in for sure.

One of the other sailors stated, "I don't think it would change the way I would have approached the race because to me that has always been there."

Affected Team. To make matters even more difficult for the team who had lost a crew member, within hours of the incident they were instructed by race headquarters to stand by for the abandonment of another competitor's boat that was sinking. Within hours of arriving at the sinking boat, all the sailors were rescued and on-board the boat.

Kevin was one of the sailors who was rescued and he spoke about the experience of being saved by the lost sailor's team:

Actually the thing that surprised me the most is how open they were to talking about it . . . I think they were over their mourning . . . you could also see that the wind had been taken out of their sails you know, they were like lying in their bunks and daydreaming . . . the focus had kind of gone . . . you felt for the guys big time.

This sailor went on to describe his feelings about having a corpse on board:

And his body was up towards the head area so when you went to the head you would see the body bag left lying up in the bow, and I remember going and using the toilet and kind of having a peek around the corner and thinking, it's kind of hard to fathom that one of your fellow competitors is lying in that bag.

One of the other rescued sailors recalled how the teams were able to console each other:

Yeah, getting on with them actually helped both of the teams. Because as was the case with us, they were also a really tight unit and so having lost one of their crew, you know a close friend, it was hard for them to deal with, and of course for us getting off the boat which was far less traumatic than that, when we got on board their boat it was a nice break in a bizarre way. To be able to help each other through, it was pretty strange.

The skipper of the boat that had been abandoned helped to put things in perspective for everyone: " Losing a boat is okay. It's not nice, but losing a guy, it's the same you're just driving in your car and you crash it in a corner, you buy a new one! . . . it's just a piece of equipment."

Alan, one of the lost sailors' teammates, describes the sequence of events that occurred after the death:

Closure was so hard because the incident happened, and we all kind of went, "Oh shit," and talked as a team, and all that and kind of sailed the next day kind of reefed down and thinking about the rendezvous with the (British Navy) ship, then the sinking thing happened and we got them all off, and we got him off the boat and we had a moment of silence for him and all that. And we had a counselor come on board because we stopped, we had two hours to wait at Lizard Point, and the CEO of our program came on and talked to us about what was going to happen, you know there was going to be press there, etc.

The arrival of the lost sailor's boat at the end of the leg in Portsmouth, England, the burial ceremony, and the subsequent decision as to whether or not to continue the race proved difficult for the crew. This was made easier by the outpouring of support from race organizers, the company that was the sponsor for the team, and the other competitors.

Alan describes what it was like coming into port at the end of the leg: "And of course we all knew three days out—you know my mom was flying out and people's families were coming . . . everyone gave tons of support. It was an emotional scene there."

For Lewis, another crewmember on the lost sailor's team, the support from the family was critical in their ability to cope with the situation and in the subsequent

decision of whether or not to complete the final legs of the race. He had this to say:

His family's support was the reason why we could go on, and we knew that's what he would want and he would have been really disappointed. Because they gave us the option and they said it's totally understandable if you guys want to stop here, you've proved everything, and his father made a point to us, he goes, "You know, we want you to keep pushing because that's what he would have wanted, keep sailing, we would be disappointed because this is what he would have wanted." And I think it was the right move you know.

Lewis went on to describe the process the team went through in making the decision about whether or not to continue:

The decision that we did make was a team thing. It was like if one person didn't want to continue then we would all stop. It was either we all went forward together or we just stopped, and it was up to everyone to decide whether they wanted to continue and it's good that we did, and I think that's what everybody wanted, to continue and finish it.

Fred had suffered a serious injury during one of the previous legs of the race and was unable to continue racing. However, he was in port to help out his team when they arrived. He describes the scene when the team arrived in Portsmouth after the tragic accident:

We were all standing around the dock and then as the boat was coming in someone started clapping and it was just amazing, every single person that was there just started clapping. I mean you're talking thousands of people and just started clapping just really quiet clapping like that because every one had so much

respect for what these guys had done and it was really emotional and it was really quite something.

Terry gave the team high accolades for recovering the body so quickly: "They did a very good job of finding him and rescuing him even though he didn't make it."

Theme #7: Extreme

This theme encompasses experiences such as the abandonment and subsequent sinking of one of the boats in the race as well as other life threatening situations. Subthemes include *Abandon* (description of the event and how the decision was made to leave the boat), *Close Calls* (near sinking incidents and potential dangers), and *Risk* (coping with the risks involved with ocean racing).

Abandon. The first subtheme, *Abandon*, recounts an incident on the leg from New York to England when one of the boats suffered irreparable structural damage and had to be abandoned by it's crew. Four of the crewmembers from the sinking boat were interviewed for the study. In this statement, Kyle summarizes the extent of the situation:

So there was a lot of water coming in, but we had it contained and we had ropes supporting the keel pin, but we knew the wind was basically going to be coming the other way in about six hours, quite fresh, we were on starboard tack and we knew we had to get on to port tack, so we knew we had to jibe and as soon as we moved the keel just a small amount—well if the keel structure fails, it's going to be a major problem. . . . we had limited sea room to run away cause we were

basically at the start of Bay of Biscay. We were only about 350 miles from England.

Because the sinking boat and its crewmembers were deemed to be in grave danger, all the boats in proximity were asked by race headquarters to render assistance. The boat that was closest and therefore best positioned to help happened to be the boat that had a crew-member fall overboard and drown only hours earlier. Kevin describes how this factor and various others influenced the decision to abandon the boat:

The skipper came around and said, "This is what I'm thinking, we've got a boat with a dead guy on it and they expressed their concern that they didn't really want to hang around too much longer." We had a British Naval vessel that had been deployed to come and rescue us, but by the time they would have got to us the low pressure would have moved over us and we would have had to transfer people in 50 knots of wind and even bigger seas.

Although the boat was in serious danger of sinking, the decision to abandon the boat was not an easy one to make. Here the skipper recounts the difficulty in making the decision:

So then it becomes yes, no, yes, no. . . or maybe leave a couple of people on the boat? So things just go through your mind the whole time . . . I looked at all the different communication, backwards and forwards and then look at the track record of all the written things and telephone communication . . . sometimes I said, "Yes, I'm staying on the boat." And then half an hour later I changed my mind . . .

Eventually, running out of options, the skipper finally made the decision to get everyone off and leave the boat:

Then all of a sudden, when I saw the waves out there I thought, "This is it." And also we had the other boat standing by, they wanted to move away before the big storm and they had a dead body on the boat as well . . . and then I just thought, "Fuck, if these guys are gone then we're by ourselves and there's nobody else from the fleet out there, we just rely on whoever is out there." If they send a navy ship they wouldn't reach us until much later . . . but then it was just boom, "We're leaving the boat."

Although the skipper concedes that abandoning the boat was the right decision, he held out hope that the boat might survive the storm and perhaps be salvaged in time to compete in the remaining legs of the race:

No it was actually not too bad, I took the decision and I can't turn it back now . . . of course there was a slight hope for me that the boat would stay afloat and we could pick it up and maybe sail, not the next leg, but at least the last two legs. Because we were going to the Netherlands, and I'm not very nationalistic in that sense, but still if you can sail into your home country it's good . . . then we came on the land and we heard there was nothing found, the boat disappeared off the tracking like I think six or seven hours later.

One would think that abandoning a boat would be a traumatic experience for the sailors. However, the sailors reported that the seriousness of the event was reduced due to the fact that the keel failure was not an unexpected event. In addition, there was an ample amount of time to

orchestrate the abandonment before the weather deteriorated and before darkness fell. As a result the sailors did not appear to feel as if their lives were in danger. Kevin relates his thoughts about the situation:

I never felt that I would never make it. I think people reading the story and seeing the footage it sounded like a whole lot worse than what it was on board so I think people were genuinely worried but I was never worried so all I can say is thanks for the concern but I was never fearful of my life.

Close calls. The second subtheme, *Close Calls*, includes situations where the sailors had to act quickly in order to save the boat from sinking. One of the most frightening incidents during the race occurred on the boat that was eventually abandoned in the North Atlantic. The problems started in the early morning darkness about 200 miles from Cape Horn. In this statement, Kyle compares the Cape Horn incident to the abandonment of the boat:

The water (in the North Atlantic) was a lot warmer, it was during the day that it happened so that's a huge difference, we were only 500 miles from England, so that made it a lot easier, we knew there were boats around us . . . the most scary moment was when we nearly sank 200 miles from Cape Horn, that was the most frightening. It was a lot scarier than when we actually had to get off the boat . . . it just happened so quickly . . . It was unbelievable, mate. That was more dramatic than getting off the boat for sure.

Kevin concurs with his fellow crewmate, "Yeah, that was honestly without a doubt the most frightening experience I have had on a sailing boat ever."

Kyle had just finished his watch and had made his way below deck. Here he describes how well the boat was performing that night,

If my memory serves me correctly, we had just done 520 miles in 21 hours so we were well and truly on to break the 24-hour record. The breeze was building and we had reduced sail on our watch . . . so when my watch partner and I went down stairs we felt pretty comfortable that the boat was well under control, it was not over canvassed or anything, it was awesome you know, the boat was on fire, we were just going for it and we thought that by the time we woke up we would have the 24 hour record under our belt, so we went downstairs and it was cold so we started a quick hot drink before we got into bed.

Shortly after Kyle had gone below decks, he happened to witness the incident that was to become such a serious threat to the boat and its crew:

I leaned over the front, over the galley, which was over the watertight box above the keel to light the kettle, and I noticed that there was water in the box, which is unusual. There is usually no water in it. And I looked at it for a couple of seconds and believe it or not, while I was watching it the lid blew off! And I shouted to wake everybody up, and by the time I managed to get around and over the keel rams to the front to double check the watertight doors, the water was almost waist deep, and that was probably 30 seconds—we went from a dry boat to waist deep in water in 30 seconds.

David was on watch with Kyle that night. He remembers how quickly they found themselves in danger:

The water was just pouring in, we actually didn't get a chance to pull all the sails down and we left the guy at the helm, the guy who was steering up on deck on his own, the sails half down and everybody else in action trying to pump water, using buckets, trying to get the electric pumps going, someone to radio, another guy getting all the safety gear up on deck and we took on so much water so quickly that all the power went out so the poor guy up on deck had no lights.

Kyle remembers the turmoil above and below decks as the sailors scrambled to gain control of the situation:

And so of course the guys on deck were trying to slow the boat down, but it was difficult conditions, and when I say slow the boat down I'm saying we were trying to keep it under 20 knots.

David gives his rendition of the initial sequence of events on the boat, describing the difficulty in gaining control of the situation:

It was a shocking night. All the life jackets, which are sort of in bags, are floating around, and it was pitch black downstairs for a short period of time, then they burst their bags cause they're water activated and all the water strobe lights were flashing.

David went on to describe the quick action that was required to stop the water from entering the boat:

And we're up to our knees in water. . . . and more the problem was once the water got above the level of the keel box, which at that stage is open to the ocean, then nothing would stop it, at least when we got the water level down a bit, that keel box was above the level of the water—but you get it the other way around it's just going to quadruple the acceleration of the water coming in. It was just that awful feeling of the lights going out and all of a sudden no power, and to find out that the pumps aren't working.

David further recalls what it was like for him while he helped to get the water out of the boat and watched and listened to his crewmates:

I was just basically in the hatch using the buckets, one guy was passing to me and I was throwing out. One of our crew members was basically jolted with electricity—because there was no power, basically he pulled the engine box off and wired the pumps straight to the battery, and you could see sparks coming out and all sorts of stuff. On the boat's radio you could hear the conversation between our navigator and the Erickson navigator saying, "Well we're five hours away from you." I thought we were going down for sure.

Kyle recalls how long it took to get the situation under control:

The guys who were asleep were by now in their survival suits and trying to get all the emergency gear on deck and prepare for a possible abandon ship. And then once we had the pumps running and the water had stopped coming up, we wired some crocodile clips onto the pumps and plugged them back. In all that took probably, oh I don't know, probably I would guess an hour, an hour and a half, to get the boat back under control. Yeah, it was incredible.

Kevin gave credit for the safety regulations in the race that were amended before the start of the leg:

Well the pumps that we had, these little like Jabsco bilge pumps, only became mandatory in Melbourne . . . so we were actually very lucky. All the skippers got together with the VOR organization and everyone said, "How can we make these boats safer?" And someone said, "Why don't we make it mandatory that each boat has two of these pumps on board?" That's what saved us for sure, we were going down . . .

Kyle realizes that luck was on their side that night.

If he hadn't decided to make a cup of tea that night coming

off watch, then the consequences of the keel failure might have been much more serious:

Yeah, I mean I wouldn't say that that's what saved us, but if it had happened 15 minutes later when we were in our bunk asleep, and there had been nobody downstairs, and nobody would have noticed for a good two minutes, and then by that time it could have been beyond salvage.

Risk. Although there were many dangerous situations during the race, the majority of the sailors had rationalized these risks in their own minds. For them it was a calculated risk that was in their favor, something that they had a certain amount of control over.

The following conversation between two bowmen (who have arguably the most dangerous position on the boat) highlights the notion of managing the risk. Because the majority of their work takes place from the mast forward to the front of the boat, they occupy the point of entry for the majority of the waves coming across the boat. This means they have little warning of when the waves are coming or how the waves will impact the motion of the boat. The nature of their roles forces them to make a choice between sacrificing mobility by being clipped into the boat versus being free to react quickly. Craig gives his opinion of how safety is defined for him:

There is a certain amount of safety in our job from being free to run around the boat. Because there is a compromise there that's not really quantifiable and won't stand up on paper for your actions . . . But as far as mentally, your process, that's all I am ever trying to do is to make everything safe, that's all we are trying to do is be safe, no one wants to do that more than you do, but being clipped in (pause), well if it goes to the British Royal whatever study in terms of our safety they are going to find a million holes

Craig goes on to compare his job to that of mountain climbers, who take what appears at first glance to be a high-risk approach to climbing:

It's like picking apart light weight alpinism in climbers, where they are just going so fast and so light and they are climbing these 8000 meter peaks with one rope and 15 kilo packs and they completely believe in that speed is safety, and getting up and down, and the weather is their biggest nightmare, they don't need ropes and tents and everything, they just want to boogie to get away from the trouble, and be free to just follow their nose.

Darren gives his perspective on the controversy around whether it is safer to be attached to the boat by a harness or unattached and free to react to the environment:

What he is trying to say is that if you have to go to the bow to do a job or whatever, if you gotta spend 10 minutes going there because you have to be clipped in from this pad eye, to this pad eye, to this pad eye then you're going to be exposed for 10 minutes, so there is a good chance that you are going to get hammered, and even though you might be clipped on, you're probably still going to get hurt, whereas if you pick your moment and do the job in 10 seconds without clipping on then that could be safer, but on

paper it's not, because you will find the gap, you do the job and come back.

Craig further clarifies how his instincts and experience help him make these judgments,

After you have spent several weeks on the boat you are surrounded by it and you are living it, I don't think, "Okay, unclip." and pick my moment. My body has been feeling those waves and being hit by that water all day, my brain just says, "Unclip now go." And I get there and I clip in again. It's not super conscious.

Darren agrees with Dwayne. He suggests that doing his job safely involves conscious decision-making that is influenced by an underlying sense of what is going on around him, "Completely conscious, I wouldn't say you're scared but you're on that verge, that acute awareness of your environment for sure." Dwayne closes the conversation by stating, "It's pretty consistent chaos, it's not just totally bizarre, I mean everything has a rhythm."

Even in what would appear to be perilous circumstances, the sailors reported that they rarely feared for their life in these situations. In this report, Dwayne recounts how his team dealt with a close call with the keel structure on their boat. Fortunately the situation did not escalate to the same degree as the boat that almost sunk near Cape Horn,

There was certainly a very real danger, but I was never worried because as soon as we saw it, we just powered the boat down straight away. And so then we

were in a much safer situation, the boat was completely safe again, the pressure was off the keel box lid—if that had blown open it certainly would have filled up the boat very fast. And so I was never worried.

The benefit of having a group of boats racing around the world together is that they can rely on each other in times of danger. Even for the sailors on the boat that almost sank off Cape Horn, they appeared to have faith that their lives were not truly in danger. Kevin summarizes the feelings on his boat:

I mean there was never probably a doubt that we would all survive, even if we had to get in a raft, Ericsson was only maybe 4-5 hours behind us, and so we probably would have been okay, and the Pirates of the Caribbean would have turned around and helped us . . . and so there was no doubt that we would probably be okay.

One of the most dangerous aspects with racing boats that are capable of such high speeds occurs during the night or in times of reduced visibility. Although large objects such as ships, other boats and land are visible on the radar, it is not possible to see semi-submerged objects such as a sleeping whale or a container that happened to fall off a container vessel (many of these containers never completely sink). Kevin describes this ever present danger and the worry it leaves in his mind, "It's never fear for your life, it's just fear of I guess, when you're doing

those speeds and you hit something, are we going to be able to get everybody out of the boat on time?"

Alex is the most experienced sailor in the group having completed four around-the-world races. He has this to say in relation to near misses and close calls:

I've had times where I've been sitting on sails at the back and gone through a wave and I've basically floated up on this wave, and maybe not over the side, but at least if I hadn't have been hooked on then I would have been gone. And you think to yourself, "If my cable—my cord had broke or if I hadn't have hooked on I'm gone—I'm dead." I mean I'm one of how ever many people, few hundred that have done the last few races, who have a story similar to that.

Theme #8: Team

The high performance nature of the boats, the small crew numbers and the format of the race created a physically and mentally demanding environment that required the teams to be effective in working together. As a result, the concept of *Team* was discussed frequently and became one of the major themes of the study. Subthemes included (a) *Filter*, describing how sailors are chosen for the race, (b) *Cohesion*, referring to the importance of the team's ability to support each other, (c) *Trust*, indicating the significance of the team's comfort with one another, and (d) *Family*, referring to the influence of the sailors' spouses.

Filter. The term filter was used by several of the participants to describe the attrition process of the sailors during the lead up to the race. As Kurt points out,

It's the sort of race that has a big filter—it filters out a lot of people that shouldn't be there long before you ever leave the dock. For a guy to get on a Volvo boat and then not perform or be a solid player, you know it does happen, but typically you weed out the people that shouldn't be out there pretty quickly. It's just too hard physically and mentally. The filter gets finer as you sift off the last 70 guys that are actually going to be on the starting line.

Alex gives a summary about what draws people to the race and how they ultimately become involved:

Well, I think that anyone who wants to do the race then that's sort of enough, if you know what I mean, as long as they really want to do it. I mean the big thing it's just not easy, it's not something that you go out and say, "Hey I did it." You know, there is a lot involved in doing it and the way that it's gotten now, it's um, the way it's gotten now it's pretty challenging to get on a boat, I mean that's the big thing, it's so many people, and if you're serious about really doing well then you need to have people who have done it before . . . but you've really got to want to do it. I mean you have to do it for the right reasons, you got to do it because you want to do it, not because you're getting paid—if that's the reason then it's not going to work.

Darren agrees with the idea of how people are naturally "weeded out" during the months leading up to the race: "I mean to start with, if you can't hack it, then you wouldn't be there anyway—you know you don't suddenly end up in the race."

One of the sailors described his feelings at the start of his first VOR several years earlier. In this quote, he discloses apprehension about whether he had the required skills and attributes necessary to be a member of a team:

And I think in the Volvo you can't bullshit your way through it, you will be shown up at some stage, and it takes a very well rounded person to be part of a team to get around the world, you know that was my biggest fear in my first race was could I actually as a person take it on, could you measure up to all these people around you after worshipping them for years.

Cohesion. Jack made the comparison to other extreme sports, suggesting that the VOR is a truly team oriented sport: "Often they say mountain climbing should be very close to sailing. I think it's way more individual in mountain climbing—in the end it's only one or two guys who make the top and we have to come around as a team."

Having the ability to get along with your fellow crewmates was seen as crucial by several of the sailors. Craig relates these ideas in the following conversation with Darren:

You can't be a dick. You have to be a grownup, and you have to have all those basic qualities which follow, like don't be a dickhead when you are living and working on the boat, talk to people with respect even if it's not going just right, clean up after yourself, do your work, help out.

Darren is in agreement, "Yeah, I think that's one of the biggest things, so that's more important than all of the others that's for sure."

Jack shares a similar point of view and adds the importance of being honest:

You have to go with the flow and then stand up sometimes and say you're wrong—and always tell the truth, that's the most important . . . especially in a team . . . when something goes bad just tell them the truth, never lie. Be honest, and when you fuck up put your hand up, you can fuck up once or twice, three times is normally not very good, but don't start screaming, moaning and bitching especially when you're in a difficult situation.

Dwayne believes an inherently positive attitude and cheerful demeanor is a prerequisite:

So you have to start happy, that is the main criteria of the psychology in this race. If you're not happy you're not going to achieve goals, you're not going to leap out of bed when it's shitty, and put wet boots on and bounce up on deck and say, "Hi guys, let's get at it, let's get ahead this leg!"

Alex makes the point that because the teams have to be self sufficient, there is no choice but to work together closely. For him, this adds to the enjoyment of the race:

The guys that are on board have to bring all the skills on board—it's not something that you can call on for help because there is no one close, it's just so much more when you're living with these guys—you're living with them and spending time with them and relying on them and you build a pretty strong team, and a lot if it is an awesome time out there, I mean you have so much fun.

According to Kyle, the ability to work together was critical when it came time to make important decisions:

There were never any issues, we never got into arguments about what to do and what decisions to take . . . we had two really good watch captains and we had a good skipper and between the three of them and the navigator they just made the decisions, right up until the end, which meant abandoning the boat.

Lewis reflected similarly on the experience with his team:

What you go through on the Volvo, it's not like you're out there for five hours and you come in and come home, you know you're out there for twenty days and unless you have good guys around you, you're not going to make it, the team bond between the team is very, very tight.

Even on the boat that had been experiencing multiple setbacks due to gear failure, the spirit remained strong.

As reported by Kyle:

Yeah, we had a really, really solid crew, good bunch of guys . . . we'd been together a while so we'd been through a lot of the hiccups . . . we all knew our strengths and weaknesses and that's all that's about . . . it was always a reasonably good atmosphere on the boat.

James suggested that although the sailors formed strong bonds with each other in some cases, the cohesion didn't always transfer to other environments:

The tightness within the team is incredible. But it's interesting because there are some people that you get very close with through that period and then you leave the race and you think you would be mates forever. And you still go and have a beer or whatever, but you're not really close.

James witnessed a similar phenomenon with his team, whereby personality differences are overlooked in the interest of the team:

So you get in the Southern Ocean and the guy who pisses you off and fucks around forever, all of a sudden he is so meticulous about safety that he saves the rig. And when you come out of that the team is so tight that you can do any maneuver on the boat without speaking a word, it's then you realize that you are part of something pretty special.

Terry suggests that the strength of the relationships on the boat was critical. It was particularly important when having to push through the difficult times and to ensure the team didn't implode:

You have a very straight relationship with your mates, and we were a very close team . . . of course like a marriage you know you have good times, bad times, but I think the team was a very strong bonded team which helped a lot during difficult moments, and we had quite a few of those.

Lewis concurs on the importance of the team, in particular in situations that required the sailors to stand behind their teammates when times were difficult. This was a common situation with the navigator's role that Lewis held:

It always goes back to the team basically, and there are difficult times during the race—we had a shocker in the leg from Brazil and we got behind, and I had to say to everyone, "Look, we're going to be pretty dog-last for the next two weeks, we just got to do the best that we can for the next two weeks and we might get an opportunity further up the track." So it's a

pretty tough thing I guess for everyone to swallow because they're working their hardest, and knowing they're working their hardest and knowing they're going to lose miles comes down to having a good team around you, you know keep your chin up and keep going for it.

From Lewis' perspective the relationship between the leader of the team and the rest of the crew was critical. A healthy relationship was important so people could work together particularly in tactical decision-making situations:

The team around you and their relationship with the skipper is important . . . I think if that works well then that strengthens the team as a whole, and if you can bounce ideas off each other and look at the strategies and make a decision, you know you might have a whole lot of ideas and someone might be seeing something different so you can actually meet somewhere that's good in the middle—they might have things you haven't thought of and you might have thought of things that they haven't.

The sailors commented that having a healthy team environment required a lot of effort. Terry was able to give an example of the adjustments that he had to make as skipper in order to keep the crew working well together:

The Volvo is a different thing because I am normally very, how do you say that, very hard on myself and on people that sail with me, and very demanding. You have to do a little bit differently the Volvo, because you stay with same people for very long, and if you are very demanding the whole time then sometimes people, it can be too much and I had to adapt a little bit.

Alex conceded that each individual had to be responsible for his own behavior: "You can't be too highly strung because when you get down and things are going bad you can't be the one who is affecting anyone else on the boat because it just doesn't work."

Only one of the teams began the race with a woman amongst the crew. However, she was removed from the team after the first leg for reasons that are not entirely clear. Terry gives his version of the situation:

Well, we started by changing the navigator (chuckle), it was not because she was a girl, it was just that she had some relationship problems with some of the guys . . . I didn't know her, but the information I had about her was pretty good and it's hard to say, I don't want to talk too much about that . . . we had some problems with her and instrumentation on the boat, it was a decision that was very difficult because, but we thought it was better to take it soon before things started to go bad, because we did well in the first leg but it's hard to say what the outcome would have been if we had not changed.

All the teams had sailors with different nationalities. According to Ted, this rarely seemed to pose a problem:

A lot of Kiwis, all pretty much the same, it was all easy. We had an Irishman, we had a South African, so pretty much all the same, and one Frenchman—sometimes the same and sometimes not, and an American—he was brilliant.

Trust. The term *trust* was used by participants in relation to teamwork. Dwayne articulates this in the following statement:

There is a bond that you form with the guys on board that is very strong; my life is in their hands and their life is in your hands . . . you sail around the world with guys that you trust implicitly and you respect—you don't have to hang around with them on shore, you don't have to like them and go to Christmas dinner with them and send them Christmas cards, but when you get on the boat it's a methodical mechanical team.

Jack supports the notion of trust, particularly in helping the sailors relax when off-watch:

I think it's always a matter of trust. If there is trust in the group, then you can go to sleep. I've done a lot of ocean races where you can just feel who's driving, like when you're lying in your bunk. But when the trust is there I think it takes a lot of the pressure off, and I think it showed that even though we had a lot of shitty times, we stayed together as a group and we went through as a group but you must have the right . . . what's the right word in English . . . chemistry?

Alex suggests that having trust in the people on the boat is also important for allaying any fears that his loved ones might have about him doing the race. He used the following logic to explaining to his loved ones that the race isn't as risky as it may seem:

Any position on a boat is only as dangerous as the people around you. If you have a crew as good as we had on our boat, and you can have 1000 percent faith in the guys that we had, then it's not as dangerous as sailing on a boat that the guys only go out and sail for once or twice a month.

Family. The majority of the teams that competed in the race were made up of sailors between 30 and 40 years of age, which meant they had young families in most cases. In order to accommodate the families and keep the sailors content, many of the teams budgeted to have the families present at the various stopovers. This arrangement posed an added challenge for at least one of the skippers, who had this comment to make:

I think it's way more important that the wives can work together . . . because the wives are . . . normally they chitchat along . . . that's where the troubles come—it's not the guys on the boat, it's the wives . . . it's way easier if you could just pick guys who are single because then there are no issues at all, but as soon as you're hitting the shore, they want their husbands for 100% and there's still things to be done.

Theme #9: Reflecting

The final theme is called *Reflecting* and includes introspective thoughts from the sailors about how completing a race such as the VOR influences their day-to-day lives. Subthemes include *Mentality*, which describes what it is about the VOR that makes it unique and how the VOR affected the sailors' outlook on sailing. *Perspective*, the second subtheme, includes thoughts regarding how the sailors often adopted an appreciation for the finer things in life after completing the race.

Mentality. Kurt believes that logging many hundreds of thousands of sea miles over the course of his sailing career helps him react to adversity in a composed manner. The difference in his mentality is obvious as he uses the example of a near sinking to highlight his point:

I was on a Cup boat in 2000 that snapped in half and everybody jumped off the boat. This Australian boat went down in sixty seconds in 1995 and everyone has that video in their minds, so when our boat snapped in half and literally the exact same thing and everybody was like, "Fuck"! And left the boat in a heartbeat, I'm looking around going, "We got some expensive shit here, so let's try and get it sorted." Everyone was screaming to get off the boat but the end of the story is I stayed there, got the main down, jib down and turned the boat downwind, and ended up getting pumps and the boat never sank. So that's sort of a Volvo mentality, as opposed to a Cup mentality, like, "Fuck man, the boat isn't in the water yet just settle down!" So Volvo guys are used to being—I mean they have all been in some really bad situations.

Kevin has competed in three VORs. He suggests that the experience gained through ocean racing has quieted his demeanor:

I think what it does is it makes you more of a calmer person. I find on inshore sailing teams, when all of a sudden something breaks and there's a mad panic and all these guys are running around. I always find myself thinking that's not really a big deal. Sure you need to rush to try to rectify the problem because it will probably cost you a couple of places in the race but I find myself not getting that excited anymore when things go wrong.

Kevin also acknowledges that it could be a combination of the sailing experience and the natural maturation process has also helped him to be more composed:

But I don't know whether that's because I'm just older as well, it's probably a combination of both having done a couple of America's Cup campaigns and Volvo campaigns . . . now you're not running around thinking the world is going to end because something broke.

A group of four participants in Valencia were interviewed together. They were all working for the same America's Cup teams and they found distinct differences between a "Cup mentality" and a "Volvo mentality." In the following discussion they reflect on these differences.

As James suggests, the smaller team size in the Volvo makes the sailors much more accountable for their actions, "In America's Cup you could probably not show up to work and they probably would not notice. But if you did that in the Volvo you would be shunned upon, there is a time and place for it." He goes on to say that the sailors with VOR experience are more likely to contribute to getting the boat ready to go sailing:

Well you just go and see what happens twenty minutes before the boat leaves the dock, have a look at what guys are down there every day, it's the same crew. Prepping the boat, covering other people's areas, run the sheets and whatever, the Cup guys will run out with two minutes to go.

Alan echoes these sentiments about the differences in attitude, "Who are the guys down below wooling kites, the one to help the other guy, or who's the one who is always on the bow pulling jibs forward, because that's what we were taught on the Volvo."

Several of the participants reflecting on the race suggested an important distinguishing characteristic of the race was that it was an adventure. Craig has competed in three Volvo Ocean Races. When asked if these races become more routine over the course of time he responded, "Well, that's what's so scary about that race. It's a huge adventure. Nothing is ever going to work out how you think, there's always going to be crazy times."

James, a race veteran, pointed out the reasons why he thinks the race is so unique:

It's a really long period of time and it involves a huge amount of technology that is developed by the team. It's not that often that you actually get the Formula One guys building the bloody car or fixing the engine, and they don't go half way around the track and go, "Fucking hell I've blown out my engine . . . I'm going to have to fix it." It is the ultimate challenge in all areas.

Lewis was interviewed for this study in Valencia, where he was working for an America's Cup team. He made this comparison: "In the Volvo you can walk into another team's container and say, 'Have you seen so and so?' and

have a chat. If you did that here (Valencia) you would be fucking hand cuffed and escorted out (chuckle).”

Alex, who was also in Valencia, describes the aspects of the event that he finds compelling and more interesting than other events: “The Volvo was always so much fun in that you were always going to another port and it was very easy to explain that you were racing from England to South Africa.”

Fred made the point of how completing such a challenging race can affect you on a personal level: “It’s an incredible character building thing to do, it’s really up to you in your head individually to be able to just, to tough it out when you have to, and that’s what makes it so challenging.”

Alex has competed in more races than any of the participants and he describes his experiences as follows: “I’ve always described the race as 90 percent boredom and 10 percent terror . . . I mean if my wife knew what it was like she would be like, ‘You’re mad and you’re never going offshore on a boat again!’”

Terry is a highly experienced sailor in a wide variety of contexts, from two-person teams at the Olympics, to larger America’s Cup campaigns. He describes the sadness that he experienced after the end of the race: “And then

the race finishes and everybody goes their separate way. It's very strange, because you have been so close for a big time and then it ends."

Dwayne is a former winner of this race. In this passage, he expresses his feelings about what makes the race so special:

Everybody has had the same experiences, we've all been sailing out of control, on the edge, scared out of our fucking minds, there's no sleep, shitty food, shit happening at home, shit happening out on the boats, boats damaged, all sorts of crap so everybody has been through everything, so that at the end of it everybody is equal . . . every single Volvo sailor has had that experience which they can't describe to someone that hasn't done it.

Lewis emphasizes the all-consuming nature of this race when he says: "It's hard to put your finger on what you do psychologically or physically or mentally, it's just everything that makes it such an awesome challenge." And finally, as summarized by James: "Once you are in this race, and you sign on, you are in, you are *in*. I mean there is nothing compared to that."

Perspective. The sailors were divided in regards to the extent to which competing in a VOR has a far-reaching impact on their outlook on life. James has completed three VORs; he talks candidly about his experiences, "It changes your life though, you can say it doesn't, but it does."

Other sailors suggest that the experience helps them to keep things in perspective. As Kevin says: "You try to keep it on a rational basis, you don't try to overplay it at all, I mean it's just your job. But doing a Volvo race does make you prioritize, mainly to change your priorities."

Kevin compares his experiences to those of non-sailors, who take on the challenge of sailing around the world as a late-in-life romantic adventure:

I read articles about people doing other races like this, there's something called the BT Challenge Race, people sail around the world the wrong way with this crew and basically they all have to qualify, they all have to pay like 35,000 pounds to go and do this race around the world and you get put with this bunch of people that have limited skill and limited sailing knowledge but it's their life long dream and they always come back and say, "Oh yeah it's changed my life." And "I used to be school teacher but this is what I'm going to do, and I used to be a mechanic but I sold my house and I sold my car just to be able to do this race and it's changed me forever."

Kevin goes on to say that because his vocation is a professional sailor, he doesn't find doing these races a life changing experience. He does however gain an appreciation for simple comforts:

But mainly because I have a job in the industry, it's not like I'm going back to another job like a desk job or anything, even a construction job, this is what I do for a living, I go sailing, luckily . . . I mean I thank my lucky stars every day that I'm able to make a living at what I love doing. I think that's why I've

never looked at it from that regard. It just makes you more appreciative of the finer things in life.

For Kyle, completing several VORs is less about a life changing experience and more about the relationships that are forged: "And the other best part about the race is that you make friends for life . . . and it's a great relationship to have with such a big family."

Dwayne believes the race influences your life in a more profound way. As he suggests, the uniqueness of the experience is a life long reward:

Every single Volvo sailor that I know and you know has had that experience of sailing, which you can't describe to someone that hasn't done it. That is the reward of this race. And that is an enormous reward because you take that to the end, until your dying day and as a Garry Jobson says once you've been bitten by the Volvo, or once you've been bitten by the Whitbread, as the saying goes, life is never the same.

Dimensions

The themes and subthemes presented in the previous section can be further organized into three larger dimensions. The following section offers a summary of each dimension and the themes and subthemes that are associated with each. The significance of the dimensions will be expanded in the general discussion section, after the discussion of the research questions.

Dimension #1: Resonance

The first of the three dimensions is called *Resonance*. It encompasses the themes of *Background* and *Reflecting* (subthemes *Reflecting* and *Mentality*). *Resonance* refers to the sailors' intrinsic motivations and perspectives on how the race has influenced their lives on a personal and professional level.

Table 1. Dimension #1: Resonance and Relevant Themes and Subthemes

Theme	Subtheme
Background	-----
Reflecting	Mentality Perspective

Dimension #2: Edgework

The second general dimension is known as *Edgework*, referring to participant's views about the inherent risk and extreme nature of the race. This dimension is an umbrella category for the themes *Tragedy* (subthemes *Man Overboard*, *Mortality*, and *Affected Team*) and *Extreme* (subthemes *Abandon Ship*, *Close Calls*, and *Risk*).

Table 2. Dimension #2: Edgework and Relevant Themes and Subthemes

Theme	Subtheme
Tragedy	Man Over board
	Mortality
	Affected Team
Extreme	Abandon Ship
	Close Calls
	Risk

Dimension #3: Performance Capacities

The VOR is an extreme event that requires individuals, teams and equipment to perform at a consistently high level. In light of this, the final dimension is called *Performance Capacities*, consolidating the themes *Skiffs on Steroids*, *Boat Breakdowns*, *Managing Self*, *Pressure*, and *Team*. This dimension captures how the sailors were affected by the various demands imposed upon them, as well as the strategies and skills used to perform at a high level despite the adversity. Three subdimensions have been

identified relating to the performance of the group, the individual, and the boat.

Subdimension #1: Collective performance. The primary determinant of high performance was the ability to work as a team. Having a group of strong individual performers and a well prepared, designed and constructed boat were only prerequisites for having a great performance. It seems that the ability to work well collectively provided the catalyst for a great overall performance. The theme *Team* is the most critical subdimension.

Subdimension #2: Individual performance. There was a great deal of information revealed pertaining to the stresses and strains experienced by the sailors as well as the various coping strategies used. Themes included are *Boat Breakdowns*, *Managing Self*, and *Pressure*.

Subdimension #3: Boat performance. The final indication of how a team is able to perform relates to having a boat that is also capable of an outstanding performance. Themes for this subdimension include *Skiffs on Steroids* and *Boat Breakdowns*.

Table 3. Dimension #3: Performance Capacities and Relevant Subdimensions, Themes and Subthemes

Subdimension	Theme	Subtheme
Boat Performance	Skiffs on Steroids	Performance
		Crew Demands
Individual Performance	Boat Breakdowns	Coping
		Composure
	Managing Self	Sustaining
		Injuries
		Preparation
		Acclimatize
Pressure	Sleep	
	Expectations	
	Responsibility	
	Advantages	
Collective	Team	Sponsorship
		Leadership
		Filter

Performance

Cohesion

Trust

Family

Discussion of Research Questions

The research questions presented in the initial proposal were meant to provide a focus for the study and to help the researcher choose a suitable research design and methodology (Maxwell, 1996). However, the inductive nature of qualitative research means that some research questions can become more or less meaningful as the findings of the study emerge. Occasionally important research questions not previously considered become apparent. As stated by Maxwell, "Often you will need to do a significant part of the research before it is clear what specific research questions you should try to answer" (p. 49).

In this section, the research questions are discussed. Based on Maxwell's (1996) assertions, some of the research questions are discussed at a more in-depth level as compared to others. An elaboration of the more relevant research questions as well as a discussion of unanticipated findings are presented in the general discussion.

1. How did the sailors become involved in the race?

This question was informed primarily by the theme *Background*.

The majority of the VOR competitors had extensive ocean racing and "big boat" experience, (as opposed to small boat/inshore racing). In these instances, they had to "put in their time" and rely on an informal yet well constructed networking structure to help them gain a spot on one of the teams.

In some instances, a notable inshore career provided inroads to being selected for the race. In another case, a skipper was chosen because of a highly decorated Olympic and America's Cup career; consequently the team he selected reflected his background, and consisted of several Olympic class sailors from his country.

A sailor on the team made up exclusively of individuals under the age of 30 was selected through the only formal large-scale selection process. He was a highly successful collegiate dinghy sailor, selected in part for his tactical knowledge, which was deemed an asset for the in-port racing segments of the race.

2. How did the technically evolved boats perform?

This question corresponds to the first theme *Skiffs on Steroids*, and specifically the sub theme *Performance*.

The cutting-edge design parameters were devised by the VOR organizers to create an exciting event that would attract sponsors and large audiences. It was clear that the progressive design and construction of the boats provided a thrilling experience for the sailors, as the 24-hour distance record was broken at least three times during the race (Honey, 2007).

Several of the sailors commented on the fact that the boats were under-crewed given the performance potential of the boats. By the end of the race most of the teams had implemented strategies to make the boats easier to sail by designing better sail-handling systems.

One of the sailors noted that although the sails were larger than previous designs, they were also designed to be used through a wider range of conditions. This meant that not as many sail changes were required, which meant less work for the sailors.

Steering the boats was reported to be easier in terms of the physical strength required to keep the boats under control; however, there was a greater premium on concentration and accuracy.

Despite the frequent equipment failures on the majority of the boats, the sailors were quick to endorse the designs for providing exceptional performances. In

general, the sailors seemed confident that future generations of the V070s would see many of the technical engineering problems solved.

Interestingly, some of the sailors stated that the high speeds became less and less of a thrill as the race went on. One sailor even suggested that only about 10% of the race was what he would describe as "sheer terror," while the other parts was "90% boredom."

3. How did sleep deprivation affect the sailors' abilities to carry out their jobs, make decisions, and relate to each other?

This question is addressed by the theme *Managing Self*, and specifically by the sub themes *Sleep, Sustaining*, and *Acclimatize*. The theme *Team*, sub theme *Filter* also speaks to sleep deprivation.

An analogy provided by one of the sailors captures the way that sleep deprivation affects the teams. He suggested that because everyone on the boat is sleep deprived to the same extent, it is difficult to notice how it is affecting the team. He related this to the experience of arriving at a party late in the evening after everyone is intoxicated; from an outsider's perspective it's outrageous, but within the group it all seems normal.

It appears that the sailors who finally secure a position on one of the teams are not negatively affected by lack of sleep; they can still function reasonably well despite only getting a few hours of low quality sleep per night for up to 20 days on end. The concept of a *filter*, which was described by some of the sailors, ensures that only those who can truly cope with lack of sleep, tight quarters, freeze dried food, and extreme environmental conditions find themselves on a team. As one of the sailors said, "You wouldn't be there if you couldn't hack it."

Most of the sailors were more focused on the techniques used to fall asleep as opposed to the lack of sleep itself. This was seen as an essential coping mechanism. Some sailors used meditation techniques whereby they would proactively "cycle-down," while others did not appear to have any proactive mechanisms in place. For many of the sailors, when their body was really tired, there was no problem falling asleep.

Several of the older sailors who had young children had difficulties falling asleep. While off-watch, lying awake in their bunks, they were not focusing all their concentration on sailing the boat and therefore had time to ponder their priorities in life. They spoke of being

conflicted between wanting to be racing and also wanting to be home with their children. Important questions such as these often kept the sailors awake when they needed to be getting valuable hours of sleep.

A factor that the sailors spoke about in relation to sleep deprivation was the acclimatization period at the beginning of each leg. During the initial few days of any leg there is a period of adapting to life at sea. This involves overcoming the land-based norms of trying to stay warm, dry, and well rested. As one of the sailors said, "Once you break through all of that, you can get on with it and the fun starts."

4. What were the most dangerous aspects of the race?

This question is addressed by the themes *Tragedy*, *Extreme* (subtheme *Risk*), and *Team*.

Generally speaking, the danger in this race was directly correlated to the wind strength, sea state, and visibility; as the wind increased and the waves grew larger, so did the danger. As visibility decreased, as it does with darkness, rain, or fog, the danger element increased.

There was a danger of suffering significant injuries when the boats were sailing at high speeds. These times of high speed were not like cruising down a four-lane highway, but more like being involved in a high-speed chase through

city streets with lots of accelerations, decelerations, turns, bumps, etc. There was also a particularly high element of danger when attempting maneuvers such as tacking or gibing, or changing sails when the conditions were extreme.

Another aspect considered dangerous on the boat was the large volume of water and the resultant force of the water as it swept the decks when the boat was sailing at high speeds. The drowning of the sailor was the result of not being "harnessed in" when his boat plowed through a large wave at high speed.

The *bowmen* have arguably the most dangerous position on the boat. Their responsibilities are associated with the most forward point of the boat (the bow) and occasionally the top of the mast. These are the most precarious and most vulnerable places to be on a boat, particularly when at sea. As such bowmen have a unique perspective on the concept of the risk.

In many instances, these sailors, being regularly exposed to the first point of contact for any waves coming over the boat, do what others on the boat would never dare think of. When they are carrying out a task, their lives are fully in the hands of those steering the boat and trimming the sails. It is interesting how the bowmen

conceptualize the notion of risk; maintaining that their primary objective is to make the boat safe; and they determine the best way to do that is get the job done as quickly as possible. In their opinion, moving quickly and accurately is the priority. The downside of this approach is that they do not have their harnesses clipped into the boat when they are moving to and from the bow, which unfortunately leaves them vulnerable to being swept overboard.

Much like rock climbers and light weight alpinists who perform solo climbs without ropes, they are supremely confident in their abilities. In addition they learn to trust their instincts implicitly; because they are entirely immersed in their surroundings, they feel they can make split-second life and death decisions with a high degree of certainty. What appears to be very chaotic to others has a natural rhythm from their perspective.

5. What aspects of the race were the most fearful?
How did the sailors deal with their fears?

This question was informed primarily by the theme *Tragedy*, and specifically the sub themes *Man Overboard* and *Mortality*.

The primary fear of the sailors was falling overboard while not being attached to the boat by a harness. This

fear was magnified during times of limited visibility (night, precipitation, fog) and also during rough sea conditions and high winds. Because the boats travel at such high speed, and the majority of the sailing is down wind with large amounts of sail area, it can take a considerable amount of time to slow the boat, take the sails down, and then sail back to the point where a person fell in the water.

Although the danger of falling overboard is omnipresent and many of the sailors acknowledged that they had had several instances during their ocean racing careers when they had been swept to the "end of their tether" they did not appear to think about this happening while they were racing.

Another fear the sailors articulated was the risk of hitting a submerged object while sailing at high speeds. They realized that with the delicate and relatively fragile nature of the canting keels, a sudden and forceful impact could cause the boat to sink quite quickly. The sailors expressed doubt as to whether or not they would be able to get everyone on deck, have the life rafts deployed, and get into the rafts before the boat sank.

Many of the sailors downplayed the fear associated with retreating to a life raft because normally other teams

were in close proximity, meaning that the chance of being rescued was good (as long as they made it into a life raft before the boat sank). Even in places as remote as the Southern Ocean, where they were out of range of rescue services, they were confident that one of their competitors would come to their rescue.

Some of the sailors suggested that they felt more vulnerable racing during an inshore race on a boat that was poorly built and/or without people they could trust on board. They also acknowledged that during inshore races, there was a risk of someone getting seriously injured due to collisions with other boats. This rationale seemed to dispel some of the danger in ocean racing and helped to put the sailors' minds at ease, but more importantly put the minds of their families at ease.

An important characteristic personified by these sailors was their tendency to be extremely composed in dangerous situations. Although disappointment was the first emotion experienced during an incident that threatened the sailors, they all noted that it was important not to dwell on those feelings. It was also important to never panic.

The sailors seemed more concerned about things that they felt were completely out of their control (such as hitting a submerged object). Yet at the same time they

stated that it was important to not think about the non-controllable factors for the very reason that they were in fact out of their control. They also reasoned that accidents happen in all walks of life and in all settings; for them it was a matter of fate and not of risky behavior. For example, all of the sailors viewed the drowning as a freak accident as opposed to a preventable incident that was the result of poor seamanship. They laid blame with chance as opposed to human error.

6. How did the sailors balance the need to survive with their competitive drive?

This question was informed primarily by the theme *Skiffs on Steroids*, and specifically by the subthemes *Performance* and *Managing Self*. The subtheme *Injuries* was also relevant.

The question of how hard to push the boats was on the minds of the sailors a great deal of the time. As explained by one of the sailors, "The boat was better than the humans." The 05/06 race was the first time the sailors had to take this into consideration, meaning that how the sailors dealt with speed versus safety became an important predictor of a successful performance.

The sailors experienced a steep learning curve in respect to the limitations of the boats. Although in some

cases the sailors had tested their boats in a variety of difficult conditions before the start of the race, when they found themselves in a competitive arena the sailors tended to push the boats much harder. Such was the case during the first night of the race, where all but two of the boats suffered structural damage. On two of the boats, the damage was significant enough that they were forced to retire from the leg.

The winning boat did not suffer any major equipment breakdowns and was able to complete every leg of the race. Although the boat was reportedly faster than the rest of the boats in the fleet, it also seemed to be the best constructed. However, one of the sailors interviewed from this boat stated that his team adopted a philosophy whereby their goal was to average a high speed, as opposed to attaining the highest speeds. In other words, they avoided dangerous situations by disciplining themselves to avoid surfing on the larger waves.

The concept of managing self took on an even greater meaning than in past races because of the increased performance capabilities of the boats and the decrease in the number of crew members. The impact of having even one person recuperating from an injury for one or two days and not being able to carry out their job put a great deal of

pressure on the rest of the team. This could be analogous to a player on a hockey team who takes a major penalty; not only does that team have a distinct disadvantage, a toll is taken on the other players, who have to work that much harder to neutralize the disadvantage.

7. What aspects of the race did the sailors find most difficult and most enjoyable?

Skiffs on Steroids, Boat Breakdowns, and Pressure addressed this two-part research question.

The sailors recalled few aspects of the race as being particularly difficult. The more difficult parts of the race for these sailors seem to be the frustration associated with equipment failure. On the boats that avoided any significant failures, major difficulties were not reported.

Several of the older sailors reported struggling with being away from their families for extended periods of time.

The cycle of psychological highs and lows was reported to be difficult, as were extended periods of light wind, or when the boats fell behind due to breakdowns or tactical errors.

Some sailors reported the acclimatization process of the first three or four days at sea as being somewhat uncomfortable, but they did not express a distinct dislike for it.

The pressure associated with sponsorship was a source of stress particularly for the skippers, but they all accepted it as part of their job and realized that it was a necessary responsibility.

The enjoyment of the races came from several sources. One of the sources was the excitement of sailing the boats. Although the boats were susceptible to breakdowns, the sailors were quick to acknowledge that the boats were exceptional; many of them were pleased to have had the opportunity to be among the first to explore the new frontier of boat design that the V070s represented.

Many of the sailors reported an enjoyment associated with a sense of adventure and a strong sense of accomplishment of having attained a worthy goal. Two of the sailors interviewed were not able to complete the event due to issues such as injury. For them, not being able to complete the journey significantly reduced the enjoyment of the overall experience.

The interpersonal component was identified as a source of enjoyment for the sailors. All the sailors commented on

the satisfaction associated with being involved with a highly functioning team. The camaraderie that comes with being part of the VOR family was also reported to be a gratifying aspect of the race.

8. How did the sailors prepare themselves during different times of the race?

It appears that for sailors, mental preparation was tied closely to boat preparation (sails, masts, hull, etc.,) and honing their abilities to sail the boats well. With the confidence of knowing that their boat was as well prepared as possible, they were able to race with a high level of self-assuredness. Becoming highly practiced and familiar with the techniques required to sail the boats effectively was important for confidence building. Sailors refer to this as "time on the water" or "boat time"

In fact, because equipment is so closely tied to performance, sailors feeling the pressure of competition have been known to become distracted, obsessing over the smallest technical details. On the other hand, sailors who do not have the requisite skills in boat repair and maintenance, or who are not well organized, tempt fate and race with ill-prepared equipment. As one of the VOR sailors remarked, "You have to leave no stone unturned, it will come back to bite you."

It appears that a shortage of time available could make it difficult for formal mental preparation. Because of the large amount of maintenance involved, and the preparation and competition in the inshore races during the stopovers, the sailors' schedules were almost always full.

The sailors did not report any particular method of preparing themselves to come up on deck to start a watch, other than wanting to know what the conditions were on deck so they could choose the appropriate gear to wear.

In relation to mental preparation, one of the sailors stated that a physiotherapist working with one of the teams had suggested that the team would benefit from the help of a sport psychologist. However this sailor expressed skepticism about whether a sport psychologist would be useful to a team of VOR sailors because most of the sailors were already highly experienced and competent sailors, intimately familiar with the demands of the race. This seemed to suggest that sport psychology would be of more benefit for younger and less experienced sailors. This sailor also seemed to be suggesting that because the sailors conform strongly to the male heterosexual stereotype, they would be reluctant to express their feelings or discuss emotion-laden issues. This sailor

thought if a sport psychologist were to become involved, the men might find a women more approachable.

9. How were the sailors affected by various overarching issues during the race? Specifically what was their experience of the following:

a. Significant speed advantages by one of the competitors,

b. Equipment failures,

c. One of the boats sinking during the race,

d. One of the competitors drowning?

a. This question is addressed by the theme *Pressure* and specifically the sub theme *Advantage*. The significant speed advantages of one of the teams had an obvious impact on the rest of the fleet. The interviews indicate that the teams that perceived themselves to be lacking in speed felt compelled to take risks in other areas to attempt to compensate for the speed deficiencies. These risks manifested in several areas. In some instances risk took the form of lighter specifications for important equipment (lighter is faster), while other times it meant using less conservative tactics to gain favorable winds that would allow them to go faster or to sail a shorter distance. The slower boats were forced to sail the boats more

aggressively when the wind strengths increased, even if it meant risking a breakdown (which often occurred).

b. This question is addressed by the theme *Boat Breakdown*. Although all the boats experienced equipment failure at some level, only two of the boats escaped leg-ending breakdowns. There was a great deal of frustration for the sailors in these situations, requiring them to use coping skills to remain focused and cohesive as a team. The impact of a breakdown had several repercussions. First, the performance of the boat on that leg suffered. Second, it meant an inflation of the expenses associated with an already tight budget. As one of the sailors remarked, it was difficult to be continually asking sponsors for more money each time there was a significant gear failure. The third issue was that a breakdown meant the teams lost valuable time learning about how to sail the boats most efficiently.

The fear of a breakdown and the uncertainty around the seriousness of the failures also had ramifications on the sailors' psyches, causing apprehension about the safety of the boat and occasionally confusion about the correct course of action.

c. This question was informed by the theme *Extreme*, and specifically by the sub theme *Abandon*. The sinking of

one of the boats during the North Atlantic leg of the race was also one of the most widely reported events in the race. However, it did not appear that the sailors were negatively affected or concerned by the incident. This was due in large part because the boat was abandoned well before the weather conditions deteriorated; there was ample opportunity to plan the method and timing of the evacuation. If the boat had sunk the first night of the race during the difficult weather conditions, then there would likely have been more dire circumstances. Because the abandonment and sinking happened near the end of the race, the sailors had already come to the realization that sinking was a likely fate that they needed to be prepared for.

The sailors who abandoned the boat did not appear to be negatively affected by leaving their boat. The sailors had had such a bad experience with this particular boat over the course of the race in terms of chronic breakdowns, that they were almost relieved to be getting off. As stated by one of the sailors, "As far as I was concerned the thing belonged at the bottom of the ocean anyway." There was however disappointment that they were not able to "nurse" the boat the final 350 miles to England. Some of the team members held out hope that the boat would survive

the storm and be recovered and repaired for the remaining legs of the race. However, after it became apparent that the boat had sunk, one of the sailors promptly went to compete in an inshore race that was taking place in Europe two days later.

d. This question is addressed by the theme Tragedy. The responses to the death were similar for all the sailors. The boats that were in close proximity to the boat that had lost the sailor immediately began to make their way back to the place where the incident occurred to aid in the search for the body. All the sailors interviewed remembered the conditions the night the sailor was lost, and they remember the roller coaster of emotions as the news was broadcast over the radios; first a man fell overboard, then he was recovered, then he was not able to be resuscitated. The weather conditions, sea-state, and the fact that it was a dark night caused the sailors to be skeptical about whether the body would be recovered; they were highly doubtful that the person would survive. However, due to the shortage of information available while the search was taking place, there was time for the sailors to speculate about who it was that had been lost and what the implications could be for the family if the sailor died.

The sailors did not consider the incident to be a result of poor seamanship or carelessness. For them it was a matter of fate, in the same category as a random accident occurring on shore. Although an autopsy was performed on the body, formal inquiries that often follow such incidents were not initiated. Praise was given to the team's ability to retrieve the body of the sailor so quickly. They regarded it as a testament to the team's professionalism that they were able to initiate man overboard procedures in an expedient and effective manner given the severe conditions that night.

The sailors were not shocked that a person had been lost, and in fact one of the more experienced sailors was surprised that an incident such as this had not happened sooner. The sailors' attitudes reflected that they were aware of the risk, had taken steps to reduce the risk so that it was manageable for them, and had come to terms of racing with risk.

The incident caused all the sailors to become more cautious. One of the teams reduced sail after the incident and changed into survival suits, while the others were quick to ensure that everyone on deck was wearing a harness and securely attached to the boat.

The team of the drowned sailor was the most affected by the incident. There were several steps they had to go through once they recovered the body and as a result closure was difficult. First they had to rescue the sailors off the boat that was being abandoned, followed a few days later by the transfer of the body to a naval frigate, then the return to port, and finally the funeral. Once the team reached the end of the leg, there was an outpouring of support from the rest of the competitors, race organizers, and the corporate sponsors of the boats. The drowned sailor's father was supportive of the team continuing, stating that that is what his son would have wanted.

10. How did the sailors learn and adapt to various circumstances?

This question was addressed by the themes *Skiffs on Steroids* and *Team*. It appears that learning and adapting were at the forefront of many of the sailors' minds, particularly because the boats were new in design and construction. The team that was the last to register its entry was also the last to launch the boat and begin sailing. This team had a slow start but became stronger as the event went on, eventually finishing second in the race. One of the crewmembers from this boat was particularly

proud of the accomplishments of his team in spite of a lack of time to prepare. This improvement was undoubtedly linked to their ability to refine crew-work, sail design, and systems on their boat.

Adapting was also critical for the early periods at sea. It is likely that the teams with individuals who were adept at acclimatizing themselves and were able to quickly adopt the ocean racing mind-set were at an advantage.

11. How did the sailors communicate their frustrations? To whom did the sailors talk in order to deal with adversity?

Although several themes shed light on the source of the sailors' frustrations and how they coped, the sailors did not report any discontent on their boats. This could be due to the sailors having forgotten specific situations (as one sailor mentioned, it is good to have a short memory), or it could be a professional norm that discourages criticism of fellow sailors. The number of professional sailors occupying positions at the upper echelon of professional sailing is small. This could create a reluctance to express criticism for fear of reprisal, or more likely was related to knowing that eventually they could find themselves having to work together on a future project or at a future regatta (due to

the small number of sailors and the equally small number of opportunities in professional sailing).

Informal conversation with a VOR coach suggested that the spouses of the sailors were a source of solace and likely acted as sounding boards for the sailors. In addition, support staff such as physiotherapists, coaches, and medical clinicians often acted as mediators and confidants for their respective teams.

One of the most publicized events in the race was the friction between one of the teams and its shore team. The situation came to a head mid-way through the race, when the team that had been afflicted with chronic breakdowns, confronted the shore team's poor attitude and ability to effectively repair the boat. As stated by one of the sailors in relation to the conflict with the shore team, "We've hired him because he supposedly knows what he's doing and one would hope that he does, but if he's got an attitude and couldn't care less attitude, that's as bad as him not knowing what he's doing." As a result, the skipper fired the majority of the shore team members.

12. What mental strategies did the sailors use to cope with the extreme conditions?

When asked about the use of mental skills during the race, none of the sailors reported any specific mental

preparation strategy for coping with the extreme nature of the race. One of the sailors explained that because the race is all consuming, "It was difficult to put your finger on what exactly you do."

Perhaps further probing or follow up interviews in this area would have resulted in more information. Because these sailors are highly experienced and are considered experts in the domain of ocean racing, it is possible that the mental skills are tightly tied to their overall performances. This would make it difficult for the sailors to compartmentalize the skills without a great deal of reflection and prompting.

13. What were the factors that enticed the sailors to do this race?

One of the primary factors that motivated the sailors to compete in this race was a romantic vision instilled at an early age. In some instances the sailors had memories from their childhood, where if they resided in a country that was involved with one of the stopovers, their parents would take them out on the family sailboat to watch the finish and start of the race.

The sailors also reported an allure from the sense of adventure that comes with the thought of sailing around the world. Certain segments of this race, in particular the

Southern Ocean legs, have a considerable amount of mystique for the sailors. Milestones such as rounding Cape Horn and crossing the equator have held romantic appeal with sailors for centuries.

For other sailors, their interest was piqued from watching video documentaries of early versions of the VOR, when it was called the Whitbread Around the World Race. One of the sailors remembers watching a video when he was a teenager, while another recalled watching one of the videos one stormy night when he was delivering a large yacht from North America to Europe.

The high performance capabilities of the boats used in these races also appear to have been a draw for this event. When sailors become experienced and confident in their abilities, they strive for ways to sail faster for longer periods of time. Personal experience would suggest that the best sailors in the world are constantly looking for new challenges.

14. How did the sailors process their experiences after the race was finished?

The sailors' reflections about the race were likely affected by the length of time that had passed since the race finished (in some cases four months, and in others eight months). The opinions of the sailors in respect to

how completing the race influenced their outlooks were equivocal. In some instances, the sailors reported that because it was part of their profession, they didn't find the experience to be life-changing, as opposed to some around-the-world events where participants with relatively little experience pay a fee to do the circumnavigation. For the paying customers the sense of achievement and potential to have a "life changing" experience is greater. The "pay to sail" events are marketed to those who have always wanted to pursue an adventure. Therefore participants might be less concerned with winning a race than completing the voyage. For these people the motivations are different as it is not attached directly to their livelihood. For the professional sailors, winning the VOR is on par with winning an Olympic medal and as a result can lead to more job opportunities with increases in pay, etc.

Other sailors interviewed believed that the experience of doing a VOR does change one's life, despite what their peers might say. One thing that appears to be common to all the experiences is that being part of the VOR does have a significant impact on one's attitude about sailing; having completed a VOR means sailors are less likely to panic when disaster strikes, and they are much more team

oriented than sailors who do not have extensive offshore experience.

General Discussion

This qualitative investigation was undertaken in order to explore the experiences of professional ocean racing sailors who competed in the 2005/06 Volvo Ocean Race. While the previous section of the chapter used the themes and subthemes to address the research questions, the purpose of this section is to provide a general overall interpretation of the findings.

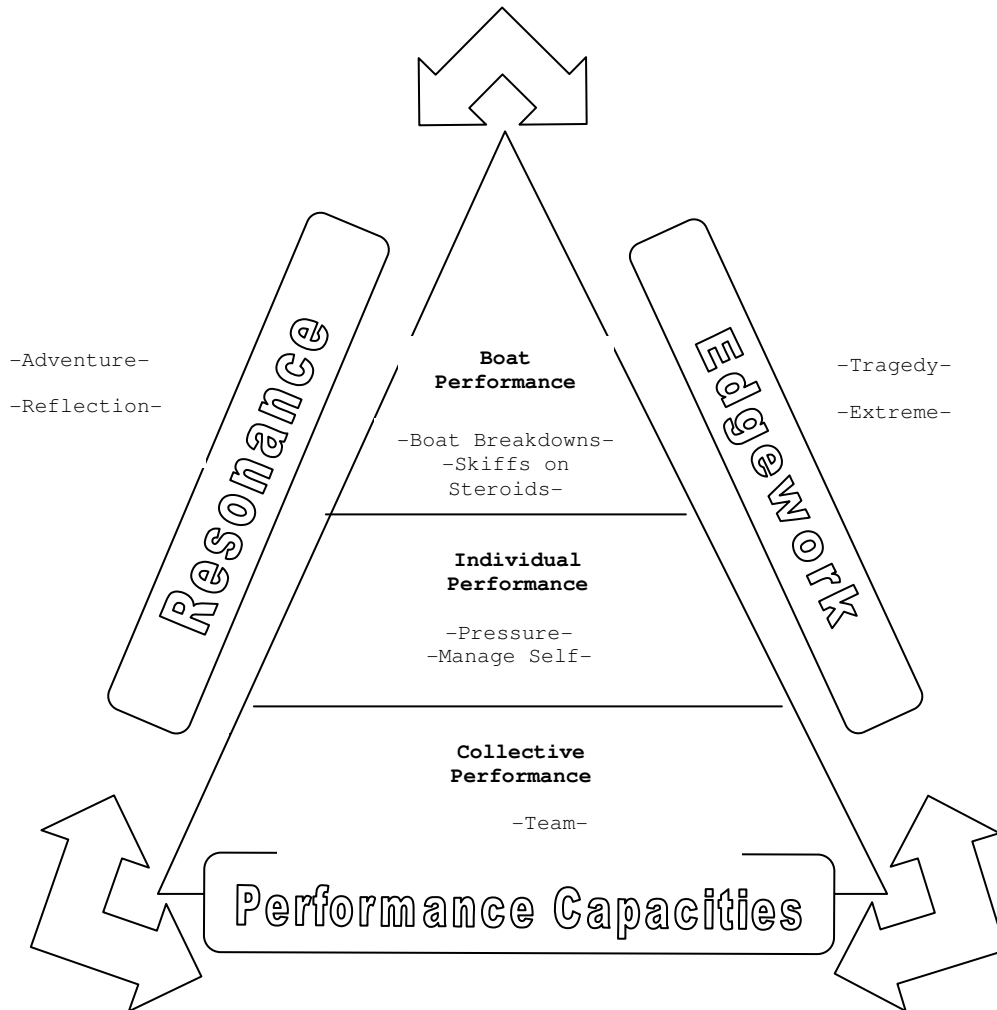
To facilitate this broader discussion, it is useful to consider the sailors' experiences within a framework of the three general dimensions: (a) the participant's deep seated passion for sailing, or what sport psychology researchers Newburg, Kimiecik, Durand-Bush, and Doell (2002) refer to as *resonance*, (b) an omnipresent undercurrent of high risk, referred to by Lyng (1990) as *edgework*, and (c) *performance capacities* that allow the sailors, the teams and ultimately the boats to perform amidst a multitude of significant challenges. In conclusion, a section examine the relevance of ancient sea-faring traditions for VOR sailors will be provided.

In accordance with Maxwell (1996), qualitative research produces descriptive as well as interpretive

information about social phenomena. The dimension of performance capacities pertains to the former, while the dimensions of resonance and edgework are oriented towards the latter.

Figure 1 is provided to illustrate the relationship amongst these three dimensions, as well as the associated themes. The arrows linking the dimensions represent the notion that the dimensions are interconnected. The model is meant to illustrate that the performance of the sailors and the boats occurs against the backdrop of an interplay between resonance and edgework. The pyramid shape of the performance capacities dimension represents the importance of the collective as a foundation, upon which is built the individual performances and ultimately the boat's performance. For example, without a strong foundation provided by the collective, the sailors cannot cope effectively and, therefore, performance suffers. The performance of the boat, affected to a certain extent by superior design, is actualized on the shoulders of the collective and individual capacities to sail the boat more consistently to its potential.

Figure 1: The REP Model: Resonance, Edgework, and Performance Capacities.



Dimension #1: Resonance

As a quote from the movie *Zero Effect* (as cited by Newburg et al. (2002)) states, "The art of research is the ability to look at the details and see the passion" (p. 266). Findings from this study make it evident that a prerequisite for any sailor to compete in and complete a VOR is having a strong intrinsic motivation or passion for ocean racing. Of all the different ways to consider the concept of passion, one of the most interesting is through a framework known as *resonance*. According to Newburg et al. (2002), resonance is a term used in a variety of contexts to explain, "increased, reinforced and prolonged energy" (p. 252). The concept of resonance as it relates to human experience is an intriguing way of examining how experts in any given domain connect with their respective fields and how they remain passionately engaged in their pursuit of excellence. As Newburg et al. suggest, resonance occurs "when there is a seamless fit between how they want to feel (internal) each day and the environment (external)" (p. 252).

Evolving out of many interviews with highly accomplished performers from a variety of backgrounds such as medicine, sport, and music, Newburg et al. (2002)

created the Resonance Performance Model (RPM) to help explain the concept of resonance and to guide sport psychology consultants in their work with clients. High performers are shown to progress through four stages of the RPM.

The first stage is called *The Dream*. According to Newburg et al. (2002), the dream is different from a long term goal or objective. Rather it is "an internal feeling that motivates people to continue playing or performing certain activities" (p. 252). Newburg suggests that the dream explains why individuals become enthralled with a particular activity and why they pursue it with a high degree of commitment for such a long period of time. Specifically, the authors suggest that the dream is central to the model because "it gives individuals the feelings they have identified as expressions of who they are and what they want" (p. 252).

The dream component is illustrated by the sailors' experiences of becoming enamored with the idea of racing around the world at an early age and/or early in their sailing careers. For some the point of engagement was watching video documentaries of previous races, and for others it was being introduced to the race as children or hearing about the races from peers in the sailing

community. Ultimately, the sailors' dreams were driven by interrelated factors such as a yearning for adventure, the pursuit of a dream, an innate competitive drive, a desire for prestige, a love of camaradery, and last but not least the exhilaration of exploring a new frontier in high performance sailing.

Newburg et al. (2002) point out that the dream cannot exist without freedom and responsibility, suggesting that these two components are critical underlying pieces of the resonance phenomenon. For many of the sailors, this was demonstrated on a daily basis; they were committed to their dreams despite not always knowing the specific steps to take along the way, as highlighted by one of the sailors in the following quote: "For me at that point it was unattainable, I couldn't see the steps, that was the romantic vision. In some ways I was ready to give up whenever along the way, you know what I mean, I couldn't see enough of the steps to know it was possible, but I was hooked on it enough to get headed that way."

Preparation is the second component of the RPM, encapsulating the various steps that must be taken along the way. Many of the sailors spoke of the persistence that was required to finally gain a position on one of the VOR teams. This was exemplified by one of the sailors in

particular who relocated to different parts of North America in order to gain experience as a sailor and to gain additional experience as a boat rigger. In this quote, one of the sailors talks about the commitment it took to get started toward his goal, "I started working towards it and I thought, "Okay, I gotta go down and learn how to sail big boats." So I moved to California, just picked up two duffle bags and a mountain bike and moved to Huntington Beach and started sailing offshore."

For individuals who are experiencing a strong sense of resonance, there is great fulfillment in the preparation process. This is reflected in the discipline required to achieve a high level of quality and quantity of time spent practicing and preparing. The sailors that are chosen to be part of a VOR team have excelled in many other areas of the sport, including Olympic classes, inshore races such as the America's Cup, and usually a multitude of high profile professional events. Some of the sailors interviewed in the study had an excess of 500,000 sea miles and had been sailing professionally for 20 years or more. For many of these sailors, becoming a professional sailor was a step in the path to competing in the VOR.

The third piece of the RPM is referred to as *Obstacles*. As the name implies, it refers to roadblocks

that the sailors have experienced during their careers. According to Newburg et al., these situations can be physical or material in nature, such as injuries or failures, but can also stem from self doubt or apprehension in the mind of the performers. Physical obstacles were encountered in one case where the sailor was not chosen for a team early in his career, presumably due to a lack of experience. When he finally did get an opportunity, he took advantage of it and has since competed in several VORs and many other international regattas.

Mental obstacles were also apparent, as explained by one of the sailors who verbalized a measure of self-doubt regarding his ability to "measure up" once he was chosen for a team. Several of the sailors alluded to the difficulty of getting selected for a team simply because there are such a small number of boats in relation to the number of sailors who want to race. To address the lack of youth in the race, the VOR organization has made it mandatory for each team to have at least two crew members under the age of 30 (VOR, 2006).

Reflection after experiencing a setback is the fourth stage of the RPM. It is called *Revisiting the Dream*, referring to the activity of drawing lessons from successful and unsuccessful moments during one's career.

This stage was evident in the sailors who were returning on second, third, fourth, and fifth attempts to win the race. In another situation, one of the participants from the 2001/02 VOR cited his recognition of the great things that could be accomplished by a highly functioning team. As a result, the majority of the group decided to return for the 05/06 VOR. It appears that the number of sailors that choose to return for subsequent VORs far outweighs the number who choose not to.

Related to the notion of resonance and represented by the subtheme *Reflection*, there was disagreement as to the extent to which the sailors' lives had been changed by the VOR experience. Some sailors saw the race as an extension of their profession, choosing to approach the race in a logical and matter of fact way. One of the participants made the comparison of his experience to that of individuals who pay a fee to race around the world, for example the BT Global Challenge. The teams in this around the world race are made up of individuals with minimal (if any) sailing experience and one professional sailor as skipper. Individuals who enroll in this race are more likely to have a life changing experience, and indeed that is how they are able to justify taking a leave from their professional lives and paying a hefty fee for the

opportunity. However, one of the sailors espoused the notion that despite what the sailors verbalized, the race does in fact change their lives at some level.

The difference in motivations between individuals who participate in a sport professionally and those who see it as leisure has been documented in other domains. In a phenomenological investigation of the experiences of ultra endurance athletes who swam the English Channel, Hollander and Avecedo (2000) discovered that swimmers could be grouped into two different categories depending on the meaning that the experience held for each swimmer. One category was called "life markers" representing the swimmers who completed the swim for the first time. For these swimmers, the swim represented a chance to overcome extreme mental and physical barriers; it represented a lofty aspiration that was secondary to their primary vocation in life. The swimmers in the second category were referred to as "competitive open water swimmers." The motivations for these athletes were to better a previous time or to compete against other swimmers. The latter group were much more experienced and had fewer misgivings about the environmental uncertainty of the weather and water. It would appear that the findings from Hollander and Avecedo's study are supported by information in this

study, where VOR sailors were more similar to the “open water swimmers.” As suggested by one of the VOR competitors “I have a job in the industry, it’s not like I’m going back to another job like a desk job or anything, even a construction job, this is what I do for a living, I go sailing, luckily.”

Dimension #2: Edgework

While resonance explains how a deep connection for ocean racing is developed and nurtured, and to a certain extent explains the sailors’ intrinsic motivations, there is a unique thread that is woven through the VOR as well as many other high risk sports: the likelihood of death or serious injury.

The term *edgework* is used to refer to activities that psychologists call “high-risk” (Lyng, 2005). Arising from an ethnographic study (researcher as a jump pilot in a community of skydivers), the term *edgework* was used by Lyng (1990) to refer to voluntary high-risk activities, primarily because “conceiving of high-risk activities as edgework shifts the focus away from fear, arousal, and preoccupation with death and toward the spontaneous, anarchic, impulsive character of the experience” (p. 864).

Control and Safety

Contrary to what outsiders might think about a seemingly dangerous activity, edgeworkers do not behave in irrational or "out of control" ways. As suggested by Lyng (1990), individuals who pursue high-risk activities dislike putting themselves in situations where they do not have a great deal of control. The activities may give off an aura of being impulsive and risky but, ironically, the act is controlled and conforms highly to well established rules in the mind of the performer. According to Celsi et al. (1993) and others (Llewellyn & Sanchez, 2007; Slanger & Rudestam, 1997), the limit of safety, or the edge, is a subjective assessment defined by the individual, based upon positive experiences and self-efficacy. The performer's perception that the task is manageable helps him or her to overcome the anxiety and fear that would be experienced by those unfamiliar with the task, a process that Slanger and Rudenstam (1997) refer to as disinhibition.

In long-duration events such as mountaineering and sailing, performers are able to realize that in certain instances taking risk often reduces the overall risk to the larger group and, in the case of the sailors, their boat. This somewhat counterintuitive feature is captured well by one of the bowmen from this study:

There is a certain amount of safety in our job from being free to run around the boat. Because there is a compromise there that's not really quantifiable and won't stand up on paper for your actions . . . But as far as mentally, your process, that's all I am ever trying to do is to make everything safe, that's all we are trying to do is be safe, no one wants to do that more than you do.

Although many dangerous situations arose during the course of the race, the majority of the sailors had rationalized these risks in their minds before the race started. As stated by Celsi and Rose (1993), "High risk performers are under no illusion regarding the risk of injury or death" (p. 17). For the sailors interviewed in this study, surviving the race was a calculated risk that was in their favor, something they had a certain amount of control over: "I mean you know that is part of the race as well as that it's not a zero risk, it's not safe." One of the sailors qualified the statement, saying: "But we all know that, and we have all been training for it for so long that we reduce the risk to a level that we are happy to at least go."

The relationship between safety and control is demonstrated well in the following quote from famed mountaineer Charles Houston: "The manageable risks that make a route difficult do attract climbers, while the uncontrollable dangers do not" (as cited by Celsi & Rose,

1993, p. 16). This statement is consistent with research findings in other high risk sports such as skydiving (Celsi & Rose, 1993; Lipscombe, 1999), rock climbing (Slanger & Rudestam, 1997), and mountaineering (Burke & Orlick, 2003).

Experiencing the edge. In addition to Lyng's work (Lyng, 1990, 2005; Lyng & Snow, 1986), there is an interest in understanding the experiences of those who negotiate the boundaries of the edge (Celsi & Rose, 1993; Hollander & Acevedo, 2000) and the role that these experiences play in the context of the participants' motivations (Lipscombe, 1999).

In the case of the sailors from this study, experiences of sailing on the edge were commonly reflected in the descriptions of sailing the boats. Regarding the inner experiences and the role that instinct played when engaged in the more challenging tasks, the bowmen provided the richest descriptions:

After you have spent several weeks on the boat you are surrounded by it and you are living it, I don't think, Okay, unclip" and pick my moment. My body has been feeling those waves and being hit by that water all day, my brain just says, "Unclip now, go." And I get there and I clip in again. It's not super conscious.

Another sailor suggested that doing his job safely involved conscious decision-making, influenced by an underlying subconscious sense of what is going on around

him. Here he gives his account of the way he works with what appears to be a very chaotic situation, a defining feature of edgework: "Completely conscious, I wouldn't say you're scared but you're on that verge, that acute awareness of your environment for sure." Another sailor who was also participating in the interview closed the conversation by stating: "It's pretty consistent chaos, it's not just totally bizarre, I mean everything has a rhythm."

A participant in Lyng's (1990) study of skydiving culture echoes the sentiments of the sailors in the following quote: "If you try to physically force your body into the correct configuration, you won't be able to 'think' your way from Point A to Point B. It's impossible to do this unless you've reached a state of being completely comfortable with the air" (p. 861).

Tragedy. The drowning death of one of the sailors during the North Atlantic crossing hit the sailors, their families, and everyone else associated with the race hard. However, in the aftermath there were no calls for formal inquiries and no attempt at laying blame. In a similar context, Celsi and Rose (1993) describe how the death of a skydiver was interpreted by members of the skydiving community. While the impact of the individual's death was

met with a great deal of grief, it was simultaneously accepted as part of the experience of skydiving.

Similarly, the sailors interpreted the death as an accident that could have happened to any one of them at any time during this race (or previous races). One of the sailors equated the incident with being hit by a vehicle—simply a case of bad luck:

That poor guy got hit by the bus, he was out on the boat and he fell off the boat and he drowned. But I didn't think of it as some stupid sailing accident. It was almost just a bad luck deal like if I got hit on my scooter tonight going home, I put it more into that category rather than something you can pick apart that you could have done better or worse, it was just shit ass luck because to do what we do we are all exposed to that.

The attitudes of the skydivers were again strikingly similar to those of the sailors in regards to how to carry on in the wake of the tragedy. Although the skydivers reflected a great deal on the loss, members of the community continued to participate, believing that the best way to honor the person was to continue to engage in skydiving. The team of the lost sailor was able to continue in subsequent legs of the race due to the support of the lost sailor's family. As stated by one of the crew:

His family's support was the reason why we could go on, and we knew that's what he would want and he would have been really disappointed. Because they gave us the option and they said it's totally understandable if you guys want to stop here, you've proved

everything, and his father made a point to us, he goes: "You know, we want you to keep pushing because that's what he would have wanted, keep sailing, we would be disappointed because this is what he would have wanted." And I think it was the right move you know.

Influence of technology. One of the most interesting story lines from the 05/06 race was the challenges faced due to the unprecedented performance potential of the boats. It appears that the sailors had a love-hate relationship with the boats; in one sense the breakdowns were the most significant source of frustration, while on the other hand the boats provided the greatest thrill the sailors had ever experienced on a mono-hull. The importance of technology in this race is consistent with Celsi and Rose (1993) and others (Lyng, 1990), who also recognize the technology as a motive for involvement in high-risk sport.

Dimension #3: Performance Capacities

Findings from the study show that a sailor's resonance for ocean racing and the overarching concept of edgework are unique and defining components of the experiences of ocean racing sailors. However, the VOR is first and foremost an elite competition. The third dimension known as *Performance Capacities*, reflects this performance component and highlights the necessary ingredients for a

successful overall performance. Within this dimension, three subdimensions were identified—pertaining to the team, the individual, and the boat.

Subdimension #1: Individual capacities. Individuals who compete in a race such as the VOR are elite sailors who have highly developed skills in the technical, tactical, physical, and mental domains. However, many of the sailors found it difficult to articulate the skills that allowed them to perform at such a high level. As stated by one of the VOR competitors, "It's hard to put your finger on what you do psychologically or physically or mentally, it's just everything that makes it such an awesome challenge." One sailor spoke about the importance of the mental toughness possessed by each individual, "It's an incredible character building thing to do, it's really up to you in your head individually to be able to just, to tough it out when you have to, and that's what makes it so challenging."

Personal experience would suggest that high-level athletes unknowingly use skills such as imagery, self-talk, and attentional control. This can be even more likely if they are not familiar with sport psychology's focus on mental skills as compartmentalized from the overall skill set. Indeed, due to the filtering process, the participants in this study do in fact represent a very high

level of expertise in ocean racing. Although it appears that traits such as resilience, mental toughness, and hardiness are possessed by the sailors, the sailors may have considered these characteristics self evident and therefore simply taken them for granted.

There were several instances in the interviews where it became apparent that the sailors were using what sport psychologists would consider mental skills. Perhaps the best examples were exhibited in the ability to stay focused in the aftermath of the breakdowns in order to ensure the safety of the boat and the sailors on board.

Coping with stress. The sailors' abilities to cope with breakdowns in a composed manner are a hallmark of the ocean-racing sailor. Although disappointment was the initial reaction when a setback such as a serious breakdown occurred, the sailors had no choice but to take action and repair or contain the problem. This was purely in the interest of survival, as time spent dwelling on their misfortune could cost them their lives.

This suggests that the sailors tended to favor problem-based coping strategies as opposed to emotion-based coping (Folkman, 1992). The following quote highlights this point:

Well there are times when your arse is in the fire and you've got to try and break it all down, otherwise you're not going to solve the problem. There's no room for panic on those boats so you've just got to slow things down and keep under control. Once you've got the situation in good place you can start then going, "How do we go forward?"

Dale's (2000) research used a phenomenological approach to exploring the most memorable experiences of elite decathletes. The study identified various methods of coping used by the athletes, such as visualizing, competing against oneself, confidence in one's training, being aware of cues, consistency, and camaraderie. The most applicable finding from Dale's study was the coping strategy known as camaraderie, which was also relied upon by the VOR sailors.

The VOR sailors were all experiencing similar conditions and situations, and indeed were pursuing the same goal. This allowed them to take solace together whenever there was a particularly difficult situation in the race; whether it was a particularly difficult leg of the race, or the loss of one of the competitors, they were all in it together:

Everybody has had the same experiences, we've all been sailing out of control, on the edge, scared out of our fucking minds, there's no sleep, shitty food, shit happening at home, shit happening out on the boats, boats damaged, all sorts of crap, so everybody has been through everything, so that at the end of it everybody is equal.

Findings from other research verify the notion that social support is one of the most important ways that athletes realize great performances, and also deal with serious setbacks.

Sources of stress. Pressures experienced by the sailors were similar to the sources of stress reported by athletes from other sports—particularly those stressors arising from organizational factors (Hanton, Fletcher, & Coughlan, 2005; Woodman & Hardy, 2001). For the sailors these organizational stressors included sponsors, the sailors' families, and, for the skippers, being fiscally responsible. The notion that organizational stressors are a greater source of stress than competitive stressors appeared to be the case for the sailors.

Findings from Thelwell, Weston, and Greenless (2007) regarding the sources of stress and coping strategies used in professional cricket suggest that every sport has unique sources of stress, and that within each sport the unique roles of each athlete will further affect the factors that are considered stressful. Supporting the contention of Thelwell et al., it seems that sources of stress, or pressures, were different for each sailor depending on different factors such as their age, marital status, and position on the boat.

Relaxation/centering. It is important to note that the sailors were not particularly worried about performing in a sleep-deprived state. They did, however, refer on numerous occasions to the difficulty in falling asleep; specifically they had difficulty "cycling down" after being on-watch in more extreme conditions. Similar to trying to fall asleep after driving for a long and intense stretch of time, switching their mind off was difficult for the sailors. Several of the sailors stated that the factor that helped them to rest in difficult conditions was having trust in the person steering the boat. The sailors were so connected to the motion of the boat that they were able to determine who was steering simply by lying in their bunk and feeling the boat's movement. The more skillful and confident helmsmen were smoother and more consistent in their driving, which in turn made it easier for the sailors to fall asleep.

The limited amounts of time when a sailor had a chance to rest, meant it was imperative to take advantage of these times. One of teams employed the services of a "sleep doctor" (chronobiologist) to help them better understand how a person's body and mind are affected by sleep deprivation. One of the sailors related how he used relaxation techniques so that he could in the best case

scenario, get some sleep, and at the very least slow his mind enough to allow his body to come down from the stress of being on deck when the conditions were severe.

General preparation. The importance of preparation was emphasized by a number of the sailors. Indeed the meticulous way in which sailors approach the preparation of their equipment suggests that it also functions as a cultural value. Evidence from personal experience and populist literature would suggest that this extends to the broader seafaring and sailing culture (Lundy, 2003). The importance of preparation has also been found in other extreme sport settings (Burke & Orlick, 2003; Krakauer, 1990).

The role of the sport psychologist. In regards to enhancing individual performance capacities, sport psychologists do not appear to have been actively involved as part of the support staff for any VOR teams. While it seems that health care practitioners are in a position where they can provide a source of confidentiality and act as a sounding board for the sailors, it is unlikely that they have in-depth knowledge of mental skills training.

It seems quite plausible that a sport psychology consultant could be of benefit to a VOR team. However, as

suggested by one of the skippers interviewed in this study, it might not be an easy sell:

Sailors are very strange people and because the guys who are doing it, most of them have done it (the race) before so they know most of the in's and out's . . . it might be helpful for some of the guys. I'm pretty sure 80% of the guys would say that's bullshit. They just go in with that attitude.

Subdimension #2: Collective Performance Capacities

The populist term *teamwork*, devalued due to its frequent usage, only begins to describe the importance of the collective performance as it relates to the VOR teams. The concept of team in the VOR goes beyond typical studies of team dynamics and group cohesion; the role of team is more profound than in any mainstream sport. The advantage gained by superior boat design and construction, and better equipment and sail inventories could be easily neutralized due to poor team dynamics.

While the team often receives credit from athletes trying to downplay their own contributions, references to the importance of the team seem more meaningful in the context of the VORs. As further evidence of the importance of the team concept, several participants found it difficult to articulate how they coped with the extreme conditions, often deferring to "the team" as being the most important factor:

It always goes back to the team basically, and there are difficult times during the race. We had a shocker in the leg from Brazil and we got behind, and I had to say to everyone, "Look, we're going to be pretty dog-last for the next two weeks, we just got to do the best that we can for the next two weeks and we might get an opportunity further up the track." So it's a pretty tough thing I guess for everyone to swallow because they're working their hardest, and knowing they're working their hardest, and knowing they're going to lose miles comes down to having a good team around you, you know, keep your chin up and keep going for it.

Cohesion and group dynamics. For the VOR sailors, cohesion was synonymous with survival and performance; without a strong sense of collective or team, the most talented sailors will have considerably less impact on the boat's performance, and it is less likely that the boat will be sailed to it's potential.

Cultural values, which Munro et al. (1999) describe as "a social expectation that pertains to how individuals should behave in various situations" (p. 272), played a strong part in influencing the behavior of the sailors throughout the event. The VOR has it's own set of rules and values that distinguishes it from other sailing events:

In the Volvo you can walk into another team's container and say, "Have you seen so and so?" and have a chat. If you did that here (Valencia) you would be fucking hand cuffed and escorted out (chuckle).

It is not surprising that these values bear a strong resemblance to the creed that seafarers have adhered to for

centuries. Indeed, many of the traditions of the ancient mariners are still played out. The VOR documentary included several teams enacting King Neptune's indoctrination of sailors who cross the equator for the first time. Also highlighted was the French belief that bananas and rabbits are bad omens on board sailing vessels (Sven, 2006).

The VOR phenomenon seems to support another contention made by Munro et al (1999) suggesting that team norms develop over the course of time through interactions and reinforcement. Because the sailors lived and breathed various norms, not only while on the boat but also during stopovers, the expected behaviors undoubtedly became deeply engrained in the minds of the sailors. It is likely that these cultural values and norms become even more integrated because of the number of sailors that return to compete in subsequent events. As Munro et al. suggest, if cultural values are strong enough, they can have a direct impact on group norms. For VOR sailors, the VOR norms and values are so strong that they impact the way they conduct themselves in other sailing contexts. As suggested by one of the participants who was interviewed while working in Valencia for an America's Cup Team, "Who are the guys down below wooling kites, the one to help the other guy, or who's the

one who is always on the bow pulling jibs forward? That's what we were taught on the Volvo."

Trust in the team and the ability of key members of the team to work together and have an open dialogue to exchange information was seen as critical:

The team around you and their relationship with the skipper is important . . . I think if that works well then that strengthens the team as a whole, and if you can bounce ideas off each other and look at the strategies and make a decision, you know you might have a whole lot of ideas and someone might be seeing something different, so you can actually meet somewhere that's good in the middle. They might have things you haven't thought of and you might have thought of things that they haven't.

The same finding was revealed by researchers examining the predictors of success for teams competing in the BT Global Challenge, suggesting that cohesion and open-mindedness of skippers and watch leaders were strongly associated with successful performances (Dulewicz et al., 2002).

Conflict. It was interesting to note that the sailors did not report any conflict amongst members of their teams. While I did not specifically ask whether there was any interpersonal conflict within their teams, when I did hint as to whether this was the case, there seemed to be a reluctance to speak about it. It is unlikely that there was complete solidarity on the boats throughout the

duration of the event. It seems that any tension on the boats was short-lived, promptly resolved, and put behind them. As explained by one of the sailors, "You don't want to be the one affecting anyone else on the boat because it just doesn't work." This norm puts a great deal of pressure on the individuals to focus on their own attitudes in order to support the team. As the individual interviewed in the pilot study stated, "Nobody wants to get off the boat."

It is difficult to understand how 10 people confined to a small space for long periods of time, in a competitive context and extreme environmental conditions, could live in total harmony. The question then, is not whether or not they experienced conflict, but rather how did they avoid any major rifts, or resolve conflict? It is possible that discontent was displaced to fellow teammates, spouses, and coaches during the stopovers. Research from crews of international space stations found that conflict was rarely discussed within the teams while on mission, but rather was diverted to members of mission controls and other support personnel (Kanas et al., 2007). It was also likely a deliberate strategy of the teams to conceal weaknesses, lest another competitor gain a psychological advantage.

In one of the most highly publicized team conflicts, one of the teams dismissed its female navigator after the

first leg of the race. Media reports never made entirely clear why she was replaced. During the interview, the skipper of the boat indicated that he preferred not to discuss the matter. The VOR is very much a male dominated event, as is the mainstream professional sailing circuit, for example the America's Cup (Crawley, 1998). One exception to this rule is the single-handed racing category, where female athletes have been competing successfully since the early 1990s (Lundy, 1999).

The on-shore team component. While the main team is obviously centered around the ten sailors on the boats, there are individuals providing support from land who are inextricably tied to the performance and psychological well being of the sailors. The shore team and the families of the sailors play critical support roles.

The shore teams are responsible for the maintenance and repair of the boats when they arrive at the end of each leg. They function much like the pit crews in car racing, whereby the driver gets out of the car, takes a rest, and discusses strategy, while a specialized team of mechanics ensures the car is functioning properly and is maximized for the expected conditions. The driver's life is in the hands of the pit crew; much the same can be said of the relationship between the sailors and the shore teams.

Comparisons could also be made to space travel and summiting mountain peaks (Kanas et al., 2001; Krakauer, 1990). Similar to the VOR sailors, the astronauts and mountaineers can solicit technical information and advice from the support teams, but they are essentially on their own to work through problems that arise.

The families of the sailors played a significant role in the overall experiences of the sailors. Because the 2005/06 race was expected to be highly demanding in respect to the high performance boats and relatively small number of crew, the most experienced sailors available were chosen for the teams. The skippers appeared to be more likely to select sailors they had sailed with in previous races and who had competed in at least one prior race and preferably two or more. This translated into the sailors being mostly in their mid 30s or early 40s, many of whom had wives and young families. Because the race took place over an eight-month period, the teams devoted a component of the budget to transporting the sailors' wives and children to the stopovers and housing them there. As stated by one of the team skippers, although the sailors prefer to have their families at the stopovers, they can be distracting. In this statement, he highlights the importance of having spouses that understand the overall context of the race:

I think it's way more important that the wives can work together . . . the wives are normally—they chitchat along . . . that's where the troubles come. It's not the guys on the boat, it's the wives . . . It's way easier if you could just pick guys who are single 'cause then there are no issues at all, but as soon as you're hitting the shore, they want their husbands for 100% and there's still things to be done.

Unlike other professional sports, where the athletes have a home base for their families and play a certain number of home games, the VOR sailors and their families were transient. Although the VOR appears to outsiders to be a glamorous adventure, there was likely a great deal of stress on the families as they were continually uprooted over the eight-month period. To accommodate the young families, the VOR organizers provided teachers to help with the education of the sailors' children at the stopovers (Mundle, 2006).

Multicultural experience. None of the teams was entirely made up of one nationality. It appears that some cultures were compatible, such as those from the British Commonwealth (Britain, New Zealand, Australia), while the Brazilian team had a positive experience being primarily made up of Portuguese speaking sailors, reflecting a "laid back" South American culture. Comments regarding the cultural make up of the teams were minimal, which could suggest that the cultural norms are over-ridden by the VOR

subculture and long-standing universal seafaring traditions.

Leadership. For centuries, life at sea has been characterized by the double edge of heroic romanticism and extreme hardship (Lundy, 2003). A number of leaders have become revered as a result of their exploits. As evidence, one has to look no further than books targeted at business leadership in turbulent times, drawing from the likes of Sir Ernest Shackelton (Morrell & Capparell, 2001; Perkins, Holtman, & Kessler, 2000).

Leadership was not specifically targeted as a research objective in this study; however, a few key observations can be made. Although leadership is normally considered in isolation as an individual skill set, within the context of the VOR, leadership is so intertwined with the inner workings of the team that it should be considered in a collective sense. When one thinks of leadership, the person that comes to mind is the skipper of the boat.

Being a skipper on a VOR boat is a challenging task. It is likely that due to the small number of crew, the skippers could not afford to entirely "step back" from their day to day responsibilities. Similarly, it is not likely that micro managing the sailors would be an efficient use of their time; the skippers needed to sustain

themselves physically, attend to the safety of the boat, and monitor the tactical and strategic decision-making. However, it appears that the skippers in this race were demanding and at the same time facilitative; sailors were left to their own devices in relation to their specific roles.

Findings from research focusing on leadership abilities of mission commanders of international space stations suggest that two types of roles need to be fulfilled (Kanas & Ritsher, 2005). One is a task/instrument role and the other is a supportive/expressive role. These two roles were enacted by successful skippers of the VOR teams.

Dulewicz et al. (2002) suggest that more successful skippers in the BT Global Challenge scored higher in emotional intelligence and were less concerned with befriending their crew than less successful skippers. It is difficult to tell whether this finding would be substantiated in an event such as the VOR. In the VOR, many of these sailors have a long history of sailing together and as such have a great deal of respect and admiration for one another. In addition, the potential power imbalance between professional skipper and amateur crew that exists in races such as the BT Global Challenge

is not present in the VOR where all the sailors are professionals.

There were, however, some similarities with the BT Global Challenge study (Dulewicz et al., 2002), one of which was the notion that skippers needed to move beyond their tendency to be overly demanding on those around them and develop a more sustainable type of leadership. As one of the VOR participants stated, "You have to do a little bit differently the Volvo, because you stay with same people for very long, and if you are very demanding the whole time then sometimes people, it can be too much and I had to adapt a little bit."

Subdimension #3: Boat Performance Capacities

Reflected primarily by the theme *Skiffs on Steroids*, and as seen in the model in Figure 1, the capacity of the boat to perform was strongly tied to the sailors' and the teams' abilities to perform at a consistently higher level than their competitors. In fact, the 05/06 VOR was the first time that the technology of boat design was beyond the capacities of the sailors' abilities to push the edge. Succinctly stated by one of the competitors:

We got halfway across (the Atlantic) and said, "Shit this is not on, we just can't do this." Even though we had very good drivers, we realized the boat was better than the humans. It was too much, too much stress.

Lyng's (1990) evaluation of the role of technology in high risk sport reflects the experiences of other edgework activities, "With the increasingly sophisticated nature of modern technology, individuals must sometimes push themselves to the outer limits of human performance in order to reach the performance limits of the technology under their control" (p. 858).

This realization caused the sailors to focus on adapting in order to gain a competitive advantage. This occurred in several areas. First, they had to change their approach to sailing the boats. Second, they had to rethink the systems used to handle the sails, in some cases borrowing strategies used by single-handed sailors. Even after the race began, intensive innovation was occurring in terms of boat handling techniques and sail design (personal communication, Ken Dool, VOR coach, July 5, 2007). This supports the notion offered by renowned coaching consultant Frank Dick, "The only sustainable competitive advantage is the ability to learn faster than others" (personal communication, March 4, 2008), as well as by others in the world of business (Argyris, 1991; Eichinger & Lombardo, 2004).

In recent times, sailboat racing has often been referred to as an "arms race," meaning that the most successful teams have owners with the deepest pockets. In addition, larger financial resources allow teams to access the best human and technological resources, which they can then leverage to competitive advantages. This is a quantifiable difference as compared to one-design classes of sailing typical of the Olympics, whereby rules are strictly enforced so that the boat's performance is a truer reflection of the sailors' abilities.

Seafaring Traditions

Further reflections on the VOR and the RPE Model would suggest that although much has changed in terms of technology onboard sailing vessels, the essence of being at sea on a wind-driven vessel remains much the same.

While it has been over 100 years since the end of the Golden Age of Sail, there are excellent accounts of life at sea that were written during the mid-late 19th century (Conrad, 1929; Dana, 1964; Raban, 1992).

From reading these descriptions of life aboard sailing vessels, we are reminded of the similarities of seafaring of the past and present. The adventurous nature and romantic allure of seafaring would correspond to the resonance dimension, the dedication, skill and discipline

required of tall ship sailors was remarkable as suggested in the performance capacities dimension, and to make a ship run safely and efficiently in extreme conditions (arguably more extreme) would be captured by the dimension of edgework.

The following account of a seaman's experience on a square rigged ship bears striking resemblance to that of the VOR sailors as depicted in the RPE Model:

Each sailing ship's voyage, before it began, was an unknowable adventure, a great contingency that could be completed, as one seaman-writer said, only "by the sea-cunning of men, not by the strength of machinery." . . . On passages under sail, it's always the men that count: what they do, what they have in them and what the voyage teaches them along the way. (Lundy, 2003, p. 8)

And finally, as quoted by Lundy (1999), a poem from Lord Byron's *The Corsair* describing the timeless and heart-felt experience of those who sail the oceans of the world:

Oh, who can tell, save he whose heart hath tried,
And advanced in triumph o'er the waters wide,
The exulting sense—the pulse's maddening play,
That thrills the wanderer of that trackless way? (p. 5)

Recommendations for Practitioners

Several recommendations have arisen from this study that will be helpful for sport psychology consultants having the opportunity to work with VOR sailors or other extreme sports teams.

In this study, 15 participants from the various VOR teams represented nine nationalities. Due to the multicultural makeup of the teams, practitioners would be well advised to have an understanding of the impact that cultural differences can have on individual styles of interacting and communicating. Cultural biases could also be reflected in the sailors' leadership styles and expectations, conflict resolution methods, and coping responses to stressful situations.

Because the VOR (and other extreme sports) are risky endeavors, there is always a chance that there could be a serious injury or loss of life. This reality necessitates that practitioners have a good measure of education in the areas of grief therapy and crisis intervention. Loss of life significantly affects not only the sailors' immediate family and teammates, but the entire VOR subculture. The sailors' families accompany them to the various stopovers so they will also require assistance if there is an incident. Ideally, a clinician with specific experience in

this area should be contracted ahead of time to be available for telephone consults, and also to travel to any stopover where an incident might occur. This person should have an understanding of high-risk sport in order to maximize her/his effectiveness to intervene.

Although sailing undoubtedly shares some of the norms and values of mainstream sport culture, the VOR is a specific subculture that creates a unique identity for the sailors, support personnel, and their families. In addition, it is unlikely that many of the sailors will have experience with sport science and it is highly unlikely that they will have any understanding about the role of a sport psychology consultant (the exception being if they had recent experience in the Olympic classes). Practitioners should be prepared for this lack of education, which could manifest itself in something as simple as curiosity, or in a more debilitating manner such as mistrust, or even ridicule. Cultural differences would likely also have an impact on perceptions towards sport psychology. To offset resistance to their help and build rapport in a more expedient way, practitioners would be well advised to take steps to familiarize themselves with the idiosyncrasies of the VOR before beginning work with any sailors or teams. Fortunately, the field of sport

psychology is growing rapidly and it's recognition as an essential component of any high performance sport team is becoming more and more evident. Once a practitioner establishes a good level of rapport, the benefits should quickly follow.

Clarification about the sport psychology consultant's scope of practice is necessary for several reasons. A non-clinical performance enhancement approach would be recommended as the field of psychology continues to call forward thoughts of mental weakness, therapy, and mental illness. Roles and responsibilities should be discussed well in advance with not only the sailors and families, but with other support personnel such as coaches, trainers, physiotherapists or physicians. A discussion of these roles as well as scope of practice is also imperative because the VOR as an organization hires physicians to be available for all the teams. As a result, there is likelihood that some level of intervention separate from or in conjunction with the sport psychology consultant's work could be ongoing. During the last VOR, several of the teams hired physicians independently of the VOR. Assuming that a sport psychology consultant would likely be best positioned to work effectively with a single team, having an excellent working relationship with the team physician

would be essential. In the case of a team physician's involvement, that person would likely be in charge of coordinating sport science and medical services.

The families of the sailors are an important aspect of the VOR event, in particular as they accompany the sailors to all the stopovers. The sport psychology consultant would have to be clear as to what level and at what times to make themselves available (if at all) for the sailors' wives and children. Although such services may be important to the performance of the sailors, family counseling or issues of child development, for example, would take away from the time required for focusing specifically on performance enhancement. Thus it would be beneficial to have a well-developed referral system.

Training in systems theory is a necessity for working with a VOR team. There is a great deal of complexity created by the needs of the sailors, their families, the shore teams, boat designers and builders, corporate sponsors, and the VOR organization. The goal of sport psychology consultants should be to minimize the amount of complexity and impact they themselves have on the teams they work with. It will be important to be flexible and adaptable in scheduling, much the same as working within an Integrated Support Team (Performance Enhancement Team),

whereby the sport scientists need skills in diplomacy, tact, and grace. Practitioners should also be prepared to “pull their weight” in areas other than sport psychology. Having the ability to operate coach boats or even crew on the boats during training sessions from time to time could be an asset.

The sport psychology consultant should be comfortable working in foreign countries. In the VOR, there is a premium on being self-sufficient; this appears to be true not only on the water but also on shore. A working knowledge of languages other than English would be an asset in many respects.

In terms of providing service, practitioners should be ready for calls at all hours of the day and night, and be prepared for long hours during stopovers and pit-stops. Additionally, it would be unlikely that practitioners would have access to office space, which would put a premium on informal interactions.

One of the skippers interviewed in this study suggested that a female consultant would be more suitable for a VOR team. This consideration should be explored further, as the world of professional sailing (and seafaring in general) is historically steeped in the norms

and values of masculinity. The gender of the consultant could be an important consideration.

The final recommendation would be to incorporate Newburg's Resonance Performance Model (Newburg et al., 2002) to guide working relationships with the sailors. Several guidelines considerations and examples of how to implement the Model are provided by Newburg et al., the most important being "one should live resonance first, and teach it second" (p. 265).

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
FOR FUTURE RESEARCH

Experiences of professional ocean racing sailors who competed in the 2005/06 VOR. The following 14 research questions were posed to narrow the focus of the study:

1. How did the sailors become involved in the race?
2. How did the highly developed and technically evolved boats perform?
3. How did sleep deprivation affect the sailors' abilities to carry out their jobs, make decisions and relate to each other?
4. What were the most dangerous aspects of the race?
5. What aspects of the race were the most fearful, and how did the sailors deal with their fears?
6. How did the sailors balance the need to survive with their competitive drive?
7. What aspects of the race did the sailors find most difficult and most enjoyable?
8. How did the sailors prepare themselves during different times of the race?

9. How were the sailors affected by various overarching issues during the race? Specifically, what was their experience of the following:

a. Significant speed advantages by one of the competitors,

b. Equipment failures,

c. One of the boats sinking during the race,

d. One of the competitors drowning.

10. How did the sailors learn and adapt to various circumstances?

11. How did the sailors communicate their frustrations? To whom did the sailors talk to order to deal with adversity?

12. What mental strategies did the sailors use to cope with the extreme conditions?

13. What were the factors that enticed the sailors to do this race?

14. How did the sailors process their experiences after the race was finished?

This chapter is presented in the following sections:

(a) Summary, (b) Conclusions, and (c) Recommendations for Future Research.

Summary

Fifteen sailors participated in semi-structured interviews designed to gain insight into their experiences of competing in the 2005/06 Volvo Ocean Race. The majority of the interviews were conducted in person at regatta sites in Miami and Valencia, while three interviews took place via telephone.

From the inductive analysis of the transcribed interviews, nine themes (*Background, Skiffs on Steroids, Boat Breakdowns, Managing Self, Pressure, Tragedy, Extreme, Team, and Reflecting*) and 28 associated subthemes emerged, as well as three dimensions (*Resonance, Edgework, and Performance Capacities*) and three related subdimensions for *Performance Capacities*.

Analysis of the data revealed that the large majority of the sailors had had an extensive amount of background experience before they began the race. The sailors each described how their background influenced their dream of one day being able to compete in the VOR. The new design of boats used for the race put a new set of demands on the crews and caused them to rethink how hard they could push the boats and themselves. Because the boats were capable of such high speeds and therefore were more dangerous and less comfortable, it became imperative that the sailors

focused on managing their sleep and diet and preventing injuries. Pressures for these sailors were competitively self-imposed, but also stemmed from the necessity of satisfying the needs of their sponsors. There was also pressure to try to overcome the speed advantage that one of the boats had compared to the rest of the fleet. This resulted in many of the teams taking higher risks in equipment choice and race strategy.

Unfortunately, one of the sailors died when he was washed overboard during the race. Many of the sailors interpreted the accident as a random incident that was not the result of poor seamanship. The sailors, although disheartened by the loss, were not surprised. Because they were all acutely aware that death was a possible consequence of competing in the race, many had gone to great lengths over the course of their careers to minimize the risk as much as possible. There were many extreme moments during the race, including several close calls involving near sinkings. The sailors were more concerned with close calls that might arise due to an unforeseen event than they were with the planned and deliberate abandonment of one of the boats.

There was a significant team element woven throughout the fabric of the race, whereby trust and cohesion amongst

the crewmembers were essential for the performance and the survival of the boat and the crew. The sailors who were ultimately invited to compete on one of the teams were the result of an informal filtering process, whereby the weaker individuals were weeded out during the lead up to the race. The concept of team also extended to the shore teams and to the families of the sailors, who traveled to the various stopovers during the eight-month period of the race. Reflections of the sailors revealed that the VOR occupies a place in their heart. The traditions of the VOR remained ingrained in the minds of the sailors long after the race finished (strong work ethic, team player, accountability, composure). It was interesting to note that the sailors were divided as to whether or not the race had resulted in personal change in their life.

A framework for understanding the experiences of the sailors was conceived in the form of a model depicting the dimensions of resonance (a passion for adventure and the VOR in particular), edgework (a desire and ability to perform in high risk, life threatening situations), and performance capacities (team performance, individual performances, and boat performance). The model suggests an interplay between the dimensions of edgework and resonance, against which is set the performance dimension.

This study is the first to take a glimpse inside the experiences of ocean racing sailors who compete in fully crewed around-the-world races. Findings confirm the widely held belief that the VOR is an extreme and unique event in the world of sport.

Conclusions

A number of conclusions can be drawn from the analysis and discussion of the study.

1. It takes a strong intrinsic motivation to compete in a VOR. The phenomenon known as resonance provides a systematic way to interpret the origins of the sailors' passions, the steps that the sailors took in order to pursue their dream, and the way that they dealt with obstacles along the way.

2. The extreme nature of the 2005/06 VOR was the result of a number of variables that combined to create a "perfect storm" of adversity. These factors included high-performance yet fragile boats, a small number of crew, an elite competitive setting that attracts the best offshore sailors in the world, long periods of intense competition (8 months in total, up to 20 days per leg, 31,350 total miles), and an unpredictable and often treacherous ocean environment.

3. Over the course of the months leading up to the race, the sailors underwent a natural selection process, or filter, that ensured each person on the boat had the prerequisite passion, personality, and skills to survive and compete in the race. The majority of the sailors had competed in at least one previous VOR.

4. The sailors had difficulty articulating the specific mental strategies they used to perform during the race. Although it was evident that the sailors used problem based coping strategies to overcome boat breakdowns and other setbacks, this was not directly revealed by the sailors, but rather interpreted from the interviews. This lack of awareness is likely due to several factors such as the complexity of the race and the fact that the deeply ingrained and highly developed nature of the skill sets were not conscious processes for the sailors.

5. The sailors (particularly the bowmen) shared many of the same characteristics of edgeworkers from other high risk sports as well as non-sport domains (Lyng, 2005). Although not the topic of day to day conversation, the sailors accepted the likelihood of death or severe injury while competing in the VOR. These realities were rationalized for the sailor (and the sailors' families)

through having confidence in their own skills and in the skills of the other sailors making up the team.

6. The concept of team is first and foremost for VOR sailors. The performance of the boat and the sailors hinges on the ability of the sailors to trust each other and have strong collective performance capacities.

7. The VOR represents a distinct social phenomenon in the culture of sailing. The camaraderie is exceptionally strong within the teams, but also amongst all sailors and teams competing in the race. The social support offered through shared experiences serves as a coping mechanism for various stressors experienced during the race.

8. The sailors' families play a significant role in this race. Sailors selected to compete in the VOR tend to be the most experienced. In the 05/06 VOR, this meant the sailors were between the ages of 30 and 40, and therefore had wives and young children that accompanied them to the various stopovers.

9. Extreme sports are becoming increasingly popular, while the risk involved in such sports is perpetually on the rise driven by improvements in technology and the athlete's quest for mastery of new skills and challenges. As the interest in extreme sport increases, the mental edge that can be offered by sport psychologists will become

important. To meet this impending demand, sport psychologists need to start educating themselves about the motivations, experiences and skills involved in extreme sport.

10. The mental and emotional demands of competing in a VOR are complex and significant. It is likely that a sport psychology consultant could add considerable value for the teams.

Future Research

The current study has provided an important first glimpse into the experiences of professional sailors who compete in fully crewed round the world sailboat races. The descriptive nature of the research also provides a platform from which to design and carry out more systematic studies in the domain of ocean racing.

The nature of future research will likely be dictated by access to participants. If full access were possible, a number of studies could be carried out, although the small numbers (there will likely be fewer than 70 sailors competing in the 2008/09 VOR) could preclude some research questions and methodologies.

1. Interviewing sailors based on their position on the boat would provide a more in-depth understanding of their experience specific to their role. The

responsibilities associated with each position vary considerably; information regarding the risks involved with ocean racing would be forthcoming from a larger sample of bowmen while insights about leadership would be richer if a larger number of skippers were included.

2. The use of focus groups would be a convenient way to access more sailors in a shorter period of time. Focus groups of the same positions would be interesting to consider based on my experience in Valencia, where one of the interviews took place with two sailors who just happened to both be bowmen. I believe that this particular interview provided more insight into the demands associated with their position.

3. A more holistic investigation into the sailors' experiences is warranted. The VOR is made up of a large extended family beyond the sailors who race on the boats, including the wives and children of the sailors, the shore teams, the coaches and sports medicine and sports science personnel, not to mention the corporate entities that sponsor the teams. An ethnographic study would be an excellent avenue to explore the organizational dynamics of the VOR phenomenon. Using a participant observer approach, the VOR could be studied in an on-going manner by interacting with the various components. Researchers in

this role could explore the VOR as social entity including the role of family and the sacrifices made by wives and children, or the nature of relationships and support networks formed among the sailors' spouses. Sailors who voluntarily or involuntarily failed to complete the race would provide an added important perspective.

4. A content analysis of the race would be beneficial in its own right and also as a means of validating qualitative investigations such as the present study. A high quality analysis is feasible due to the vast amount of media information that is available from various sources such as the VOR website and the individual team websites. Although the commercially available documentary of the 2005/06 VOR was 70 minutes in length, the full length documentary obtained from the VOR race organizers had approximately 866 minutes of footage. Because the VOR enjoys such a high profile within the sailing community, magazine articles are rich sources of information, as are books written about the race. The amount of information about the lived experiences of the sailors will continue to grow as communication technology improves. All teams competing in the 2008/09 VOR will carry one crew-member who will be responsible solely for producing daily media

reports; they are not permitted to participate in the sailing of the boat.

5. The individuals who compete in races such as the VOR are unique in their field of play, their skills, and in their professional designation. Recently, single handed sailors who competed in the Velux 5 Oceans single handed race were studied by a group of researchers interested in various performance variables such as coping (personal communication with Dr. Neil Weston, sport psychology member of research team from University of Portsmouth, January 24, 2008). For researchers interested in individual *and* collective performance in adverse conditions such as space travel, military combat, or arctic exploration, many insights could be gleaned from VOR competitors.

6. One component that did not surface during the interviews was information about how the sailors coped with conflict. It is difficult to comprehend that 10 sailors living together on a relatively small yet high performance sailboat for extended periods of time in an intensely competitive atmosphere did not experience internal strife. Although it is not clear at this time how such information could be gathered, it is a fascinating topic that could contribute a great deal to the field of team dynamics, mediation, and conflict resolution. Specifically, it would

be interesting to investigate how the sailors ensure interpersonal conflict does not interfere with other individuals on the team, or the boat's performance and/or safety of the team.

7. Future research should be carried out to determine if the Resonance, Edgework, Performance Capacity Model could be applicable to other domains considered high risk or extreme. These other settings could include entrepreneurship, corporate management, and/or the military.

8. For the 2008/09 VOR, there will be a mandatory media crew member on board each boat for the duration of the race. This person will be responsible for capturing video footage, conducting interviews, and writing reports based on the teams' activities. The race organizers have made it the responsibility of each team to select the media crew member. However, it is explicitly stated that this crew member is not permitted to assist in the sailing of the boat. As this is a novel arrangement for ocean racing teams, it would be worth examining how the presence of this person will impact the team dynamics.

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APPENDICES

APPENDIX A
INTERVIEW GUIDE

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INTERVIEW GUIDE

BACKGROUND

Before we get started I wanted to ask you a few questions about your sailing background.

1. How old were you when the 05/06 race started?
2. How many offshore miles had you sailed before the start of the 05/06 race?
 - a. Which offshore races had you completed?*
 - b. Which teams/boats had you sailed with? Results?*
 - c. How many VOR in total? How many VOR legs in total?*
3. How many years had you been sailing as a professional?
4. What position did you have on the boat?

INVOLVEMENT

5. How did you get involved with the VOR?
 - a. How did you land a spot on a boat? Were you invited to race?*
 - b. Was there a selection process - i.e. Tryouts? Interviews? Personal connection?*

BOAT PERFORMANCE

6. Can you describe to me what it's like to sail a VO 70?

a. *How does it compare with other boats that you have sailed?*

7. What was the best/longest 24 hour run on your boat?

SLEEP DEPRIVATION

8. What were the sleeping conditions like during the race?

a. *If poor, how did the lack of sleep affect your ability to do your job?*

b. *If poor, what impact did the lack of sleep have on your team?*

c. *If it was a problem, was there anything you did to compensate for the lack of sleep?*

i. *Any caffeine, etc?*

DANGER

Safety

9. What were the most dangerous aspects of your role on the boat?

10. What were the most dangerous maneuvers on the boat?

11. What were the most dangerous conditions?

12. Did you ever have any second thoughts about doing the race while you were out there?
13. Were there any situations that you considered life threatening? Can you tell me about those situations?
14. What precautions did you take to ensure the safety of yourself and your teammates?
15. Did you ever think you were going to have to abandon the boat? Can you tell me about those situations?

Injury

16. Were you or anyone on your boat seriously injured?
 - a. *Can you tell me about the incident?*
17. How did the team make up for the injured person's duties?

Significant Events

18. Can you tell me about how each of these affected you during the race?
 - a. Speed advantages of some teams
 - b. Equipment failures
 - c. The sinking of one of the boats
 - d. The drowning of one of the competitors

MENTAL STRATEGIES

Preparation

19. How did you get ready for:
 - a. The start of the first leg
 - b. The start of subsequent legs.
 - c. Beginning your watch.

Interpersonal factors

20. How would you describe the team dynamics on your boat?
21. What was the structure of the watch system on your boat?
 - a. *Was there competition between the watches?*
22. Did you have any "issues" with other crew members?
 - a. *Did other members of the crew have any friction?*
23. What types of things did you do to keep the relationships running smoothly?
24. How did the conflict (or unity) affect you or the rest of the team's performance?
 - a. *Was there a "team leader" who helped to resolve conflicts?*
 - b. *Was anyone asked to leave the boat?*
 - c. *How did your team respond to the changes in personnel?*

Pressures

25. Did you ever feel pressure during the race?
- a. *If so, when - was it intermittent or constant?*
 - b. *Was it worse on certain legs?*
 - i. *Sponsors/Friends/Family/Team mates/Self*
 - ii. *Not wiping the boat out?*
 - iii. *Responsibility for team?*

Resiliency

26. What was your process of getting past setbacks?
27. Were you able to learn from crisis? Can you give some examples?
- a. *Was there a debriefing?*
 - b. *How did the debriefing process happen?*
 - i. *On and off the water*
 - ii. *Formally or informally*
 - iii. *Who handled it?*

MOTIVATIONS

Reflecting

28. What were the most enjoyable aspects of the race for you?
29. How did you feel after the race was finished?
- a. *The day after ---*
 - b. *The next week ---*
 - c. *One month later ---*

d. Now?

30. Has completing the race influenced your life in any meaningful way?

31. What advice would you give for someone about to do a VOR for the first time?

32. Would you do another VOR? Why or why not?

33. Is there anything else that you would like to add about your experiences that we haven't already covered?

Thank you for taking the time to participate in this interview!

APPENDIX B
EXPERT PANEL

APPENDIX B
EXPERT PANEL

1. Professional Sailing

- a. Jeff Brock, VOR 2001/02 competitor and 15 year professional sailor.

2. Sports Medicine

- a. Dr. J.B. Allen, Sailsport Med, Physician for America's Cup & 2001/02 VOR.

3. Sport Psychology

- a. Rolf Wagschal, PhD student in sport psychology and former Canadian Sailing Team member.

APPENDIX C
INFORMED CONSENT FORM

On Temple Letterhead

Consent Form

Title: "Life at the extreme: An exploratory study into the experiences of professional ocean-racing sailors"

Principal Investigator (PI): Michael Sachs, PhD

Sub Investigator (SI): Colin Guthrie (PhD Candidate)

Temple University, Department of Kinesiology
Telephone: (215) 204 1940

This study is being conducted to find out about your experiences as a competitor in the 2005/06 Volvo Ocean Race. Specifically, I am interested in the factors that made the race difficult or enjoyable for you, how the conditions affected your performance, how you coped with adversity during the race, and how competing in the race may have affected you as a person and as a sailor. Participation in this study will require 60-90 minutes of your time.

Within two to four weeks of the phone interview, you will be provided with a transcribed copy of the interview so that you can review the information and decide if it is an accurate portrayal of your experiences. At that time you can decide if there are any parts of the interview that you would prefer not to have included in the study.

In order to protect your anonymity, pseudonyms will be used in any and all written and verbal discussion of the findings or results of this project. In order to protect your anonymity, all attempts will be made to disguise aspects of the race that could identify you.

There are no known risks associated with participating in this interview. However, if you feel uncomfortable or distressed at any time during the interview, you are encouraged to request that the interview be stopped. If you would like, you can then speak with the interviewer about your concerns. Also, referrals to mental health services

within the community are available if you would like access to on-going resources.

I welcome questions about the study at anytime: (902) 830-2244/ cguthrie@temple.edu

Questions about your rights as a research participant may be directed to Ms. Ruth Smith, Office of the Vice Provost for Research, Institutional Review Board, Temple University, N. Broad Street and Oxford Street, Philadelphia, Pa. 19122, phone (215) 707-3249.

Signing your name below indicates that you have read and understand the contents of this Consent Form and that you agree to take part in this study.

Participant's name (printed)

Participant's Signature

Date

Sub Investigator's Signature

Date

Colin Guthrie

APPENDIX D
NON-WRITTEN CONSENT

NON-WRITTEN CONSENT

Statement to be read to participants:

This study is being conducted to find out about your experiences as a competitor in the 2005/06 Volvo Ocean Race. Specifically, I am interested in the factors that made the race difficult or enjoyable for you, how the conditions affected your performance, how you coped with adversity during the race, and how competing in the race may have affected you as a person and as a sailor.

You will be asked approximately 20 questions during the course of the interview, which will last between 60 and 90 minutes. With your permission, the interviews will be taped and transcribed verbatim. The transcripts will be returned to you for your verification that the statements are accurate reflections of your thoughts and experiences. At that time, you will also have the option to omit any parts of the interview that you decide are disagreeable to you. Pseudonyms will be used in any and all written and verbal discussion of the findings or results of this project. In order to protect your anonymity, all attempts will be made to disguise aspects of the race that could identify you.

There are no known risks associated with participating in this interview. However, if you feel uncomfortable or distressed at any time during the interview, you are encouraged to request that the interview be stopped. After stopping the interview you can speak with the interviewer about your concerns. Also, referrals to mental health services within the community are available if you would like access to on-going resources.

Your choice to participate in the interview will constitute your consent to take part in the study. Do you agree to participate in this study?

APPENDIX E
CODING KEY

PREP	<i>Preparation</i>	Preparing the boat or self for racing		Mental or physical, reference to age
SLEEP	<i>Sleep</i>	References to sleep deprivation, fatigue	strategies for falling asleep	
CoS	<i>Care of Self</i>	Taking care of yourself during the race		Hydration, sleep
INJ	<i>Injury</i>	Mechanisms of injury, specific incidents, symptoms,		
DANGER	<i>Danger</i>	Worries and concerns about safety, risk; times when there was danger or potential of something bad happening		Abandoning boat, hitting a submerged or floating object at night, falling overboard, injury
C-INC'T	<i>Critical Incidents</i>	Making decisions during crisis situations		
HANS	<i>Hans Horrevorts</i>	Recollections about the night Hans was lost		
FAM	<i>Family</i>	References to family, wife, children of competitors	** see DVD	
T-DYN	<i>Team dynamics</i>	Observations and	T-DYN SHORE	Relations with shore team

		comments about dynamics, cohesion, crew changes,		
			T-DYN CC	Crew changes
FIL	<i>Filter</i>	What does it or doesn't it take to do the race		P1:88-93
MGMT	<i>Management</i>	Management of teams and organizational structure		
TRAIT	<i>Traits</i>	General disposition to be active or be risk taking.		Skiing, ultra-marathons,
SOLO	<i>Solo/single-handed sailing</i>	Thoughts about single-handed racing		
VOR INF	<i>Influence of VOR</i>	How the VOR changes you as a sailor or a person		Can be
FPLAN	<i>Future plans</i>	Plans after 05/06 VOR		
REFLECT	<i>Reflections</i>	Thoughts that put things into perspective		