NATURE-BASED EXTREME SPORTS PARTICIPATION AND ECO-SENSITIVITY: A SOUTH AFRICAN CONTEXT

by

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Declaration

I, **Nicolette Human**, hereby declare that this dissertation for the degree, Magister Artium (Human Movement Science) with the option Sport and Recreation Management in the Department of Sport and Leisure studies, at the University of Pretoria, has not previously been submitted by me for this degree, at this or any other university. This is my own original work in design and execution, and all materials from published sources and secondary material contained herein have been carefully acknowledged and referenced in accordance with university requirements. I understand what plagiarism is and I am aware of this university's policy and implications in this regard. I have not permitted anyone to copy any part of my dissertation.

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SIGNATURE **DATE**

Ethics statement

I, **Nicolette Human (04515049)**, declare that I have obtain the applicable ethical approval for the researcher titled ***Nature-based extreme sports participation and eco-sensitivity: A South African context*** (see APPENDIX B: FORMAL ETHICAL CLEARANCE LETTER). I further declare that I have observed the ethical standards required in terms of the University of Pretoria's code of ethics for researchers and the policy guidelines for responsible research. This study was approved on the **25th of February 2019**, with **reference number HUM20190116**, from Prof. M. Schoeman, the Deputy Dean of Postgraduate Studies and Ethics, in the Faculty of Humanities at the University of Pretoria.

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AUTHOR SIGNATURE **DATE**

Abstract

Title: Nature-based extreme sports participation and eco-sensitivity: A South African context

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Since mindless actions of the South African society persist in the form of environmentally degrading behaviour, the sustainability of healthy eco-systems is constantly threatened. Practical ways of acquiring environmental literacy is necessary to develop environmental responsible behaviour of citizens. Theory-based research on nature-based extreme sports participation rarely acknowledges its positive transformative value on society. This neglect roots, in part, from naïve or novice misconceptions that motives for participation are primarily risk-focused in pursuit of an adrenaline rush. Thrill-seeking theories often make anthropocentric assumptions of a rivalry human-nature relationship to showcase individual prowess. As a result, “extreme” is naïvely associated with “out-of-control” or “reckless” actions. Phenomenological traditions from Heidegger and Merleau-Ponty navigate a hermeneutical understanding of a bodily-being-towards-death in such high-risk sports activities. This interpretative phenomenological analytical study considers the lived experiences of 10 expert South African nature-based extreme sports participants who take calculate risks. Their first-hand narrations provide evidence, which derails the naïve stigma and identify voluntary high risk-taking as a by-product of participation. For some, the extensive period of time spent in the wilderness, where their survival depends on the collaboration with natural elements enable a realization that humanity is part of a larger functioning network. Findings from semi-structured interviews present an eco-centric outlook on the facilitative role of participation, in eco-sensitivity. Flow and mindfulness are recognised as contributing factors in the display of pro-environmental behaviour of nature-based extreme sports participants. How participation encourages an intimate bond with and sensitivity of nature, which permits a setting for extraordinary physical and psychological changes, is explored. From this study, eco-centric management principles can be discovered and its educational principles incorporated within schools and sport organizations to become more ecologically sensitive and just.

Key words: Nature-based extreme sports participation, eco-sensitivity, environmental literacy, eco-centrism, anthropocentrism, mindfulness, flow, superfluidity, being-in-this-world, human-nature relationship, interpretative phenomenological analysis

Dedication

To our brave Katryn, who lives on in our hearts.

We miss you.

“Goodbye to you my trusted friend
We've known each other since we were nine or ten
Together we've climbed hills and trees
Learned of love and ABC's
Skinned our hearts and skinned our knees
Goodbye my friend it's hard to die
When all the birds are singing in the sky
Now that spring is in the air
Pretty girls are everywhere
Think of me and I'll be there
We had joy, we had fun
We had seasons in the sun
But the hills that we climbed
Were just seasons out of time…”

“Seasons in the sun”

English-language adaptation of the song "Le Moribond"

Songwriters: Jacques Brel / Rod Mckuen

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List of abbreviations

APA	American Psychological Association
AQAL	All Quadrants All Levels
EE	Environmental Education
IEEP	International Environmental Education Programme
IPA	Interpretative Phenomenological Analysis
MAC	Mindfulness-Acceptance-Commitment
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER 1: INTRODUCTION

1.1 Background

The survival of humankind depends on healthy natural ecosystems[1] (Acar, 2013). Humanity faces dire environmental issues involving global warming, freshwater shortages, deforestation, loss of biodiversity, overpopulation, the depletion of natural resources, and water-, air-, and soil pollution (Acar, 2013; Atchia, 2002; Davis, 2008; Furrow, 2015; Hardin, 1968; Martin, Maris & Simberloff, 2016; Ojedokun & Balogun, 2013; Steg & Vlek, 2008). Typically, these environmental problems are embedded in environmental degrading behaviour conducted by humans (Steg & Vlek, 2008). Globally, the most visible sign of environmental pollution and degradation is attributed to littering[2] (Garg & Mashilwane, 2015; Ojedokun, 2011). Litter[3] is an unsightly source of contamination of air, water and soil which contributes to the aforementioned environmental issues (Ojedokun & Balogun, 2013; Schultz, Bator, Large, Bruni & Tabanico, 2013). The increase in human population and their demanding lifestyles threaten the sustainability of natural resources[4] (Atchia, 2002; Furrow, 2015; Ojedokun & Balogun, 2013).

Self-awareness and attitude toward nature, play a significant role in an individual's tendency to participate in environmental degrading acts such as littering. A lack of self-awareness and irresponsible attitudes motivate acts of littering (Waghorn-Lees, Fantetti, Ditzian & Dunlop, 2013). Senior (1992) confirms that "it is not just the nature of the items themselves, nor the demands of retailers and manufacturers which are to blame, it is the community, whose behaviour, attitude and awareness are fundamental to the problem" (as cited in Marais & Armitage, 2004, p. 483). Communities are responsible for ensuring a clean and healthy environment.

[1] **Natural ecosystems** include the interaction of a community of living organisms (fauna and flora) and non-living components within a given physical environment (Smith & Smith, 2015). Each ecosystem is characterised by certain non-living factors such as the weather, earth, sun, soil, climate and atmosphere, which affects and is being affected by the biotic elements. "Eco" is considered to be associated with the environment and "system" relates to the unified operation of individual related components that operate as a whole (Smith & Smith, 2015).

[2] **Littering** is the act of inappropriately disposing of minor amounts of waste materials. This phenomenon has been observed as a social behavioural and an educational problem since the 1970s (Andres, 1993, as cited in Marais & Armitage, 2014).

[3] **Litter** can be in the form of consumer materials including packaging items, soft drink bottles (both plastic and glass), pure water nylons, fabric, chip and confectionary wrappers, metal cans, plastic straws, bottle caps, small pieces of papers, newspapers or magazines, vegetable waste and food scraps, household wastes, cigarette butts, milk tins, sweet or crisp wrapper, piece of chewing gum, etc. which is dropped and left on bare ground or in water sources (Ojedokun & Balogun, 2011).

[4] **Natural resources** encompass water, sunlight, atmosphere, land (and involved minerals), vegetation and crops and wildlife (Okonkwo, 2017). It can also represent a separate entity such as fresh water, fertile soil, clean air, living organisms such as fish, or fossil fuels such as coal and petroleum (Lampert, 2019).

Natural resources, energy and space are under pressure to satisfy these human lifestyles[5], producing heaps of environmentally unfriendly and imperishable waste (Atchia, 2002). South Africa's newly elected president, Cyril Ramaphosa, emphasised that the beautiful and healthy appearance of South Africa is progressively compromised by irresponsible human acts such as littering, illegal dumping and pollution. During the launch of the Good Green Deeds Campaign at the Sisa Dukashe Stadium in Mdantsane, President Ramaphosa addressed the polluting behaviour of South Africans as follow (Department of Environmental Affairs, 2019):

> Littering, illegal dumping and the pollution of our air, our streams, our rivers and our oceans have had negative effects on our health, our quality of life and on the very appearance of our country. We have become the throwaway generation. Instead of putting litter into waste bins, we toss it out onto the streets. Instead of managing our waste, we dump it in places it is not supposed to be. Instead of flushing dirty water into a sewerage system where it can be treated, we throw it into our rivers and streams, and even into the sea. When we dump waste into a stream, this affects communities much further away. When we throw glass bottles out of a car window it makes that same road unsafe for pedestrians, for cyclists and for other road users. When as municipalities we let mounds of trash build up in illegal landfills and dumpsites, it attracts pests and disease. When industries illegally dump hazardous waste and don't properly dispose of water used in industrial processes, surrounding communities are badly affected. All this makes our planet sick, and it makes us sick. It makes our children sick. It is time for change.

Evidently, environmentally degrading behaviour turn healthy ecosystems into degraded and unhealthy ecosystems. South African societies are not mindful[6] of their environmental behaviour and its repercussions. **Mindfulness** is innately a state of consciousness, which can be regarded as an increased attention to and awareness of one's present experiences or immediate reality (Brown & Ryan, 2003). The increased awareness manifests when attention is purposefully raised in the present moment in a non-judgmental manner, as to uncover an evolving experience, moment by moment (Kabat-Zinn, 1994). An occurrence of sense and sensitivity can also be identified by interpreting mindfulness as a "flexible state of mind in which we are actively engaged in the present, noticing new things and being sensitive to context" (Langer, 2000, p. 220). Environmental challenges need to be addressed in a sustainable and mindful way, which requires the conservation of nature.

[5] This degrading state of the Earth and its ozone layer can prominently be accredited to human behaviour during the Industrial Revolution, World War I & II and the technological advancements of the 20th and 21st century (Atchia, 2002).

[6] Being mindful entails a set of internally operated skills of observing, narrating and being in the present moment (Dimidjian & Linehan, 2003). Overall, the process involves centring one's attention to the present experience on a moment-to-moment basis (Marlatt & Kristeller, 1999). The absence of these skills represents a person who is not mindful and essentially mindless.

Eco-centricsm and anthropocentricism both express environmental concern and an interest in conserving the natural world. Their underlying motives for preserving natural resources however differ vastly (Thompson & Barton, 1994). On the one hand, anthropocentrism, also called **ego-centrism**, asserts that the natural world should predominantly be appreciated for its resources, which are essential for the enhancement and sustenance of human quality of life, standard of health and comfort (Akgül, Birinci, Göral & Karaküçük, 2017; Thompson & Barton, 1994). This notion supports the idea that our contemporary industrialized societies nurture the concept that humans are *apart*[7] from nature (Schultz, 2002). Today, most people have progressively become estranged from the outdoor natural world by constructing their lives inside technologically built environments (Acar, 2013; Schultz, 2002). Ego-centrics consider the ecosystems and its natural resources as independent objects that function separately from each other, primarily to sustain the needs and wants of humanity (Imran, Alam & Beaumont, 2014).

On the other hand, an eco-centric mindset values nature for nature's sake[8] (Thompson & Barton, 1994). **Eco-centrism** advocates that humankind should not be viewed as apart from nature, but rather being *a part*[9] of it (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007). Humans are therefore interlaced with the health and survival of the natural world within a larger function network[10] (Thompson & Barton, 1994). An eco-centric outlook recognizes that experiences in nature and feelings towards the natural world reflect a transcendental dimension, which adds deeper inherent meaning to human life (Brymer & Gray, 2010; Thompson & Barton, 1994; Washington, Taylor, Kopnina, Cryer & Piccolo, 2017).

When an individual is provided with sufficient time to explore the outdoors, they can develop an affinity to nature, a phenomenon introduced by Wilson (1984) as biophilia. Biophilia is an inherent tendency to seek connections with the natural environment (Wilson, 1984). Individuals can explore the beauty of the earth's fauna and flora, water sources, landscapes as well as discovering their "own backyard"[11], if technological transformations, consumerism and materialism have not already moulded their thoughts and lives (Orr, 2000).

[7] Isolated from and superior to nature.
[8] Individuals who approach life with an eco-centric outlook are convinced that nature should be conserved for its inherent worth despite of its contribution to humanity's materialistic goals (Thompson & Barton, 1994).
[9] Both humanity and the natural world are of equal importance (Akgül et al., 2017).
[10] Within this network the survival of both humanity and nature depend on their unification and harmonious existence (Imran et al., 2014).
[11] Indicates a place near or close to a person. In this case the discovery of the natural beauty of South Africa.

An enchantment[12] of nature can evolve into ecological literacy [13] and purposeful driven lives when nurtured and supported by environmental knowledgeable and compassionate individuals (Orr, 2000). To foster environmentally responsible citizens, who can make environmentally sustainable decisions, communities need to be more mindful of their environmental behaviour and the repercussions thereof. Humans need to acknowledge that environmental knowledge and awareness alone, although helpful[14], cannot sustainably combat the environmental challenges we face (Činčera & Johnson 2015; Ellsworth, 2013; Gray & Birrell, 2013; Metzger & McEwen, 1999). Society needs to invest in practical ways of learning and acquiring knowledge, skills and abilities to act pro-environmentally.

Pro-environmental behaviour is characterised as conscious actions performed by a person with the aim to reduce the detrimental impacts of human activities on the environment. It involves protective environmental behaviour that benefits and enhances the quality of the environment (Krajhanzl, 2010; Steg & Vlek, 2008; Sawitri, Hadiyanto & Hadi, 2015). Essentially, communities need to practically learn to acquire an "eco-sensitivity."[15] Fostering an environmental sensitivity leads to pro-environmental citizens whose mission is to support a biodiverse "beautiful, and resource rich planet for future generations" (Tanner, 1980, p. 20).

An individual's belief of the effects of natural environmental degrading behaviour is based on their level of environmental education. Environmental Education[16] which highlights the importance of environmental sensitivity, should be a priority for governing educational bodies and introduced to society. Research suggests that outdoor[17] environmental education compared to indoor education is remarkably more effective in increasing an individual's motivation to behave pro-environmentally (Colberg, Imhof & Keller, 2014).

[12] An affinity or attraction towards nature.

[13] **Ecological** or **environmental literacy** includes having a fundamental consciousness, awareness and comprehension towards environmental degrading problems (Roth, 1968).

[14] Although people's actions cannot be altered through knowledge alone, the provision of knowledge-based programmes can clarify misconceptions regarding environmental issues (Činčera & Johnson, 2015).

[15] Eco or environmental sensitivity embodies a sense of care and compassion towards the natural environment accompanied by a positive affection for the natural world, as viewed from a kind-hearted perspective (Peterson, 1982 as cited in Nunez & Clore, 2017).

[16] "**Environmental Education** is a lifelong process with the objective of imparting to its target groups in the formal and non-formal education sectors environmental awareness, ecological knowledge, attitudes, values, commitments for actions, and ethical responsibilities for the rational use of resources and for sound and sustainable development. Environmental Education emphasises the teaching of the holistic nature of the environment through interdisciplinary and problem-solving approaches." (UNESCO-UNEP [IEEP], 1992, p. 1)

[17] Conducted in nature.

Outdoor environmental education typically permits individuals, who have a more positive attitudes towards nature and the environment (Colberg et al., 2014). The outdoors and natural world ought to be the setting in which learning and understanding about the environment and related issues take place. This implies that during outdoors learning, nature is viewed as a sacred place that is to be respected in terms of an eco-centric perspective, opposed to being dominated as viewed from an ego-centric viewpoint.

An individual's true self, according to Duerr's (1985) understanding of the eco-centric outlook, is potentially unlocked when people experience and surpass society's norms[18] by re-visiting the wilderness[19], conquering their disconnection from nature and facing mortality[20]. Participation in nature-based extreme sports is considered to be a form of extreme and risky physical activity in which the individual has sufficient time to explore the outdoors and natural world (Sirch, 2014). Considering the high risks of injury and death involved during nature-based extreme sports participation, extreme sports athletes are reminded of their own mortality and of their "being-towards-death"[21] during their activity (Heidegger, 1962, p. 179-182).

Facing one's own death, in fear and seriousness, is a manner of becoming whole and authentic (Breivik, 2011). When the possibility of death is purposefully encountered, one may reflect on oneself and the meaning of life (Breivik, 2011). Heidegger refers to it as the "Eigentlichkeit" or an authenticity (Breivik, 2011). Authentic living involves taking accountability for oneself and the life tasks[22] embarked on (Breivik, 2011). Authenticity continues through an honest living towards these profound life tasks and goals (Breivik, 2011). The true self is thus nurtured by an authentic lifestyle. Man is termed as "Existence" by Heidegger and explicates that an individual recognises his finitude ("Endlichkeit") through death (Breivik, 2011).

[18] **Social norms** are unwritten behavioural rules that are regarded as acceptable by a group or society (Leijdekkers et al., 2015). The unwritten behavioural rules provide the group or society with an expected idea of how to behave (McLeod, 2008).

[19] An area involving natural communities of life, essentially untouched by human activity.

[20] **Death** is viewed as the stage at which life comes to an end (finitude) (Macann, 1993). It is a personal matter that belongs to each being (Dasein) (Heidegger, 1996). It is essentially **each individual's solitary journey.**

[21] Heidegger explicates that being-towards-death signifies a way of understanding the broader aspects of one's life (Breivik, 2011).

[22] **Life tasks** are meaningful personal ambitions that guide our actions in pursuit of happiness and well-being (Moore, 2019). Life goals are subjective in nature and branch into intrinsic and extrinsic goals (Kasser & Ryan, 2001). **Intrinsic goals** relate to personal growth and compassion towards others. The desire for self-actualisation strongly correlates with inherent goal setting – Maslow's hierarchical needs theory (Maslow, 1943). **Extrinsic goals** are culturally driven and concerned with a person's physical appearance, social status and wealth (Moore, 2019).

Nature-based extreme sports athletes encounter similar conditions during their extreme and risky activity, confronting death and anxiety, which may elicit the likelihood for authentic living (Breivik, 2010). Merleau-Ponty adds to Heidegger's notions through his phenomenon of the "lived human body"[23] and the importance in reaching one's profound goal in life[24] (Breivik, 2011; Schrag, 1962). The human body, according to Merleau-Ponty's phenomenology, can be described as an active agent, which is interpreted in terms of the type of situation and activity it is presented with (Breivik, 2011). Merleau-Ponty declares the body as a "here", which sequentially represents the merging of "the active body" into an object[25] (Breivik, 2011). When the body merges with the surrounding objects, it allows the individual to deal with and undertake the task at hand (Breivik, 2011).

A sensitizing process of the human body with nature through movement is described by Van den Berg's (1950) encounter with natural objects during mountain climbing. He terms his experience as "depasseren", when he puts his pain and feelings into the mountain he climbs and becomes one with natural elements (Van den Berg, 1950, p. 403). Similar to Merleau-Ponty's notions of the bodily being-in-the-world, eco-centrism explicates that humanity views nature as a representation of itself (Brymer & Gray, 2010). Its profound immersion and unification with nature does not allow a separation (Brymer & Gray, 2009). This means that when humanity confronts nature, it confronts itself and when it understands nature, it understands itself (Glendinning, 1994 as cited in Brymer & Gray, 2010). By way of *depasseren* an individual can enter a state of flow.

Flow outlines a state where a person is intensely absorbed within an activity in which everything else appears irrelevant (Csikszentmihalyi, 1990). In a sports context, the flow experience is typically referred to as being-in-the-zone (Bergland, 2017). During nature-based extreme sports participation, the athlete's bodily exploration through movement may elicit an intense flow experience characterised by surreal and transcendental moments[26] (Csikszentmihalyi, 1990). Acknowledging Csikszentmihalyi's flow model, this study further distinguishes between a state of flow and a state of superfluidity.

[23] In this case, the significance of the "bodily feature" of our being-in-the-world is highlighted. For example, during a nature-based extreme sports activity such as white-water kayaking, the upper body that propels the kayak forward facilitates the outcome of the activity (Breivik, 2011).

[24] Every person's ultimate goal in life differs. It refers to reaching self-actualisation, which Maslow (1971) defines as a sort of individual destiny. Essentially, a person needs to be doing what they are "born to do" (Jerome, 2013).

[25] An object can either be natural or man-made.

[26] If the participant forms a bond and harmonious connection with the natural elements, they will be able to attain extraordinary heights and transcendence in their nature-based extreme sports activity.

Flow may be more readily attainable by the ordinary person or doing traditional sports (Csikszentmihalyi, 1975, 1990). In comparison, superfluidity is an enhanced state of flow primarily accomplished by doing the extraordinary and non-traditional: participating in nature-based extreme sports (Bergland, 2017). Moving through the natural world at an *extreme* and *risky level* is only attainable when the participant collaborates with the natural elements (Brymer & Gray, 2010). To experience true enjoyment in the activity, the individual needs to foster the necessary skills, involving psychological energy of the mind and body (Csikszentmihalyi, 1975, 1990). It takes practice to acquire a level of sensory delight (true enjoyment in the activity). The comprehension and collective utilization of the individual's senses during the nature-based extreme sports activity therefore, determine the level of sensory sensitivity[27] and experiences of flow (Csikszentmihalyi, 1975).

Since, flow is an extraordinary desirable state, which is challenging to acquire, and in this case, so is superfluidity, its attainment depends on having the right mindset (Bergland, 2017; Hopper, 2017). Mindfulness is vital to a transcendental flow experience (Hopper, 2017). The features of a flow experience are similar to the various qualities of an individual who displays mindful actions (Kaufman, Glass & Arnkoff, 2009). Some of these qualities include centering one's attention; having a greater sense of control of one's internal and external environments; perceived loss of time, effortlessly focusing on the present moment, having an enhanced awareness and degree of intrinsic motivation (Hopper, 2017). Consciously and purposefully addressing one's moment-to-moment nature-based extreme sports movements can elicit an inherent state of consciousness, which sets forth a mindful experience (Brown & Ryan, 2003).

Athletes in nature-based extreme sports are commonly confronted with unprecedented activities (Young & Knight, 2014). This may involve climbing high-altitude mountain of 29,029 ft, such as Mount Everest; kayaking the Inga rapids of the Congo River[28] and rowing across the Atlantic Ocean from one continent to another. It becomes a necessity to display a certain extent of mental toughness during these extreme challenges (Burke & Orlick, 2003). Nature-based extreme sports participation demands a degree of tranquillity during a tensed situation, the ability to conquer hardships, manage emotional and physical distress, and endure severe weather conditions[29] (Burke & Orlick, 2003). Participation requires the ability to address difficult and threatening situations (Young & Knight, 2014).

[27] Awareness of relaying information in terms of one's senses (smell, sight, sound, taste, touch, pain).
[28] The biggest body of white-water on earth.
[29] Nature-based extreme sports take place in natural spaces under challenging environmental conditions involving extreme sunny, humid, windy, cloudy, rainy and snowy conditions (Sirch, 2014).

These “extreme” fields of sport of unconventional leisure activities involve high-risk where the likelihood of a mismanaged action can lead to tragic outcomes (Brymer, 2005). Participation in these activities require physical attainment of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof (Sirch, 2014). For example, in white-water kayaking, an essential piece of equipment is a spray cover, which prohibits water from getting into the compartment of the boat and keeps the kayaker dry when paddling (Zakaria, Yasim, Taff, Dasril & Mustafa, 2017). In rock climbing, the safety rope helps secures minimal falls, and in the case of a fall during bouldering, climbers utilize a crash pad to protect them from injury (Kidd & Hazelrigs, 2009). In high-altitude mountaineering, an ice axe can be used as a walking stick, to help self-arrest in case of a downhill slip, to dig themselves out of the snow, and bring up a second climber (Bunn, 2015).

Athletes have to endure long distances and long-lasting exercise or movement tasks (Sirch, 2014). Mountain running is an example of having to endure various long distances up to hundred kilometres involving running or walking on mountain trails consisting of positive and negative slopes (Rodríguez-Marroyo, González-Lázaro, Arribas-Cubero & Villa, 2018). Adventure racing also demonstrates long-lasting movement tasks by having to canoe for an intense distance, mountain bike uphill on brutal terrain, trek, navigate, run, kayak and climb (De Jager, 2006).

Many scholars, non-participants and novice extreme sports participants naïvely associate[30] nature-based extreme sports participation with desires for an adrenaline rush and seeking thrill or high-risk[31]. Although the initial motive for participating in nature-based extreme sports may be the thrill of taking high risks, over time, an extraordinary physical and psychological transformation takes place within the individual (Brymer & Gray, 2009). Nature-based extreme sports participants strive for settings which they can control and which their survival is determined by experience, skill and judgement, rather than to carelessly gamble with their life and to leave survival up to chance (Krein, 2007). Once this distinction is acknowledged, one can view the nature-based extreme sports participant in a positive light without making the typical connotation of a “reckless thrill-seeker.”

[30] “Stereotypes affect not only our perceptions of what we believe high-risk sportsmen to be like but also what we believe others believe them to be like. This affects our judgement regarding expectations of others, and consequently, identity-formation assumes an aspect of the self-fulfilling prophecy” (Farley, 1991, p. 47).

[31] Baker & Simon, 2002; Breivik, 1996; Brymer, 2002; Brymer & Gray, 2009; Clough, Mackenzie, Mallabon & Brymer, 2016; Delle Fave, Bassi & Massimini, 2003; Kerr & Mackenzie, 2012; Lambton, 2000; Laurendeau, 2008; Olivier, 2006; Pizam, Reichel & Uriely, 2002; Rinehart, 2000; Self, Henry, Findley & Reilly, 2007; Simon, 2002.

A positive transformative outlook on nature-based extreme sports participation is paved by scholars who consider the actual lived experiences of the participant (Brymer, 2005, 2010; Brymer & Gray, 2009; Brymer & Oades, 2009; Celsi, Rose & Leigh, 1993; Ogilvie, 1974; Weber, 2001; Willig, 2008). Findings reveal that nature-based extreme sports participation facilitates character building, enhances psychological resilience and promotes an individual's self-esteem, confidence and mental toughness (Clough et al., 2016; Pain & Pain, 2005). A strong motivator for nature-based extreme sports participation is justified by the intimate relationship with the natural world and meaningful transformations through extraordinary experiences (Brymer & Gray, 2009; Krein, 2007). Eco-centric[32] notions are rooted within the transformative role of nature-based extreme sports participation.

There has been little to no studies conducted on the personal perceptions of South African nature-based extreme sports participants and their relationship with nature; and what kind of sensitising process emerges as result. Hence, a gap exists to explore the meaningful transformations of the nature-based extreme sports participant from a South African context in terms of a sensitising process or eco-sensitivity.

Eco-centric management reflects principles of ecological justice[33] and an eco-sensitivity in recognizing the intrinsic value of nature and all living organisms, rather than to exploit them as humans see fit (Bosselman, 2006). From this study eco-centric management principles can be discovered and incorporated within schools and sport organizations to become more ecologically just. In accordance, sport organizations and education systems can contribute to a healthy ecosystem and serve as ecologically just models for organizations in other industries to imitate.

[32] Eco-centrism recognises that experiences in nature and feelings towards the natural world reflects a transcendental dimension which adds deeper inherent meaning to human life (Brymer & Gray, 2010; Thompson & Barton, 1994; Washington et al., 2017). This eco-centric outlook on nature-based extreme sports participation attempts to highlight the positive transformational value of nature on the athlete, which can potentially contribute to the maintenance of healthy natural ecosystems.

[33] Environmental or ecological justice refers to the honest, just and meaningful participation of all people (irrespective of their race, ethnicity or financial status) in the development, execution of environmental laws, policies and regulation. A basic characteristic of ecological justice is the acknowledgement of that we share environments (Aløe & Kristensen, 2005).

1.2 Problem statement and research question

Environmentally degrading human activities have collectively caused an imbalance in ecosystems and the depletion of the biodiversity of life (Alberta Education, 1990; Martin et al., 2016; Steg & Vlek, 2008). Even though humans are equipped with conscious thoughts, most of their decision and actions continuously exploit[34] and degrade natural resources (Atchia, 2002). Mindless actions persist in the form of environmentally degrading behaviour, which exhaust the earth's life-support network (Davis, 2008; Hardin, 1968). Littering, illegal dumping and pollution of air, streams, rivers and oceans are typical[35] in the South African communities (Garg & Mashilwane, 2015; Leijdekkers et al., 2015).

Since the majority of South Africans are environmentally uneducated[36], they do not regard the impact of their environmentally degrading behaviour as threating to healthy ecosystems. South African societies need to invest in practical ways of learning and acquiring knowledge, skills and abilities to act pro-environmentally. Communities need to practically learn to acquire an eco-sensitivity. Nature-based extreme sports can serve as a practical means of outdoor environmental education and is explored in terms of their eco-centric management principles.

Many scholars, non-participants and novice extreme sports participants naïvely conceptualize extreme sports participation motives as having a desire for an adrenalin rush and seeking high risk[37]. The "risk-focused" and "thrill-seeking" theories of extreme sports fundamentally concentrate on possible negative associations of participation (Brymer & Gray, 2010).

[34] Meeting human wants and needs through forceful economic actions cause an increase in the utilization of natural resource (Mei, Wai & Ahamad, 2016).

[35] South Africans struggle to commit to sustainable environmental activities such as recycling (Council for Scientific and Industrial Research [CSIR], 2012). A study conducted by the CSIR in 2010 revealed that the country's urban population only recycle 3.3% of household waste (CSIR, 2012). Further findings indicate that more than 73% of South Africans who live in urban areas do not recycle. This indicates an overall negative attitude towards recycling (CSIR, 2012). They display behaviours such as littering and illegal dumping, which compromise pro-environmental behaviour and the sustainability of the environment.

[36] A study conducted by Rosenberg, Nsubuga and Burtshows (2009) shows that environmental education is happening haphazardly in South African schools. Even though Life Orientation as subject contains Environmental Studies, teachers are not trained on the presentation of these themes. Hence, the teachers are not adequately equipped to transfer environmental content to the school children (Theron, 2016). Environmentally uneducated children therefore do not perceive littering as detrimental to the environment.

[37] Baker & Simon, 2002; Breivik, 1996; Brymer, 2002; Brymer & Gray, 2009; Clough et al., 2016; Delle Fave et al., 2003; Kerr & Mackenzie, 2012; Lambton, 2000; Laurendeau, 2008; Olivier, 2006; Pizam et al., 2002; Rinehart, 2000; Self et al., 2007; Simon, 2002.

Theory-based analyses[38] gathered that nature-based extreme sports participants display a lack of control, exhibit sensation-seeking behaviour and are more inclined towards narcissism[39] (Breivik, 1996; Elmes & Barry, 1999; Laurendeau, 2008; Lyng, 1990). However, participants take calculated risk[40] and seek to minimize the involved risk in their nature-based extreme sports activity. Various nature-based extreme sports participants prefer to postpone their expeditions when variables[41] are exceedingly uncontrollable[42] (Celsi et al., 1993). Seeking 'risk itself'[43] can therefore be understood as being a **by-product[44],** rather than the main goal during participation (Krein, 2007). Anthropocentric cultures[45] assert that nature-based extreme sports participation serves as a measurement of individual prowess by fighting against the forces[46] of nature (Le Breton, 2000). A rivalry relationship drives a separation between humanity and nature sustaining the idea that nature should be feared and controlled (Stilgoe, 2001). Rather than harmonizing with nature for nature's sake and being one with the natural elements during an activity as with an eco-centric mindset, anthropocentrics[47] feel that nature should be dominated and its resources utilized for their own benefit (Brymer & Gray, 2009).

[38] Theories who have not considered the actual lived experiences of nature-based extreme sports participants.

[39] Research indicates that participating in extreme sports by challenging death are perceived as an outlet for those with a deviant personality trait (type T personality) and considered psychologically unhealthy activities (Ogilvie, 1997; Self et al., 2007).

[40] **Nature-based extreme sports** typically involve voluntary participation, where participants are aware of the dangers of the attempted activity (Frühauf, Hardy, Pfoestl, Hoellen & Kopp, 2017). Having an awareness of the risk found in the extremely hazardous environments, participants conduct extensive planning to prepare and reduce the probability of a negative result (Brymer, 2010; Krein, 2007). The participants personal knowledge, technical skills and specialized equipment pertaining to the activity permits them to rationally control the potentially hazardous action (Haegeli & Pröbstl-Haider, 2016; Krein, 2007). During their preparation they develop distinctive physical skills (Young & Knight, 2014). Additionally, the participants acquire psychological competencies that could assist them during the psychological demands during an unpredictable encounter (Young & Knight, 2014). Athletes enhance their skill level and develop a profound understanding of the distinctive activity they will undergo (Pain & Pain, 2005).

[41] According to the observations of Pain and Pain (2005), extreme sports participants **purposefully familiarize** themselves with the different variables, which constitutes the weather, the environment and their apparatus.

[42] Nature-based extreme sports require significant **discipline** and **control** (Pain & Pain, 2005). Participants do not desire to be uncertain or have uncontrollability of that which they can plan and prepare for (Brymer, 2010). Participants do not want to risk their lives by exceeding their personal abilities (Pain & Pain, 2005).

[43] **Risk perception, risk manifestation** and **risk management** during an activity provides us with an understanding of whether risk is the predominant motive for participation (Krein, 2007). It may also clarify the manifestation of the misconception of the 'reckless' thrill-seeker.

[44] If the participant primarily seeks risk and an adrenaline rush from such extreme activities, Krein (2007) explains that there are many other convenient and easier ways to experience risk. For example, one can drive very fast with the seatbelt unbuckled (Krein, 2007).

[45] From **anthropocentric** viewpoints, the human-nature relationship becomes a rivalry in which humans perceive themselves as superior to the natural world (Akgül et al., 2017; Brymer & Gray, 2009; Washington et al., 2017).

[46] Engaging with the powerful and unpredictable natural features requires fluid responses that challenge human abilities (Krein, 2007).

[47] **Anthropocentrism** considers the natural world to be a lifeless object, which is incapable of feeling or understanding (Brymer & Gray, 2009).

This rivalry human-nature relationship associated with nature-based extreme sports participation can be a manifestation of how a naïve non-participant of extreme sports or novice participant perceive the interaction (Brymer & Gray, 2009). Naïve and novice perceptions neglect the inherent transformative value of the nature-based extreme sports experience (Brymer & Gray, 2009). This study realises the intrinsic value of strengthening the bond between humanity and nature through nature-based extreme sports participation as a sensitising process.

The human-nature relationship during nature-based extreme sports participation can be seen as a unifying journey (Brymer & Gray, 2009). The interaction between humanity and the natural world is not solely grounded on anthropocentric notions concerning conflict and overcoming nature (Olsen, 2001). Accordingly, a harmonious human-nature relationship with transformative value can manifest during nature-based extreme sports participation (Brymer, 2005, 2010; Brymer & Gray, 2009, 2010). The natural world and the various demands of the nature-based extreme sports activity provide a setting for self-learning and facilitates an intense bond between nature and mankind (Brymer & Gray, 2009).

Many of the traditional findings are grounded on social and psychological theory and neglect to include data collected directly from the participant (Sparks, 2016). Nature-based extreme sports participation should not only be recognised for the thrill, high risk-taking or display of human power. Considering environmentally degrading behaviour as a threat to the sustainability of healthy ecosystems, further exploration into the facilitative role of nature-based extreme sports participation in eco-sensitivity is suggested. Since stereotypes and misconceptions manifest through novice notions of nature-based extreme sports, the study focusses on *expert* participants' lived experiences. Ultimately, there is a gap to explore the meaningful transformations of the expert nature-based extreme sports athlete's lived experiences from a South African context, in terms of a sensitising process or eco-sensitivity. Hence, this study asks the following question:

How do South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity?

1.3 Aims and objectives

The overall purpose of this study is to explore **the facilitative role** of nature-based extreme sports participation in eco-sensitivity from a South African context. To achieve the primary aim of this study, the research is supported by the following objectives:

1. To determine if a transformational process has occurred due to nature-based extreme sports participation.
2. To investigate if this transformational process contributed to an increased awareness and sensitivity towards the self (body); the natural world; their fellow-man and their equipment.
3. To explore whether there is a triadic relationship (interrelationship) between the self (body); the natural world; and other people.

1.4 Researcher's hypothesis

The following hypothesis by the researcher is aligned with the objectives of this study:

The researcher considers that although the initial motive for participating in nature-based extreme sports may be the thrill of taking high risks, over time, an extraordinary physical and psychological transformation takes place within the athlete (Brymer & Gray, 2009). Since the athletes spend considerable amount of time in nature, they develop an intimate bond with and positive attitude towards nature, which motivates them to behave more pro-environmentally.

If the athlete experiences being-towards-death as a result of their participation, then the athlete may reflect on themselves and the meaning of life. This reflection is perceived as an "Eigentlichkeit" or represents an authenticity (Breivik, 2011). With an **authentic** lifestyle, the athlete is more likely to have an appreciation and sensitivity towards the natural world. If authenticity is accomplished, the athlete can become their true self and a true being-in-this-world. A true being and mindful being both require "being present" in the now and here, which lays the foundation for associating a true being with mindfulness. There thus exists a positive interrelationship between true-beings, mindful actions and eco-centrism. If a transformational process occurs due to the athlete's participation in nature-based extreme sports, then it can be perceived as a **sensitising process** with one's body, the natural world and with fellow extreme sports athletes. The researcher considers that both humans and the natural world are part of a larger functioning network including ecosystems in which survival depends on co-existence. If this growing awareness and sensitivity is attained through nature-based extreme sports participation,

then connections with one's body, the natural world and other people are inevitable. The vision of "when we try to pick out anything by itself, we find it hitched to everything else in the Universe" is realised (Muir[48], 1911, p. 110). Therefore, the self (body), the natural world, and other people are considered to be "hitched" to one another and cannot be viewed as separate entities. In this larger functioning network, each entity affects and is being affected by another.

The researcher hypothesizes that there is a facilitative role of nature-based extreme sports participation in an eco-sensitivity. The involved transformations are regarded as a sensitising and integrational process with one's body, the natural world and other people. Participation allows for superfluidity (an enhanced state of flow), which requires mindfulness and facilitates the individuals true-self. The sensitising process permits an authenticity, where an eco-centric bond with the natural world is easily facilitated. Eco-sensitivity can contribute to the sustainability of healthy eco-systems.

1.5 Theoretical framework

Interpretative phenomenology[49] underpins the theoretical framework of this study. The focus of interpretative phenomenology involves "what it means to be" prior to analysing a person's understandings regarding their existence, the truth and nature of their reality (Mackey, 2005). It involves the comprehension of the given experience (phenomenology) as personally experienced by the nature-based extreme sports athlete, and how the athlete makes sense of this experience (interpretation). The researcher's personal experiences and perceptions are recognised during the interpretation of the athletes' nature-based extreme sports experiences. The selection of interpretative, rather than descriptive traditions is based on the fact that the researcher incorporates her own perspectives when she analyses the studied phenomenon in addition to considering the narratives of the nature-based extreme sports participant. The fusion of both the researcher and the participants narratives and perceptions creates a deeper understanding that exceeds the traditions of merely a descriptive process (Mackey, 2005). An interpretative researcher builds communication between the "practical concerns and lived experiences through engaged reasoning and imaginative dwelling in the immediacy of the participants' worlds" (Benner, 1994, p. 99).

[48] The naturalist and environmental philosopher, John Muir, made this observation during his climbs of Mount Hoffman and Lake Tenaya.

1.5.1 Heideggerian and Merleau-Ponty: Interpretative phenomenology

Heidegger's interpretative phenomenological approach is well suited to interpret nature-based extreme sports, where extreme situations of confronting danger and possibly death bring deep existential structures to light in an unusual and remarkable way (Breivik, 2010, 2011; Jirásek, 2007). The essential disclosure of information occurs through the Dasein's[50] meaningful association with commodities[51] in the environment, which manifests through expression (Moran, 2000). Heidegger terms *Dasein* as the human mode for "Being" (Matthews, 2006). Ultimately, "we experience the world . . . not as detached subjects or pure reason, but as actual human beings who exist at a particular time and place, and who interact with their surrounding world from that position in space and time" (Matthews, 2006, p. 12). Furthermore, he asserts that our relations are mainly interpretive[52] or hermeneutical in saying that "relating to things, disclosing them, always relates to our concerns in advance" (Moran, 2000, p. 234).

When an individual observes something, their observation of it elicits a given set of expectations which are either fulfilled or demolished in subsequent perceptions (Moran, 2000). Heidegger fused phenomenology with *hermeneutics*, which provided a different perception of Husserl's practical intentionality (Moran, 2000). Hermeneutics refers to "the theory and practice of interpretation" (Van Manen, 1990, p. 179). It reflects a holistic interpretation of human existence (Moran, 2000). In his early philosophy, Heidegger's intend was to study the basic processes and structures of human existence as they evolve in daily life (Breivik, 2011). Moran (2000) explains that the 'sports-world'[53] is part of people's daily lives. The conceptualisation of Heidegger's phenomenology was thus to delineate the fundamental structures of the *Dasein*, the fundamental means of existence (Heidegger, 1962). The existential meaning of Dasein is care ("Sorge") (Moran, 2000). To care for mother nature is one of the important aspects discussed in this study. Having an eco-sensitivity reflects a care for nature.

[50] The Heideggerian term, **Dasein** represents the human being which correlates to "being there" or "being here" (Kruger, 1988, p. 31). Furthermore, it refers to the world being present to man and man being present to the world and its fellow man (Kruger, 1988).

[51] **Husserl** (1989) pinpointed our associations to commodities in our bodily activity in the local environment and in a sense foreshadowed Heidegger's notion of *Being and Time* (Moran, 2000).

[52] A particular **interpretive feature** in every intentional act was noted by Husserl and delineated in his writings of grasping sense, namely "Auffassungssinn" (Moran, 2000).

[53] **Heidegger** himself showcased that sport plays an evident part in one's life, where he skied to lectures from his hut in Todtnauberg to the University of Freiburg.

If and how this eco-sensitivity is cultivated during nature-based extreme sports participation are revealed through the experiences of the 'expert' nature-based extreme sports participant. An understanding, certain state-of-mind, a sense of falling and type of discourse form four of the basic constructs of Heideggerian interpretation (Breivik, 2011). Individuals constantly understand themselves in a specific way, being in a definite state-of-mind, with the susceptibility to lose oneself in the world and interact with oneself and others in a specific manner (Breivik, 2011). These ways of 'being' can be categorized into authenticity and inauthenticity (Breivik, 2011). Authentic moments represent the times we are most at one with ourselves, experiencing "mineness" (Moran, 2000, p. 240).

Most of our everyday living consists of inauthentic moments (Moran, 2000). Heidegger explains that we often just pass information along, not too absorbed or attentive towards the meaning of it, but rather living in a fuzzy and mediocre comprehension of the everydayness (Moran, 2000). People do not consider happenings as influencing their 'ownmost' being intensely (Moran, 2000). People do not submerge themselves in the situation as if they are experiencing it personally (Moran, 2000). Facing one's own death, in fear and seriousness, is a manner of becoming whole and authentic (Breivik, 2011). An authentic being signifies a potential-to-be-whole (Moran, 2000). Human beings have the desire to master their lives and to take hold of and unify with their life, becoming whole (Moran, 2000).

This phenomenological study of nature-based extreme sports embeds itself in these fundamental structures of *Dasein*. For example, it indicates how a climber plans an alternative route, undertakes the next move, is in a specific state-of-mind experiencing a non-flow, flow or superfluid state, liaises with other climbers and communicates with the mountain (natural element) (Breivik, 2011). The study rests on the nature-based extreme sports participants mastery of the subject area (Breivik, 2011). The nature-based extreme sports participant is an *expert*[54] in his specific extreme and risky activity, which allows the depiction and interpretation of their narratives.

[54] Excluding a novice or naïve non-participant.

1.5.1.1 Interaction with other people and the utilization of equipment

All human beings' function within a specific world, including the 'work-world', 'art-world' and 'sports-world' (Breivik, 2011). In this 'sports-world' there exists an 'extreme sports world', which is then further divided into 'nature-based extreme sports world', and then branches into the worlds of kayaking, climbing, rowing, surfing, biking et cetera. The branches then extend into various types of kayaking, climbing, rowing, surfing and biking et cetera. (Breivik, 2011). The athlete is a "being-in-the-world"[55], which signifies that the activity of the athlete must be studied in an environmental context[56]. We, as human beings, are not isolated from the world, but imbedded and interlaced with it (Breivik, 2011). Our primary involvement with the world is not based on a theoretical understanding, but rather practical. Athletes are practically collaborating with each other and connecting with the natural world through play and competition (Taylor, 1995). In nature-based extreme sports, athletes are intensely interacting with specific natural elements, such as air, running water, rock et cetera. These practical and direct connections with the different "worlds"[57] form the various natural environmental contexts. For example, mountaineers adapt to the thinning of air and changes in altitude (Wickens, Keller & Shaw, 2015). White-water kayakers are submerged in running water, rivers and interacting with currents, waves and waterfalls (Zakaria et al., 2017). Rock climbers connect with and on rock (Breivik, 2007; Magiera & Roczniok, 2013).

The fundamental endeavour of *Dasein* is the practical engagement and being cautious towards the natural world through the utilization of equipment (Breivik, 2011). Using equipment such as man-made and natural elements, assists the individual to realise his/her profound goals in life. Each piece of equipment for the different extreme sports activities play a specific vital role in the feasibility of the activity and together each piece supports the realization of the goal (Breivik, 2011). For example, white-water kayaker utilizes the kayak to float on water; the paddle operates to move and steer the kayak; and the spray deck allows for kayaking on white waters (Breivik, 2011). In this study, the phenomenology of nature-based extreme sports places the primary appearances of risk in the specific relations with the person, activity and arena (landscape) (Breivik, 2011).

[55] "[Being-in-the-world showcases that] we are a peculiar part of the world, by virtue of the fact that we are conscious of it. We do not exist apart from the world we experience, but we are a part of it" (Matthews, 2006, p.12).

[56] See chapter three for the use of Bronfenbrenner's socio-ecological theory.

[57] Distinguished by the various natural elements.

1.5.1.2Bodily being-in-the-world

Heidegger's approach neglects to consider the phenomenon of the lived body and its importance in reaching one's profound goal (Breivik, 2011; Schrag, 1962). The importance of the "bodily feature" of our being-in-the-world is omitted. For example, the upper body that propels the kayak forward is not considered (Breivik, 2011).

However, the bodily feature and its involvement with the world, is intensely studied by Merleau-Ponty[58] (Breivik, 2011). Merleau-Ponty's depiction of our bodily being-in-the-world furthers and enhances Heidegger's viewpoints. According to Merleau-Ponty, we only get to comprehend the world because we are a mind with a body, rather than a mind and a body. Since our body is embedded in the world, it allows us to access to external objects (Merleau-Ponty, 2002). The body, according to Merleau-Ponty, is the active agent interpreted with regards to the type of situation and task it is presented with (Breivik, 2011). The body refers to a "here", which sequentially represents the merging of 'the active body' into an object (Breivik, 2011).

When the body merges[59] with the surrounding objects, it allows the individual to deal with and undertake the task at hand (Breivik, 2011). The course of living is expressed as follow*:*

> I experience the movements as being a result of the situation, of the sequence of events themselves; myself and my movements are, so to speak, merely a link in the whole process and I am scarcely aware of any voluntary initiative . . . It all happens independently of me. In the same way, in order to make a movement, he places himself in the affective situation as a whole, and it is from this that the movement flows, as in real life (Merleau-Ponty, 2002, p. 120).

A mergence or having a deep relatedness to a natural object is portrayed in Kruger's (1988) writings. His writings provide an example of a woman's experience and relatedness with a natural element, a tree. The woman, also known as Mandy, explains that she feels "absorbed into the being of a tree" and that she merges "with the life of a tree" (Kruger, 1988, p. 53).

[58] Merleau-Ponty asserts that being-in-the-world is inseparable from embodiment (Matthews, 2006). Merleau-Ponty directs the focus to the manner in which all of human subjectivity is articulated through the body. Through seeing with one's eyes, hearing with one's ears, speaking as an interaction between one's tongue, breath and vocal cords, moving with one's legs and arms (Matthews, 2006).

[59] Embarking on a nature-based extreme sports adventure affects the emotional, spiritual and physical spheres of an individual (Brymer & Gray, 2009). The transformational experience can only reveal an element of oneself when the individual is totally submerged in nature and relies on its forces (Brymer & Gray, 2009), and seeing it as an intimate partner and continuation of the "self" (Birrell, 2001; Martin, 2009; Schultz, 2002).

Therefore, in some way whatever happens to or is felt by the tree, happens to and is felt by her. When a tree was cut down which Mandy was closely related to, Mandy felt an intense pain as if she was also "cut down" (Kruger, 1988). Mandy describes her intense connection with trees as (Kruger, 1988, p. 53):

> I concentrate fully on that apprehension and begin to lose awareness of my body and all that surrounds me and the tree. The senses by which I usually perceive the world are no longer distinct, they have become fluid, flowing into each other, and are gradually absorbed into the being of the tree.

Mandy continues (Kruger, 1988, p. 53): "I merge with the life of a tree. I am contained within the tree…Time no longer exists." This represents a unifying process where she becomes one with the tree (natural object). This only one of her experiences that involve the vital aspects of her connection to trees at that moment. Every experience differs, because it depends on both the state-of-being of herself and the tree at the specific time (Kruger, 1988). This also applies to nature-based extreme sports, where the different activities elicit different actions, feelings and an overall experience. Van den Berg's (1950) views add to the idea of the merging of the human body with the surrounding natural element and present task. A sensitizing process of the human body with nature through movement is described by him in a Netherlands extract (Van den Berg, 1950, p. 403):

> De kwetsbaarheid van zijn lichaam wordt hem lang voordat hij valt duidelijk als gevaarlike helling of als rolbaar material onder de voeten; en zijn pijn is lang voor de stoot present als kantige rots of scherpe steen. Zelfs wanneer hij zich stoot, kan het zijn, dat het landschap hem zozeer in beslag neemt, dat de pijn overgeslagen wordt naar het cave!, dat het terrain concretiseert, zijn is gedepasseerde pijn: is eigenschap van de stenen, aard van het landschap.

This translates that during rock climbing the pain of the human body and so called "fear" is placed back into the rock or mountain through a process called "depasseeren", therefore he does not experience pain, because he is one with the mountain.

Merleau-Ponty perceives that the body inhabits space, rather than just being in space (Breivik, 2011). Principally, this is observed through movement and intentionality (lived experiences) (Breivik, 2011). Humans perceive themselves (their bodies) moving towards an object to investigate it, however they also experience an invitation attraction from the object (Breivik, 2011). People's bodies are drawn towards the specific object that they want to seize as if the object commands it. The bodily agent is not necessarily the initiator of the movement, but rather the activity to be conducted that prompts the vital movements from the person via an automatic "magnetism" toward the object. This is similar to the extraordinary stimuli in one's visual sphere that draws us forth (Breivik, 2011).

In nature-based extreme sports, immediate and cognizant reactions to different environmental stimuli and its occurrences are essential to survival (Breivik, 2011). Van den Berg (1972, p. 51) interprets the way we perceive our bodies through "reflection" and "pre-reflectivity." His interpretation of the body begins by distinguishing between *having* a body and *being* our body. From a reflective stance, the body is viewed as a material object which mankind attempts to understand through physiological dissection (Van den Berg, 1972).

By *having* a body, a form of distance is created between the person and the body part he/she refers to. For example, "I *have* a hand", which can be physiologically dissected into blood vessels, muscles, nerves and bones. In essence, by reflecting upon the body one *is*, the body one *has* comes into existence (Van den Berg, 1972). A pre-reflective stance considers that man and body are intertwined (Van den Berg, 1972). In contrast to a reflective viewpoint, the "being body" cannot be understood through physiological dissection. Therefore, the conclusion can be made that "talking about one's body means talking about oneself" (Van den Berg, 1972, p. 50).

Elements of time and space in accordance to the being-in-the-world are explicated by Buber's (1987) understanding of an individual's twofold relationship with the world. This twofold relationship is understood through the use of primary the words "I-Thou" and "I-It"[60] and their attached attitudes (Buber, 1987, p. 15). The *I-It* is chained to others and objects and therefore, its existence depends on being bound to things (Buber, 1987). In contrast, *I-Thou* detaches from things and establishes the world of relation (Buber, 1987). Therefore, *I-Thou* has no limits and becomes the divine, which does not mean that nothing exists except himself, but that "all else lives in his light" (Buber, 1987, p. 21). When the I of the *I-It* is engulfed by numerous contents there is only a past filled with objects, leaving no space for the present (Buber, 1987). However, the *I-Thou* is continually present and enduring (Buber, 1987). Fundamentally, Buber explicates that "true beings are lived in the present, the life of objects is in the past" (Buber, 1987, p. 26). From these interpretations, one can correlate the attitude of an *I-It* to that of ego-centrism and an *I-Thou* to an eco-centric approach. Since a mindful being purposefully pays attention in the present moment, it connotates with I-Thou traditions (Kabat-Zinn, 1994).

[60] A practical example of the **I-It** and **I-Thou** is demonstrated in an extract from *The Centred Skier* (McCluggage, 1999, p. 11): The poor skiers fight the mountain, attacking it with their tiny poles their miniature spirits, and slashing at it with their edges. The good skiers join the mountain, commune with it, go with it. Yes, their poles stab and their edges cut, but with a difference. The difference is that the poor skiers have an I-It relationship with the mountain, to use Martin Buber's term. The mountain is a thing apart from them. An object to be manipulated and subdued. The good skiers have an I-Thou relationship with the mountain; there is a union.

1.5.1.3Nature as a stage (landscape)

Nature-based extreme sports athletes engage with and explore on a "stage" including natural elements and landscapes that involve different parts of the earth (Breivik, 2011). The natural elements such as rock, running water, air and the ground are drawn into the human 'world' of nature-based extreme sports. To discover the natural world during extreme sports signifies that the natural elements and landscapes are drawn into certain "extreme and risky worlds", because they elicit the various types of activities and actions that comprise nature-based extreme sports (Breivik, 2011). This can take one of two forms. One, where the athlete searches for a specific type of natural element or landscape and the capacity at which the person will attempt the activity. For example, a rock climber searches for a rock face with certain features for his potential climb (Breivik, 2011). The other, where the natural element or landscape attracts and affords a specific type of action and way of approaching it (Breivik, 2011). Thus, these natural elements and landscapes attract and elicit specific human actions. An athletic being-in-a-risky-world signifies experiencing different gestalts, with natural features and landscapes that can either be pleasant (attractive) or unpleasant (unattractive) (Breivik, 2011).

1.6 Research methodology

The following section provides a short overview of the applied methodology. A detailed discussion of the research methodology is provided in chapter four. Methodology includes a systematic structure within which research is conducted to answer the research question (Clark, Flewitt, Hammersley & Robb, 2014; Gratton & Jones, 2010). This study's research question *How do South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity?* is answered by following the theoretical underpinnings of **Heidegger's** and **Merleau-Ponty's interpretative phenomenology** and the context it provides for the implementation of the **interpretative phenomenological analysis (IPA)**.

Interpretative phenomenological traditions of Heidegger and Merleau-Ponty are used to shape the researcher's understandings of the studied phenomenon[61] by using **hermeneutics** and **ideography**. If research aims to delineate a phenomenon which depends on the perception and narratives of a person's experiences in a certain situation, it is fitting to utilise a **qualitative research design** (Stake, 2010).

[61] To explore the facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context.

Since, this research deals with the personal lived experiences and perceptions of nature-based extreme sports athletes, a qualitative design is selected as appropriate to approach the objectives of this study and answer the research question. The adopted qualitative approach recognises the internal reality of the subjective experiences of the selected South African 'expert' nature-based extreme sports athletes (Terre Blanche & Durrheim, 2002).

Considering the high risks of injury and death involved during nature-based extreme sports participation, extreme sports athletes are reminded of their own mortality during their extreme activity and of their "being-towards-death" (Heidegger, 1962, p. 179-182). Studies conducted by Breivik (2011) indicate that Heidegger's phenomenological[62] approach is well suited to interpret nature-based extreme sports, where extreme situations of confronting danger and possibly death bring deep existential structures to light in an unusual and remarkable way (Breivik, 2010; Jirásek, 2007).

The selection of interpretative[63] rather than descriptive traditions is based on the fact that the researcher incorporates her own perspectives when she analyses the studied phenomenon in addition considering the narratives of the nature-based extreme sports participant. The fusion of both the researcher and the participants narratives and perceptions creates a deeper understanding that exceeds the traditions of merely a descriptive process (Mackey, 2005).

Since an interpretative study's quality and depth of the identified themes are determined by its sample, it is kept small (Durrheim, 2002). A **non-probability key informant sample** is selected as most appropriate for the purpose of this study. The research sample is chosen based on the specific knowledge and "expertise" the individual possesses (Jones, 2015). The refined sample comprises 10 South African 'expert' nature-based extreme sports athletes who participate in one or more nature-based sports, who are above 18-years of age and are either male or female. The sampling criteria provides what constitutes a nature-based extreme sports activity as derived from the literature review. The modus operandi for the data collection, transcription process and data analysis from which the final interpretations and themes stem are all led by the interpretative phenomenological notions.

[62] Heidegger's phenomenology is principally driven by the theoretical notions of interpretative phenomenology.
[63] Interpretative phenomenology considers the individual in their entirety and values their experiences.

Four constructs of interpretative phenomenology identified by Mackey (2005), namely **being-in-the-world**; **hermeneutical process**; **concepts of time**; and **concepts of space** guide the manner in which the research is approached. The selected data collection strategy involves **one-on-one semi-structured interviews** guided by a **semi-structured interview schedule**. Interviews are **audio-recorded** while concise hand-written notes are taken, whether the interview is conducted in person or telephonically. This follows a **manual transcription** of each recorded interview, where the researcher considers a five to eight hours transcription period per hour interview done.

The employed interpretative phenomenological analysis (IPA) incorporates a four-stage iterative process encompassing the (1) searching of themes; (2) connecting of themes; (3) continuing of the analysis with the next transcript; and (4) the write-up of themes into concluding statements. Identified themes are then linked to relevant literature and interpreted by the researcher.

This dissertation is written in the **third person**, with cases where the researcher refers to herself in the first person as she places herself into the research process and is actively involved. The first-person reflections are introduced through a **researcher reflexive box**[64]. Approaches to ensure **validity** and **reliability** introduce the accuracy and truthfulness of the findings, the consistency, stability and repeatability of the athletes' narratives (Brink, 1993). Noteworthy **ethical considerations** reveal that the nature-based extreme sports athletes are informed of the true nature of the study; they willingly choose to participate; they are required to provide written consent without coercion; and are aware that they have the liberty to withdraw from the study at any time, as to rule out any misconduct. These ethical considerations are attended to before any data collection commences.

1.7 Outline of chapters

The following study is structured into six chapters concluding with a thorough list of references and relevant appendices with additional information. To facilitate the reading of this document, the researcher provides a complete table of contents with respective page numbers, followed by a list of figures and tables used. An outline of each chapter in this study is presented below:

[64] The researcher's reflexivity in the study is addressed to showcase her active and subjective involvement in the interview process, transcription process, interpretation and analyzation of data gathered; as directed by the interpretative phenomenology. The researcher's pre-understandings of the phenomena are recognised.

CHAPTER 1: INTRODUCTION

The introduction in chapter one serves to contextualise the research problem and provide an overview of the purpose, relevance and design of the study. To ensure that the aim and objectives are achieved the theoretical framework of this study is delineated. An overview of the research methodology further provides the reader on the selection of a qualitative research design. A clarification of terminology is provided to furnish the reader with a comprehension of terms and concepts referred to in this study. Overall, the introduction provides the reader with a roadmap to understanding the study.

CHAPTERS 2 AND 3: LITERATURE REVIEW

The title of this dissertation outlines **nature-based extreme sports** and **eco-sensitivity** from a **South African context**. To gain clarity on the meaning and context of these terms, relevant literature is reviewed and divided into two chapters. The first part of the literature review attempts to define nature-based extreme sports, the involvement of risk during participation in such sports and identifying the motives and benefits of participation. In the second part of the literature, flow and mindfulness are explored in terms of the "extreme" context of nature-based extreme sports leading to an understanding of superfluidity and mindlessness. Bronfenbrenner's (1979) socio-ecological systems theory explicates the significance of the interaction between the nature-based extreme sports athlete, their equipment, other people and the natural environment within a particular setting and the various contexts that guide their behaviour. Environmental degrading behaviour from a South African point of view is demonstrated through littering. Accordingly, a clear distinction between pro-environmental behaviour and environmental degrading behaviour is made. Ultimately, the reader can grasp the idea of "eco-sensitivity."

CHAPTER 2: NATURE-BASED EXTREME SPORTS

By way of an All Quadrants All Levels-model (AQAL-model) for extreme sports, the definition of nature-based extreme sports and its involved types of activities as utilised throughout the study are provided. An understanding of the term "expert" is also delineated in terms of the perception and management of risk. Considering risk as a by-product of participation in such activities, the motives for participation are presented with an understanding of deliberate and precautionary risk-taking behaviour. Furthermore, a short overview of the different types of nature-based extreme sports as utilised throughout this study is introduced. Lastly, the benefits of participating in nature-based extreme sports are outlined.

CHAPTER 3: FLOW, MINDFULNESS AND ECO-SENSITIVITY

A differentiation between flow and superfluidity is made by referring to Csikszentmihalyi's (1975) interpretations of a flow state. Kabat-Zinn's notions regarding mindfulness are discussed and an understanding of mindlessness is sketched. Thereafter, the Mindfulness-Acceptance-Commitment (MAC) theory and its relevance to a nature-based extreme sports athlete during a nature-based extreme sports activity is explained. Potential mechanisms of mindfulness are then constructed to illustrate its facilitative role in transformation and change.

Bronfenbrenner's socio-ecological theory showcases that nature-based extreme sports athletes including their unique characteristics and behaviours are embedded within a biophysical and socioeconomic environment (Coutts, Forkink & Weiner, 2014). To understand environmental degrading behaviour, littering from a South African context is used as an example. Finally, through the concepts of environmental literacy, environmental thinking, environmental education, and pro-environmental behaviour, a thorough outlook of "eco-sensitivity" is presented.

CHAPTER 4: METHODOLOGY

The aims and objectives as set out in chapter one, are restated to provide the reader with an understanding of the reasoning for the selected methodology. The research design, context, sampling process, measures taken to increase the quality, as well as the ethical considerations pertaining to the study are delineated.

CHAPTER 5: FINDINGS AND INTERPRETATIONS

A clear description of the findings is produced, which are gathered through one-on-one interviews guided by a semi-structured interview schedule. This part includes an exploration of the themes in relation to the participants unique experiences. The findings and their interpretations presented in this chapter, assume an interpretative phenomenological analysis (IPA) and considers Heidegger's and Merleau-Ponty's phenomenological notions. Furthermore, the literature discussed in the previous chapters are acknowledged and applied during the analyses and identification of final themes and grouping them into clusters. Notably, the researcher's reflexive statements are included in accordance with the interpretative phenomenological traditions.

CHAPTER 6: SYNTHESIS, LIMITATIONS AND RECOMMENDATIONS

Lastly, this research paper concludes with a synthesis and conclusion to the study. Chapter six entails a summary of the central facets of each chapter. The quality of the study is determined through the validity and reliability of the IPA research method. Identified limitations and recommendations for future research are discussed. The researcher concludes with her final reflection of the research processes.

1.8 Orthography

A complete reference list and several appendices with additional information follow chapter six. Since this study deals with various psychological aspects in terms of interpreting personal experiences, motives for participation, mindfulness, flow, Maslow's hierarchical needs theory et cetera., the researcher considers the use of the **APA-style** appropriate, rather than the Harvard method. The Harvard method is typically used in the Department of Sport and Leisure Studies. The APA-referencing guidelines are implemented both in-text and in the reference list. The bibliographic details of the works cited in this study is listed according to the guidelines based on the *6th edition of the Publication Manual of the American Psychological Association (APA).* The reader should note that the APA-method allows for the first in-text citation and all subsequent citations of **six** or **more authors** to be referenced by only using the first author's last name followed by the abbreviation et al., which is not italicized and a period follows "al". In the first citation for **three, four** or **five authors**, the researcher refers to all authors. When referring to the authors for a second time and all subsequent in-text citations, the first author's last name followed by the abbreviation et al is applied (view Appendix A).

The text follows a set format of an **Ariel** font and 1" margins on all sides. Although the APA-style recommends double spacing, the researcher makes use of **1.5** paragraph spacing. Each paragraph is separated with a line of white space. The next paragraph starts with no indent, and the word-spacing is adjusted (fully justified) so that the text falls flush with both margins. Chapter headings are styled in a larger **bold font** and written with CAPITAL letters. Headings within each chapter start with an uppercase letter and follow lower case letters and words. Section headings and the subsection heading are indicated with a bold font. Further divisions of subsections are written in a normal font weight and an *italic* typeface (non-bold italics). Noteworthy terms within the text are either emphasised through a bold or an italic typeface, typically followed by a clarification of the term. Additional notes, explanations and citations regarding the topic at hand are presented in **footnotes**.

1.9 Clarification of terminology

To facilitate the reader's appropriate understanding of the utilisation of the terms in the specific context used throughout this study, a clarification of the terminology has been provided. The terms are alphabetic arranged. Each nuanced term and description set the foundation for interpretation of nature-based extreme sports participation and eco-sensitivity from a South African context.

1.9.1 Civilisation

According to its etymology, civilization is an idea originally linked to cities and towns. The Oxford English dictionary describes civilisation as the comfort and convenience of modern living, which is only available in cities and towns (Delanty, 2018). Civilisation within this study's context refers to the comfort and convenience of modern life in terms of the availability of human and medical resources in case of an emergency. Exploring the wilderness, essentially connotes to the absence of civilisation or very low levels thereof. A low degree of civilisation would involve relying on one's own 'medical' skills to survive in isolation/ solitary.

1.9.2 Eco-centrics

"Eco" is considered to be associated with the environment (Smith & Smith, 2015). **Eco-centrics** advocate that humankind should not be viewed as apart from nature, but rather being a part of it (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007). Humans are seen as interlaced with the health and survival of the natural world within a larger function network (Ehrnström-Fuentes, 2016; Thompson & Barton, 1994).

1.9.3 Ego-centrics

Also referred to as *anthroprocentrics*. Ego-centric notions assert that the natural world should predominantly be appreciated for its resources, which are essential for the enhancement and sustenance of human quality of life, standard of health and comfort (Akgül et al., 2017; Thompson & Barton, 1994). Humans are viewed as superior to and apart from all living organisms (Ehrnström-Fuentes, 2016; Schultz, 2002).

1.9.4 Environmental degrading behaviour

Environmental degradation involves the deteriorated state of the earth or environment in which the natural resources have been exploited (Acar, 2013; Davis, 2008). The depletion and pollution of natural resources such as clean air, fresh water, fertile soil result in unhealthy ecosystems and loss of biodiversity (Martin et al., 2016). The deteriorated state of the environment is commonly caused by a combination of human actions and overpopulation (Garg & Mashilwane, 2015; Mei et al., 2016).

Environmental degrading behaviours typically involves littering and increased landfills (water, air and soil pollution), overfishing (overconsumption), hunting (wildlife extinction), poor water management and irrigation systems (decrease in fresh water), deforestation and environmental noise (Ojedokun & Balogun, 2013; Steg & Vlek, 2008).

1.9.5 Environmental Education

Environmental Education is an educational process that aims to develop the skills and attitudes necessary for understanding the relationship between human beings, their cultures and the biophysical world (natural world) (UNESCO-UNEP International Environmental Education Programme (IEEP), 1992). Environmental education can be conducted indoors (inside technologically built or man-made environments) or outdoors (outside in the natural world, physically interacting with natural elements) (Llyod & Gray, 2014).

1.9.6 Environmental responsible citizen

An environmentally responsible citizen can be summarized as an individual who has an awareness and sensitivity towards the whole environment and the challenges it faces; a fundamental comprehension of the whole environment and these challenges; compassion for the environment and incentive for actively engaging in environmental preservations; prowess for recognising and resolving environmental challenges; active participation on every level aiming to solving the environmental issues (Hungerford & Volk, 1990).

1.9.7 Expert

An expert nature-based extreme sports participant involves a knowledgeable, skilled and experienced athlete, which opposes a novice or less-experienced participant.

1.9.8 Mindlessness

An individual can experience a state of mindlessness, when their practice of behaviour becomes habitual or automatic where their attention is scattered and awareness of the present moment dissipates (Gardner & Moore, 2006). Mindlessness is signified through James's (1924, p. 237) remark that "compared to what we ought to be, we are only half awake." This research considers mindlessness as a state where the athlete's body and mind are not in synch. Being mindful entails a set of internally operated skills of observing, narrating and being in the present moment (Dimidjian & Linehan, 2003). Overall, the process involves centering one's attention to the present experience on a moment-to-moment basis (Marlatt & Kristeller, 1999). The absence of these skills represents a person who is not mindful and essentially mindless.

1.9.9 Nature-based extreme sports

Nature-based extreme sports include unconventional fields of high-risk sports, which take place outdoors, in natural spaces where the likelihood of a mismanaged action can lead to an injury or fatality. These activities involve the interaction of natural elements which are oriented towards a combination of endurance, adventure, risk and action. Commonly, expeditions are performed in isolation with minimal availability of human and medical resources in case of an emergency.

Athletes must safely mitigate challenging unpredictable environmental conditions; complete long distances; and endure long-lasting movement tasks. Nature-based extreme sports participation requires physical attainments of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof. Although deliberate risk-taking is involved, the athlete's survival depends on precautionary measures (Brymer, 2010; Frühauf et al., 2017; Krein, 2007; Llewellyn & Sanchez, 2008; Pain & Pain, 2005; Sirch, 2014).

1.9.10 Pro-environmental behaviour

Pro-environmental behaviour is characterised as conscious actions performed by a person with the aim to reduce the detrimental impacts of human activities on the environment. It involves protective environmental behaviour that benefits and enhances the quality of the environment (Krajhanzl, 2010; Steg & Vlek, 2008; Sawitri et al., 2015).

1.9.11 Risk

The probability of physical danger (Brymer, 2010).

1.9.12 Risk-taking

Any conscious activity, which involves an unfamiliarity, or which poses a great challenge, enough for the ordinary person to become anxious (Levenson, 1990). Risk-taking behaviour involves the act of voluntarily investing oneself in a set of circumstances that may potentially result in bodily impairment (either a bodily injury or in severe cases a fatality) and/or tangible loss (Cazenave, Le Scanff & Woodman, 2007). These circumstances depend on the extent of the challenges the individual is exposed to (Cazenave et al., 2007). Risk-taking encompasses the trilogy of making a self-determined conscious choice, which involves a degree of uncertainty, unpredictability, and the haphazard course of events that may have detrimental effects (Cazenave et al., 2007).

1.9.13 Sensitising process

A sensitising process includes becoming highly sensitive and attentive to specific stimuli and behaviours. Sensory sensitivity, commonly experienced during a flow state, involves an awareness of an athlete's bodily functions (Csikszentmihalyi, 1975). Emotional auto-regulation is part of the sensitising process, which involves that the athlete directs his/her attention on experiencing bodily sensations such as having an awareness of their rising heart rate (Castenier, Le Scanff & Woodman, 2010).

1.9.14 Wilderness

Wilderness comprises remote natural places in which the biophysical landscapes and its living elements remain largely untouched by mankind. It is essentially removed from modern technological society and civilisation involving cities, towns, roads and man-made structures (Hawes, Dixon & Bell, 2018). However, indigenous societies may be integrated within the wilderness following hunter-gathering methods of survival (Dudley, Kormos, Locke & Martin, 2012; Hawes et al., 2018). The cycles of life within the wilderness are regulated by natural forces and processes, involving various biotic interactions (Hawes et al., 2018). Safeguarding of wilderness areas from human exploitation is crucial to the maintenance of healthy ecosystems. These remote areas are critical for ecological refuges, as it provides a depot of bio- and geodiversity, and act as buffer against climate change (Mackey, Lesslie, Lindenmayer & Nix, 1998). According to the observations of Hawes et al. (2018, p. 11):

> It is a place where a human visitor can stand with their senses steeped in nature, far from the noise of machines and the distractions and turmoil of modern life. It is a place that requires a journey to reach: a journey on which the traveller is largely self-reliant, and the day-to-day rhythms of life get stripped back to the basic rhythms of survival and interacting with the natural world. It is a place where one can find psychological refreshment and spiritual inspiration; where one can rediscover one's relationship with the living Earth, indeed with life itself.

CHAPTER 2: NATURE-BASED EXTREME SPORTS

2.1 Introduction

The previous chapter provides the reader with an introduction to the purpose, relevance, and theoretical framework that guides this study. To holistically interpret the research problem, the relevant literature has been divided into two chapters. The two parts of the studied phenomenon involves “nature-based extreme sports participation” and “eco-sensitivity” from a South African context. Within chapter two, relevant literature regarding “nature-based extreme sports participation” has been reviewed and organised to provide the reader with the concepts of: nature-based extreme sports; the involvement of risk associated with nature-based extreme sports; types of nature-based extreme sports activities; and the motives and benefits of such participation.

2.2 Defining nature-based extreme sports

Academic writings have not come to a consensus about the understanding of extreme sports and its involved disciplines (Sirch, 2014). Hence, scholars build their own truths on the matter. A compilation of definitions is used to compose one description of the researcher’s understanding and truth regarding nature-based extreme sports.

2.2.1 All Quadrants All Levels-model for extreme sports

An All Quadrants All Levels-model (AQAL-model) for extreme sports based on an integral[65] view, as proposed by Sirch (2014), is used as a reference to describe nature-based extreme sports with its respective disciplines. Furthermore, the AQAL-model becomes a useful tool to outline nature-based sports participation. Essentially, the observations of Sirch’s (2014) AQAL-model is acknowledged and applied to the purpose of this research. This integral view regarding the “extreme” evolution of traditional sports is grounded in Ken Wilber's 1970’s writings who coined the *Integral Theory*, known as the “theory of everything": the living totality of mind, matter, body, and soul (Sirch, 2014). Wilber’s AQAL-model abbreviates to all quadrants, all levels, all lines, including all states, and all types of an individual’s reality (Esbjörn-Hargens, 2009). The researcher outlines the fundamental dimension-perspectives introduced in the *all quadrants* subsection, as well as explaining depth and complexity within the *all levels* category. Notions made within these subsections lay the foundation to its application to nature-based extreme sports.

[65] Separate paradigms are drawn together to produce an interrelated framework (Wilber, 2005).

2.2.1.1 All quadrants: Fundamental dimension-perspectives

Dimensions of reality experienced by an individual are "actual aspects of the world that are always present in each moment" (Esbjörn-Hargens, 2009, p. 2). The four quadrants in Wilber's AQAL-model acknowledge that all things or reality can be perceived from two basic distinctions: 1) from an inside (interior) and an outside (exterior) view; and 2) from a singular (individual) and plural (collective) view (Esbjörn-Hargens, 2009). These two distinctions are built on four dimensions of reality of understanding the actual aspects of the world, namely subjectivity, intersubjectivity, objectivity, and inter-objectivity (Esbjörn-Hargens, 2009). The four abovementioned dimensions respectively construct the upper-left (UL) quadrant, lower-left (LL) quadrant and upper-right (UR) quadrant, and lower-right (LR) quadrant of the model (Esbjörn-Hargens, 2009). Figure 2.2.1 illustrates the four quadrants of Wilber's integral theory including its fundamental dimension-perspectives.

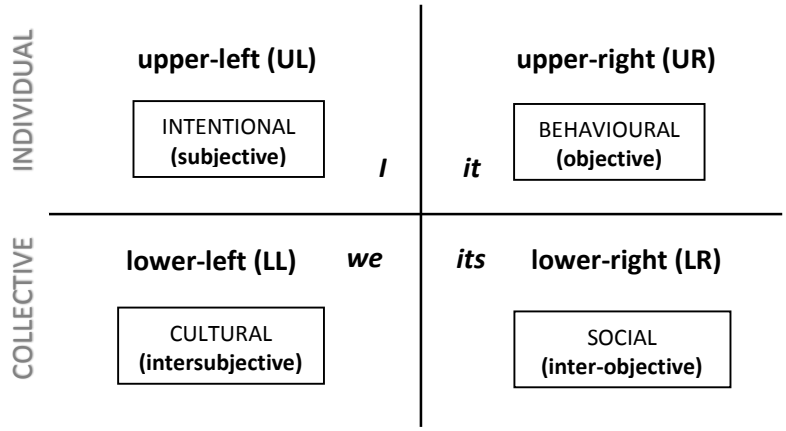

Figure 2.2.1. Wilber's integral theory including its fundamental dimension-perspectives (*Note*. Adopted from "An overview of Integral Theory" by S. Esbjörn-Hargens, 2009, *Integral Institute*, p. 3)

To simplify this construct, four fundamental pronouns ("I", "we", "it", and "its") are introduced to represent each one of the dimensions in the four quadrants of the AQAL-model (Esbjörn-Hargens, 2009). The upper-left quadrant constitutes the "I"; the lower-left constitutes "we"; the upper-right constitutes "it"; and the lower-right constitutes "its" (Esbjörn-Hargens, 2009). Because objectivity is an attribute of both the upper and lower right-side quadrants, the four quadrants are also known as "the three value spheres of *subjectivity* (UL), *intersubjectivity* (LL), and *objectivity* (UR and LR)" which represents Wilber's "Big three" perspectives of reality[66] (Esbjörn-Hargens, 2009, p. 3). These three realms can also be distinguished by the involvement of aesthetics and consciousness; morals and culture; science and nature.

[66] Wilber terms "I", "we" and "it/s" as "the Big Three" as each of these pronouns can be representative of the first, second-, and third-person perspective in its global use throughout world-wide language (Esbjörn-Hargens, 2009). See the incorporation of the "the Big Three" in Figure 2.2.2.

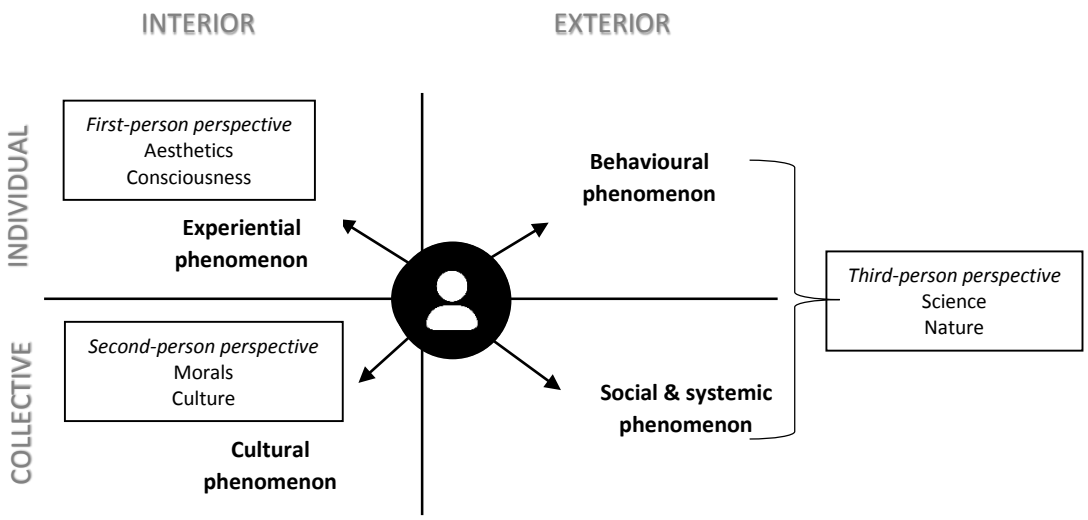

Figure 2.2.2. The AQAL-model's four quadrants of an individual's reality (*Note*. Adapted from "An overview of Integral Theory" by S. Esbjörn-Hargens, 2009, *Integral Institute*, p. 5)

An individual can be centred within the four quadrants-model where the different realities of the individual are encountered in terms of their actual dimensions of their own existence, based on their experiential, behavioural, cultural, and social/systemic context (see Figure 2.2.2) (Esbjörn-Hargens, 2009). This *quadratic* notion asserts that when an individual is more "open-minded" to the four dimensions of reality, opposed to a "tunnel-vision" view towards reality involving only one channel/dimension/perspective, they are more receptive to knowledge and act with appropriate and insightful feelings (Esbjörn-Hargens, 2009). In this way, the individual is encouraged to constructively notice, recognise and engage within their world or reality[67] (Esbjörn-Hargens, 2009; Wilber, 2005). In addition to the idea that the quadrants emphasise the four dimensions of reality every individual can have, another representation of the AQAL-model, known as *quadrivia,* which involves the four ways of viewing a studied phenomenon, is introduced (Esbjörn-Hargens, 2009).

In this case, the studied phenomenon explores if and how South African 'expert' nature-based extreme sports participants develop an eco-sensitivity as a result of their participation (see Figure 2.2.3).

[67] This reflects the engagement of all three of Wilber's "Big Three" perspectives including the first-, second-, and third-person perspectives of reality by way of providing the following example (Esbjörn-Hargens, 2009; Wilber, 2005). When the reader becomes aware of their own thoughts as they read through this section of the study (first-person perspective); they interpret what message the researcher is attempting to convey (second-person perspective), while simultaneously being aware of the surrounding sounds, the light shining through, and the air and temperature at that moment brushing their skin (third-person perspective).

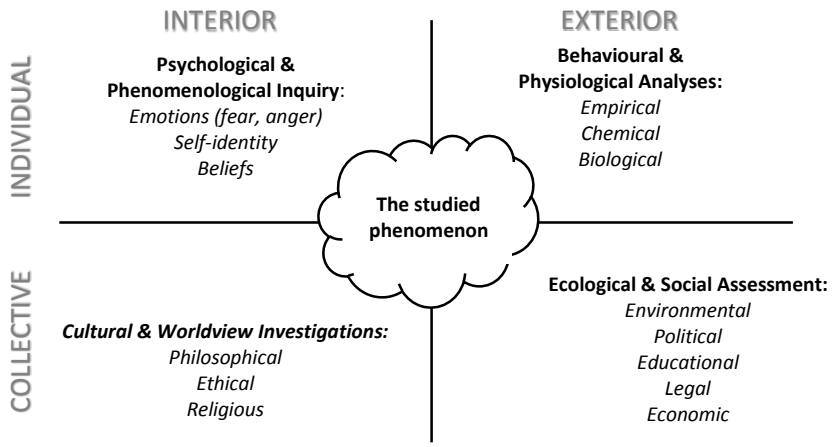

Figure 2.2.3. The four *quadriva* of a studied phenomenon (*Note*. Adopted from "An overview of Integral Theory" by S. Esbjörn-Hargens, 2009, *Integral Institute*, p. 6)

2.2.1.2 All levels: Depth and complexity

Each quadrant consists of a set of unique levels or stages concerning the focus or orientation of that particular quadrant (Landrum & Gardner, 2012). Within each of the four quadrants of the AQAL-model there exists different *levels of development* (Esbjörn-Hargens, 2009; Wilber, 2005). The left-side quadrants (interior) are characterised by *levels of depth* and the right-side quadrants (exterior) are characterised by *levels of complexity* (Esbjörn-Hargens, 2009). The existing levels in each quadrant is comprehended as *probability waves* (the possibility of an occurrence), which mirrors the dynamic nature of reality including the various ways particular conditions manifest (Esbjörn-Hargens, 2009). Depth involves the attribute of being intense or extreme and complexity entails the characteristic of being intricate (Esbjörn-Hargens, 2009).

These levels harmonize with the levels in the other distinctive quadrants, in terms of their level of depth and complexity (Esbjörn-Hargens, 2009; Landrum & Gardner, 2012). The incorporation of all levels of all quadrants assist the individual's appreciation and engagement with their realities (Esbjörn-Hargens, 2009). Each quadrant's levels or probability waves introduce a so called *holarchy* (Esbjörn-Hargens, 2009). A *holarchy,* is similar to a hierarchy in which the next level exceeds the limitations of the prior-levels. However, it still incorporates the vital facets of those precedent-levels (Esbjörn-Hargens, 2009; Wilber, 2005).

In short, each level builds upon the traits of the precedent-level and develops a new level of organisation or capacity (Esbjörn-Hargens, 2009). Thus, each level of depth and complexity holistically forms the next structure and is part of a greater whole (Esbjörn-Hargens, 2009). In the **subjective sphere**, also known as the "I"-perspective, sensations (can include bodily sensations) are transcended and incorporated in impulses, with the following levels transcending and involving the preceding level: emotions; symbols; and concepts (Esbjörn-Hargens, 2009). Similarly, the **intersubjective sphere** builds upon archaic interpretations to magical understandings, to mythical narratives, to rational viewpoints, to integral comprehensions (Esbjörn-Hargens, 2009). This type of dynamic movement continues throughout the **objective sphere**, which moves from atomic level to molecular level, to a cellular level, to tissues, and to organs (Esbjörn-Hargens, 2009). Lastly, the inter-objective sphere dynamically moves from galaxies to planets, to ecosystems, to families, and to villages (Esbjörn-Hargens, 2009). Figure 2.2.4 provides a visual illustration of the levels of development in each distinctive dimension.

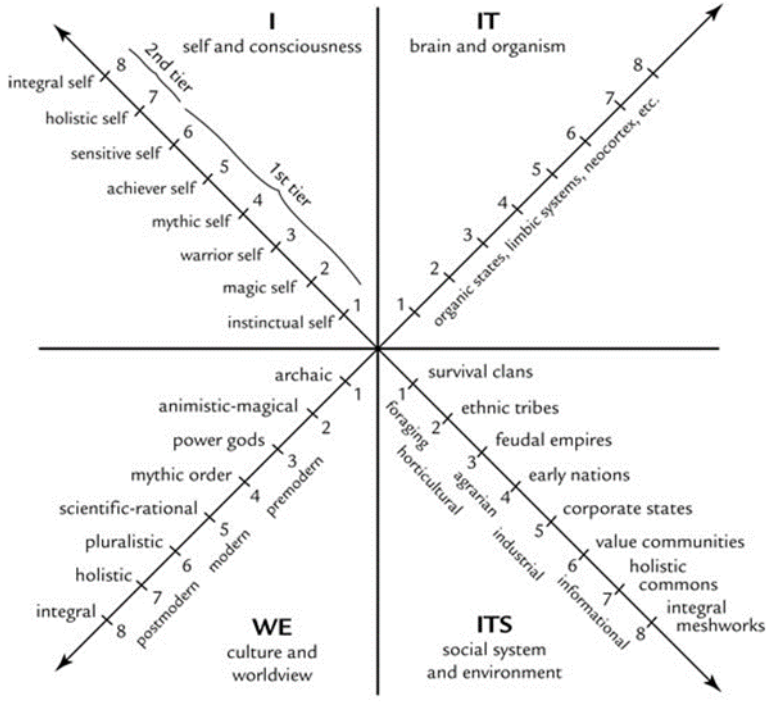

Figure 2.2.4. Some levels in the four quadrants (*Note*. Adopted from "An overview of Integral Theory" by S. Esbjörn-Hargens, 2009, Integral Institute, p. 8)

The Integral approach utilises the idea of a 'altitude' as a visual comparison and estimation of the similarities and dissimilarities of development throughout the various domains either within or between the quadrants (Esbjörn-Hargens, 2009). A centigrade thermometer serves as an example, where it functions efficiently in both the arctic and at the equator, which serves as a comparable instrument for weather conditions. Additionally, each level of consciousness is portrayed through a designated rainbow colour (i.e. red, amber, orange, green, teal, and turquoise) (Esbjörn-Hargens, 2009).

The movement of a broadened identity is also introduced through this band of colour (Esbjörn-Hargens, 2009). This extension of identity ranges from *egocentric* ("me") to *ethnocentric* ("my group"), to *sociocentric* ("my country"), to *worldcentric* ("all of us"), to *planetcentric* ("all beings") to finally a *Kosmoscentric* ("all of reality") (Esbjörn-Hargens, 2009) (see Figure 2.2.5). Typically, the direction of this widened awareness harmonises with each quadrant, having mutual relationships or correlates in the respective quadrants. Concentric circles, which are commonly overlaid on the quadrants, are used to display how the embedded quality of the levels transcend and reflect within each other (Esbjörn-Hargens, 2009). Figure 2.2.5 represents the broadening identity and the embedded quality of levels as they transcend and reflect within each other.

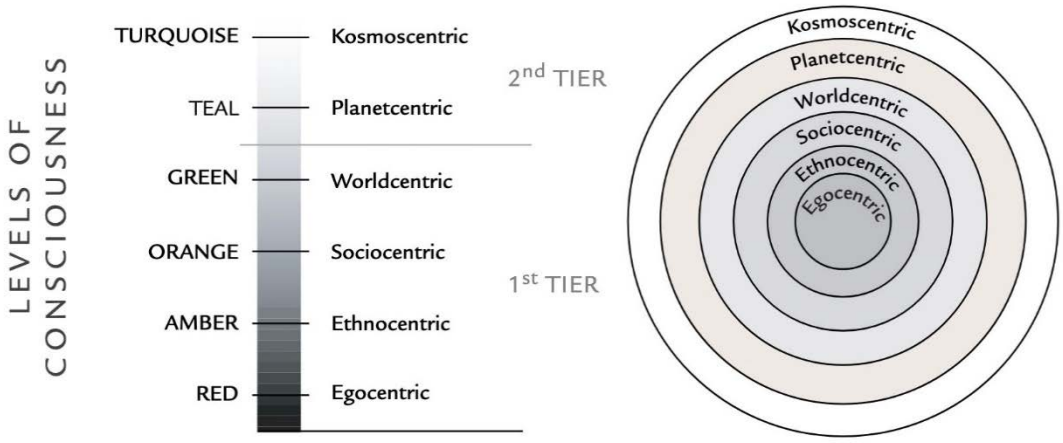

Figure 2.2.5. The broadening identity (left) and the embedded quality of levels as they transcend and reflect within each other (right) (*Note*. Adopted from "An overview of Integral Theory" by S. Esbjörn-Hargens, 2009, Integral Institute, p. 9)

2.2.2 Application to nature-based extreme sports

Sirch's (2014) proposed AQAL-model for extreme sports, considers the integral theory's quadrants and various characteristic lines of sports. The four quadrants are divided into aesthetics (UL), risk (LL), and performance (right-quadrants) (see Figure 2.2.6). This model corresponds to *professional high-performance sport* or top-level sport, which can be characterised by stress, high-risk of injury and challenge (Sirch, 2014). High-performance sport also correlates to elite performance. Willimczik's (2007) prototype semantic study introduces the *traditional sports model* as the core of sports, which is typically characterised by a high degree of competition, performance and teamwork. Therefore, the characteristics of traditional or conventional sports assist in producing clear attributes of "extreme sports" (Sirch, 2014).

In this model, the term **"alternative sports"** or **"outdoor sports"** are used to broadly represent the phenomena, and the term **"extreme sports"** to refer to the phenomena in a narrow or 'extreme' perspective (Sirch, 2014). The AQAL-model of extreme sports is determined by the four clusters identified by the personal views of the extreme sports athlete regarding their extreme sports activity (Sirch, 2014). The four quadrants of the AQAL-model for extreme sports position each cluster or category of extreme sports according to their leading orientation (Sirch, 2014). In the current study, all types of extreme sports activities are nature-based with the leading orientations based on the degree of endurance, risk, adventure, and action. Further observations include that contemporary sports are positioned within each quadrant based on three essential domains (Sirch, 2014): (1) *subjectivity* (upper-left quadrant: aesthetic experience and expression); (2) *intersubjectivity* (lower-left quadrant: risk taking and risk management); and (3) *objectivity* (right-side quadrants: maintaining or maximizing physical performance) (see Figure 2.2.6).

To understand Figure 2.2.6, which involves the positioning of contemporary sports in each quadrant according to aesthetics, risk and performance, the following sports are defined: artistic sports; sports for health and sport-related hobbies (Sirch, 2014). *Artistic sports* are positioned within the upper-left quadrant and include activities such as dance, acrobatics and figure skating. Aesthetics, expression, creativity and presentation characterise artistic sports. *Sports for health*, contrary to high-performance sports, involves forms of health promotion, relaxation, recreation, wellness and the "everyday life" (Sirch, 2014).

Activities within *sports for health* include walking, fitness training, back therapy training and yoga. Fishing, hunting, chess or bowling activities classify as sport-related hobbies which traits such as chance, coincidence, monotony and distraction (in case of lack of aspiration and expertise) are typically attributed to (Sirch, 2014). Both sports for health and sports-related hobbies are located within the upper-right quadrant comprising of a physical performance aspect. Notably, the non-traditional sports such as action sports, risk sports, adventure sports and extreme endurance sports are positioned in the lower-left quadrant and lower-right quadrant, which primarily encompasses a dimension of "risk" and a degree of performance. There is also an association with aesthetics and action sports (an "alternative sport" or subsection of "extreme sports) (see Figure 2.2.6).

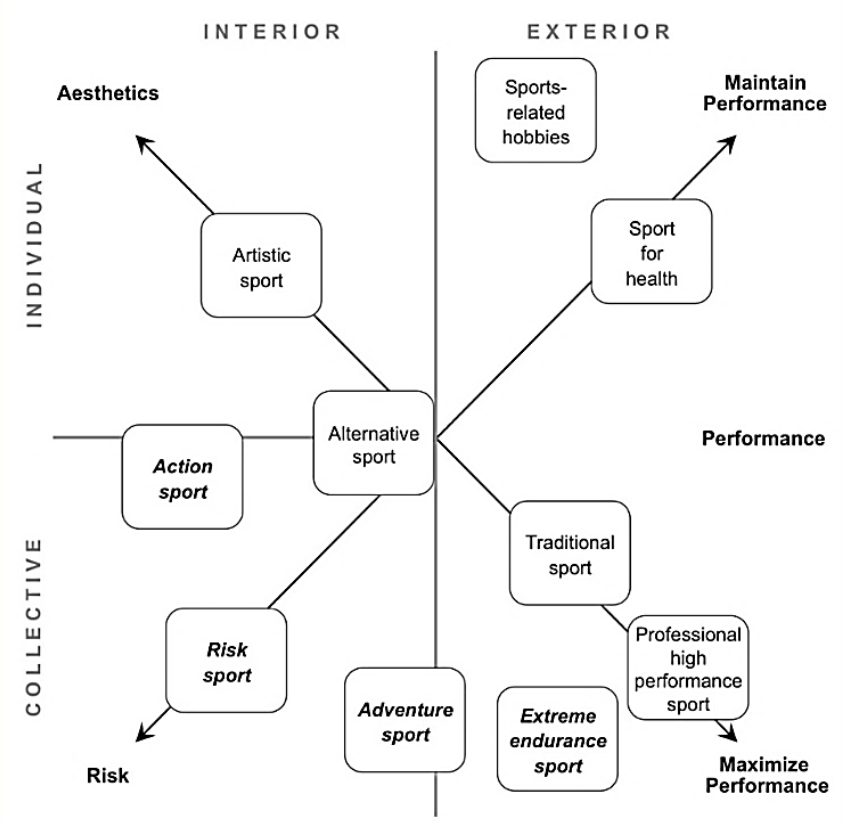

Figure 2.2.6. Positioning of contemporary sports (regular font) in each quadrant according to aesthetics, risk, and performance. Extreme sports (bold font) is positioned according to the degree of endurance, risk, adventure, and action (Note. Adopted from "Extreme sports: An integral view and the quest for applications." (p. 5), by S. Sirch, 2014, Paper presented at the first Integral European Conference (IEC), Budapest, Hungary)

Via the cluster analysis, extreme sports can be grouped into four clusters, namely extreme endurance sports, risk sports, adventure sports, and action sports, which can be viewed as the four models of extreme sports (Sirch, 2014). This brings us one step closer to the definition of **nature-based extreme sports** employed in this study. The four clusters of extreme sports are positioned in the field of sports, between outdoor sports, high-performance sports and artistic sports, but further distance is created between sports for health and sport-related hobbies (Sirch, 2014). A short overview of extreme endurance sports; risk sports; adventure sports; and action sports are provided below (Sirch, 2014):

(1) Extreme endurance sports entail long distances or long periods of physical activity which typically includes a constant repetition of similar movements. Common examples may include activities within the ultra-marathon and triathlon group (including long-distance running, swimming or cycling or a combination of them). Endurance activities are generally referred to as extreme sports because of the intense or "extreme" durations individuals need to attain. However, extreme endurance sports include regulated competition settings with different leagues, licenses, worldwide rankings and international governing bodies, which may lead them to be closer to the model of traditional and high-performance sports.

(2) Risk sports concentrate on the attainment of difficult movement tasks in a close-to-nature environment. These types of activities require unusual body movements and positions in non-standardized places. The unpredictability and power of the earthly elements such as water, rock and dirt in or on which the activity is done, ensures for its classification as higher risk or the increased possibility of serious injury or fatality.

(3) Adventure sports encompass the elements of risk sports and endurance sports. Consequently, it includes moving across, over and under natural terrains via unusual body movements and positions while enduring harsh weather conditions and temperatures for long distances or periods of time. A sense of "survival" is added to this category as individuals are far away from civilisation when they go on an expedition; and they take several days, weeks to even months to complete their journey while relying on their own 'medical' and navigation skills to survive in isolation.

(4) Action sports commonly do not take place in remote areas such as in adventure sports. However, they frequently use nature or natural elements to construct or cordon off the terrain for participation. The movement tasks associated with action sports involve an increased level of difficulty and style. Therefore, the chances of higher risk of injury is great and may transition to elements of risk sports.

Considering, the above descriptions and applying it in terms of quadrants and the characteristic lines of sports, Sirch (2014) suggests a description for extreme sports in Figure 2.2.7. The upper-right quadrant represents movement and body positions in time and space; the lower-right quadrant portrays all the social regulations, technological facets, spatial and environmental conditions; the left-side quadrants represents three vital motives or essential values of extreme sports. The level of "extreme" of the type of extreme sports activities are demonstrated by the degree of the line[68] (the higher the degree on the line, the more extreme) (refer to the notions of Figure 2.2.4). The researcher uses this description of "extreme sports" as foundation to essentially form her own truth and definition of nature-based extreme sports (Sirch, 2014).

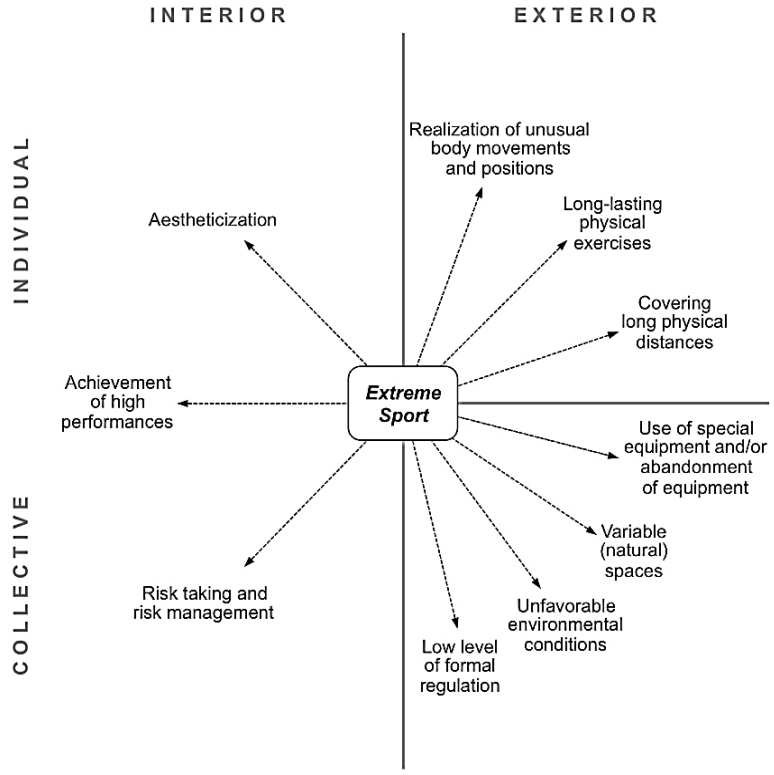

Figure 2.2.7. Description of "extreme sports" using quadrants and lines (Note. Adopted from "Extreme sports: An integral view and the quest for applications." (p. 8), by S. Sirch, 2014, Paper presented at the first Integral European Conference (IEC), Budapest, Hungary)

To summarise, the researcher recognises Sirch's (2014) remarks regarding an AQAL-model for extreme sports and applies it to the purpose of the study in the following way:

[68] For example, the extreme environmental conditions of Patagonia during a freeclimb is higher than in Yosemite Valley: the characteristics of the freeclimbing a big wall are similar in height and difficulty and include the same safety outcome, however the weather/environmental conditions are more sever in Patagonia.

a) Each cluster or category of extreme sports is defined according to their leading orientation based on the degree of endurance, risk, adventure, and action. The four clusters or categories of extreme sports include (1) extreme endurance sports; (2) risk sports; (3) adventure sports; and (4) action sports.
b) Within each respective cluster or category of extreme sports, a certain type of extreme sports activity is positioned. The researcher provided the following respective examples according to the purpose of the study: adventure racing and mountain running; white-water kayaking, ocean wave surfing, free ride mountain biking or certain types of rock climbing; mountaineering, ocean rowing, trekking; downhill mountain biking, snowboarding, and kite surfing (see Table 2.2.1).
c) All four of the above categories of extreme sports take place in nature, but vary in the degree of incorporating the natural world into their activity and as part of their survival. Therefore, this research asserts that all types of extreme sports activities mentioned in (b), are nature-based.

Moreover, the researcher's analysis of Sirch's (2014) description of the cluster or category of extreme sports lead to the identification of the terms: civilisation, competition and recreation as incorporated in this study. Table 2.2.1 provides examples of types of "nature-based" extreme sports with its corresponding involvement of civilisation and degree of competition (by classifying the involvement as low, medium, high or very high).

i. **Civilisation**[69] within this study's context refers to the comfort and convenience of modern life in terms of the availability of human and medical resources in case of an emergency. A low degree of civilisation would involve relying on one's own 'medical' skills to survive in isolation/ solitary.
ii. **Competition** in terms of this study represents an event or race in which a monetary or materialistic reward is at stake, sponsors are usually involved.
iii. **Recreational**[70] refers to the practice of an activity for the enjoyment and intrinsic reward, striving towards raising awareness to a specific cause. This means the individual is less concerned about the monetary or materialistic reward for themselves.

[69] According to its etymology, civilization is an idea originally linked to cities and towns. The Oxford English dictionary describes civilisation as the comfort and convenience of modern living, which is only available in cities and towns (Delanty, 2018). Exploring the wilderness, essentially connotes to the absence of civilisation or very low levels thereof.

[70] Recreation represents any "activity through which leisure may be experienced and enjoyed" (Cushman & Laidler, 1988, p. 508).

Table 2.2.1. *Types of extreme sports including its involvement of civilisation and degree of competition*

Cluster or category of extreme sports *with its leading orientation*	**Type of extreme sports** *(Examples in accordance with the current study are provided)*	**Continuum of the involvement of civilisation**	**Continuum of the degree of competition**
(1) **Extreme endurance sports** *Endurance*	▪ adventure racing ▪ mountain running	*High*	*High to very high*
(2) **Risk sports** *Risk*	▪ white-water kayaking ▪ free ride mountain biking ▪ rock climbing ▪ deep sea diving	*Medium*	*Medium*
(3) **Adventure sports** *Adventure: Combination of risk and endurance*	▪ mountaineering ▪ ocean rowing ▪ trekking fall	*Low*	*Low*
(4) **Action sports** *Action: Increased style and technical difficulties*	▪ downhill mountain biking ▪ ocean wave surfing ▪ snowboarding ▪ kite surfing	*High*	*Very high*

d) The level of aesthetic experience or expression; the involvement of risk taking and risk management; and maintaining or maximizing physical performance are all facets that determine the placement of each cluster of extreme sports on the AQAL-model.

2.2.3 Extreme sports in a nature-based context

The researcher has reviewed various definitions of extreme sports and explanations of the tasks such athletes are exposed to and found that the following descriptions provide the most accurate and holistic understanding of extreme sports in a nature-based context. This section provides a description of the terms: (i) extreme; (ii) sport; (iii) extreme sports; (iv) extreme sports participation; and ultimately (v) the compilation of nature-based extreme sports.

(i) Extreme

"Extreme" in terms of "extreme sports" refers to a so-called deflection or deviation to what is typically considered as a "normal", "traditional" or "conventional" (Cohen, Baluch & Duffy, 2018). Therefore, activities associated with "extreme" involve activities which surpasses societal norms and assume the participant surpass the "standard" limits of the average human being (Cohen et al., 2018). Accordingly, "extraordinary" can be linked with the term "extreme." Extreme also indicates a high potential for death as result of mismanaged actions and high-risk indicates the high possibility for injury (Hunt, 1995).

(ii) Sport

"Sport" refers to the performance of physical activities, which can range from a competitive or recreational nature and can be achieved individually or collectively as a team. Physical activity refers to any bodily movement fostered by skeletal muscles producing physiological attributes such as enhanced energy expenditure and improved or maintained physical fitness, health and wellness (Caspersen, Powell & Christenson, 1985; Pettee, Morrow & Woolsey, 2012). Physical fitness encompasses a health and skill component. The health component comprises muscular endurance and strength, cardiorespiratory endurance, body composition and flexibility. Agility, balance, coordination, speed, power and reaction time are associated with the skill component of physical fitness (Caspersen et al., 1985). Additionally, there exists conventional and unconventional fields sports.

(iii) Extreme sports

"Extreme sports" is a collective term used to describe unconventional fields of sport, which involves high-risk where the likelihood of a mismanaged action can lead to an injury or fatality (Brymer, 2005). Athletes have to endure long distances and long-lasting exercise or movement tasks (Sirch, 2014). Furthermore, these "extreme" activities require the physical attainment of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof (Sirch, 2014). The activities typically take place in natural spaces under challenging environmental conditions (Sirch, 2014). Thus, ***nature-based extreme sports*** can be defined as an extreme sports activity which must take place outdoors, in natural spaces and involve the interaction of the natural elements.

(iv) Extreme sports participation

"Extreme sports participation" includes voluntary participation, where participants are aware of the dangers of the attempted activity (Frühauf et al., 2017). Having an awareness of the risk found in the extremely hazardous environments, participants conduct extensive planning to prepare and reduce the probability of a negative result (Brymer, 2010; Krein, 2007). Participants' personal knowledge, technical skills and specialized equipment pertaining to the activity permits them to rationally control the potentially hazardous action (Haegeli & Pröbstl-Haider, 2016; Krein, 2007). During their preparation they develop distinctive physical skills (Young & Knight, 2014). Psychological competencies are further required during the psychological demands during unpredictable encounters (Young & Knight, 2014). An extreme sports athlete in this study is referred to as an elite athlete or highly skilled professional, since they are proficient in extreme forms of physical activities.

Extreme sports athletes purposefully familiarize themselves with the different variables, which constitutes the weather, the environment and their apparatus (Pain & Pain, 2005). These elite athletes do not want to risk their lives by exceeding their personal abilities (Pain & Pain, 2005). Therefore, they enhance their skill level and develop a profound understanding of the distinctive activity they will undergo (Pain & Pain, 2005). Extreme sports require significant discipline and control (Pain & Pain, 2005). It is not desirable for the athlete to be uncertain or have uncontrollability in terms of equipment and aspects they are able to control (Brymer, 2010). Extreme sports athletes strive to achieve peak performance, take risk, manage risk and enjoy the aesthetics of the sport (Sirch, 2014).

(v) Compilation of the definition for nature-based extreme sports

The researcher compiled the following definition of *nature-based extreme sports* as employed in this research by adopting the abovementioned notions (Brymer, 2010; Frühauf et al., 2017; Krein, 2007; Llewellyn & Sanchez, 2008; Pain & Pain, 2005; Sirch, 2014):

> Nature-based extreme sports include unconventional fields of high-risk sports, which take place outdoors, in natural spaces where the likelihood of a mismanaged action can lead to an injury or fatality. These activities involve the interaction of natural elements which are oriented towards a combination of endurance, adventure, risk and action. Commonly, expeditions are performed in isolation with minimal availability of human and medical resources in case of an emergency. Athletes must safely mitigate challenging unpredictable environmental conditions; complete long distances; and endure long-lasting movement tasks. Nature-based extreme sports participation requires physical attainments of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof. Although deliberate risk-taking is involved, the athlete's survival depends on precautionary measures.

2.4 Different types of nature-based extreme sports

This study utilizes the classification of extreme endurance sports; risk sports; adventure sports; and action sports to group the following activities as nature-based extreme sports: mountain running; adventure racing; white-water kayaking; rock climbing; ocean wave surfing; high-level mountaineering; ocean rowing; and downhill mountain biking. A short overview of each activity is provided.

2.4.1 Mountain running

Mountain running races involve running or walking on mountain trails over various distances consisting of positive and negative slopes (Rodríguez-Marroyo et al., 2018). The most challenging in terms of psychophysiological responses and energy balance are mountain ultramarathons or ultra-endurance mountain running (Clemente-Suárez, 2015).

During the most extreme events, participants can reach an accumulative altitude gain of ~24,000m (Saugy, Place, Millet, Degache, Schena & Millet, 2013). Contributing factors such as the average incline, altitude, snow fields, glaciers et cetera, may be used to define the technical level of a course (International Skyrunner Federation [ISF], 2018). The ISF[71] categorizes mountain running races according to their distance and elevation gain or vertical climb (ISF, 2018). The climbing difficulty should not exceed II° grade and the incline is commonly over 30%. A race between 20 to 49km with 1,300m minimum vertical climb, is classified as a Sky-race and a race between 50 and 99 km with 3,200m minimum vertical climb, is classified as an Ultra-run (ISF, 2018). An Ultra-run's maximum finish time must be under 16 hours. The course can be over paths, trails, moraines, rocks or snow with an asphalt not less than 15% of the total distance and have a minimum average of 6% incline over the total distance, with 12% uphill and reach the highest points in the area (ISF, 2018).

2.4.2 Adventure racing

Adventure racing, or otherwise known as expedition racing, encompasses a multidiscipline endurance test with challenges involving canoeing for an intense distance; mountain biking uphill on brutal terrain, trekking, navigating, running, kayaking and climbing (De Jager, 2006). Simpson, Post and Tashman (2013) describe adventure racing as an endurance hybrid sport which is a by-product of triathlons; kayaking; backpacking; sailing and exploring. Races frequently incorporate mystery challenges including puzzle solving, archery, swimming, orienteering, high elements on a ropes course (De Jager, 2006).

A race commonly includes a team of three or four people, in which at least one female needs to be part of, known as a *coed* team (De Jager, 2006). The participants must collaborate as a unit from the starting point and navigate through different checkpoints in the wilderness to finish the designed course which can last up to several days (De Jager, 2006; Simpson et al., 2013). Coed teams are inclined to have an optimal balance of strength and stamina (De Jager, 2006). Because the team is only as strong and fast as the weakest and slowest member, the team needs to circumvent each team member's frailty (De Jager, 2006). The race requires endurance, risk taking and management of challenging landscapes (Simpson et al., 2013).

[71] In 1992, skyrunning was coined by Marino Giacometti, president of the International Skyrunning Federation, which governs the discipline worldwide and supports the tagline: "Less cloud. More Sky" (ISF, 2018).

The cooperation and problem-solving skills of the team determines the effectiveness by which the psychological demands of the race are addressed (De Jager, 2006). Members from other teams, usually the elite teams who have already finished the race, are allowed to help other struggling competitors through the various obstacles (Murphy & McEntegart, 2001). This sport is fancied by a wide variety of groups and individuals, including family teams to police officer to even high fashion models. Sarah Odell is an example of a highly payed model who quit after 8 years of modelling and became one of the world's top extreme athletes in adventure racing (Prichard, 1995). Individuals love the challenge, adventure racing offers, and commonly aim to see if they can finish the race, unconcerned about the place on the podium (De Jager, 2006). To ensure the safety and validity of the race, team members must stay together as a team for the entire course (De Jager, 2006).

2.4.3 White-water kayaking

White-water kayaking requires navigating rivers with rapids, waves and waterfalls with a calibration of I to VI difficulty[72], where grade I, is the easiest and grade VI, the most difficult (Fiore, 2003; Zakaria et al., 2017). River running, play boating, creek running, river and creek racing; and slalom racing are different categories within white water kayaking (Ivester, 2017). Each category requires a different type and size kayak (Ivester, 2017). The technicality and expertise demanded are commonly determined by the class of the rapid (Fiore, 2003). Rolling is a high-skilled technique, which can assist the kayaker in confidently flipping back into a normal position when they have capsized (Zakaria et al., 2017). An increase in the class of rapid is parallel to an increase in the technical skills and knowledge necessary to manage it (Fiore, 2003). This involves higher risk of injury or fatality when a situation is mismanaged (Fiore, 2003). Furthermore, the kayaker's survival on the river is determined by the appropriate paddling technique (Zakaria et al, 2017). A spray cover is an important piece of equipment which safeguards the boat from water getting into it (Zakharia et al., 2017). In the kayak, the kayaker is seated in such a position that allows the anterior extension of their legs in the cockpit (Broomfield & Lauder, 2014).

2.4.4 Rock climbing

Rock climbing is a multidisciplinary form of physical activity involving top rope climbing; sport climbing; traditional climbing; and bouldering (Kidd & Hazelrigs, 2009). During *top rope climbing*, the athlete ascends a route with caution using a safety rope which is

[72] Grade I refers to no rapids and smooth flowing water (more to flat water) and grade VI for advanced paddlers and team of experts involves scouting rapids with given hidden hazards which requires precise manoeuvring and taking all safety precautions (Zakaria et al., 2017, p. 2).

attached from above. The safety rope secures minimal falls when the climber releases their grip on the rock (Kidd & Hazelrigs, 2009). In *sport climbing*, the athlete also ascends a route with caution using a safety rope, however, the technique includes clipping every few meters replaced bolts on the route to prevent a large fall if the climber lets go of the rock hold (Kidd & Hazelrigs, 2009). In principle, traditional climbing is similar to sport climbing, however, differs in that there are no pre-set bolts. The climber must secure their own protection into the rock cracks to prohibit large falls (Kidd & Hazelrigs, 2009). *Bouldering* incorporates a small number of moves, which are typically powerful in nature and low to the ground. In case of a fall during bouldering, climbers make use of a crash pad to safeguard them from injury (Kidd & Hazelrigs, 2009).

The following criteria determines the difficulty of rock climbing: the length and endurance of a climb; the type of risk involved; the required type of equipment and tools (Magiera & Roczniok, 2013). The length of a climb and the endurance it requires can vary from mastering a short and intense problem to a multi-day oxygen-deficient Himalayan climb (Magiera & Roczniok, 2013). The risk involved can include free soloing on mountain peaks to more secured rock walls (Magiera & Roczniok, 2013). On a multi-day climb, an athlete may need several dozen kilograms of equipment, compared to only a pair of shoes and a chalk bag required for a short one-day climb (Magiera & Roczniok, 2013). The wall inclination and the number of holds, including their size and shape determines the difficulty of the climb (Baláš et al., 2014). Before the start of a climb, the inclination of the climb should be carefully assessed as the climbing speed is a personal preference and ensures an enhanced physiological response (Baláš et al., 2014). In congruence to personal preferences is the type of actions fancied during training or the climbing season (Magiera & Roczniok, 2013).

2.4.5 Ocean wave surfing

Ocean wave surfing involves riding breaking waves in an upright or prone position towards the shore, via a surfboard (Booth, 2018; Surfer Today, 2019). Commonly, surfboards have carefully shaped edges (rail), noses and tails: including three fins found on the underside. The fins allow for better stability on the open waters. Surfers strive to ride and glide on the unbroken part of the wave until it loses its energy and breaks (Surfer Today, 2019). Surfing waves can be classified into spilling waves, plunging waves, surging waves, and collapsing waves (Surfer Today, 2019). Unpredictability of ocean waves, winds and ocean life contribute to the ‘extreme’ nature of the sport.

Winds are critical to the formation of surfing waves (Scarfe, Healy & Rennie, 2009). Ideally, winds blow directly offshore allowing the wave face to steepen initiating so called plunging waves ("barrelling") at certain surfing breaks (Scarfe et al., 2009). Offshore winds demand an increased skill level necessary to surf a specific wave (Scarfe et al., 2009). Onshore winds produce unpredictable breaking waves, which require a certain skill level of a surfer (Scarfe et al., 2009). The way a surfer moves in the ocean and on the wave is described a sort of "gymnastics dance", which reflects the aesthetics of the sport (Booth, 2018).

Big wave surfing is a more 'extreme' surfing discipline in which a surfer needs to surf a wave of a minimum height of 20 feet accompanied by a speed of around 80km/h (LUEX, 2019). Wipe-outs can result in the athlete being engulfed by the powerful ocean waters, which requires them to have great lung capacity holding their breath until their bodies are spit out (LUEX, 2019). Preparations such as underwater rock running assists with improving lung capacity and strengthens the surfer's core muscles that help them gain a prone position on their surfboard (LUEX, 2019). Since a wipe-out at high speed knocks air out the surfer's lungs before being sucked into the water, the athlete needs to strengthen the body's diaphragm to train to use air efficiently underwater. Therefore, Yoga or Pilates forms part of their training. As part of mental training, the surfer needs to anticipate the time period they will take to resurface, which allows the surfer to approach the situation with less stress. When a person panics and stresses, more oxygen is consumed due to muscle contraction, which can be detrimental to the already oxygen loss when air is knocked out during a wipe-out (LUEX, 2019). Ocean surfing challenges traditional ways of viewing, practicing and comprehending sport (Wheaton, 2000).

2.4.6 High-altitude mountaineering

High-altitude mountaineering can be considered as an extreme activity due to the unpredictability and intense weather conditions (Wickens et al., 2015). The atmosphere thins with rise in altitude which can lead to hypoxia: a decreased supply of oxygen in the body. Moreover, during a summit, temperatures can typically drop below 1.67˚ C for every 1, 000 feet (300m) in elevation gain having detrimental effects on the body. Moreover, high speed winds are part of intense weather conditions athletes need to withstand which impedes even basic task and movement: and increases calorie consumption (Wickens et al., 2015). These high-speed winds with blowing snow and low clouds can create a reduced visibility and may lead to drastic spatial and geographic disorientation (Wickens et al., 2015). The aim is to ascend and descend the mountain without losing the tenuous hold to snow, ice or rock, which with a misstep may result in a fall (Wickens et al., 2015).

Climbing the mountain requires more than just muscular strength, it also demands fine motor technique to grasp the rock or ice axe which exerts minimum physical strength and maximum fine motor skills (Bunn, 2015). Fine motor strength predominantly requires postural muscles, therefore, to preserve upper body energy expenditure, weight is balanced and distributed on the climber's legs (Bunn, 2015). A number of ailments can surface due to the intense effect of the environment. The ailments include acute mountain sickness; high-altitude pulmonary and cerebral edema; hypothermia and frostbite; snow blindness; blood clots; injuries attained through falls and impacts from falling snow, ice or rock (Wickens et al., 2015).

2.4.7 Ocean rowing

Rowing can be categorised into three disciplines including flat-water (i.e. conventional Olympic rowing style racing), open-water (i.e. ocean or coastal rowing), and indoors-rowing (i.e. rowing machines in a gym) (Thornton et al., 2016). Ocean or coastal rowing is the "extreme" and adventurous sub-discipline of rowing where specialized boats are used to row in isolation along and across the ocean (Angus Adventures, 2019). Standard ocean rowboats are designed for solo expeditions (singles), doubles and fours (including coxed quadruple sculls) (Thornton et al., 2016). Since the rowboats need to mitigate the power of the ocean waves and dangers of being swamped by the rough water, the design includes a buoyant boat which is shorter, studier and has a wider hull that serves to ensure the athletes' safety and survival (Murphy, 2016).

Typically, ocean rowers are further classified as ultra-distance athletes who travel rough and intense distances from one point to another (i.e. island to island; continent to continent; island to continent and vice versa) (Clark, Coleman, Figure, Mailhot & Zeigler, 2003). Most expeditions commonly take place on the Atlantic Ocean, but voyages may involve rowing on the Indian, Pacific and Arctic Ocean (Angus Adventure, 2019). Due to the ever-changing nature of the ocean, rowing on rough waters are more challenging than the common Olympic flat-water style of flowing and sculling in a straight line (Thornton et al., 2016). The ocean rower needs to row and flow with the existing tides, currents and winds. Most Atlantic crossings commence east to west, since the north is characterised as colder, rougher and more extreme (Angus Adventure, 2019). Having knowledge regarding the topography, and mitigating the maritime traffic and ever-changing weather is crucial.

2.4.8 Downhill mountain biking

Downhill mountain biking is a sub-category of mountain biking, which is identified by the gravity assisted descent of an off-road trail encompassing both natural and man-made elements including vertical drops, jumps and banked corner (Burr, Drury, Ivey & Warburton, 2012). Although there are man-made components in downhill mountain biking, it takes place outdoors and interaction with natural surroundings take place. Therefore, downhill mountain biking is classified as a nature-based extreme sport in this study.

2.4.9 Scooter safari

In the context of this study, the term "safari" implies an intercontinental overland expedition observing the natural world, excluding the traditional meaning of hunting[73] animals in eastern Africa. The overland expedition is done by scooter, exploring the various natural landscapes of countries and cities. Covering a distance of more than 100 000 kilometres on a scooter, moving across, over and under natural terrains characterises scooter safari as an adventure sport. It takes several weeks to even months to complete their journey, while relying on their own 'medical' and navigation skills to survive in isolation. A scooter is light two-wheeled open automotive vehicle including a seat for the driver to avoid straddling the enclosed engine. The driver's feet rests on a low footboard. Although the scooter is propelled by an internal-combustion engine, it has smaller wheels and is less powerful than a motorcycle (Webster's New Twentieth Century Dictionary, 1970). Some scooters have a parcel compartment, in which the driver stores their food, medical equipment, toolbox, maps, passports, communication gear et cetera (Gove, 1966).

2.5 Benefits of nature-based extreme sports participation

Participation in extreme sports activities has possible transformational value, which can enrich a participant's life in an extraordinary way (Willig, 2008). Adventurous physical activities have the potential to promote the physical and psychological health and well-being of participants (Brymer, 2010; Brymer & Schweitzer, 2012, 2013; Epstein, 2004; Lima, Rosa, Braga de Mello, Albergaria & Filho, 2011). Character building manifests from risk-taking and displaying "out of the comfort zone" acts (Clough et al., 2016). This is supported by Ewert and Yoshino (2011) who claim that dangerous and risky activities create ideal stressful and uncomfortable settings, which facilitate character building and enhances psychological resilience.

[73] According to the Merriam-Webster dictionary, a safari refers to the caravan and equipment of a hunting expedition especially in eastern Africa also: such a hunting expedition. This definition is not used by the researcher to describe "safari" in this study.

It further promotes an individual's self-esteem and confidence (Pain & Pain, 2005). The settings in which extreme sports take place can also encourage comradeship (Shoham, Rose & Kahle, 2000). Mental toughness is another benefit that can be associate with participation in extreme sports activities (Clough et al., 2016). The participants inclination to accept the extreme challenge encourages mental toughness (Crust & Swann, 2013). Furthermore, experiences of flow are associated with mental toughness (Crust & Swann, 2013).

Flow occurs when the participants involvement in the activity causes a trance, which elicits various psychological benefits (Csikszentmihalyi, 2000; Mackenzie, Hodge & Boyes, 2011). Literature proves that mindfulness and flow are interconnected within the athlete population (Cathcart, McGregor & Groundwater, 2014). High performance athletes typically term the flow experience as "being in the zone" (Hopper, 2017). The reference of being in the zone also mirrors a sense of mindful awareness during their activity (Hopper, 2017). Regardless of the type of sport, elite athletes experience flow as a period in which the body and mind connect and unify (Hopper, 2017). Flow characteristics involve possessing a high level of prowess, intense levels of concentration, improved self-confidence with lower self-consciousness and an emotional flexibility (Hopper, 2017). Having a present moment focus leads this flow experience, followed by an ease of effort, relaxation and self-transcendence (Hopper, 2017). For an athlete to experience flow, a balance between the challenges at hand and their perceived skills should be achieved (Hopper, 2017). To achieve this balance, these challenges should not exceed nor fall below the individual's current skill level (Hopper, 2017). Scholars report that mindfulness catalyses a transcendental flow experience (Hopper, 2017). Features of a flow experience are similar to the various qualities of an individual who displays mindful actions (Kaufman et al., 2009).

Accordingly, observed outcomes of extreme sports participation include positive life transformations, improved quality of life, emotional regulation, goal attainment, formation of social bonds, serves as a relief from boredom, developing and facilitating interpersonal relations; experiencing a sense of euphoria; conquering personal hardships and gratifying proprioceptive consciousness (Brymer & Oades, 2009; Brymer & Schweitzer, 2012; Kerr & Mackenzie, 2012; Mackenzie et al., 2011; Mackenzie, Hodge & Boyes, 2013; Willig, 2008; Woodman, Cazenave & Le Scanff, 2008; Woodman, Hardy, Barlow & Le Scanff, 2010).

2.6 Involvement of risk

As this study explores, the transformative value of nature-based extreme sport participation, it is important to understand how misconceptions of extreme sports and the stereotyping of such participation as reckless thrill-seeking may arise. For this purpose, the meaning of risk-taking, risk perceptions and risk management during nature-based extreme sports participation is considered. This section outlines the definition of risk-taking; risk-taking as a by-product; risk assessment; perceptions of risk; deliberate and precautionary risk-taking behaviour.

2.6.1 Defining risk-taking

The functioning description of the term "risk" involves "the appraised likelihood of a negative consequence of behaviour, characterized by personal significance, an uncertain outcome, and the distinct possibility of loss" (Taylor, Gould, Hardy & Woodman, 2006, p. 16). In sporting terms, risk-taking is an intricate happening involving physical danger and unpredictability (Rossi & Cereatti, 1993). The association between the perception of loss and risk has been explored by Yates and Stone (1992), who explicated risk-taking through three essential facets: the possibility of loss; the gravity of that loss; and its unpredictability. Loss can be in the form of material or bodily (physical or psychological) loss.

Physical risk-taking refers to a scenario where an individual's health, safety or welfare is possibly endangered having prospective detrimental effects (Turner, McClure & Pirozzo, 2004). Congruently, risk-taking is considered as willingly undertaking endeavours which may potentially lead to tragedy (Turner et al., 2004). **Risk-taking behaviour** involves the act of voluntarily investing oneself in a set of circumstances that may potentially result in bodily impairment (either a bodily injury or in severe cases a fatality) and/or tangible loss (Cazenave et al., 2007). These circumstances depend on the extent of the challenges the individual is exposed to (Cazenave et al., 2007). **Risk-taking** encompasses the trilogy of making a self-determined conscious choice, which involves a degree of uncertainty, unpredictability, and the haphazard course of events that may have detrimental effects (Cazenave et al., 2007).

Both socially acceptable and unacceptable risk-taking behaviour involves a form of emotional auto-regulation (Castenier et al., 2010; Cazenave et al., 2007; Woodman et al., 2010). Literature on risk and risk-taking claim that extreme sports athletes often auto-regulate their emotions because they commonly supress their intra-psychological conflicts (Castenier et al., 2010).

Emotional auto-regulation during risky and extreme sports situations involves that the athlete directs his/her attention on experiencing bodily sensations such as having an awareness of their rising heart rate (Castenier et al., 2010). This sense of physical awareness permits a temporary disregard of their real-life troubles (Castenier et al., 2010; Cazenave et al., 2007, Woodman et al., 2010). Essentially, the athlete is liberated from their real-life troubles and those attached negative emotions during their nature-based extreme sports participation. Their participation thus serves as means to counterbalance real-life issues.

This liberation of real-world circumstances is clearly portrayed by the extract from Krakauer (1997). In the extract, an inquiry is made into the intriguing nature of mountaineering embedded in uncomplicated interpersonal relationships, simplistic relations in terms of friendship, and an alternative of an "Other" relationship attributed to the mountain or the challenge. Moreover, Krakauer (1997, p. 151) asserts that "behind a mystique of adventure, toughness, footloose vagabondage – all much-needed antidotes to our culture's built-in comfort and convenience – may lie a kind of adolescent refusal to take seriously ageing, the frailty of others, interpersonal responsibility, weakness of all kinds, the slow and unspectacular course of life itself…"

2.6.2 Risk-taking as a by-product

The manifestation of risk and the management thereof during a nature-based extreme sports activity can give us an indication of whether risk is the primary objective for participation (Krein, 2007). The extreme sports athlete requires exploration of risky and dangerous landscapes through safe actions (Breivik, 2011). Firstly, when the athlete accepts that they may encounter unpredictable hazards and natural disasters during their activity, they can act with caution (Krein, 2007). In some cases, when being exposed to these natural dangers, one may have little to no control in mitigating the risk. Therefore, having the fundamental knowledge and skill in that situation, does not determine the participants survival (Krein, 2007). An expert, less experienced or a non-participant in nature-based extreme sports all have different perceptions of risk which determine their fate (Demirhan, 2005). A mismanaged mistake or risk during a nature-based extreme sports activity can lead to serious injury and/or fatalities[74] (Brymer, 2005; Cater, 2006; Palmer, 2004).

[74] From the year 1981 to 2015, more than 300 deaths worldwide involved base jumping and the wingsuit mortality rate was as high as 1/50 participants (Tofler, Hyatt & Tofler, 2018). Between the years 2006 and 2011, there were 417 reported free diving accidents from which 318 were fatal and 109 non-fatal (Tofler et al., 2018).

Injuries and/or fatalities may occur when features of natural landscapes are carelessly approached and mismanaged (Krein, 2007). The “careless” implies that these features can be mitigated by specific knowledge, skills and experience, but is not (Krein, 2007). For example, a novice or less-experienced participant is more prone to injury and death, skiing a steep slope for the first time, compared to an expert or more experienced athlete skiing the slope or similar slopes regularly (Krein, 2007). The risk can be understood as being a **by-product,** rather than the primary goal during participation because the athlete possesses the basic knowledge and skills to mitigate the potential risk (Krein, 2007).

2.6.3 Risk assessment

Risk-taking comprises both an objective factor and rely on subjective perceptions (Shoham et al., 2000). Risk can be assessed in terms of objective risk or actual risk, the risk perceived by experts and the risk perceived by non-participants (Cater, 2006; Pedersen, 1997). The objective or *actual risk*[75] is the quantified estimation of the likelihood of an event (Cater, 2006). Whilst *perceived risk* is greatly predisposed by objective or actual risk; the participants preconceptions and feelings determine how the risk is perceived and is essentially qualitative (Carter, 2006). Acceptance of the risk at hand, is also dependent on how an individual previously experienced risk and their awareness of it (Bentley & Page, 2008).

2.6.4 Perceptions of risk

An expert can assess risk by applying useful tips, principles and knowledge attained through their experiences (Demirhan, 2005). Less experienced individuals can sometimes neglect to identify when faced with risk or identify risk but inaccurately address it (Ewert, 1994; Grant, Thompson & Boyes, 1996). Investigations by Celsi et al. (1993) introduce evidence that various extreme sports participants prefer to postpone their endeavours if these variables are exceedingly uncontrollable. Evidently, athletes attempt to minimize the risk involved in their extreme sports activity. It does not seem that ‘risk itself’ is the main attraction for participation (Krein, 2007). Non-participants are commonly informed about risk-associated situations via media sources (Demirhan, 2005). Media sources present the objective risk in terms of social expectations, which commonly leads to the term “extreme”.

[75] An analytic system can be used to determine the probabilities and formal logic risk assessment (Slovic, Finucane, Peters & MacGregor, 2002).

Consequently, misconceptions regarding risk and extreme sports are accredited to information provided by media sources that do not necessarily contain an athlete's lived perspective, but rather an outsider perspective and their accompanied observations. Misconceptions of the 'reckless' nature-based extreme sports athlete are typically attributed to situations where an experienced athlete can decide to act recklessly. Hence, having many years of experience (doing the activity over and over again; for weeks, months, and years) does not necessarily correlate to being an expert. A distinction between a responsible expert and careless and irresponsible expert is necessary. Being a responsible 'expert' is determined by the individual's mindset and presence of mindfulness. A responsible expert displays a growth mindset accompanied by acts and behaviours of mindfulness. A careless and irresponsible expert displays mindless behaviour.

The individual's risk perception and risk management determine whether the nature-based extreme sports athlete can be classified as an 'expert.' For instance, a mountain climber who has climbed for only two years, might be more of an 'expert' because he/she is able to recognize risk and interpret it with caution; compared to perhaps a ten-year experienced climber who has become arrogant and in a sense 'mindless' who does not recognize a threat or risk or misinterprets it, which may result in reckless behaviour. An 'expert' can be determined by their application of deliberate and precautionary risk-taking behaviour.

2.6.5 Deliberate and precautionary risk-taking

Two types of risk-taking may be introduced during a nature-based extreme sports activity, namely deliberate risk-taking and/or precautionary risk-taking. This research acknowledges both these types of risk-taking as means to understand why misconceptions of extreme sports may surface; and to gain further insight on what distinguishes a responsible 'expert' from the 'reckless' or 'careless.'

a) Deliberate risk-taking

Deliberate risk-taking outlines the extreme sports athlete's purposeful subjection to a threatening situation and its relevant environmental conditions neglecting any precautionary measures to safeguard themselves from a tragedy (Woodman, Barlow, Bandura, Hill, Kupciw & MacGregor, 2013). A tragedy can be in the form of an injury or fatality (Woodman et al., 2013).

b) Precautionary risk-taking

Contradictory to deliberate risk-taking, precautionary risk-taking involves the act of subjecting oneself to threatening situations during a nature-based extreme sports activity, but applying safety provisions to mitigate the risk accompanying that situation (Llewellyn & Sanchez, 2008; Pain & Pain, 2005). Essentially, a tragedy is mitigated by applying precautionary measures.

c) Precautionary measures

Numerous studies have illustrated that high-risk sports athletes purposefully or deliberately take risks during their participation in high-risk sport (Llewellyn & Sanchez, 2008; Slanger & Rudestam, 1997). However, *risk* relating to this study can be considered as a **by-product**, rather than the primary goal during participation (Krein, 2007). Many scholars support the idea that nature-based extreme sports athletes demonstrate predominately precautionary measures during their participation (Pain & Pain, 2005).

For example, precautionary measures during rock climbing involves inspecting the rope and looking at the weather forecast prior to climbing the rock face (Pain & Pain, 2005). Observations from Pain and Pain (2005) reveal that the type of risk-taking depends on the certain activity the athlete undertakes and its accompanied circumstances. Furthermore, they claim that both types of risk-taking can present itself by the same athlete during the same activity (Pain & Pain, 2005). For instance, the rock climber may deliberately implement the precautionary measures via exhibiting top roping or thoroughly examining the rock face prior to ascending it, but the climber may turn out to climb the rock unaccompanied by safety equipment (Pain & Pain, 2005). In this way, the decision of avoiding precautionary measures is reckless. This type of decision making can further fuel the “reckless” misconceptions.

d) Sensation seeking and risk-taking

Sensation seeking plays a vital role in people’s risk-taking behaviour in sports (Kupciw & MacGregor, 2012). **Seeking sensation** is a human attribute which typifies the “need for varied, novel, and complex sensations and experiences, and the willingness to take physical and social risks for the sake of such experiences” (Zuckerman, 1990, p. 313). Commonly, associated terms with “sensation seeking” include thrill, arousal, excitement, fun and experience (Zuckerman, 2009). Furthermore, it can be seen as a survival mechanism and mechanism for reproductive success (Zuckerman, 1990). Survival is part of nature-based extreme sports participation.

Congruently, studies identified thrill and adventure seeking; seeking experience; disinhibition; and boredom susceptibility as four distinct features of sensation seeking (Zuckerman, 1990). The desire to partake in an activity which surpasses the risk and sensation involved during conventional sports, relate to the component of *thrill and adventure seeking* (Zuckerman, 1990). An openness to experiencing new sensations in terms of a non-traditional lifestyle represents *seeking experience* (Zuckerman, 1979). *Disinhibition* regards a lack of restraint which surfaces through social settings such as parties, drinking and sexual relations (Zuckerman, 1979). *Susceptibility to boredom* represents an intolerance of routine and steering clear of predictability and repetition (Zuckerman, 1990).

High sensation seekers have a higher tendency to participate in extreme sports which produces a sense of novelty, enhanced experiences and sensations of intense speed and zest (Zuckerman, 1990). A novice or "expert" athlete who participates in high risk activities, are observed to interact with environments which provides settings that illicit sensations through the mind and their senses (Goma-i-Freixanet, 2004). Environmental factors such as the height and depth of surrounding structures, the speed, presence or absence of light, changing temperatures or wind contribute to the stimulations felt by the athlete (Goma-i-Freixanet, 2004). High-risk athletes tend to avoid experiences involving routine or repetition and rather find joy and pleasure in unconventional and thrilling encounters (Zuckerman, 1979). Furthermore, these athletes are associated with low levels of anxiety as anxiety can be detrimental to their performance (Zuckerman, 1979).

Anxiety[76] refers to the rational or irrational fear of injury or mortality (Zuckerman, 1979). It can also indicate a higher demand of action opportunities of the athlete compared to their capabilities which results in stress (Csikszentmihalyi, 1975). Moreover, a study conducted by Zuckerman (1979), showcases that the more experienced a person is in an activity, the less risky it is rated by that person. This indicates that an experienced athlete considers their extreme sports activity to be less risky and therefore is less anxious, compared to a novice athlete or non-participant. The experienced athlete displays precautionary risk-taking as he/she is aware of the involved risk and possibility of injury (Zuckerman, 1979). However, misadventures including injury or death may occur due to uncontrollable conditions despite the application of safety measures (Woodman & Bandura, 2010). Consequently, disasters can strike in the face of precautionary behaviour.

[76] The manifestation of anxiety during an activity is better explained through Csikszentmihalyi's (1975) flow model in chapter three.

Insufficient knowledge and awareness pertaining to high-risk sports environments are accredited to notions of deliberate risk-taking behaviour (Woodman et al., 2013). In contrary, precautionary behaviour considers concise preparations and apprehension of the affiliated risk, present during such environments (Woodman et al., 2013). Therefore, it is essential to assess risk-taking behaviour in terms of deliberate risk-taking behaviour and precautionary risk-taking behaviour as proposed by Woodman et al. (2013). The application of the associated accidents with deliberate and precautionary risk-taking behaviour can provide further distinction and comprehension of the respective terms.

Typically, deliberate risk-taking behaviour is linked to a greater number of failure or mishaps and the possibility of tragedy, compared to precautionary risk-taking behaviour which comprises of less missteps and occurrence of misadventures (Kupciw & MacGregor, 2012). Since precautionary measures such as safety checks are carried out before high-risk activities are performed, the association with less misadventures and precautionary behaviour are made (Kupciw & MacGregor, 2012). Thus, the association between deliberate risk-taking and a greater number of mishaps give rise to the "reckless" misconceptions. On account of the fatal repercussions involved in high-risk sports such as nature-based extreme sports, it is vital to grasp the involved motives for participation in terms of deliberate risk-taking and the application of precautionary behaviour (Woodman et al., 2013).

2.7 Motives for nature-based extreme sports participation

There are various reasons why individuals decide to invest more time into nature-based extreme sports activities compared to traditional sports. The researcher considers that participants in nature-based extreme sports have various underlying psychological motives as to following and consuming extreme and risky sports (Cottingham, Phillips, Hall, Gearity & Carroll, 2014; Karakaya, Yannopoulos & Kefalaki, 2015; Trail & James, 2001). Since each athlete possesses unique qualities, their motives for participation differ (Karakaya et al., 2015; Shank & Lyberger, 2014). Their motivations to being attracted to: non-traditional compared to traditional; nature-based extreme sports instead of indoor extreme sports in artificial settings; and their choice to choose a certain nature-based extreme sports activity over another differ.

Within the literature of high-risk subcultures, scholars' baffle to pinpoint the definite motives for extreme sports participation, since the extreme athlete frequently asserts that the experience is "essentially ineffable and can only be fully understood by actually participating in it" (Lyng, 1990, p. 862).

A nature-based extreme sport experience commonly leaves the athlete in awe and cannot be put into words (Allman, Mittelstaedt, Martin & Goldenberg, 2009). Regardless of attaining an understanding of the activity, some claim that the appreciation for the experience can only be recognised by doing it yourself (Olsen, 2001). Findings which challenge the stereotypical view of extreme sports indicate that high-risk athletes purposefully take on risk as a way of becoming positively transformed (Brymer & Oades, 2009; Lupton & Tulloch, 2002; Maeland, 2002). Accordingly, a clear feeling of transcendence encourages participation.

In this study, the focus shifts to highlight the motivations in terms of the *perception of risk* by the responsible 'expert' athlete, rather than the perceptions of naïve, novice or careless 'expert' athletes who commonly add to the misconceptions of the 'reckless thrill-seekers.' Therefore, the application of precautionary behaviour during nature-based extreme sports participation permits positive transformation, which exceeds the merely sensation seeking motivator of deliberate risk-takers who neglect precautionary measures (Pain & Pain, 2005; Woodman et al., 2013). Studies reveal that the motives will vary depending on the athlete's experience level and the type of nature-based extreme sports activity (Ewert, Gilbertson, Luo & Voight, 2013).

2.7.1 Maslow's hierarchical needs theory

Connotations with **Maslow's hierarchical needs theory** and nature-based extreme sports are drawn to illustrate the motive of achieving self-actualisation. It is suggested that an athlete is motivated to fulfil their basic needs on Maslow's pyramid prior to progressing onto the "advanced" needs which ultimately lead to personal growth and fulfilment (Maslow, 1943). Maslow's hierarchical needs theory explains that the actions of an individual are encouraged by their aim of accomplishing specific needs. Fundamentally, "instincts" are considered as needs (Maslow, 1943). In nature-based extreme sports, instincts are crucial to the athlete's survival in the wilderness.

A hierarchical pyramid demonstrates the growth from basic to more complex needs (Maslow, 1971). In terms of nature-based extreme sports, the theory can apply to highly motivated athletes who are willing to work on achieving their highest potential. In Figure 2.4, Maslow's hierarchical needs pyramid is presented. The bottom of the pyramid is categorised into biological and physiological needs (Jerome, 2013). Once these basic life needs are met, the need for safety and security can be attended to, which forms the second tier of the pyramid. Belongingness and "love" needs follow the safety needs, but only emerge once both physiological and safety needs are satisfactory (Jerome, 2013).

The activation of esteem needs can then commence, since the physiological-; safety and security-; and belongingness needs are achieved. Only once all of the foregoing needs are fulfilled, the needs for **self-actualisation** become operative (Jerome, 2013). The various levels of needs which compile Maslow's hierarchical needs theory are implemented into a nature-based extreme sports context and outlined as follow:

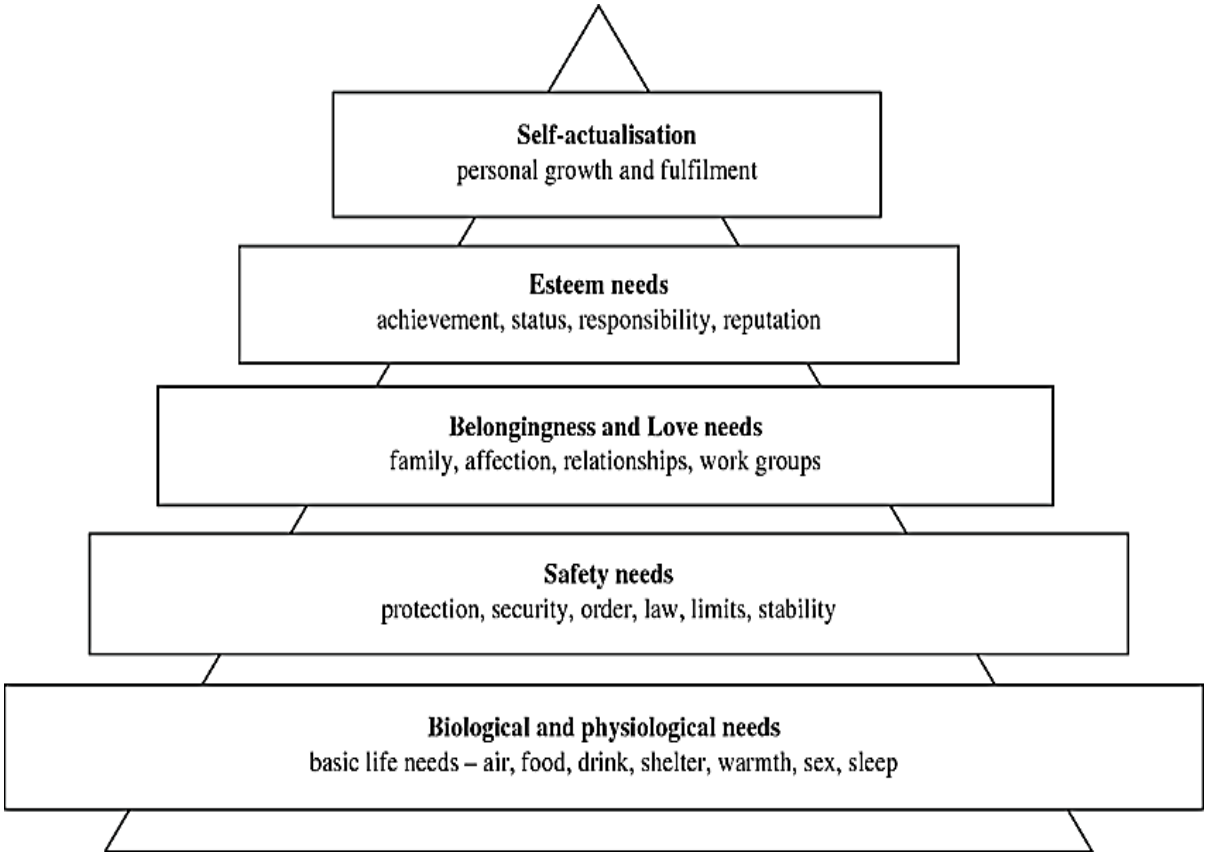

Figure 2.7.1. Maslow's hierarchical needs pyramid

(i) Biological and physiological needs

The need for oxygen (air), food, water, a constant body temperature, shelter, certain hours of sleep comprise of the dominant biological and physiological needs to ensure a functioning body (Jerome, 2013). Deprivation of one of these needs can lead to bodily disfunctions. An athlete's participation in nature-based extreme sports is highly dependent on satisfying their biological and physiological needs. Having energising foods during an expedition can keep the athlete strengthened during extreme endurance tasks and maintaining long lasting unusual body positions or movements (Arnaout, 2003; Sirch, 2014).

Staying hydrated is essential to an extreme sports athlete, as water regulates the athlete's body temperature and lubricates their joints. The oxygen in the water can also assist in providing their muscles with enough oxygen to contract. Furthermore, nutrients can be transported to keep their bodies healthy and energised to optimally perform in extreme and risky situations (Arnaout, 2003). Athletes are exposed to server weather conditions which make the regulation of body temperatures challenging (Wickens et al., 2015). Moreover, the amount of sleep[77] affects the athlete's performance during their participation (Arnaout, 2003). Athlete's sleep on hard, uncomfortable surfaces during expeditions. Once these basic life needs are effectively attended to, the athlete is able to focus on achieving safety needs.

(ii) Safety needs

The athlete's level of protection and security are addressed within the safety needs level in sport. This includes the ability to feel protected, safe, secure and stable in both the physical and interpersonal spheres of the athlete during participation (Arnaout, 2003). Since the weather conditions in nature-based extreme sports are extremely unpredictable and expeditions are typically done in solitary with minimal human resources and medical support in case of an emergency, it is especially challenging to attend to in the wilderness. Hence, the extreme sports athlete does proper planning and applies precautionary measures to reduce the possibility misadventures (Brymer, 2010; Krein, 2007). Having certain rules, an organised expeditions and 'expert' team leaders can also contribute to a sense of security and elicit a feeling of comfort and confidence within the athlete during participation (Arnaout, 2003).

(iii) Belongingness and "love" needs

The third tier of the pyramid includes the psychological needs such as the need for love, affection and belongingness (Jerome, 2013). Belongingness and "love" needs can emerge once the physiological welfare and safety needs of the athlete are considered. Typically, individuals strive to overcome feelings of isolation and loneliness (Maslow, 1971). As a result, affection, love, and sense of belonging can be given and reciprocated (Jerome, 2013). Thus, the social level becomes a desired need (Arnaout, 2003). In nature-based extreme sports, the athlete strives to feel like a contributor and catalyst for their sporting community (Arnaout, 2003).

[77] On average, healthy adults require about seven to nine hours of sleep out of a 24-hour day to function optimally.

During, expeditions involving team members and a team leader, each member of the team needs to feel a sense of belonging within the team (Arnaout, 2003). Therefore, trust is important as it determines the achievement of the common goal (Arnaout, 2003). When the member also feels that they are an asset rather than a liability to the team, it encourages them to perform better, to start the expedition or continue it (Arnaout, 2003). Congruently, a word of encouragement or congratulation after completing an expedition can assure the fulfilment of the social level of the athlete (Arnaout, 2003).

(iv) Esteem needs

When the athlete's physiological-and-safety needs and needs of belonging are sufficed, the athlete can address their esteem needs (Jerome, 2013). *Esteem needs*, which is a psychological needs level on the pyramid branches into self-esteem needs and the esteem the athlete receives from other people (public self-esteem) (Arnaout, 2003; Jerome, 2013). All individual strives for a firmly grounded, stable and high-level of self-respect as well as some sort of respect from others (Jerome, 2013). When the person has gained a satisfactory self-respect and respect from others, their self-confidence enhances and they receive validation that they belong in this world (Jerome, 2013).

However, their validation can turn into feelings of inferiority, helplessness and worthlessness if these needs are misguided. In a sports context, there are various participants who demand respect and admiration to encourage their esteem (Arnaout, 2003). Once the athlete attains a sense of recognition of their contributions along with respect from friends, trainees, team members, leaders and sport communities, their esteem can be enhanced and lead to the continuation of their sport (Arnaout, 2003).

(v) Self-actualisation

Maslow defines self-actualisation as a sort of individual destiny: a person needs to be doing what they are "born to do" (Jerome, 2013). Essentially, a nature-based extreme sports athlete must explore and adventure in the wilderness (Arnaout, 2003). Thus, the self-actualisation tier can technically be seen as a personal level. As part of this level of need, the athlete is encouraged to critically and concisely analyse their own perceptions of their contribution to a specific part of nature-based extreme sports regarding their participation (Arnaout, 2003).

2.7.2 Correlation between traditional and non-traditional sports participation motives

Participants in a study conducted by Zhou, Chlebosz, Tower and Morris (2019) reported seven motives for participating in high-level extreme sports activities which are closely correlated to motives for traditional sports participation. These motives are categorised into *mastery*; *physical condition* (health); *psychological condition* (well-being); *enjoyment*; *affiliation*; *the expectations of others*; and sense of *competition/ego*. *Catharsis* and *vertigo* are dimension motives that were also identified but were motives that did not correspond to the motivations of traditional sports. However, they did correlate with studies on attitudes towards physical activity (Kenyon, 1968; Smoll & Schutz, 1980).

Mastery reflects the motive of attaining a self-referenced goal in a certain setting (Zhou et al., 2019). When higher levels of skill are attained without comparing performances to others, a sense of mastery is experienced (Zeigler-Hill & Shackelford, 2019). The achievement and the challenge are both constructs of the theme of mastery (Zhou et al., 2019). Achievement comprises an attainment of a high-level goal, typical beyond an individual's optimal effort, or a never-been-done task, or a task performed in an alternative way. The challenge links with goal setting that is beyond precedent attainments (Zhou et al., 2019).

Features of *mental health* and *well-being* encompasses the notion of psychological condition (Zhou et al., 2019). A heightened mental state, relaxation and mental toughness are all observed outcomes of extreme sports participation and contribute to its relevance of a motivator of participation (Zhou et al., 2019). Enhanced mental state refers to the capacity to react to continuous demands of an experience, which requires the application of socially acceptable emotions and thoughts; and to be flexible enough to enable or delay spontaneous reactions as demanded (Plante & Rodin, 1990). Consequently, a sense of relaxation mirrors stress relief and a feeling of calmness during participation (Zhou et al., 2019).

When an individual experience pleasure and satisfaction as a result of their participation, a dimension of *enjoyment* is achieved (Zhou et al., 2019). Another motivational attribute to participation includes being physically healthy and having the physical strength of achieving certain bodily capabilities (Zhou et al., 2019). The *expectations of others* greatly influence the athlete's motivation to persist with their participation. These expectations can be in the form of preparation for future occupation, financial rewards and family support (Zhou et al., 2019).

Affiliation is related to the involvement of social interactions during the performance of a task which elicits feelings of social relatedness (Zhou et al., 2019). *Competition* entails the act of competing, including a rivalry between individuals in a contest where typically a winner is selected (Zhou et al., 2019). The incentive of *catharsis* mirrors a release of emotional tension which can restore the athlete's spirit after an overwhelming experience (Reeck, Ames & Ochsner, 2016). *Vertigo* refers to the intention of the athlete's participation of thrill, excitement, danger and risk – seeking sensation (Zhou et al., 2019). Because this study aims to derail the misconception of reckless thrill seeking or careless sensation seeking in nature-based extreme sports (as viewed by the naïve, novice athlete or non-participant), freeriding is used as an example to understand the consideration of risk perceptions.

2.7.3 Motives for high-risk participation

Risk perception is influenced by one's experience, one's emotions and by the current situation (Raue, Streicher, Lermer & Frey, 2015). Their study found that during a freeriding ski tour, the risk perception between an experienced and less experienced freerider differed greatly (Raue et al., 2015). A stable risk perception before, during and after freeriding correlated to an experienced freerider (Raue et al., 2015). Compared to these results a freerider with low experience levels perceived the activity as higher risky before participation and only less risky after their participation (Raue et al., 2015). Therefore, this dissertation considers that the motivation to participate in nature-based extreme sports is also determined by the athlete's experience level and their engagement in the type of extreme sports activity. Although this study does not include 'freeriders' in the sample, the researcher still draws reference to the motivations of freeriders as they have considerable relevance to nature-based extreme sports. The following themes emerged from the analysis of the freeriders' motives to participate in extreme sports: challenge, nature, friends, balance, and freedom/pleasure (Frühauf et al., 2017).

Athletes perceived a *sense of challenge* because they encounter new places via their skis; they explore their personal limits; they experience a mastery of a skill; and they overcome a challenge of environmental conditions (Frühauf et al., 2017). For an athlete in freeriding, the opportunity to explore their personal limits suggests a *challenge* (Frühauf et al., 2017). Challenge is also described as a more complex motivation, which regards mastering a challenge rather than seeking sensation (Frühauf et al., 2017). Experiencing the outdoors and being in nature, forms a motive to go freeriding (Frühauf et al., 2017).

This motive can be accredited to the fact that the exploration of remote areas is only reachable by ski (Frühauf et al., 2017). A sense of being away from the indoors or built environment was another reason for participation (Frühauf et al., 2017). Freeriding functions as a counterbalance to the athlete's daily living and can motivate the athlete's participation (Frühauf et al., 2017). Additionally, it provides an escape from everyday boredom (Greenberg, 1977).

More than half of the freeriders who participated in Frühauf's et al. (2017) study described the importance of shared trust and shared passion with their friends which contributed to their extreme sports experience. Athlete's also reported a *sense of freedom*: to decide what to do and where to go (Frühauf et al., 2017). However, with this freedom comes great responsibility and the freeriders knew they had to accept the consequences of their action (Frühauf et al., 2017). A *sense of fun and pleasure* was also reported by the freeriders who experienced great joy riding untracked snow and feeling the snow beneath their feet (Frühauf et al., 2017).

Overall, linking the aforementioned motives with nature-based extreme sports participation reveals the following motivators:

1) To experience the outdoors and remote natural places
2) To seek a challenge and mastering a difficult or never-been-done-before skill
3) To attain a self-referenced goal in a challenging setting
4) To counterbalance real-life circumstances
5) To enjoy shared trust and passion with friends
6) To have freedom to make decisions on what to do and where to go
7) To experience fun and enjoyment
8) To be physically healthy
9) To gain a heightened mental state and improved mental toughness
10) To release emotional tension and relax

2.8 Conclusion

The reviewed literature aimed at compiling a definition of nature-based extreme sports. Adopting and combining the notions of Brymer (2010), Frühauf et al. (2017), Krein (2007); Llewellyn and Sanchez (2008), Pain and Pain (2005), and Sirch (2014) the following definition of nature-based extreme sports emerged:

> Nature-based extreme sports include unconventional fields of high-risk sports, which take place outdoors, in natural spaces where the likelihood of a mismanaged action can lead to an injury or fatality. These activities involve the interaction of natural elements which are oriented towards a combination of endurance, adventure, risk and action. Commonly, expeditions are performed in isolation with minimal availability of human and medical resources in case of an emergency. Athletes must safely mitigate challenging unpredictable environmental conditions; complete long distances; and endure long-lasting movement tasks. Nature-based extreme sports participation requires physical attainments of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof. Although deliberate risk-taking is involved, the athlete's survival depends on precautionary measures.

An **All Quadrants All Levels-model** (AQAL-model) for extreme sports based on an integral view served as a useful instrument in the development of the understanding "nature-based extreme sports" and its respective activities. Applying the notions of Wilber's AQAL-model the activities are categorised into extreme endurance sports; risk sports; adventure sports; and action sports. Moreover, mountain running, adventure racing, white-water kayaking, rock climbing, ocean wave surfing, high-level mountaineering, ocean rowing, and downhill mountain biking are highlighted and outlined as part of nature-based extreme sports activities.

A closer look into the involvement of risk during nature-based extreme sports is taken and possible motives for the emergences of misconceptions regarding "reckless thrill seeking" are identified. Novice, naïve and "reckless" experts' perceptions contribute to the ideas of misconception of risk-taking during nature-based extreme sports. Accordingly, risk-taking includes the trilogy of making a self-determined conscious choice, which involves a degree of uncertainty, unpredictability, and the haphazard course of events that may have detrimental effects (Cazenave et al., 2007).

Risk perceptions, risk manifestation and risk management during an "extreme" and "risky" activity provides the reader with an understanding of whether risk itself, is the primary motivator for participation (Krein, 2007). Evidently, explicating deliberate risk-taking and precautionary risk-taking behaviour, a clear picture is sketched of why 'risk' is viewed as a **by-product** during nature-based extreme sports participation.

In brief, the experienced and responsible “expert” athlete displays precautionary risk-taking behaviour as they are aware of the involved risk and possibility of injury or death (Zuckerman, 1979). Misadventures including injury or death may occur due to uncontrollable conditions despite the application of safety measures (Woodman & Bandura, 2010). However, the ‘expert’ athlete’s actions are calculated and attempt to control aspects within their capacity, rather than being reckless (Brymer, 2010).

Lastly, the benefits of participating in nature-based extreme sports are outlined in which flow and mindfulness are highly regarded. The following chapter further delineates the second part of the studied phenomenon including eco-sensitivity and an introduction to littering as an environmentally degrading behaviour from a South African context.

CHAPTER 3: FLOW, MINDFULNESS AND ECO-SENSITIVITY

3.1 Introduction

The previous chapter provided the reader with the researcher's truth and definition of nature-based extreme sports and its involved type of activities employed throughout the study. An understanding of the term "expert" is also delineated in terms of the perception and management of risk. Moreover, within the athlete population an inseparable association of flow and mindfulness is outlined (Cathcart et al., 2014). Mindfulness is seen as a catalyst for a transcendental flow experience and consequently is a benefit of nature-based extreme sports participation (Hopper, 2017). Scholars assert that the characteristics of a flow experience mirrors the qualities portrayed by a mindful individual (Kaufman et al., 2009).

In this chapter, a differentiation between flow and superfluidity is made by referring to Csikszentmihalyi's interpretations of a flow state. Kabat-Zinn's notions regarding mindfulness are discussed and an understanding of mindlessness is sketched. Thereafter, the Mindfulness-Acceptance-Commitment (MAC) theory and its relevance to a nature-based extreme sports athlete during a nature-based extreme sports activity is explained. Potential mechanisms of mindfulness are then constructed to illustrate its facilitative role in transformation and change. Bronfenbrenner's socio-ecological theory showcases that nature-based extreme sports athletes including their unique characteristics and behaviours are embedded within a biophysical and socioeconomic environment (Coutts et al., 2014). To understand environmental degrading behaviour, littering from a South African context is used as an example. Finally, through the concepts of environmental literacy, environmental education, environmental thinking and pro-environmental behaviour, a thorough outlook on "eco-sensitivity" is presented.

3.2 Flow and superfluidity

This study distinguishes between a state of flow and superfluidity to create nuanced language that shows that superfluidity is an enhanced state of flow, which nature-based extreme sports athletes have a higher possibility of reaching compared to an 'ordinary' individual who participates in conventional sports (Bergland, 2017; Csikszentmihalyi, 1975). This distinction is achieved through the observations of Csikszentmihalyi's flow channel.

3.2.1 Flow

Flow is referred to as the holistic sensation felt by individuals when they act with total involvement (Csikszentmihalyi, 1975, 2000). Within this flow state, movement follows movement in accordance to an internal logic in which conscious interventions seem irrelevant (Csikszentmihalyi, 1975). The individual, experiences flow as a unified flowing of moments, in which the individual is in control of their actions (Csikszentmihalyi, 1975). The self and the environment, stimulus and response, and the past, present, and future are intertwined and cannot be viewed as separate entities (Csikszentmihalyi, 1975).

One of the elements of the flow experience is the unification of **action** and **awareness** (Csikszentmihalyi, 1975). When an individual is in a state of flow, they have no dualistic perspective: they are aware of their action, but not of the awareness itself (Csikszentmihalyi, 1975). For example, a rock climber is completely attentive to the rock face and the texture and structure of that rock. Flow is interrupted when individuals view the activity from the outside, which causes a divided awareness (Csikszentmihalyi, 1975). A merged awareness with a person's action can only by attained for a short period of time and cannot be preserved for lengthy periods without at least momentary interruptions[78] (Csikszentmihalyi, 1975).

3.2.1.1 Components of a flow experience

A flow experiences is compiled of four vital components, where the presence of each component determines the occurrence of a flow state (Csikszentmihalyi, 1975). These components include the feasibility of the undertaken activity; the centering of attention on a limited stimulus field; a separation of the self from the ego or consciousness; and the individual's control of their actions and surrounding environment (Csikszentmihalyi, 1975). The first important quality of flow, which this study particularly highlights, is the occurrence of flow based on the **feasibility of the undertaken activity**. When the activity which the athlete undertakes is within their ability to perform it, a flow state is readily attainable (Csikszentmihalyi, 1975, 1990, 2000). Therefore, activities which clearly define rules for action and proper preparation, commonly produce an experience of flow (Csikszentmihalyi, 1975). The unification of awareness and action is facilitated through a second trait of the flow experience: the **centring of attention on a limited stimulus field** (Csikszentmihalyi, 1975).

[78] Momentary interruptions include the surfacing of queries such as "am I doing well?"; "what am I doing here?"; "should I be doing this?" (Csikszentmihalyi, 1975). During a flow state, these queries are absent.

This process is generally termed as a "narrowing of consciousness" or "giving up the past or the future" (Maslow, 1971, p. 63-65). A nature-based extreme sports athlete in rock climbing, illustrates this as follow (Csikszentmihalyi, 1975, p. 40): "When I start on a climb, it is as if my memory input has been cut off. All I can remember is the last thirty seconds, and all I can think ahead is the next five minutes." A third component of the flow experience involves a **separation of the self from the ego or consciousness** and is referred to as "loss of ego"; "self-forgetfulness"; "loss of self-consciousness"; and even "transcendence of individuality"; and "fusion with the world" (Maslow, 1971, p. 65, p. 70). In this instance, self-forgetfulness refers to being in touch with one's own physical reality, rather than the loss thereof (Csikszentmihalyi, 1975).

The researcher asserts that a loss of "ego" represents a gain in "eco." Mindfulness can thus be positively associated with "eco" and be representative of the "true self." Being in touch with one's own physical reality can be interpreted as being your "true self." Humanity's true self from an eco-centric outlook, can only be understood when people experience and surpass society's boundaries by re-visiting the wilderness, conquering humanity's disconnection from nature and facing mortality (Duerr, 1985). In the context of this study, nature-based extreme sports participation surpasses societal norms of doing the expected ordinary/ traditional sports and are reminded of their own mortality during high risk activities (Heidegger, 1962).

Having *physical awareness* entails that the individual becomes aware of their internal processing (Csikszentmihalyi, 1975). Rock climbers have indicated an increased kinesthetics sensation: an immediate rise in ordinarily unconscious muscular movements (Csikszentmihalyi, 1975). This kinesthetics sensation can also be called a "sensory sensitivity"[79], which if achieved through mind-and-body practice can illicit true enjoyment (Csikszentmihalyi, 1990). Awareness of an athlete's body or functions is not generally lost during flow, but rather the construct of "the self": the intermediary which an athlete learns to interpose between stimulus and response (Csikszentmihalyi, 1975).

[79] Visual appearances are integrated tactile possibilities, which are perceived as inter-sensory (Husserl, 1989, p. 75). Merleau-Ponty similarly asserts that something perceived is an "inter-sensory entity"; "any object presented to one sense, calls upon itself the concordant operation of all the others" (1962, pp. 317-318). A nature-based extreme sports athlete might see a sharp rock texture glistening in the sun and potentially feel the sharp rock slide across their hand and cut them.

A fourth aspect of a person in flow asserts that flow is determined by an **athlete's control of actions and environment** in terms of their concern of the possibility to control. A flow experience can commence when an athlete is not worried by the possibility of lack of control, where their active awareness of control is absent (Csikszentmihalyi, 1975). Congruently, the previous literature asserts that nature-based extreme sports athletes are calculated and do not wish to proceed with an activity without proper planning (Brymer, 2010; Pain & Pain, 2005). In simple terms, when an athlete recalls an experience, they generally reckon that for the time spent in flow, their abilities and skills were sufficient for addressing environmental demands (Csikszentmihalyi, 1975). Potentially, this reflection can be a construct "for positive self-concept" (Csikszentmihalyi, 1975, p. 44). In the same light, Maslow's theory of hierarchical needs can apply to the notions of a positive self-concept (Maslow, 1943).

3.2.1.2 A state of boredom, anxiety and flow

As it happens, flow episodes where dangers are "objectively" presented as tangible to the individual, can also elicit a sense of feeling in control and no fear of "worry" (Csikszentmihalyi, 1975). British rock climber, Chris Bonington, illustrates this feeling profoundly (as quoted in Csikszentmihalyi, 1975, p. 46):

> At the start of any big climb I feel afraid, dread the discomfort and danger I shall have to undergo. It's like standing on the edge of a cold swimming pool trying to nerve yourself to take the plunge; yet once [you are] in, it's not nearly as bad as you have feared; in fact, it's enjoyable… once I start climbing, all my misgivings are forgotten. The very harshness of the surroundings, the treacherous layer of verglas covering every hold, even the high-pitched whine of falling stones, all help build up the tension and excitement that are ingredients of mountaineering.

The treacherous layer of verglas covering every hold and the high-pitched whine of falling stones are tangible elements, which the rock climber refers to as assists which build tension and excitement during mountaineering. Evidently, a sense of control was present and the "worry" started to disappear as soon as the activity began. The manifestation of "anxiety" or "worry" and "boredom" during an activity and how a state of flow can be achieved from that are outlined in Figure 3.2.1, which indicates the increase of the complexity of consciousness as a result of the flow experience (Csikszentmihalyi, 1975, 1990). A state of flow is achieved when the opportunity for action is equal and in balance with the athlete's skill level (*A1*). When the athlete's skills exceed the opportunity to utilize them, a state of boredom results (*A2*). If the athlete considers their action opportunities as too demanding compared to their capabilities, the outcome of stress is experienced in the form of anxiety.

When the correlation of an athlete's capabilities is higher than the present challenge, but the challenge is still too demanding for their skills: they experience worry (*A3*). Following (*A2*) and (*A3*), there are two ways of reaching the flow channel represented in (*A4*). In the case of experiencing "anxiety or worry", the individual needs to improve their skill-level in order to find their way back to the flow channel. In the event of boredom, the individual needs to find a way to increase the current challenge to reach a state of flow. Although both (*A1*) and (*A4*) are located within the flow channel, they do not possess the same level of complexity (Csikszentmihalyi, 1990). A more complex state is experienced at (*A4*), because the challenge is now greater and demands a higher skill-level. Evidently, flow activities lead to growth and discovery (Csikszentmihalyi, 1990). Growth and discovery in turn indicate a transcendental experience.

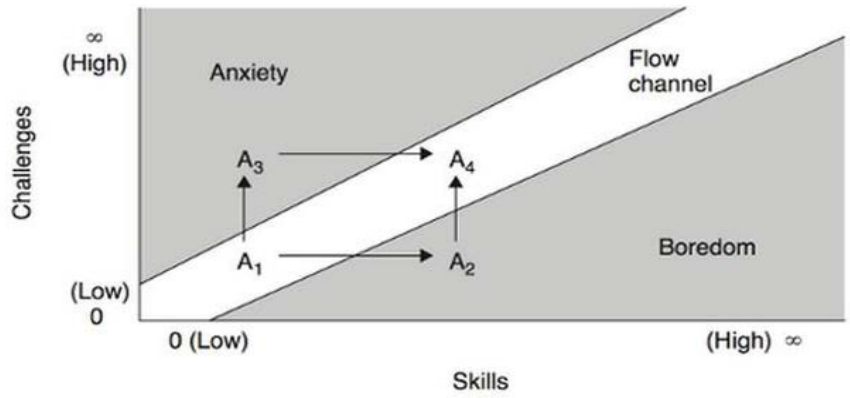

Figure 3.2.1. Why the complexity of consciousness increases as a result of the flow experience (*Note*. Adopted from "Flow: The psychology of optimal experience" (p. 75), by M. Csikszentmihalyi, 1990, San Francisco, California: Harper Perennial Publishers)

Furthermore, Figure 3.2.2 provides an example of a flow and non-flow situations in rock climbing to illustrate when a state of boredom, anxiety and flow are experienced (Csikszentmihalyi, 1975). A challenge in rock climbing is determined by the difficulties of the rock face or pitch: an athlete is set to climb (Csikszentmihalyi, 1975). Every climb and every move taken in a climb, can promptly be rated in terms of the objective difficulties the athlete encounters (Csikszentmihalyi, 1975). This model adapts a rating systems that rangers from *F(1)* which represents a minimal set of skills pertaining to rock climbing, to *F(11)* which includes the limits of the rock climber's potential. Additionally, on the same continuum the difficulty of the hardest climb the rock climber has completed reflects their skill-level. As similarly applied in this study, Csikszentmihalyi (1975) hypothesizes that when the hardest climb an individual ever did is ranked as *F(6),* the skill level can also be asserted as *F(6).* This ensures a fairly "objective" evaluation of both coordinates.

The given model also presupposes that when one is informed about the rankings of the rock being climbed as well as the climber, one can make predictions regarding the climber's experiential state (Csikszentmihalyi, 1975). It is important to realize that these predications will only be accurate if the involved individual objectively views the difficulties faced with during a challenge and their own capabilities. Significantly, the rock climber's perception, assessment and management of the risk when faced with a challenging situation play a vital role in the occurrence of a flow state.

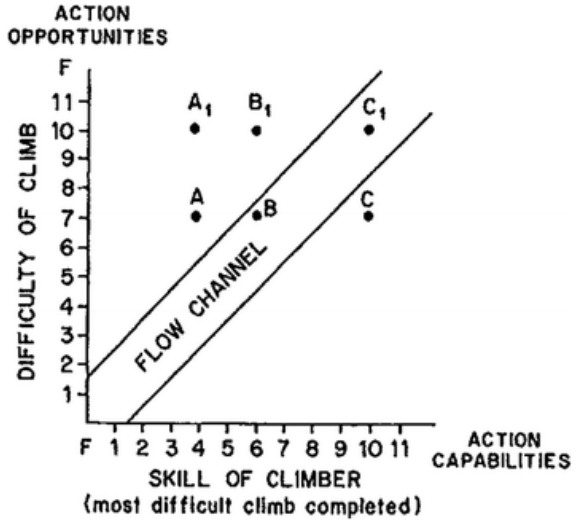

Figure 3.2.2. Example of flow and non-flow situations in rock climbing. Confronted with a rock face whose difficulty factor is classified F(7), climber A (a rock climber with F(4) skills) will feel worried; climber C (with F(10) skills) will feel bored; and climber B (with F(6) skills) will experience flow. On a rock whose difficulty factor is F(10), A will feel anxious, B worried, and c in flow. (*Note*. Adopted from "Beyond Boredom and anxiety" (p. 51), by M. Csikszentmihalyi, 1975, San Francisco, California. Jossey-Bass Publishers.)

Taking the above mentioned aspects into account, one can make the following assumptions (Csikszentmihalyi, 1975): A *F(4)* climber on a *F(7)* pitch will tend to be worried and on a *F(10)* pitch they will be anxious. Correspondingly, those individuals who have *F(10)* skills will be bored climbing a *F(7)* pitch, except if they decide to increase the challenge they are presented with by adding some tactic rules. These rules may entail utilizing only one arm or attempting a climb without protection or shifting their focus on new action possibilities including teaching a novice climber how to climb (Csikszentmihalyi, 1975). Rock climbing is a classified as a good flow activity, because no person can individually master all the *F(11)* pitches in the world. The same pitch or climb can also be made more challenging or difficult by weather conditions or self-imposed handicaps (Csikszentmihalyi, 1975).

As rock climbing is part of the classification of nature-based extreme sports activities, the assumption is made that all the outlined activities in chapter two follow the notions of Csikszentmihalyi's flow channel. In addition, the athlete's experience can be classified as *autotelic* when they predominantly strive for the flow experience itself and not for the incidental extrinsic rewards, which may emerge from it (Csikszentmihalyi, 1975).

3.2.2 Superfluidity

Considering, Csikszentmihalyi's flow model, it becomes essential to distinguish between the experience of flow and superfluidity in extreme sports (Bergland, 2017). Investigations reveal that flow is more easily attained than a so called, superfluid state (Bergland, 2017). Superfluidity happens within the flow channel, however it is more episodic, ecstatic and extreme (Bergland, 2017). Commonly, sport contexts refer to "being-in-the-zone" as the flow experience (Bergland, 2017). In addition, "superfluidity" is coined as an increased, second level of that flow experience. By differentiating between a state of flow and a state of superfluidity, one can readily assume that a regular state of flow is easily accessible to people from all spheres of life and average capabilities (Bergland, 2017). Thus, there is a need to transparently address the different grades of extraordinary and unusual states of consciousness (Bergland, 2017).

The onset of making this distinction can be attributed to the notion that for an elite athlete who deliberately practices inside Csikszentmihalyi's flow channel with the purpose to create a state of flow can easily become predictable, formulaic and mundane (Bergland, 2017). However, this does not dismiss the value of flow and the idea that flow fosters a platform for transcendence during nature-based extreme sports participation, it merely addresses the lack of nuanced language (Bergland, 2017). For the purpose of this study, flow is perceived as a state which can be readily experienced by the 'ordinary', compared to superfluidity, which refers to an enhanced state of flow.

Consequently, superfluidity as an extraordinary state of consciousness can manifest a self-fulfilling prophecy and an explanatory way of refuting the naïve misconceptions of extreme sports participants as being reckless-thrill seekers and taking on physically impossible tasks for an adrenaline rush (Bergland, 2017).

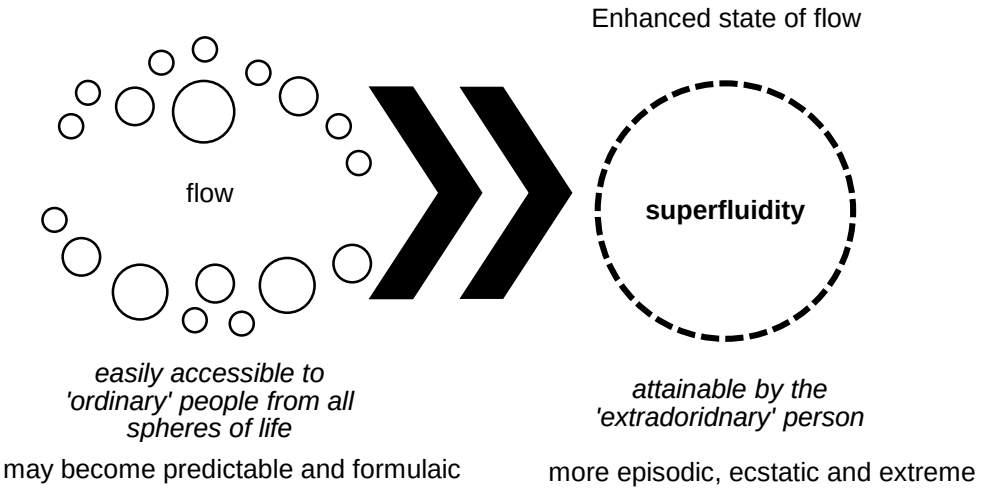

Figure 3.2.3. Distinction between flow and superfluidity

3.3 Implication of superfluidity on eco-sensitivity

Having the ability to enter a superfluid state during nature-based extreme sports participation, which is a more enhanced form of the 'ordinary' flow state, permits an intense and heightened connection with one's body and surrounding elements. A heightened level of sensory sensitivity enables an enhanced awareness *of* nature (natural environment) and *on* the participant. To move into a superfluid state, the individual needs to be mindful of their behaviour. Recognising that mindfulness is a flexible state of the mind, in which the participant is actively involved in the present moment during the nature-based extreme sports activity, observing new things and "being sensitive to context", allows an association of a superfluid state with mindful actions (Langer, 2000, p. 220).

3.4 Mindfulness

To illustrate the meaning of mindfulness, this section outlines the notions of John Kabat-Zinn, the essential traits of mindfulness, and an understanding of mindlessness. Concepts of the Mindfulness-Acceptance-Commitment (MAC) theory is introduced to nature-based extreme sports participation and the potential mechanisms of mindfulness are delineated.

3.4.1 Defining mindfulness

In modern context, Jon Kabat-Zinn laid the foundations as to how mindfulness can be understood (Brown & Ryan, 2003). He illustrates that mindfulness is an acute awareness, which manifests through "paying attention on purpose, in the present moment, non-judgmentally to the unfolding of experience, moment by moment" (Kabat-Zinn, 1994, p. 4). Mindfulness is an awareness that is open-hearted (Kabat-Zinn, 2005).

Being mindful entails a set of internally operated skills of observing, narrating and being in the present moment (Dimidjian & Linehan, 2003). Overall, the process involves centring one's attention to the present experience on a moment-to-moment basis (Marlatt & Kristeller, 1999). Mindfulness surpasses meditation, having the flexibility of consciousness to be present, observe new things and sensitive towards environmental context (Brown & Ryan, 2003; Langer, 2000). A state of mindfulness is thus innately a state of consciousness, which can be regarded as an increased attention to and awareness of one's present experiences or immediate reality (Brown & Ryan, 2003). Since mindfulness has been closely related to the characteristics of flow and vice versa (Kaufman et al., 2009), the researcher asserts that a loss of "ego" correlates to a gain in "eco." The increased attention to and awareness of one's present experiences represents a loss of ego and gain in "eco", becoming your true 'authentic' self.

An essential trait of mindfulness has been expressed as *open* or *receptive* awareness and attention which may be mirrored in a more regular or *sustained consciousness* of continuing phenomena and experiences (Deikman, 1982; Martin, 1997). For instance, when one speaks with a friend, one can be intensely attentive to the communication, while being sensitively aware of the potential underlying subtle emotional tone (Brown & Ryan, 2003). However, consciousness may be blunted or restricted which then hinders sustained consciousness (Brown & Ryan, 2003). An example of this inhibition is an individual who is absorbed in their past, or imaginations and apprehensions regarding their future, which can ultimately withdraw the individual from their present happenings (Brown & Ryan, 2003).

Attention and **awareness** can also be disconnected when individuals are busy with numerous activities at once or distracted by issues which then discount the quality of their current situation (Brown & Ryan, 2003). *Private self-consciousness* emerges from theorising **self-awareness**, which reflects a disposition to be particularly aware of one's internal conditions (Fenigstein, Scheier & Buss, 1975). Nevertheless, this form of self-awareness is established by its focus but neglects its quality (Brown & Ryan, 2003).

Having an increased *private self-consciousness* could represent a preoccupation with inherent conditions or being open-minded to those conditions (Brown & Ryan, 2003). Current research identified two features within this phenomenon, coined the *internal state awareness* and *self-reflectiveness* (Cramer, 2000; Trapnell & Campbell, 1999). An internal state awareness reflects a sensitivity towards existing psychological processes, which links with mindfulness (Brown & Ryan, 2003).

Public self-consciousness is the inclination to focus on "the self" as viewed by others which could discount an individual from current awareness (Brown & Ryan, 2003). These forms of self-awareness represent cognitive operations on features of "the self" via self-examination, which refer to *reflexive consciousness* (Baumeister, 1999; Bermu'dez, 1998). Mindfulness concerns itself with the quality of consciousness and therefore disregards notions of reflexive[80] thought in terms public self-consciousness (Brown & Ryan, 2003). Qualities of private self-consciousness which encapsulates mindfulness, outline a clarity and vividness of present experiences and functioning. Accordingly, the assumption is made that private self-consciousness correlates with mindfulness which correlates to an "eco"-consciousness or awareness. On the contrary, public self-consciousness could encourage the presence of the "ego", which involves a loss of the individual's "true self" since their current awareness is discounted.

An individual can experience a state of mindlessness, when their practice of behaviour becomes habitual or automatic where their attention is scattered and awareness of the present moment dissipates (Gardner & Moore, 2006). **Mindlessness** is signified through James's (1924, p. 237) remark that "compared to what we ought to be, we are only half awake." This research considers mindlessness as a state where the athlete's body and mind are not in synch. Thus, an individual's body is not in the same place at the same time as its mind during an activity. Accordingly, mindfulness opposes the mindless of less "awake" conditions of habitual or automatic functioning (Brown & Ryan, 2003). Typically, mindfulness "offers a bare display of what is taking place" (Shear & Jevning, 1999, p. 204).

An experiment conducted by LeBel and Dubé (2001) identified that individuals whose attention was centred on only the **sensory experiences** of eating chocolate indicated a higher sense of pleasure[81], compared to individuals who were tasked with an additional activity while eating chocolate. Since, a nature-based extreme sports athlete is exposed to various 'extreme' and unpredictable weather situations in their pursuit to complete their task/expedition, it becomes challenging to achieve this so-called sensory delight (Csikszentmihalyi, 1990). Therefore, the athlete's preparations and calculated risk-taking during their activity depend on the achievement of mindfulness, which in turn determines the attainment of a superfluid state.

[80] Note: this should not be confused with Van den Berg's (1972) interpretation of the "reflective" and "pre-reflective perception of our bodies (see chapter one).
[81] Sensory delight.

In a wider view, research established that inherently motivated and flow endeavours, signified by engagement with and attention to what is occurring, yield enjoyment and a perceived sense of liveliness (Csikszentmihalyi, 1990; Deci & Ryan, 1985). Nevertheless, it is suggested that the qualities of attention and awareness can differ vastly, from an increased state of transparency and sensitivity to very low levels thereof. Low levels of transparency and sensitivity is characterised by thoughts or actions that are habitual, automatic, mindless or blunted (Wallace, 1999). Thus, the presumption is made that "because of the inherent capability, discipline or inclination, individuals may differ in the frequency with which they deploy attention and awareness and that there are intra-individual variations in mindfulness" (Brown & Ryan, 2003, p. 824).

3.4.2 Mindfulness-Acceptance-Commitment (MAC) theory

Concepts of the Mindfulness-Acceptance-Commitment (MAC) theory is applied to this study in a nature-based extreme sports context to demonstrate to the reader the ability of mindfulness to assist an athlete's sports performance and their generally psychological welfare during their extreme sports activity while experiencing intense discomforts. The **Mindfulness-Acceptance-Commitment (MAC) approach** is designed to enhance the sport performance and general psychological well-being, which includes a compilation of mindful practices and approaches to acceptance (Gardner & Moore, 2010). The MAC-method introduces the notion that peak performance can be achieved while an athlete experiences discomfort during their nature-based extreme sports activity (Gardner & Moore, 2010).

Directed by the MAC-approach, these **discomforts** experienced by the nature-based extreme sports athlete may be prompted by bodily sensations, internal experiences and external stimuli purposed to assist optimal performance (Hasker, 2010; Schwanhausser, 2009). The automatic development of the athlete's prowess during an uncomfortable or challenging situation is further supported by the MAC-techniques, which allows the athlete to direct their mind on handling the current task (Gardner & Moore, 2004, 2006, 2007). The following three prominent aspects construct the MAC-approach applied to the understandings and analysis of the narratives and perceptions of the nature-based extreme sports athlete (Gardner & Moore, 2004, 2006, 2007):

(1) Their mindful attention
(2) Through non-judgmental acceptance of discomforts, experienced either through bodily sensations, internal experiences and external stimuli
(3) To commitment to their values

Moreover, the nature-based extreme sports athlete has the choice to either **accept** or **avoid** their mindful awareness of their bodily sensations, internal state and external stimuli (Hayes, Luoma, Bond, Masuda & Lillis, 2006). The terms acceptance, avoidance and commitment are described to explain to the reader its application to the study.

3.4.2.1 Acceptance

When an athlete non-judgmentally accepts the discomfort or 'uncomfortable challenge' they are presented with during a nature-based extreme sports activity, they are momentarily (moment-by-moment) aware of their bodily sensations, internal state and experience of external stimuli and open-heartedly acknowledge this process (Gardner & Moore, 2004, 2006, 2007; Kabat-Zinn, 2005). Bodily sensations, internal experiences and external stimuli are inevitably part of an individual's daily functioning and appear naturally throughout their daily life. It is however experienced extraordinarily by the extreme sports athlete during their nature-based extreme sports activity. When the athlete accepts these discomforts, they acknowledge their willingness to experience whatever bodily sensation, internal state and external stimuli they are presented with in the service of pursuing their extreme performance and the related values that carry personal significance (Fletcher & Hayes, 2005; Gardner & Moore, 2004, 2006, 2007, 2010; Hayes et al., 2006; Hayes & Strosahl, 2004).

3.4.2.2 Avoidance

The athlete may also decide to avoid their bodily sensations, internal state and external stimuli. Avoidance is characterised by the athlete's pursuit to control or reduce the bodily sensations, internal state and external stimuli they are presented with during their nature-based extreme sports activity (Gardner & Moore, 2010). Their avoidance can either be obvious or subtle. An example of an obvious avoidance would be a white-water kayaker who stays away from kayaking a certain river with great rapids due to a previous unpleasant or negative experience at the rapids. Commonly, the action of avoidance is motivated by short-term comfort when a sense of temporary relief is experienced in terms of a personal discomfort (Gardner & Moore, 2010). The kayaker enjoys kayaking but does not want to move through certain rapids that remind him of the unpleasant experience. Long-term avoidance strategies are detrimental to the extreme sports athlete as it hinders their development of essential skills with regards to their practice and preparation (Gardner & Moore, 2004, 2007, 2010; Hasker, 2010; Schwanhausser, 2009).

An example includes the white-water kayaker avoiding kayaking in the certain river for a long period which hinders their skill development in an Eddy turn and S-turn, a peel out, maintaining an active blade and moving downstream through rapids.

3.4.2.3Commitment

Commitment enhances an athlete's "mindful-attention" (Gardner & Moore, 2004, 2007, 2010). This is based on the notion that an athlete's decision to act in the service of their values, permits them to pay attention to the current task. During their participation in their nature-based extreme sports activity, the extreme sports athlete's body is continuously pushed to the 'extreme' limit. To commit, regards the athlete's choice to be mindful and their acceptance and acknowledgment with regards to the experienced discomforts in the service of their values (Gardner & Moore, 2004, 2007, 2010). Moreover, the extreme sports athlete shows poise once they achieve optimal performance with complete prowess and commitment towards significant values despite experiencing discomforts (Gardner & Moore, 2004, 2007, 2010). Essentially, if the athlete accepts and commits to the challenge they are presented with during a nature-based extreme sports performance via utilisation of significant values, they increase their susceptibility towards success and peak performance (Gardner & Moore, 2004, 2007, 2010).

Notably, motivation should not be confused with commitment. **Motivation** merely serves as a desire for something or reason for acting or behaving in a certain manner. Commonly, most athletes are motivated to perform better, but not all athletes are committed to push the "extreme" limits through unpleasant and uncomfortable situations to enhance their performance (Gardner & Moore, 2007). According to the researcher's understanding, motivation is the desire to reach a goal and commitment means having the practical foundation to dedicate oneself to achieving it. Therefore, commitment is an important facet to transforming the desire into action (Gardner & Moore, 2004, 2006). In contrary, **non-commitment** reflects the desire to achieve a certain goal, but with no practical means to attaining it. Figure 3.4.2 illustrates the basic components of the Mindfulness-Acceptance-Commitment (MAC) theory as applied to this study in order to understand and interpret the narratives and perceptions of the nature-based extreme sports athlete.

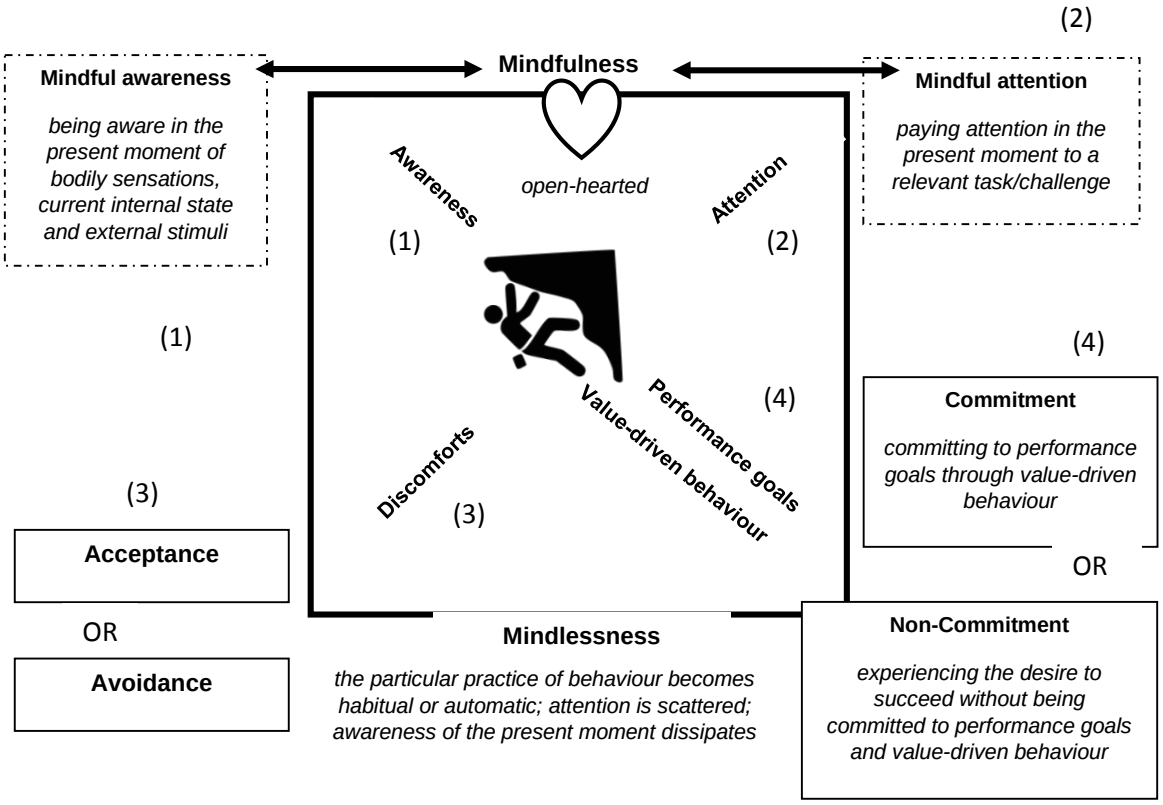

Figure 3.4.2. The basic components of the Mindfulness-Acceptance-Commitment (MAC) theory as applied to the nature-based extreme sports athlete

3.4.3 Potential mechanisms of mindfulness

The potential mechanisms of mindfulness are underlined by Shapiro, Carlson, Astin and Freedman's (2006) study, in which they attempt to present a model that delineates how mindfulness might encourage transformation and change. Notably, there are various contributing factors in this complex process. This model is a preliminary model and simply illustrates "a" model and not "the" model for mindfulness (Shapiro et al., 2006). Their model consists of three axioms[82]: (1) Intention; (2) Attention; and (3) Attitude. These axioms were gathered by identifying the fundamental facets of mindfulness and its relevant literature. Kabat-Zinn's (1994, p. 4) definition of mindfulness encapsulates these three axioms: *On purpose* embodies "intention"; *paying attention expresses* "attention"; and *in a particular way* personifies "attitude" (mindfulness qualities). Figure 3.4.3 demonstrates that mindfulness is a moment-to-moment cyclic process in which intention, attention and attitude are interlaced and cannot be seen as separate phases (Shapiro et al., 2006).

[82] Axioms are underlying fragments from which other things unfold or become apparent (Shapiro et al., 2006).

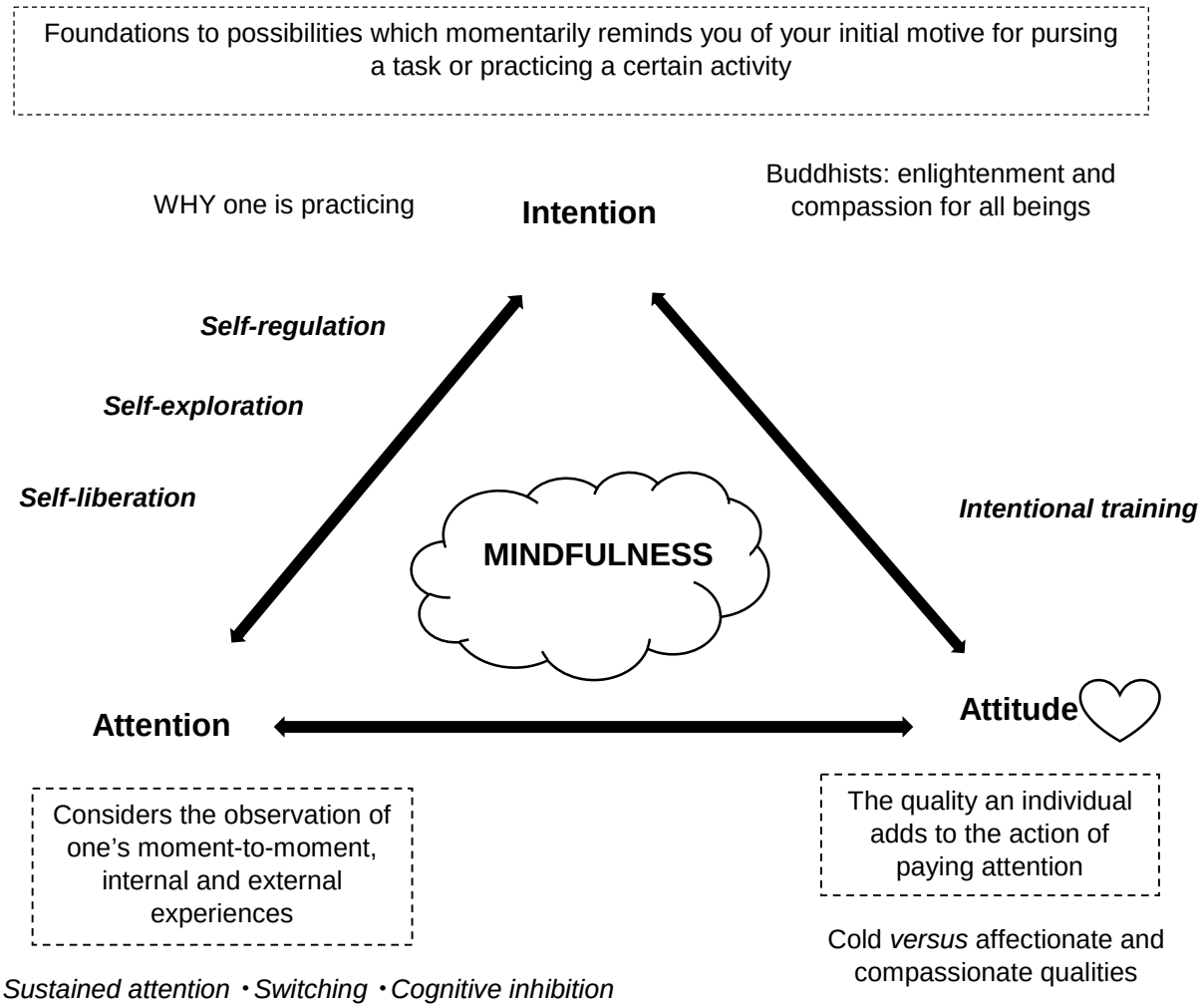

Figure 3.4.3. The potential mechanisms of mindfulness: (a) *Intention*; (b) *Attention*; (c) *Attitude*. (*Note*. Adapted from "Mechanisms of mindfulness" (p. 3), by Shapiro et al., 2006, Journal of Clinical Psychology)

3.4.3.1 Intention

Incorporating intention ('why one is practicing) as one of the principal elements of mindfulness is essential to holistically comprehending the complex process, which is commonly omitted by modern definitions (Bishop et al., 2004). The characteristics of intention, known to Buddhists as enlightenment and compassion for all beings, are regarded as valuable and added to this model (Shapiro et al., 2006). Kabat-Zinn's (1990, p. 32) writings describe intentions as foundations to possibilities which momentarily reminds you of your initial motive for pursing a task or practicing a certain activity: "your intentions set the stage for what is possible." He further refers to intention as a sort of personal vision: "I used to think that meditation practice was so powerful… that as long as you did it all, you would see growth and change. But time has taught me that some kind of personal vision is also necessary" (Kabat-Zinn, 1990, p. 49).

The *intention*, or this personal vision, is constantly changing and transforming (Freedman, 2010). This constant change can be understood by the following example: a 32-old man initiates a mindful practice to lose weight by going for a hike. As his journey of mindful practices continues, he may develop an additional intention of spending more time with his wife and kids (Shapiro et al., 2006). Shapiro's (1992) study[83] explores the intentions of mediation practitioners and establishes the position of intention in meditation practice. The findings reveal that as meditators continue to practice, their intentions reposition along a continuum from self-regulation, to self-exploration, to self-liberation (Shapiro, 1992). *Self-regulation*[84] is the operation of the maintenance of stability of functioning and being able to adapt to change (Shapiro et al., 2006). *Self-liberation* introduces the experience of transcendence as if becoming free of something or someone: the sense of being a separate self (Shapiro et al., 2006).

Evidently, there is a correspondence with the above discoveries of self-regulation, self-exploration and self-liberation and with the definition of intention utilized by Shapiro et al (2006), which refers to a constant change and transformation. This enables individuals to adjust and evolve with a deepening modus operandi, awareness and insight.

3.4.3.2 Attention

Paying attention, in the context of being mindful, considers the observation of one's moment-to-moment, internal and external experiences (Shapiro et al., 2006). Merleau-Ponty calls for "return to things themselves" (Matthews, 2006). This reference implies that all interpretations of experience should be eliminated, and the focus should be on the experience itself – as it manifests in the here and now (Shapiro et al., 2006). Therefore, it allows an individual to address the message of consciousness, moment by moment (Shapiro et al., 2006). In the field of psychology, it is suggested that the healing process is grounded on *paying* attention (Shapiro et al., 2006). In other dynamic and humanistic practices, awareness potentially permits the discovery of needs, conflicts and existential concerns (Brown & Ryan, 2003). Remarkably, Perls (1973) observed healthy organism as organising essential and transparent gestalts or perceptions which manifest in conditions of relaxed attention.

[83] Their study showcases that outcomes correlate with intentions. Individuals whose goal was self-regulation and stress-management achieved self-regulation; those individuals who set out to achieve self-exploration achieved self-exploration; and those individuals who strived for self-liberation advanced towards self-liberation and compassionate service (Shapiro, 1992).

[84] Self-regulation is founded on feedback loops (Shapiro et al., 2006).

Furthermore, he signifies this present moment awareness by asserting that *attention in and on itself is curative* (Perls, 1973). Additionally, the ability to address (i.e. observe) internal and external behaviours, one of the pillars of cognitive-behaviour therapy, illustrates the value of attention (Shapiro et al., 2006). Cognitive psychology explicates a variety of facets of attentional abilities, which includes the potential to address a single object for an extensive period, referred to as vigilance or **sustained attention** (Parasuraman, 1998; Posner & Rothbart, 1992). The potential to willingly transfer the focus of attention between objects and mental sets, is referred to as **switching** (Posner, 1980). The potential to impede secondary elaborative thoughts, feelings and sensations, is referred to as **cognitive inhibition** (Williams, Mathews & MacLeod, 1996). Therefore, it is predicted that the augmentation of sustained attention; switching of attention; and cognitive inhibition will result, based on the **self-regulation of attention** in this mindfulness axiom

3.4.3.3Attitude

The third axiom outlines the contribution of one's attitude and the management thereof (Shapiro et al., 2006). The attitudinal underpinnings of mindfulness are referred to as the qualities an individual adds to attention (Kabat-Zinn, 1990). Because the quality of the pure awareness which is associated with mindfulness is rarely recognised, the quality which an individual adds to the action of paying attention becomes essential (Shapiro et al., 2006). For instance, Kabat-Zinn (2003, p. 145) distinguishes between a cold quality and "an affectionate, compassionate quality… a sense of openhearted, friendly presence and interest." Heart-qualities are potentially derived from the Japanese characters of mindfulness which include the interaction of the mind and the heart (Santorelli, 1999).

Thus, Shapiro and Schwartz (2000) consider a more accurate composition of mindfulness, namely, a heart-mindfulness. The prediction is that an individual can learn to address their own internal and external experiences without interpretation or evaluation. However, they need to apply acceptance, compassion and openness, despite an occurrence of contrasting experiences to inherent wishes and expectations (Shapiro et al., 2006). In this predicition, the attitudinal quality of awareness is clearly outlined. Furthermore, **a conscious commitment** by the individual is required. Commitment could be in the form of introducing kindness, curiosity and openness to the individual's awareness (Shapiro et al., 2006). **Intentional training** allows an individual to be captivated by their experiences as it manifests and also permits the release of an experience (to let go) (Shapiro et al., 2006).

When an experience is addressed without considering the “heart” qualities, the possibility of expressing complete disapproval or judgement over one’s inherent experience is apparent (Shapiro et al., 2006). This approach could contrast the intentions of the mindful practice, which results in the fostering of judgmental patterns rather than tranquillity and acceptance. Another attitudinal facet to mindfulness, also known as *orientation to experience* in the present moment, proposed by Bishop et al. (2004), incorporates curiosity, non-striving and acceptance. An alternative interpretation to mindfulness finds that “the goal is not to change problematic thoughts and emotions, but rather to accept them for what they are – just private experiences, not literal truth” (Greco & Hayes, 2008, p. 15). This explicates that one needs to be present and non-judgmental despite intense unpleasant and painful moments to be regarded as mindful.

3.4.4 Implication of mindfulness on eco-sensitivity

Mindful actions emerge when a participant “comes to their senses.” Literally, it signifies coming to their senses in terms of an awareness of what they hear, smell, see, touch and taste during an activity. This notion is based on the idea that mindfulness results in non-judgmental awareness of the participant’s internal states in terms of bodily sensations and emotions; and external environmental stimuli (Kabat-Zinn, 1994, 2005). Figuratively, it denotes that the participant begins to apply good judgement. Since majority of society functions on auto-pilot, their actions are habitual and mindless. Consequently, leading to inauthentic lifestyles (Moran, 2000). However, through mindfulness, the participant’s lifestyle can transform to authentic moments, becoming their true self and a true being-in-this-world (Heidegger, 1962). The Dasein signifies that the world is present to man and man is present to the world and its fellow people (Kruger, 1988). Mindful equals a purposeful presence in the world or situation.

Mindful awareness monitors the inner and outer environment of the participant acting as a “detector”, which consciously scans and records stimuli through their bodily senses (Brown, Ryan & Creswell, 2007). *Mindful attention* acts as a “navigator” in which the consciousness is directed towards heightened sensitivity to a specific experience (Brown & Ryan, 2003). The enhanced ability to detect potential “distracting” or “uncomfortable” internal and external stimuli during an activity (mindful awareness), and application of actions that refocus and direct bodily senses on the present task (mindful attention), brings about a self-regulated being (Gardner & Moore, 2007). Eco-sensitivity requires the ability to self-regulate behaviour, including having an acute awareness and sensitivity of one’s being and surrounding natural world.

3.5 Environment

When examining the literature in the field it is important to distinguish between the different meanings of "the environment" (Hart, 1997). The term "environment" can refer to the *setting/context* in which a specific activity is carried *on* or operated *in* or have *geographical connotations* including "physical environment", "built environment", and "natural environment" or "natural resources." In their portrayal of the natural environment in an evolving ecological public health paradigm, Coutts et al. (2014) safely assume that the physical environment branches into the natural environment and the built environment. Human-made structures are referred to as the "built environment" or artificial environments (Hart, 1997). The term "natural environment" is used throughout this dissertation to refer to surrounding open outdoor spaces, which the nature-based extreme sports athlete engages with. Earthly or natural elements typically include bodies of water, mountains and rock, vegetations such as trees, plants, grass, et cetera.

3.5.1 Bronfenbrenner's socio-ecological theory

Respectively, both these definitions of environment are outlined by applying Bronfenbrenner's socio-ecological theory (Leijdekkers et al., 2015). This theory is not the prominent framework that guides the study, it merely serves as an explanatory instrument to indicate the socioeconomical and the physical features the nature-based extreme sports athlete is surrounded by. Bronfenbrenner's socio-ecological theory showcases that nature-based extreme sports athletes including their unique characteristics and behaviours are embedded within a biophysical and socio-economic environment (Coutts et al., 2014). A nature-based extreme sports athlete's contexts represent their surrounding environment (context and biophysical), which subsequently determine their behaviour during and outside of their activity (Visser, 2007). Detrimental behaviour of the nature-based extreme sports athlete could involve mindless risk-taking, mismanaged risk, careless application of skills, neglection or inappropriately utilisation of equipment during an activity. Consequently, these behaviours determine the athlete's experience of a superfluid state.

Intra-individual processes, which involve the perception of risk and how risk is assessed and managed, if and how the specialised equipment is used and whether skill and knowledge is applied during an "extreme" challenge, are all dependant on the athlete's environmental circumstances or context (Visser, 2007). A poor support system could possibly involve the athlete's environmental circumstance which determines the above detrimental behavioural issues.

Therefore, an athlete's context or setting (environment) becomes a determinant of their behaviour. The athlete's behaviour and learning are subject to their physical environment and its affordances (Acar, 2009). This includes the natural world and its earthly elements and how they are used to produce the nature-based extreme sports activity. For example, during high altitude mountaineering the athlete is typically surrounded by ice and rock (natural elements), the ice can be boiled to drink and even to gain grip, the rock can be used to step on, grip and ascent the mountain (affordances). The socio-ecological systems theory, developed by Urie Bronfenbrenner (1979), explicates the significance of the interaction between the nature-based extreme sports athlete, their equipment, other people and the natural environment within a particular setting and the various environments (contexts) that guide their behaviour.

The theory differentiates between the environments (contexts/settings) based on their distance from and level of involvement with the athlete (Leijdekkers et al., 2015). The athlete's context/setting encompasses a series of interconnected systems, known as the microsystem, mesosystem, exosystem and macrosystem (Bronfenbrenner, 1994). The nature-based extreme sports athlete exists within these layers of social relationships which fit into one another like a puzzle (Bronfenbrenner, 1994). The interaction between the four environments is complex and can both be affected and affect the athlete's development (Johnson, 2008). A fifth dimension, called the chronosystem, added by Bronfenbrenner (1994) includes an element of time.

This multiple nested system in which the nature-based extreme sports athlete exists, is governed by the natural and built environment. The biophysical environment refers to the "natural environment" as the word *bio* originates from the Greek word *bios* meaning '(course of) human life', therefore relating to life and living beings. The nature-based extreme sports athlete is positioned within this eco-systematic background that involves an interdependence between the athlete and their biophysical or natural environment (Coutts et al., 2014). The athlete moves in and out of the various socio-economic environments, each including a biophysical environment (natural environment) which affects and is being affected by their socio-economic environment (Acar, 2014; Coutts et al., 2014). The built environment is also present in each socio-economic environment.

From the moment a child is born, their surrounding natural environmental stimuli influence their physical, cognitive, social and emotional development and way of learning (Acar, 2014). It is impossible to view humans as separate from their natural and built environment and context (Acar, 2014).

The individual is both the focal point of its environment and an element of that environment, which determines the display of certain actions and behaviour (Acar, 2014). Therefore, there exists an interrelationship between the natural and built environment, the setting/context and the athlete's behaviour.

3.5.1.1 Microsystem

The *Microsystem* forms the innermost layer that surrounds the nature-based extreme sports athlete known as their immediate environment (Bronfenbrenner, 1994; Krishnan, 2010). This system is the setting in which the athlete lives and is in direct contact with (Christensen, 2010). Bronfenbrenner (1994, p. 39) calls it a given "face-to-face setting." Moreover, the developing athlete experiences a pattern of activities, different social roles and interpersonal relationships (Bronfenbrenner, 1994). The setting consists of the athlete's family, peers, sport clubs/training arena and neighbourhood (Christensen, 2010; Krishnan, 2010). Notably, the microsystem has the most immediate and earliest influences on an individual (Krishnan, 2010). The researcher assumes this system greatly influences the athlete's motive for choosing nature-based extreme sports above conventional sports. Within this type of setting, the **pattern of activities** branches into *molar* and *molecular* (Krebs, 2009). Molar activities are meaningful and purposeful activities to the athlete, which persists until its fulfilment (Krebs, 2009). Molecular activities are tasks which the athlete may analyse as meaningless or having no purpose, which determines its continuation (Krebs, 2009).

Applied to the studied phenomenon, the nature-based extreme sports athlete directs meaning to certain endeavours, which determine whether that undertaking is commenced or ceased. An example may include the rock climber undertaking a certain rock face because of its challenging features and rock textures (molar) compared to a rock face, which does not promote the climber's skills in any way. As a result, the climber continues the challenging rock face as it is more attractive and meaningful (improve skills) than pursing an unattractive and easy rock face (no improvement of rock-climbing skills).

Interpersonal relationships refer to the developing extreme sports athlete's relationship with other people, including their team members, family, friends and peers (Krebs, 2009). Within a nature-based extreme sports setting such as mountaineering, adventure racing or team ocean rowing, the type of interaction between team members, and the leader and the members determines "life or death" during an expedition. Face-to-face communication is crucial to conveying important information between team members, trainers and their trainees, and team leaders and members during an expedition.

However, due to the “out-of-the-ordinary” circumstances of nature-based extreme sports, communication skills in verbal and non-verbal ways need to refined. Ultimately, if the team leader is unable to convey a message quick, concise and on time to all members during for example a Mount Everest expedition during the summit stage, their level and expertise are compromised and have detrimental results (Kidman & Hanrahan, 2011). Thus, if miscommunication or an absence of communication during an expedition prevails, it may result in casualties (Walsh, 2011). On the bright side, a learning environment for the team members of the expedition can manifest once concise communication between the leader and the member has been obtained. As a result, the athlete develops confidence, competence and character (Human, 2015).

The **social roles** represent expected undertakings and relationships that are grounded on societal expectations/ norms (Bronfenbrenner, 2005; Krebs, 2009). The relationship between the individual and this environment is bi-directional (Bronfenbrenner, 1994). The term bi-directional outlines that the athlete’s family, peers, sport club and neighbourhood influences and is influenced by their behaviour (Krishnan, 2010). Referring to the abovementioned mountaineering example, the athlete (team member) simultaneously is influenced by and influences the other team members and the leader during their summit of Mount Everest.

3.5.1.2Mesosystem

The *Mesosystem* emphasises the linkage between two or more systems specifically between the different microsystems in which the developing athlete actively participates in (Bronfenbrenner, 1994; Krishnan, 2010). For example, taking into account the nature-based extreme sports athlete engages and communicates with their family, friends, peers, fellow team members, trainers, and team leader, the linkage between the participant’s family and friends, friends and peers, family and training community, team members and team leaders are considered. The participant can fluidly move in and out of the interactions of their different microsystems.

3.5.1.3Exosystem

The *Exosystem* forms the third layer of the ecological systems theory, which directly influences the nature-based extreme sports athlete’s behaviour (Bronfenbrenner, 1994, 2005; Krebs, 2009). This system encompasses the micro- and mesosystem and as a result influences the well-being of everyone who engages with the athlete (Krishnan, 2010). The linkage between two or more settings where at least one of the settings does not contain the developing athlete characterises the exosystem (Bronfenbrenner, 1994).

Nature-based extreme sports events, contingencies, decisions and policies are all present within this setting, however the developing athlete has no control over these aspects (Johnson, 2008). Policies and decisions made in the wider level can indirectly impact the person (Krishnan, 2010). This system exercises a unidirectional influence that either directly or indirectly affects the developing nature-based extreme sports athlete (Johnson, 2008). Sports federations and governing bodies fall within this surrounding environmental system of the participant. For example, the International Canoe Federation (ICF), International Surfing Association (ISA), International Sailing Federation (ISAF), Union Internationale des Associations d'Alpinisme (UIAA), International Federation of Sport Climbing (IFSC).

3.5.1.4 Macrosystem

The *Macrosystem* forms the outermost and distal layer of the ecological systems theory (Bronfenbrenner, 1994). This layer comprises all the elements that form the nature-based extreme sports athlete's culture and the laws they must adhere to (Krishnan, 2010). There is specific reference to the belief system, bodies of knowledge, material resources, customs, lifestyles, opportunity structures, hazards and life course options that are rooted in each of these broader systems (Bronfenbrenner, 1994). It describes the overall societal culture in which the athlete lives in. Bronfenbrenner (1994, p. 40) refers to this as the "social blueprint for a particular culture or subculture." Additionally, cultural characteristics, political upheaval or economic disruption are all factors associated with the macrosystem that collectively shape the development of the nature-based extreme sports athlete (Krishnan, 2010).

This study explores nature-based extreme sports participation from a South African context. Therefore, the nature-based extreme sports athlete's macrosystem rests on a South African setting and its relevant cultural characteristics. Accordingly, the system impacts all the lower environments of the socio-ecological systems theory of the athlete. Typically, the macrosystem exercises a unidirectional influence on all three systems it encircles, including the micro-, meso-, and exosystem, as well as the developing nature-based extreme sports athlete (Johnson, 2008).

3.5.1.5 Chronosystem

Lastly, the socio-ecological systems theory describes the influence of time on the relationship between the nature-based extreme sports athlete and the four surrounding environments (settings). Chronological age, duration and nature of periodicity fall within the time element of Bronfenbrenner's socio-ecological model (Krishnan, 2010).

This brings us to the concept of Heidegger's notions of being-in-the-world[85] which asserts that without man, time would not exist; time is in man and characterises his existence (Kruger, 1988). An event has a variety of effects on the athlete and these effects can either be positive or negative (Krishnan, 2010). The *chronosystem* influences the processes within the four ecological systems surrounding the athlete. This system constitutes both a short- and long-term time dimension throughout the length of the athlete's life (Johnson, 2008).

The socio-ecological systems theory is built upon the idea that the nature-based extreme sports athlete does not develop in isolation, but rather in a variety of systems or environments (settings) (Krishnan, 2010). Additionally, these systems include both natural and built environments and interact continuously. The nature-based extreme sports athlete's development is not only shaped by their immediate environment (setting), but also through the interactions of the wider settings including the physical environment (Krishnan, 2010). Figure 3.8 illustrates the application of Bronfenbrenner's (1994) socio-ecological systems theory, which clarifies the environmental context of the South African nature-based extreme sports athlete.

[85] "We experience the world . . . not as detached subjects or pure reason, but as actual human beings who exist at a particular time and place, and who interact with their surrounding world from that position in space and time" (Matthews, 2006, p. 12).

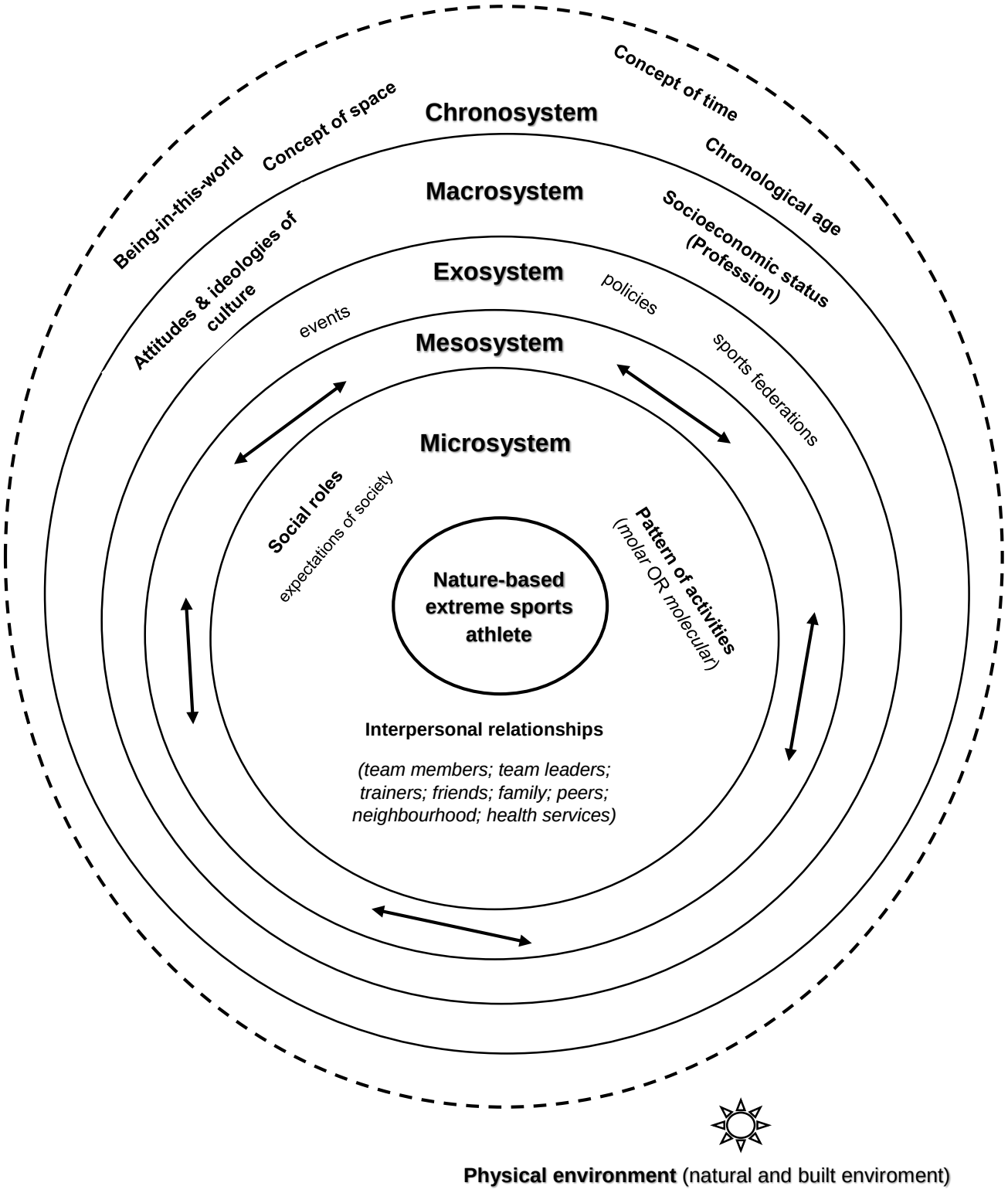

Figure 3.8. Bronfenbrenner's socio-ecological systems theory applied to South African expert nature-based extreme sports participants

3.5.2 Natural environmental degradation

The following sub-section uses littering from a South African context as an example, to holistically comprehend the meaning of natural environmental degradation[86]. The act of littering leaves behind unwanted, unnatural and contaminated elements in the environment, which is perceived as a natural environmental degrading behaviour (Green, 2001). Litter contributes to various environmental, social and aesthetic issues (Schultz et al., 2013). Bacteria, rats, roaches and mosquitoes flourish in litter and pose safety and human health hazards (Ojedokun & Balogun, 2013; Schultz et al., 2013). Plastic marine debris[87] which contaminate and pollute the oceans and other water sources has become a major issue[88] in South Africa. Research conducted on international scientific study on marine plastic pollution, identified South Africa amongst the countries who generate the highest volumes of mismanaged plastic waste (Carnie, 2017).

Littering is classified as an anti-social behaviour (Curnow & Spehr, 2011). Social problems concerning litter, includes increased crime rates (Brown, Perkins & Brown, 2004). An experimental study conducted by Keizer, Lindenberg and Steg (2008) provides evidence that social transgression like theft increases due the presence of litter. Various environmentally degraded areas in South Africa are motives for gangsterism and rampant crime (Marais & Armitage, 2004). However, excessive littering alone is not the reason for the crimes being committed, but adds to an unlawful atmosphere where the tendency to commit a crime is heightened (Marais & Armitage, 2004). The National Litter Education and Prevention Organization in the United States, called *Keep America Beautiful* found that people litter due to the following three reasons: (a) they lack a sense of ownership; (b) they believe that someone else has to pick up their litter; and (c) that the area is already littered (Garg & Mashilwane, 2015). Laziness, acting carelessly and the nuisance value of keeping the litter supports littering behaviour (Torgler, García-Valiñas & Macintyre, 2008).

[86] Environmentally degrading behaviour of humans exhausts the Earth's resources and compromise environmental sustainability (Atchia, 2002; Furrow, 2015; Mei et al., 2016; Ojedokun & Balogun, 2013). The sustainability of the natural environment is compromised by the devastating effects of global warming, urban air pollution, water shortages, environmental noise and loss of biodiversity (Steg & Vlek, 2008). These environmental problems are embedded in human behaviour (Steg & Vlek, 2008). Essentially, society is not mindful or rather mindless of their environmental behaviour.

[87] **Plastic marine debris** comprise any unwanted man-made **plastic (waste)** material that has been carelessly littered into coastal or marine environment that inadvertently makes its way out to sea.

[88] Studies by UKZN biology students demonstrated that several species of juvenile fish off the Durban coastline were growing more slowly and dying more frequently from eating microplastics (tiny fragments of plastic washed into the ocean sea from a wide variety of land-based sources) (Carnie, 2017).

The psychological tendency to evaluate or react with a certain degree of favour or disfavour towards throwing waste on bare grounds reflects the individuals' attitude towards littering (Ojedokun & Balogun, 2011). An individual's tendency to litter increases when they observe other individuals participate in littering (Torgler et al., 2008). Commonly, this type of tendency is called "people follow the crowed" (Kolodko, Read & Taj, 2016, p. 6). Therefore, the individual's behaviour is influenced by their observation of another citizens' behaviour. The behaviour displayed can be understood by examining the social learning theory, which states that an individual's behaviour is learned from the environment through the process of observational learning (Bandura, 1971). When the individual observes other people litter, they believe that their behaviour is socially acceptable (Kolodko et al., 2016).

Accordingly, littering becomes part of the social norm (Garg & Mashilwane, 2015). This phenomenon is explained as "…any norm violation that is observed tends to weaken the norm by detracting from its social validity" (Krauss, Freedman & Whitcup, 1976, p. 112). They explicate that many people justify their undesirable behaviour with the concept of "everyone does it" (Krauss et al., 1976). The relationship between littering and gender reveals that males tend to litter more than females (Ojedokun & Balogun, 2013; Schultz et al., 2013). This might be explained through the belief of many African cultures where it's the duty of a woman to clean the house (Ojedokun & Balogun, 2011).

3.5.2.1 Determinants of littering behaviour

Various reasons are put forward by scholars to explain littering[89] behaviour. People participate in littering, because it is an **easy and effortless** option (Waghorn-Lees et al., 2013). They believe it takes less effort to throw their litter on the ground than to walk to a bin. Consequently, they display a lack of ownership and believe that someone else will pick up their litter (Garg & Mashilwane, 2015). The tendency to litter is strengthened when the area is already littered or the individual views another person drop their litter on the ground (Garg & Mashilwane, 2015; Waghorn-Lees et al., 2013). Additionally, peer pressure attitudes, cause the individual to feel uncomfortable to use the bin and conform to littering behaviour (Waghorn-Lees et al., 2013).

[89] This type of degrading behaviour is easy, comfortable, forms part of an individual's daily routine and becomes a habit (Lyndhurst, 2013; Ojedokun & Balogun, 2011). Consequently, littering becomes an automatic response to dispose of waste materials. Research is divided on whether children are the main culprits in littering. Children compared to adults, litter the most (Torgler et al., 2008).

Since littering is seen as a natural environmental degrading behaviour, the determinants of littering are explained and adopted as motives for natural environmental degrading behaviour for the purpose of this study. The determinants of littering behaviour comprise all the causal elements that influence an individual's participation in littering and consequently environmental degrading behaviour. Evidently, the reader can see the use of Bronfenbrenner's socio-ecological theory. These casual elements are categorized into attitudes, subjective norms, perceived behavioural control and environmental factors (Leijdekkers et al., 2015).

3.5.2.1.1 Attitudes

Attitudes towards littering are formed based on the individual's perceived effect of littering, their laziness, the size and biodegradability of the litter, the inconvenience of keeping the litter and the probability of getting caught (Ajzen, 1991). The attitude towards certain behaviour, includes the positive or negative evaluation of performing that particular behaviour (environmentally degrading or pro-environmental). Behavioural beliefs determine the individual's attitude. An individual's beliefs are based on the consequences of their behaviour. Thus, attitudes can either have positive or negative consequences on the larger functioning network. Accordingly, an individual develops a favourable attitude towards that particular behaviour based on their belief that it has a desirable consequence for them (Ajzen, 1991). Similarly, unfavourable attitudes towards a particular behaviour are linked with undesirable consequences (Ajzen, 1991). Theory of Planned Behaviour explicates that an individual develops an attitude by evaluating the costs and benefits of performing a particular behaviour (Ajzen, 1991).

People have a positive (inclination towards) attitude towards littering, because the effort and energy used to throw the litter on the ground is less than disposing the litter in a bin (Kolodko et al., 2016). Additionally, the tendency of people to litter is built on their belief that someone else will clean it up. Their belief towards litter is therefore: "whatever, someone else will clean it." Thus, they shift the responsibility of their behaviour onto someone else, for example the municipality. The amount of people present in a setting determines an individual's tendency to litter. Therefore, their tendency to litter is based on the idea of getting caught. Individuals seated in large groups are less prone to litter, because there are more eyes watching their behaviour (Durdan, Reeder & Hecht, 1985). Interestingly, the anonymity of the physical environment is a deciding factor of littering behaviour.

Hidden areas such as forests or remote parking lots are often classified as anonymous environments (Lyndhurst, 2013). Some researchers suggest that individuals are more inclined to litter in these areas compared to an open, known and often used environment. A possible explanation for their behaviour can be that they feel that less people can observe their littering behaviour. Additionally, there is an absence of social pressures which drives individuals to litter more easily.

Similarly, the researcher asserts that people are prone to display environmentally degrading behaviour, because it is easy, uses less energy, the responsibility of cleaning-up can be shifted onto another party. If there are no lawful repercussions for their environmentally degrading behaviour, the tendency towards such behaviour is higher.

3.5.2.1.2 Subjective norms

Subjective norms refer to the perceived social pressures to either perform or not perform a particular behaviour (Ajzen, 1991). Peer pressures, personal norms[90], the type of company that surrounds the individual, their sense of community and the amount of people present influence subjective norms. The social pressures come from peers and groups who either approve or disapprove performing a particular behaviour. An individual typically complies with the beliefs of a person or group they regard as important in their environment (Ajzen, 1991). An individual's inclination towards littering depends on the type of company that surrounds them. Commonly, when a person is surrounded by their most influential peers in their social lives, they are more prone to follow the behaviours of those influential peers (Lyndhurst, 2013). A sense of community can determine an individual's littering behaviour. This refers to the individual's pride of belonging to a neighbourhood, local area and community. A poor sense of community can increase littering behaviour by 10% (Lyndhurst, 2013). In various communities, social sanctioning is a consequence for participating in pro-environmental behaviour. Therefore, an individual's fears drive them to comply with littering behaviour (Lyndhurst, 2013). Essentially, the fear of social sanctioning contributes to the compliance in environmentally degrading behaviours.

[90] Personal norms, also known as internalized norms, are likely to be formed when internalized values are communicated by peers (Lee, 2011). The reinforcement and circulation of a norm of environmental behaviour is set forth by an individual's significant network which involves their peers. Media plays a vital role in the formation of personal norms regarding environmental behaviour. The media, including radio stations, television and newspapers, provides information concerning environmental issues, adds value to these issues and defines what society deems as appropriate (Lee, 2011). Accordingly, the media and the significant people in the individual's social environment shape the values pertaining to the natural environment and establish the individual's personal norms (Lee, 2011).

3.5.2.1.3 Perceived behavioural control

Perceived behavioural control involves an individual's belief regarding the ease or difficulty of performing a particular behaviour (environmentally degrading or pro-environmental). Time constraints are directly related to perceived behavioural control. Whether an individual is in a rush or not determines their tendency to litter or not (Schultz et al., 2013). Typically, when an individual is in a rush, they tend to litter as it takes time to act pro-environmentally.

3.5.2.1.4 Environmental factors

Environmental factors comprise all the external factors that lie outside the individual and influence their behaviour towards littering. These factors include the existing litter level, the amount, distance and fullness of the bin, the characteristics (attractiveness) of the bin and the presence of penalties for wrong behaviour and rewards for right behaviour (Leijdekkers et al., 2015). The existing litter level in the area influence the littering behaviour of an individual (Keep America Beautiful, 2010; Kukreja, 2014). Research on the accumulation of litter provides evidence that individuals tend to litter more easily at environmentally polluted areas (Dur & Vollaard, 2014).

The amount, proximity and fullness of the bins available in the area influence an individual's tendency to litter (Keep America Beautiful, 2010; Kukreja, 2014; Lyndhurst, 2013; Ojedokun & Balogun, 2011). Kolodko et al. (2016) also refer to this determinant as the availability, accessibility, visibility and attractiveness of bins. The tendency to litter is enhanced when there are only a few bins available, the distance to the bin is long and the bin is already full. Whether an individual has to lift the lid of the bin, the opening size and height of the bin fall into the category of the 'characteristics (attractiveness) of the bin (Leijdekkers et al., 2015).

3.5.3 Environmental literacy

In 1968, the concept of environmental literacy was founded by Charles Roth who conducted an inquiry into the environmental literate citizen (Roth, 1968, 1992). **Environmental literacy** includes having a fundamental consciousness, awareness and comprehension towards environmental degrading problems (Roth, 1968). Based on the works of Roth, scholars have regarded knowledge, dispositions, competencies and environmentally responsible behaviours as the four interconnected facets of environmental literacy (Hollweg et al., 2011; Hungerford & Volk, 1990; Stern, 2000). These interconnected facets are interwoven into the sub-categories of environmental knowledge, environmental education, environmental sensitivity and pro-environmental behaviour.

3.5.3.1 Environmental knowledge

Knowledge comprises the information and an understanding of the functional operations of the physical, ecological, social, cultural and political spheres (Hollweg et al., 2011). However, thinking that knowledge[91] alone will translate into changed behaviour can lead to setbacks (Činčera & Johnson 2015; Ellsworth, 2013; Gray & Birrell, 2013; Metzger & McEwen, 1999). Knowledge on its own, is not sufficient in harmonizing man with nature (Herbert, 2008). Having environmental knowledge does not necessarily result in pro-environmental and responsible behaviour (Herbert, 2008). The problem is prominently embedded in the insufficient practical knowledge of people to embrace healthy lives despite the sustainable challenge they may face (Willis, 2012).

3.5.3.2 Environmental education

Hungerford and Volk (1990) confirm the importance of practical knowledge through the Tbilisi objectives for environmental education by stating that the behaviour of citizens requires an *education thrust* that stretches further than education in a traditional way. This comprises of adding active participation of society to environmental knowledge, pro-environmental attitudes and skills (Hungerford & Volk, 1990). The 1977 Tbilisi Intergovernmental Conference on Environmental Education proclaimed five objectives for Environmental Education (EE) which are categorized into awareness, sensitivity, attitudes, skills and participation regarding the environment (Hungerford & Volk, 1990). The objectives, as set out in the 1978 Tbilisi conference declaration, serve as guidelines to define an environmentally responsible citizen (Hungerford & Volk, 1990, p. 258):

(1) an awareness and sensitivity to environmental issues;
(2) various experiences and a basic comprehension of the environment and the challenges it faces;
(3) compassion towards the environment and encouragement to participate in environmental conservations;
(4) prowess for identifying and solving environmental issues;
(5) to provide social groups and individuals with opportunities to become actively involved in solving environmental issues.

[91] The provision of knowledge-based programmes can clarify misconceptions regarding environmental issues (Činčera & Johnson, 2015).

When these objectives are effectively met, an individual can be viewed as an **environmentally responsible citizen**[92] (Hungerford & Volk, 1990). The UNESCO-UNEP[93] International Environmental Education Programme (IEEP) compiled the following definition of Environmental Education:

> Environmental Education is a lifelong process with the objective of imparting to its target groups in the formal and non-formal education sectors environmental awareness, ecological knowledge, attitudes, values, commitments for actions, and ethical responsibilities for the rational use of resources and for sound and sustainable development. Environmental education emphasises the teaching of the holistic nature of the environment through interdisciplinary and problem-solving approaches (UNESCO-UNEP [IEEP], 1992, p. 1).

Environmental Education is divided into "education about; education in/through; and, education for the environment" (Le Grange, 2002, p. 83). Education *about* the environment highlights the knowledge about the natural systems and processes. Education *in/through* the environment focuses on the experiences of the learner in the environment as a way of developing competencies and values clarification capacities of the learner (Le Grange, 2002). Education *for* the environment emphasises teaching environmental values through which social change and transformation can occur. The environmental values are conveyed to the learners through their participation in action-based exploration of the natural environment and involvement in analysing and solving environmental issues (Le Grange, 2002).

3.5.3.3Environmental sensitivity

Dispositions can be attributed to an individual's tendency towards environmental sensitivity, environmental attitude, personal responsibility and their motivation to display pro-environmental or environmentally degrading behaviour (Hollweg et al., 2011). **Environmental sensitivity** embodies a sense of care and compassion towards the natural environment accompanied by a positive affection for the natural world, as viewed from a kind-hearted perspective (Peterson as cited in Nunez & Clore, 2017).

[92] Education's leading challenge is to develop a generation of pro-environmental activists, who become active responsible citizens that can make knowledgeable environmentally sustainable decisions (Lloyd & Gray, 2014).
[93] Noteworthy, the 2001 UNESCO Congress laid the foundation for Environmental Education in the 21st century. During the Congress central themes such as globalization, the protection of the biodiversity of life, the relationship between the environment and poverty and peace were acknowledged and addressed (Atchia, 2002). Environmental Education has been one of the methods used in most countries to educate the communities regarding the conservation of nature and natural resources and reducing damaging human actions (Hart, 1997).

Chawla (1998, p.19) interprets a sensitivity towards the environment as “a predisposition to take an interest in learning about the environment, feeling concerned for it, and acting to conserve it, on the basis of formative experiences”. Therefore, fostering environmental sensitivity leads to pro-environmental citizens whose mission is to support “a varied, beautiful, and resource rich planet for future generations” (Tanner, 1980, p. 20).

3.5.3.4 Pro-environmental behaviour

Competencies include an *individual’s ability* to point out environmental issues, followed by interpreting and studying it to determine possible solutions to combat them (Hollweg et al., 2011). The last element of environmental literacy encompasses **environmental responsible behaviour**, which signifies the display of eco-management, advocacy, and actions in consumer/economic, political-, and legal practice of environmental care (Hollweg et al., 2011; McBeth, Hungerford, Marcinkowski, Volk & Meyers, 2008). This asserts that an individual’s behaviour towards the environment; problem-solving attributes; together with their environmental knowledge and attitude determine if and how environmental literate they are (McBeth et al., 2008).

Pro-environmental behaviour is characterised as conscious actions performed by a person with the aim to reduce the detrimental impacts of human activities on the environment. It involves protective environmental behaviour that benefits and enhances the quality of the environment (Krajhanzl, 2010; Sawitri et al., 2015; Steg & Vlek, 2008). Consequently, pro-environmental behaviours in society are governed by the **environmental literate** person’s knowledge and comprehension of the environmental degrading state and its relevant issues (Roth, 1992; Teksoz, Sahin & Tekkaya-Oztekin, 2012). If people engage in pro-environmental behaviours, the likelihood of preserving natural resources are strengthened (Kollmuss & Agyeman, 2002; Steg & Vlek, 2008).

Figure 3.5.3. demonstrates the human-nature relationship from an ego-centric and eco-centric mindset. As seen in this figure, the “superior” human from an ego-centric perspective will only act and attempt to combat environmental degradation once they are affected. Humans’ motive to protect nature is aligned with their own benefit, excluding concerns for the impact on the rest of nature. In contrast, the “interwoven” human within and as part of the eco-centric mindset views degradation of the natural world as the degradation of humans (no matter its rank) and concerns themselves with natural conservation for nature’s sake.

An eco-centric outlook on the human-nature relationship essentially advocates that humankind should not be viewed as *apart* from nature, but rather being *a part* of it (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007). It does not consider humans as the apex of living organisms, but rather views them as an integrated part of a whole. Therefore, a nature-centred interpretation explicates that both humans and the natural world are of equal importance (Akgül et al., 2017). Therefore, humans are interlaced with the health and survival of the natural world (Thompson & Barton, 1994). Nature encompasses various ecosystems with all its resources including the biodiversity of fauna and flora and is considered as part of a larger functioning network (Imran et al., 2014). Exploring these natural facets of the local environment is said to assist the gradual development of an eco-literate person who displays eco-intelligence (Herbert, 2008).

Eco-literacy involves viewing humans as interlaced with the natural world and as part of a larger functioning network (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007). Ultimately, the survival of both humanity and nature depend on their unification and harmonious existence (Imran et al., 2014). The following observation is made to illustrate the interwoven concept: "when we try to pick out anything by itself, we find it hitched to everything else in the Universe" (Muir, 1911, p. 110).

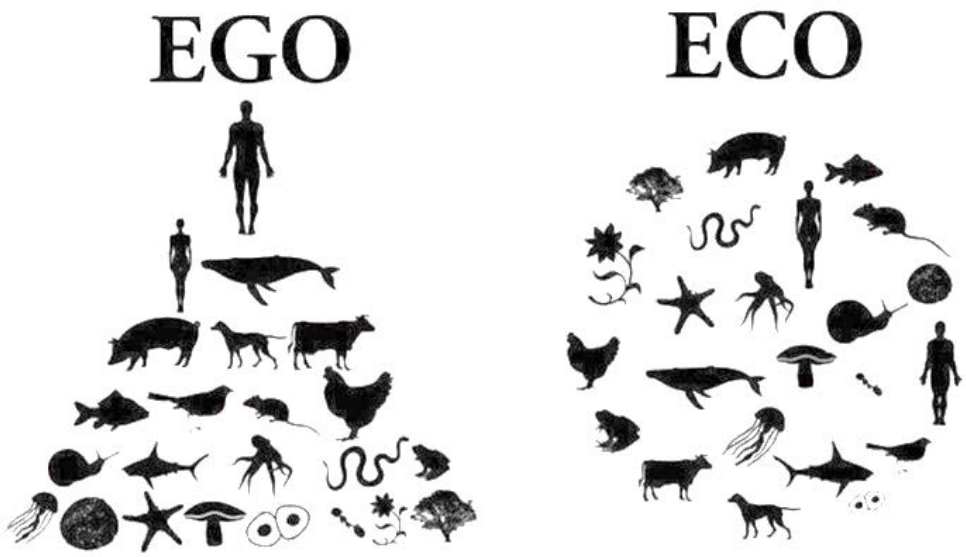

Figure 3.5.3. The human-nature relationship from an ego-centric and eco-centric mindset (*Note*. Adapted from M. Ehrnström-Fuentes, 2016, p. 18)

3.6 Conclusion

A differentiation between flow and superfluidity is made by referring to Csikszentmihalyi's interpretations of a flow state. Superfluidity is identified as an extraordinary state of consciousness, which can manifest a self-fulfilling prophecy (Bergland, 2017). Kabat-Zinn's notions regarding mindfulness are discussed and an understanding of mindlessness is sketched. Mindfulness involves the awareness which manifests through "paying attention on purpose, in the present moment, non-judgmentally to the unfolding of experience, moment by moment" (Kabat-Zinn, 1994, p. 4). Thereafter, the Mindfulness-Acceptance-Commitment (MAC) theory and its relevance to a nature-based extreme sports athlete during a nature-based extreme sports activity is explained. Potential mechanisms of mindfulness are then constructed to illustrate its facilitative role in transformation and change. Bronfenbrenner's socio-ecological theory showcases that nature-based extreme sports athletes including their unique characteristics and behaviours are embedded within a biophysical and socioeconomic environment (Coutts et al., 2014). To understand environmental degrading behaviour, littering from a South African context is used as an example. Finally, through the concepts of environmental literacy, environmental thinking, environmental education, and pro-environmental behaviour, a thorough outlook of "eco-sensitivity" is presented. The employed methodology is discussed in the following chapter.

CHAPTER 4: METHODOLOGY

4.1 Introduction

The overall purpose of this study is to explore the facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context. Since the research attempts to highlight the transformative value of nature-based extreme sports, which naïve and novice participants rarely acknowledge, the research takes a closer look at an expert's perceptions. The researcher asks the question: **How do South African 'expert' nature-based extreme sports participants develop an eco-sensitivity as a result of their participation.** The overall purpose is supported by the following objectives: (1) To determine if a transformational process has occurred due to nature-based extreme sports participation; (2) To investigate if this transformational process contributed to an increased awareness and sensitivity towards the self (body); the natural world; their fellow-man and their equipment; (3) To explore whether there is a triadic relationship (interrelationship) between the self (body); the natural world; and other people.

The research methodology outlines the manner in which the research population is selected, from which data is gathered for interpretation. The methodology includes a systematic structure within which research is conducted to answer the research question (Clark et al., 2014; Gratton & Jones, 2010). If research aims to delineate a phenomenon which depends on the perception and narratives of a person's experiences in a certain situation, it is fitting to utilise a qualitative research design (Stake, 2010). Since, this research deals with the personal lived experiences and perceptions of nature-based extreme sports athletes, a qualitative design is selected as appropriate to approach the objectives of this study and answer the research question. A qualitative approach is adopted to comprehend the internal reality of the subjective experiences of the extreme sports athletes (Terre Blanche & Durrheim, 2002).

Considering the high risks of injury and death involved during nature-based extreme sports participation, extreme sports athletes are reminded of their own mortality during their extreme activity and of their "being-towards-death" (Heidegger, 1962, p. 179-182). Studies conducted by Breivik (2011) indicate that Heidegger's phenomenological approach is well suited to interpret nature-based extreme sports, where extreme situations of confronting danger and possibly death bring deep existential structures to light in an unusual and remarkable way (Breivik, 2010; Jirásek, 2007).

Heidegger's phenomenology is principally driven by the theoretical notions of interpretative phenomenology. The selection of interpretative rather than descriptive traditions is based on the fact that the researcher incorporates her own perspectives when she analyses the studied phenomenon in addition considering the narratives of the nature-based extreme sports participant. The fusion of both the researcher and the participants narratives and perceptions creates a deeper understanding that exceeds the traditions of merely a descriptive process (Mackey, 2005).

The interpretative phenomenological traditions of Heidegger and Merleau-Ponty are used to shape the researcher's understandings of the studied phenomenon by using hermeneutics and ideography. The modus operandi for the data collection, transcription process and data analysis from which the final interpretations and themes stem are all led by the interpretative phenomenological notions. Interpretative phenomenological analysis is a peculiar way of exploring this qualitative research, because it provides a theoretical framework (Heidegger's and Merleau-Ponty's Interpretative phenomenology) including a systematic blueprint (interpretative phenomenological analytic process), which navigates the analysis of the findings (Smith & Osborn, 2007). Lastly, the reliability, validity and ethical considerations of the study are acknowledged.

4.2 Research design

This study follows a **qualitative research** approach. It utilizes a **non-probability key informant** sample in which individuals are selected based on the specific knowledge and experience they possess pertaining to their participation in a specific nature-based extreme sports activity (Jones, 2015). The research sample comprises of 10 'expert' South African nature-based extreme sports participants who participate in one or more of the nature-based extreme sports activities outlined in chapter two.

4.2.1 Qualitative research

The essence of **qualitative research** is to construct a rich, complex and holistic depiction of the lived experience of the nature-based extreme sports participant. Qualitative research differs from quantitative research in the fact that it does not produce numerical data, but rather in-depth descriptive data through language (Yeh & Inman, 2007). In this case, the researcher takes on the role of an interpreter and recognises that she has an influence on the knowledge manifested from the exploration of the extreme sports athlete's life (Yeh & Inman, 2007). Therefore, the researcher is not a passive observer or conveyer of reality, but rather assumes an active role.

One can also declare this qualitative research as emic[94] in nature, as the data manifests from an insider perspective on the nature-based extreme sports athlete. Moreover, the generated knowledge is idiographic, because it is only applicable to a narrow field of individuals (nature-based extreme sports participants), which supports transferability. This qualitative research is subjective in nature because one cannot isolate the researcher from the research process (Yeh & Inman, 2007). Hence, true objectivity within this type of research is impossible. It is crucial to note that the researcher plays an essential subjective role in how she shapes, influences, interprets, analyses and selects the theories that frame and guide this study. Thus, her own values, biases and assumptions are acknowledged. Additionally, the researcher plays a vital part in establishing the trustworthiness of the research. The trustworthiness in qualitative research reflects the credibility, transferability, validity and reliability of the inferences that are depicted from the data (Creswell & Miller, 2000). In this case, trustworthy qualitative research accepts the researcher's influences on the final interpretations.

4.2.2 Interpretative phenomenological research

Phenomenological research aims to highlight the significance of an experience as it is conceptualized by the person having the experience (Brymer & Gray, 2010). This approach acknowledges that the "lived experiences" are communicated through language[95], and thus the participant's explanation demonstrates the manner in which they perceive and interpret their own experience (Willis, 2001). Through the use of language, the depth, richness and texture of the information can be produced (Yeh & Inman, 2007). Practically, it implies that the researcher must understand the participant's narrative of their experiences to comprehend its significance (Smith, Flowers & Larkin, 2009). Phenomenology strives to interpret the hidden meanings in the phenomenon under analysis that are found in the words of the participant's narratives (Maggs-Rapport, 2000).

Consequently, this method concentrates on the "experiences" of an individual or group and the "meaning" or "meaningfulness" thereof (Thomas & Nelson, 1990). Interpretative phenomenological methods assist in setting forth "the experiences and perceptions of individuals from their own perspectives" (Lester, 1999, p.1). Interpretative phenomenology highlights the understanding of the phenomenon in context and views an individual as a self-interpretive being in the world (Taylor, 1985).

[94] The researcher (observer) places herself within the culture of nature-based extreme sports.

[95] "Language does not reflect human being but actually makes humans be, brings about human existence as communal understanding and self-understanding" (Moran, 2002, p. 270).

This means that the extreme sports athlete actively engages in the interpretation of their nature-based extreme sports activity, surrounding objects and people in their lives (Pietkiewicz & Smith, 2012). Heidegger asserts that every facet of human awareness is interpretative and consequently significance is attached to a lived experience, while its meaning is interpreted (Van Manen, 1990). The researcher has utilized Heidegger's interpretative or hermeneutical phenomenological approach to comprehend the narratives of nature-based extreme sports participants (Breivik, 2010; Jirásek, 2007). Additionally, the bodily feature of the extreme sports athlete and its involvement during their nature-based extreme sports activity, is considered by Merleau-Ponty (Breivik, 2011). This methodology involves a thorough comprehension of some of the common features of the "moving human being" and the association with humans and the natural world in the selected nature-based extreme sports (Breivik, 2011). Consequently, an inquiry of the bodily moving athlete in those nature-based extreme sports; and how the athlete is "attached to, is playing in, on and with" the natural world follow (Breivik, 2011, p. 317).

4.2.3 Constructs of interpretative phenomenology

Philosophical writings of Husserl and Heidegger underpin descriptive phenomenological and interpretive phenomenological traditions, respectively (Lopez & Willis, 2004). Phenomenology becomes hermeneutical when its method is taken to be interpretive, rather than purely descriptive (Smith et al., 2009). In this case, interpretive phenomenological traditions from Heidegger are more closely associated to the purpose of interpreting the personally lived experiences of nature-based extreme sports participants. The following four constructs of interpretative phenomenology guide this methodology and the researcher's perception of the participant (Mackey, 2005):

4.2.3.1 Being-in-the-world

Being-in-the-world is principal to interpretative phenomenology, because the nature-based extreme sports athlete's realities are invariably shaped by the world in which they live (Breivik, 2011; Moran, 2000). The most noteworthy means of being-in-the-world is to master the inquisition of one's own existence: becoming aware of your own being (Spinelli, 1989). Since the nature-based extreme sports athlete is immersed into the extreme sports-world they live in, they are inseparably associated with those social, cultural and political contexts (Lopez & Willis, 2004). Therefore, the idea of *situated freedom* navigates the nature-based extreme sports athlete choices in life. Situated freedom explicates that an individual is free to make choices, however "their freedom is not absolute; it is circumscribed by the specific conditions of their daily lives" (Lopez & Willis, 2004, p. 729).

4.2.3.2Hermeneutical process

Heidegger's insights on the hermeneutical process is based on the 'being' of understanding, rather than the manner in which being can be understood (Koch, 1995). Through the *hermeneutical circle*, the researcher aims to understand "the whole through grasping its parts and comprehending the meaning of the parts divining the whole" (Crotty, 1998, p. 92). Practically, it implies acquiring a cultivated understanding of the phenomenon by continuously advancing between its parts and the whole phenomenon (Paterson & Higgs, 2005). This association functions on a number of levels in a research document including: a single word compared to a sentence, a sentence in relation to a complete transcription and a complete transcription versus the holistic research.

The hermeneutic process[96] allows for the emergence of textual meaning founded on the researcher's interpretations by means of unmasking hidden themes within the participants' transcripts (Moustakas, 1994). Figure 4.2.3.2 represents the use of the hermeneutical circle in this study. This allows for a fluid transition between partial understanding and holism of the investigated phenomenon (Mackey, 2005). The way in which the whole phenomenon contextualises each part; and the manner in which each part of the phenomenon is incorporated into the whole to define it, is therefore recognised (Paterson & Higgs, 2005). This relates to Schleiermacher's[97] understanding of its mutual dependence and co-constitutiveness[98] by asserting that the whole can only be comprehended as it corelates to its parts, and vice versa, the parts can only be comprehended as they link to the whole (Tomkins & Eatough, 2018).

Heidegger introduces the *fore-structures of understanding*, claiming that individuals have a pre-conception or pre-supposition of something, known as a fore-having (*Vorhabe*), prior to mastering its meaning (Tomkins & Eatough, 2018). *Pre-understandings* are the understandings or knowledge preceding the interpretation (Dreyfus, 1995). The pre-understandings[99] affect how individuals interpret the text (Tan, Wilson & Olver, 2009).

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[96] It emphasises the circular process of interpretation of the IPA, which requires a repetition of engagement with the text (Smith et al., 2009).

[97] **Friedrich Daniel Ernst Schleiermacher** (1768- 1834) is also referred to as "the father of modern hermeneutics as a general study". Schleiermacher (1998) asserts that the interpreter of a text should consider both the author's inner thoughts and the language in which the text was written, to fully comprehend and analyse its meaning. Heidegger, Gadamer, and Ricoeur have furthered Schleiermacher's focus on hermeneutics as a theory of interpretation for textual expression into the 21st centuries' theory of interpretation of lived experiences.

[98] **Co-constitutiveness** considers two entities which mutually form an essential element of each other.

[99] Sequentially pre-understandings are transformed and cultivated through an interplay (Tan et al., 2009).

The nature-based extreme sports athlete and the researcher both introduce pre-understandings into the study. This process is guided by Heidegger's (1967, p. 56) assertion of phenomenology "to let that which shows itself be seen from itself in the very way in which it shows itself from itself." The fore-having is consequently shaped by any fore-sight (*Vorsicht*) and fore-conception (*Vorgriff*) elicited through perceptual or cognitive experiences (Tomkins & Eatough, 2018). The hermeneutical process applied to this study is based on Heidegger's proposal of returning to our being "which presents itself to us initially in a nebulous and undeveloped fashion, and then seeks to unfold that pre-understanding, make explicit what is implicit, and grasp the meaning of Being itself" (Crotty, 1998, p. 97).

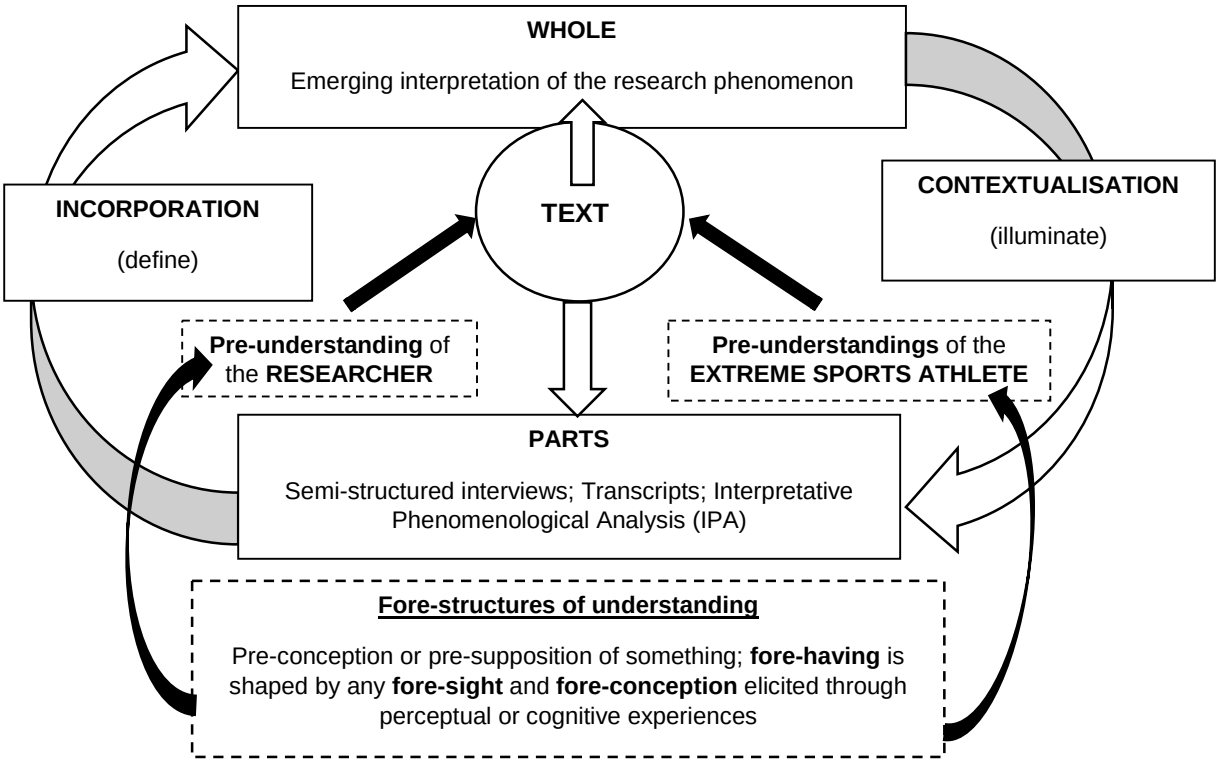

Figure 4.2.3.2. The hermeneutical process for studying nature-based extreme sports participation and eco-sensitivity from a South African context

4.2.3.3 Concept of time

Time is the foundation for all our understanding, because it permits an understanding of our past, to be able to address the present and to foreshadow future expectations (Kruger, 1988). An individual's psychological processes are guided by the manner in which they foreshadow events (Kelley, 1973). Individuals are not free from their life histories: "the conditions for a decision are given by the past whilst the act itself originates from the future, from expectance or wish or fear or desire" (Van den Berg, 1972, p. 68). Nature-based extreme sports athletes anticipate an activity by constructing its replications. It constitutes playing scenarios over and over again in their mind to justify their decisions and risk management (Kruger, 1988). Lived time precedes the scientific and spatial construct of measured time (Kruger, 1988). Essentially, without man, time would not exist; time is in man and characterises his existence (Kruger, 1988). Interpretation can only be attained if it is embedded in a consideration of time. Time is viewed as a rudimentary structure of human existence (Kruger, 1988). Concept of time is interlaced into every facet of life and the research process. It is potent to the comprehension of the being-in-this-world, since every person must be temporally situated in the world (Polt, 2005).

4.2.3.4 Concept of space

Spatiality embeds an individual in a location. Space permits individuals to attract something (a sort of proximity) or to experience something as remote (Dreyfus, 1995). Closeness can be apprehended as a reflection of an individual's concerns (Dreyfus, 1995). In this case, the interpretative phenomenological research perspective strives to comprehend the spatial situation of the nature-based extreme sports athlete's world; and the closeness and remoteness of the conditions from their description of the phenomena (Mackey, 2005). Therefore, the athlete's spatiality and the research are closely related. By making use of interpretative phenomenological approaches, the researcher strives to understand the narratives of the nature-based extreme sports athletes and their context in terms of their existence. The purpose is to examine how the nature-based extreme sports athlete fathoms their experiences within the constructs of space and time (Chapman & Smith, 2002).

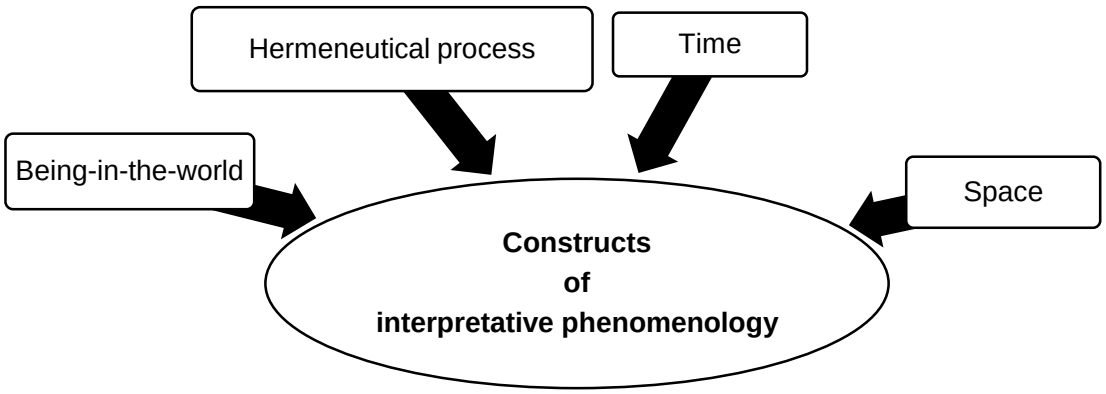

Figure 4.2.3. Concepts of interpretative phenomenology: Being-in-the-world; fore-structures of understanding; time; space

4.2.4 Researcher's position

Interpretative phenomenology involves a dynamic process in which the researcher holds an active position (Smith & Osborn, 2003). Hence, the researcher's personal experiences and prejudice are recognised as having a significant impact on the understanding of the studied phenomena and its interpretation (Kafle, 2011). The researcher needs to bring a "critical self-awareness of their own subjective, vested interests, predilections and assumptions and to be conscious of how these might impact on the research process and findings" (Finlay, 2006, p. 17).

There is a co-generation of the understanding of the investigated phenomenon by the researcher and the nature-based extreme sports athlete (Wojnar & Swanson, 2007). The researcher accepts that she plays an active role in the compilation of the literature, the interview process and interpretations of the data collected. As part of the interpretative phenomenological approach, she uses her knowledge to guide the research inquiry and does not discard any of her presuppositions or understandings (Lopez & Willis, 2004). Although, the researcher recognises her own presuppositions, she is also receptive to alternative approaches rather than concentrating on initial assumptions (Lopez & Willis, 2004).

Moreover, the researcher asserts a reflexive position throughout the research process (Jones, 2015). **Reflexivity** is "an awareness of the researcher's role in the practice of research and the way this is influenced by the object of the research, enabling the researcher to acknowledge the way in which [she] affects both the research process and outcomes" (Haynes, 2012, p. 72). A **researcher reflexive box** which involves the researcher's perceptions/ experiences/ pre-understandings is added to the interpretation of the findings to illustrate her active role.

4.3 Target research population

The target research population, according to Creswell (2009), encompasses all the individuals who present some features that are specific to the study. In this study, the target population includes South African expert extreme sports athletes who participate in one or more nature-based extreme sports activities.

4.3.1 Sample selection

The first step in selecting a sample is to define your population (Jones, 2015). The sample selection includes the 'who, why and how' participants are chosen for this study. Accordingly, this qualitative research considers the notion of transferability or the degree to which findings may apply to other similar samples within similar settings (Jones, 2015). A **non-probability key informant sampling** is selected where individuals of the population are selected based on their specific knowledge and experience, pertaining to their participation in a specific nature-based extreme sports activity or activities (Jones, 2015). The quality and the depth of the themes that are identified are determined by this sample (Durrheim, 2002). The research question is kept in mind as it represents the population used in the study. Therefore, **South African 'expert' nature-based extreme sports participants** comprise the population of this study. This implies that the participant must be a South African citizen and be an 'expert' in their field of extreme sports.

This does not yet explain the meaning of 'expert' or what type of nature-based extreme sports activity the participants must do to be selected. Therefore, additional criteria are used to refine this population. The refined sampling criteria provides a better understanding of the meaning of an 'expert'; whether the population includes males, females or both; the age of the participant and the type of extreme sports activity.

4.3.2 Sampling criteria

The following table represents the criteria used to select the South African 'expert' nature-based extreme sports participant:

Table 4.3.2 *Sampling criteria*

	Description of sampling criteria
(a)	The participant has reached a stage at which they have intensely and comprehensively experienced their nature-based extreme sports activity in its totality. This does not mean that the participant cannot learn or grow from future expeditions. It means that it excludes a novice participant or participant that undertook a nature-based extreme sports activity for the first time. The participant must at least have **two-year experience participating** in any nature-based extreme sports activity defined in (d- e), which may include the participation of one or more of these extreme sports activities in those two years. They must practice these activities altogether at least three to four times a year, which may include their preparation/training and an expedition/tour/race.
(b)	Male and female participants are selected.
(c)	The participant is above 18 years of age.
(d)	The extreme sports activity takes place in **nature** where the athlete interacts with specific natural elements and landscapes. The activity involves the interaction with natural elements such as air, water, rock, earth/ground. This excludes extreme sports in artificial settings, where the surroundings are primarily man-made structures.
(e)	**Nature-based extreme sports activities** include unconventional fields of high-risk sports, which take place outdoors, in natural spaces where the likelihood of a mismanaged action can lead to an injury or fatality. These activities involve the interaction of natural elements, which are oriented towards a combination of endurance, adventure, risk and action. Commonly, expeditions are performed in isolation with minimal availability of human and medical resources in case of an emergency. Athletes must safely mitigate challenging unpredictable environmental conditions; complete long distances; and endure long-lasting movement tasks. Nature-based extreme sports participation requires physical attainments of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof. Although deliberate risk-taking is involved, the athlete's survival depends on precautionary measures.

4.3.3 Sample size

Once the target population and sampling criteria have been determined, a list of names are compiled of all the individuals who best fit the profile based on the criteria that can be used in the research (Churchill & Iacobucci, 2002). Participants in this study include five males (mean age= 36 years) and four females (mean age= 33.4 years) ranging in experience (two to 22 years). To be eligible for the phenomenological interviewing, participants have experience with nature-based extreme sports and they are able to articulate this experience (Dale, 1996). All of the selected nature-based extreme sports athletes (participants) met the study's sampling criteria.

4.4 Research data

The research data consists of all the information gathered through conducting one-on-one semi-structured interviews with each extreme sports athlete. Each interview is audio-recorded and led by a semi-structured interview schedule. The transcription process allows for the audio-recorded data to be translated onto paper, which permits the interpretative phenomenological analysis thereof. Through interpretative phenomenological analysis, the data is refined into specific constructs, encapsulating relevant themes and their sub-categories. Final conclusions are then drawn and supported by extracts from the nature-based extreme sports participants personal accounts.

4.4.1 Data collection strategies and procedures

Data collection strategies and procedures involve the ways in which data for this research is gathered and their relevant steps. It is important to note that the researcher assumes an active role as the interviewer, transcriber, interpreter and analyst during each stage of data collection.

4.4.1.1 Semi-structured interviews

The semi-structured interviews take on a hermeneutic phenomenological approach based on the views of Heidegger and Merleau-Ponty. Phenomenology is characterised as a philosophical and methodological notion, that centres around a person's experiences and perceptions of the subjective world within which they exist (Jones, 2015). Data is collected via one-on-one interviews with the nature-based extreme sports athlete (Jones, 2015). A semi-structured interview schedule is designed to smoothly guide the interview process. It is important to note that although the semi-structured interview schedule navigates the interviews, the interviews are not bound to it (Smith & Osborn, 2007).

Guidelines used by the researcher during each semi-structured interview includes (Smith & Osborn, 2007): (1) determining rapport with the extreme sports athlete; (2) being flexible in the use of probes, especially during the surfacing of interesting scenarios; (3) being aware that there is not a fixed order of asking the questions; (4) knowing that the interview can attend to the extreme sports athlete's interests and concerns. Because the responses of the extreme sports athlete are determined by the direction of the interview, it may bring to light unthought of issues (Smith & Osborn, 2007). The nature-based extreme sports athlete is regarded as the "experiential expert on the subject" and essentially, optimal opportunity is permitted for their narration of their nature-based extreme sports experiences (Smith & Osborn, 2007, p. 59).

4.4.1.2 Constructing semi-structured interview schedule

Constructing the semi-structured interview schedule[100] in advance enables the researcher to hypothesize on matters related to the present research problem and research question (Smith & Osborn, 2007). Furthermore, it allows the researcher to consider possible difficulties with regards to the phrasing of the questions or certain sensitive topics; and to deliberate how to address them (Smith & Osborn, 2007). Once the ways of approaching the interview and addressing difficulties have been considered, the researcher can confidently conduct the interview (Smith & Osborn, 2007).

4.4.1.3 Interview approaches and considerations

The purpose of the interview is to ensure the validity of the data (Jones, 2015). To accomplish this validity, the participants need to be willing to provide the necessary information during the interview process. The participants should not feel coerced into completing the interview (Jones, 2015). The interview process should be a pleasant and satisfying experience to ensure the interviewee willingly co-operates (Frankfort-Nachimas & Nachimas,1996). Therefore, the researcher gives a good impression of herself and her prospective study. This is achieved by thoroughly informing the participants of the interview process (Jones, 2015). The interview is conducted at a convenient time and place suggested by the interviewee (Jones, 2015). The interviewee should be aware of the significance of their contribution to the study. The researcher needs to be self-assured and display confidence in their field of research, and accordingly build credibility (Jones, 2015). Although the researcher needs to exhibit a degree of competency in their study area, she needs to display a willingness to learn from the participant (Jones, 2015). **Reflexivity** throughout the research process should be considered (Jones, 2015). This should be applicable to the researcher's personal characteristics and ability to conduct interviews. Member checking (informant feedback) can also be used by the qualitative researcher to ensure credibility of the study (Anney, 2014).

4.4.1.4 Recording the interview

Recording the data, either through written notes or audio recordings is a vital aspect of the interview process (Jones, 2015). It is impossible to remember all the data and should be captured in some form to transcribe it efficiently (Jones, 2015). Before any of the conversations are recorded, the researcher first gains written consent[101] from the selected nature-based extreme sports athletes. Written notes can be taken without recording the

[100] View Appendix C: Semi-structured interview schedule.
[101] View Appendix D: Informed consent letter.

interview; however, the researcher's concentration becomes divided between what the extreme sports athlete is saying and writing notes (Jones, 2015). Consequently, a loss of harmony between the researcher and the extreme sports athlete may exist (Jones, 2015). Additionally, in the process of only writing notes, the researcher may omit important information and the manner in which a question is answered (Jones, 2015). Therefore, this study audio-records the interviews as it builds better harmony with the extreme sports athlete and captures the essence of the relevant interview.

The recordings may contain a large amount of irrelevant data, that the researcher needs to analyse (Jones, 2015). By making concise hand-written notes, the researcher can mark significant expressions or nuances by the nature-based extreme sports athlete, which can assist in the deciphering of sections of irrelevant audio-recorded data. For optimal data collection this study makes use of **audio recordings** and **concise hand-written notes**, as suggested by Jones (2015). Directly after the interview, a moment is taken to test the recorder to ensure that the whole interview has been recorded. The selected extreme sports athletes have the alternative choice to do a telephonic interview if a face-to-face (in person) interview is not possible.

4.4.2 Transcription procedure

Each audio-recorded interview is manually transcribed. Transcription allows for the familiarization of the collected data (Smith & Osborn, 2007). The whole interview with the relevant interview questions are all part of the transcription (Smith & Osborn, 2007). A margin on both sides of the paper is left open for the analytic notes (Smith & Osborn, 2007). As this study follows an interpretative phenomenological approach, the transcription process follows a *semantic structure* (Smith & Osborn, 2007). Therefore, all the spoken words comprising the false starts, notable pauses and laughs or any other momentous expressions are captured in the transcripts (Smith & Osborn, 2007). This relates to Braun and Clarke's (2006, p. 88) view of transcribing, in which they acknowledge transcription as "an interpretative act, where meanings are created, rather than simply a mechanical act of putting spoken sounds on paper." The **transcription process** is lengthy and depends on both the clarity of the audio-recordings and the researcher's typing capabilities (Smith & Osborn, 2007). The researcher accommodates for roughly five to eight hours transcription time per hour of recorded interview. Once the transcription of each interview is completed, the transcribed data is then read through, while listening to the recorded audio to ensure that the transcription is an accurate account of the relevant interview. This provides a holistic perspective of the interviews before analysing the data.

4.4.3 Data analysis procedure

An **Interpretative Phenomenological Analysis (IPA)** is implemented to organise the transcribed data from the semi-structured interviews. The goal of this analysis is "to explore in detail how participants are making sense of their personal and social world, and the main currency for an interpretative phenomenological analytic study is the meanings particular experiences, events, and states hold for participants" (Smith & Osborn, 2007, p. 54). In this case, the purpose is to peculiarly explore the nature-based extreme sports athlete's understanding of their personal and social world in terms of their nature-based extreme sports participation and the specific meanings their experiences hold. *Hermeneutics* (interpretation) and *ideography* (representation of ideas) is firmly rooted within this phenomenological analysis (Smith et al., 2009).

This **idiographic** method of data analysis focusses on the extreme sports athlete's perceptions and considers their personally lived experiences (Smith, 2004). The ideographic nature of IPA focusses on the personal perspectives and experiences of each selected nature-based extreme sports participant, which support the transferability of findings (Smith, 2004). The value in ideography in this research lies within the examination of an individual case before identifying the convergences and divergences of participants' narratives (Smith, 2011). Analysis of the write-up of transcript extracts for each participant acknowledge the individual experiences of the nature-based extreme sports participant.

The understandings and meanings of the specific experiences or events lived by the nature-based extreme sports athlete are the foundation of this study (Smith & Osborn, 2007). By applying phenomenological notions, the researcher aims to identify 'that' specific meaning of a particular phenomenon by concentrating on the palpable experiential narratives immersed in the extreme athlete's daily living (Langdridge, 2007). Relatedly, phenomenology entails a reflective[102] analysis of the life-world experiences of the nature-based extreme sports athlete and researcher (Moustakas, 1994; Von Eckartsberg, 1986).

Hermeneutics allows for interpretation and the formation of insights on the phenomenon at hand, involving nature-based extreme sports participation and the development of eco-sensitivity. Additionally, applying the hermeneutical process to a text during transcription can be perceived as an "opening of the text" (Wong, 2001). Thus, the researcher needs to not only read the text, but also listen to it as if in a dialogue with it (Wong, 2001).

[102] To recollect and recognize experiences.

The dialogue allows for *active participation* where the meaning of the teaching of the text unfolds. In this way, the principles of Lieh-tzu in which the intention of the text is conveyed by permitting the "text to speak for itself" becomes relevant to this study (Wong, 2001, p. 15). The following notions of hermeneutics are applied to understanding the texts in the transcripts (Wong, 2001, p. 15):

i. A text consists of multiple levels of meaning. The meaning conveyed in the semantics of the text becomes the surface meaning (what is spoken in the text).
ii. How the words are spoken represent a deeper level of meaning.
iii. The "intention" of the text (its voice) allows for even deeper levels of meaning.
iv. When the researcher "listens", these intentions can be realised.
v. The aim is to "open" the text for the different levels of meanings to unfold. Spiritual text (transcendental text) are said to have various levels of meaning.

Interpretative phenomenological analysis follows the traditions of hermeneutics by incorporating the researcher's active role in the process (Smith, 2004). Moreover, the use of a process of reflexivity is encouraged in which the researcher's presuppositions are recognised and then disclosed (Smith, 2004). **Reflexivity**[103] involves the evaluation of the position of the researcher within the study (Brackenridge, 1999).

Furthermore, the strong associations between the researcher and nature-based extreme sports athlete are essential in establishing analysis of the truth of any results or findings (Brackenridge, 1999). The essence of interpretation and phenomenology in the interpretative phenomenological analysis, proposed by Smith et al. (2009, p. 37), reveal that "without the phenomenology, there would be nothing to interpret, without hermeneutics, the phenomenon would not be seen." Significant themes are identified whilst remaining true to the personal accounts of the nature-based extreme sports participant (Eatough & Smith, 2006). The incorporation of ideography reflects an extensive analysis on isolated instances and the contribution of contextual perceptions of the nature-based extreme sports participant (Pietkiewicz & Smith, 2012). Thus, it is important to create conclusions only after thoroughly considering the isolated instance (Pietkiewicz & Smith, 2012).

[103] A reflexive box which involves the researcher's perceptions/experiences/pre-understandings is added to the interpretation of the findings to illustrate her active role.

The four potent constructs of interpretive phenomenology of being-in-the-world; hermeneutical process; concept of time; and concept of space are presented in the data analysis as they manifest through the researcher's and nature-based extreme sports athlete's perceptions. **Subjectivity** of the researcher's experiences is totally connected to the nature-based extreme sports participation and eco-sensitive contexts which introduces the *being-in-the-world*. The researcher has the choice of selecting and identifying the final themes as they manifest through the interview-and-transcription process, however, the researcher's situated freedom is regulated by her environmental context (Lopez & Willis, 2004). The preceded awareness that the researcher has with regards to nature and eco-sensitivity, as well as some background in indoors extreme sports participation implies the influence of the fore-structures of understanding of the researcher on the identified themes.

This outlines the *hermeneutical process*. Mackey (2005, p. 182) confirms that the influence of the fore-structures on the interpretations "allows [for] that which is already understood, to be revealed." Ultimately, the existing awareness of the researcher on the phenomena are building blocks for the manifestation of the themes. The idea of *time* is crucial in comprehending the extreme sports athlete's experiences; their participation in nature-based extreme sports; and how their participation may facilitate an eco-sensitivity. As part of the interpretive phenomenological practice, all the experiences are submerged in time, which enables the rational experience of the apprehension of an individual's past, present and future (Mackey, 2005).

Placing the analysis in the extreme sports athlete's experiences of time permits their perception of reality. Articulating the extreme sports athlete's experiences of participation in nature in terms of time, lays the foundation for the outcomes of their experiences of eco-sensitivity. In the interpretive phenomenological analysis, the extreme sports athlete is positioned in a certain nature-based arena, addressing the concept of space. Data analysis strives to delineate the experiences of the extreme sports athlete in terms of the remoteness of their specific nature-based extreme sports activity. A sense of closeness towards nature, because of their participation in a nature-based extreme sports activity is determined by the experience of the natural world they are surrounded by (experience of location) (Mackey, 2005).

4.4.3.1 Interpretative phenomenological analytic process

Interpretative phenomenological analysis (IPA) is subjective in nature as it includes the researcher's perceptions of the phenomenon (Smith & Osborn, 2007). The analytic process is comprehended in terms of an empathetic understanding: a sense of closeness to the data (Terre Blanche, Durrheim & Painter, 2006). The following cyclic stages compile the iterative process of the IPA[104] employed in this study. Data analysis is approached with the hermeneutic circle in mind with the purpose to comprehend and illuminate the part-whole relationships of findings.

Stage 1: Searching for themes

The first stage of the IPA process, which encompasses the searching of themes, consists of two parts (Smith & Osborn, 2007). The first part involves the researcher's initial encounter with the data from the transcripts. Transcripts are read numerous times, after which the left-open margin is used to mark any striking and interesting quotes from the nature-based extreme sports participant (Smith & Osborn, 2007). **Reading** and **re-reading** enables a familiarisation with the data: a familiarisation with the narratives of each nature-based extreme sports athlete. Subsequently, initial notations are transformed into preliminary themes. An umbrella of themes that manifest from the specific extract (form analysed transcript) mirrors the richness of the data (Smith & Osborn, 2007).

Part 1: Initial encounter with the data (text)

Thoroughly reading through and re-reading the transcripts, which permits the active engagement of the researcher (Smith & Osborn, 2007). Notations of whichever impression, observations and reflections during re-reading the texts are then captured. By re-reading the transcripts, new insights are introduced (Smith & Osborn, 2007). This is done in conjunction with listening to the audio-recordings of the participant. Repeated phrases are noted, while marking the researcher's queries, own feelings and emotions and delineating the used language in the texts (Biggerstaff & Thompson, 2008). The essence and sense of personality of the nature-based extreme sports athlete is, is also highlighted during this stage (Smith et al., 2009). Convergence and divergence, amplification and contradictions made by the nature-based extreme sports athlete are noted (Smith & Osborn, 2007). Initial observations are documented in a single (left-hand) margin of the transcript (Smith, Jarman & Osborn, 1999).

[104] See Figure 4.4.3.1 for a visual illustration of the interpretative phenomenological analytic steps.

Part 2: Identification of preliminary themes

The searching of themes is continued by the identification of preliminary themes (Smith & Osborn, 2007). Within this stage, initial notes documented on the left-open margin on the transcripts are translated into holistically compact phrases, reflecting the essence of the analysed text (Smith & Osborn, 2007). This is accomplished by returning to the start of the transcript and using the right-open margin to log any **theme topic** that manifest (Smith & Osborn, 2007). A theme topic consists of one to three words and provides a holistic summary of the related spoken words of the nature-based extreme sports participant. Risk perception; transformations, and eco-sensitivity are examples of theme topics. The researcher should be capable of identifying concepts, which are distinguished enough to enable theoretical associations between scenarios, but still capture the uniqueness of the account (Smith & Osborn, 2007).

Stage 2: Connecting the themes

The preliminary themes are listed in chronological order as they surfaced during the reading of the transcript (Smith & Osborn, 2007). Preliminary themes consist of a primary (superordinate) theme which branches into secondary (subordinate) themes. Secondary or subordinate themes assert a hierarchical association (Smith et al., 1999). Once the manifested themes are listed on a piece of paper, associations between them are drawn (Smith & Osborn, 2007). Thereafter, an analytic or theoretical structuring of these themes follow while the researcher attempts to understand their meaning (Smith & Osborn, 2007).

Part 1: Grouping themes into clusters

The manifested themes are grouped into “clusters” or ideas by pinpointing their affiliation to each other (Smith & Osborn, 2007). A comparison between the affiliations and the actual words of the nature-based extreme sports participant are then made in accordance with the audio-recordings to ensure the consistency of the findings (Smith & Osborn, 2007). Essentially, this stage supports the identification of primary themes (superordinate themes) and discovery of secondary (subordinate) themes which assert a hierarchical relationship (Smith et al., 1999). A **hierarchical nodes tree** is created to visually illustrate the organisation and association of themes. The top node represents the topic theme, followed by the superordinate or primary themes which branches into subordinate or secondary themes. In this way linkages and identification of convergences and divergences between the nature-based extreme sports participants'' accounts can easily be made.

Part 2: Tabulating themes of each transcript

A table of themes including the theme topic, superordinate (primary) and subordinate (secondary) themes is constructed for each transcript (Smith et al., 1999). Quotations of the lived experiences of the participants in accordance with the theme topic, primary and secondary themes are highlighted on the transcript itself (Smith et al., 1999). A column on the table is left open to indicate a page-line code which is used to refer back to the relevant quotes. For example, if the quote is on page 3 of the current transcript and the start of the quote is on line 12, it will be indicated as 3.12 in the quote column.

Stage 3: Continuing the analysis with the next transcript

During this stage, one of two options for the analysis of the next transcript can be chosen (Smith & Osborn, 2007):

(1) The identified themes from the initial transcript become a template that directs the analysis of the next transcript.
(2) The next transcript is analysed afresh, putting aside the themes identified in the initial transcript.

In this research, the identified themes from the initial transcript are a template that directs the analysis of the next transcript, however, new ideas that surface are documented and recognised. Furthermore, the researcher is attentive towards the similarities and differences in the data.

Stage 4: Writing-up of themes into concluding statements

Lastly, the final themes are document in a master list (table format) from which concluding assertions are drawn that delineate the inherent meanings of the nature-based extreme sports athlete's experiences (Smith & Osborn, 2007).

Part 1: Master list of final themes

After analysing and tabulating identified themes of all the transcripts, the researcher subjectively considers the **"master list of final themes"** which best represent the purpose of this study. The study's objectives and research question are kept in mind during the development of the master list of themes. Within this list the final theme topics with their associated primary (superordinate) and secondary (subordinate) themes are captured.

Part 2: Write-up and interpretation of themes

This stage organises the themes into a form of storytelling. This narration of analysis is broadened by the process of explicating, portraying and refining of themes (Smith & Osborn, 2007). Each theme is supported by relevant quotations which best represent the personal accounts of the nature-based extreme sports athlete (Smith et al., 1999). These quotations embody the "narrative argument interspersed with verbatim extracts from the transcripts to support the case" (Smith & Osborn, 2007, p. 76). A clear distinction is further made between the accounts of the extreme sports athlete and the researcher's interpretations (Smith & Osborn, 2007).

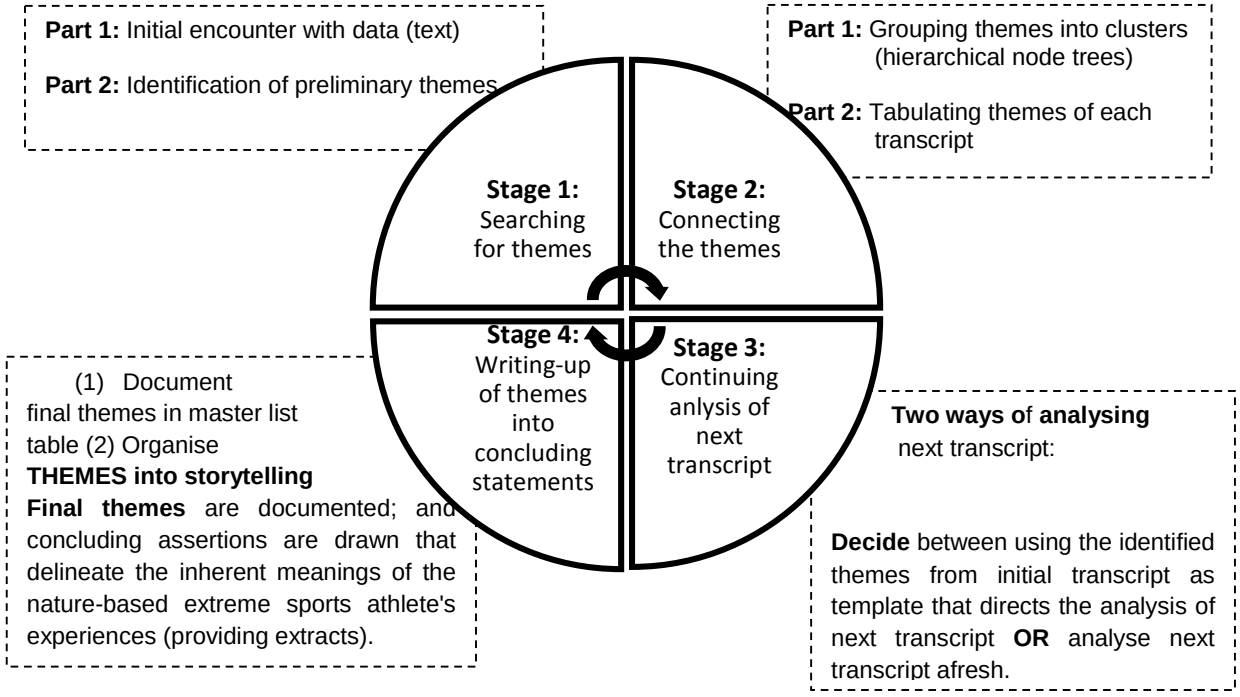

Figure 4.4.3.1. The employed cyclic process of the interpretative phenomenological analysis (IPA)

4.5 Validity and reliability considerations

Validity and reliability are vital facets of any type of research (Brink, 1993). Peculiarly addressing these facets determines the credibility and trustworthiness of this study (Brink, 1993; Golafshani, 2003). In qualitative research, validity connotes the appropriateness of the mechanisms, processes and data utilized (Leung, 2015). **Validity** considers the accuracy and truthfulness of the findings (Brink, 1993). Firstly, the validity of the desired outcome is determined by the research question (Leung, 2015). Thereafter, the suitability of the selected methodology, its design, sampling and data analysis in attempt to answer the research question must be determined (Leung, 2015). Lastly, the results and conclusions made from investigations for the sample and context must be appropriate.

Reliability considers the consistency, stability and repeatability of the participant's narrative (Brink, 1993; Grossoehme, 2014). The ability of the researcher to accurately collect data and record the participants accounts determines the reliability of the study (Brink, 1993). The **trustworthiness** of the research process and results can be enriched by the following five approaches suggested by Silverman (2009): provide refutational analysis, compare data constantly, utilize data comprehensively, be inclusive of the deviant case and make use of tables.

To facilitate credibility of the study, it is necessary for the researcher to show a **sensitivity to the context** in which the study is to be conducted (Yardley, 2000). It can be achieved through building rapport; identifying the subject-knowledge imbalance between the researcher and the selected nature-based extreme sports participant and adopting an emphatic approach to gathering data. A prolonged interaction with the topic under investigation permits a **commitment** to and **rigour** of the research process involving the data collection, transcription process and interpretation of data through correlating it to relevant literature (Yardley, 2000). Rigour can further be improved through the selection of an appropriate research sample, to achieve the purpose and objectives of the research (Tracy, 2010).

Reliability can be enriched through designing a standardised interview schedule that guided the interviews; ensuring a consistent interview environment by only allowing the presence of the interviewee and researcher; and recording the interview with the nature-based extreme sports athlete's (interviewee's) consent (Jones, 2015). By transcribing he interview shortly after the interview concludes can further enhance the reliability of the study, since the information is fresh in the memory of the researcher. **Member checking** can also serve as a way to achieve reliable data, by restating and summarising information and questions with the nature-based extreme sports participant during the interview process, which determine the accuracy of the data collected. The nature-based extreme sports participant has the opportunity to either affirm that the summaries reflect their feelings, views and experiences or restates their intentions. The researcher can enrich the **trustworthiness** of the research process by providing refutational analysis, comparing data constantly, utilizing data in a comprehensive way, including deviant cases and presenting findings in tables and figures (Silverman, 2009). Chapter six discusses whether and how the reliability and validity is achieved.

4.6 Ethical considerations

Contact with the potential research population and data collection only commences once approval from the Research Ethics Committee was given. **The Research Ethics Committee of the Faculty of Humanities at the University of Pretoria** formally approved this study and gave it ethical clearance on **25 February 2019** (view Appendix B). Qualitative research, which involves the interaction with people in their everyday environments demands an awareness of the possible ethical issues that may stem from such engagements (Orb, Eisenhauer & Wynaden, 2001). Thus, the practice of suitable ethical principles can safeguard the participants in this study from any misconduct (Orb et al., 2001). Consequently, the researcher has the responsibility to protect every extreme sports athlete who participates in this study from potential physical or emotional harm. As part of this protection, the selected participants in this study have the right to be informed regarding the purpose of the study; they have the liberty to decide whether or not they want to participate; and they have the freedom to withdraw from this study at any time without any repercussions (Orb et al., 2001).

The purpose of the informed consent process is to provide an understanding of the expectations of the participants and guarantee the integrity of the researcher. The participant is thus ensured of being handled with respect (De Vos, Strydom, Fouche & Delport, 2011). Initial contact with the selected participants is made via an electronic mail (e-mail) and willingness to participate in the study is determined. The e-mail contains a short introduction on who the researcher is, the reason for approaching them and the purpose of the study. A *participant information sheet* delineated the nature, aims and objectives, and criteria of the study (see Appendix D).

The given overview of the nature of the research enables them to make an informed decision regarding their participation. Once the participant shows willingness and voluntarily agrees without any coercions to participate in the study, the attached written *informed consent form* provided is completed, signed and submitted to the researcher, prior to conducting the interviews (see Appendix D). By signing the informed consent form, the participant voluntarily gives permission that their interview may be audio-recorded and typed up as a written document or transcript for the purpose of presenting it in this dissertation. They are also advised that some of their comments may be included in a journal article or conference paper/presentation, however, their identity would be kept anonymous (via use of name coding).

Each participant in this data set is assigned a **name code**, which was allocated to them based on the order in which an interview was conducted with them (e.g. Extreme Sport Participant 1 (male) – ESP001M; or Extreme Sports Participant 9 (female) – ESP009F). The name coding ensures that their identities is kept anonymous and allows for privacy and confidentiality (Jones, 2015).

Any queries of the participants are swiftly addressed as to ensure a positive, comfortable and trustworthy relationship between the researcher and participant. Accordingly, participation in this study is based on a voluntary sample where the selected extreme sports athletes are aware of their participation. This awareness allows them to freely withdraw from the study at any time, should they feel the need to, at any stage in the research process. The selected participants are also informed that no compensation is given to them for their participation in the study.

4.7 Conclusion

A qualitative research design involving a non-probability key informant sample was selected as most appropriate for the purpose of this study, which involves the interpretation of an individual's lived experiences who possess specific knowledge and expertise on the studied phenomenon. The research population includes 10 South African 'expert' nature-based extreme sports athletes. The studied phenomenon includes if and how nature-based extreme sports participation can facilitate eco-sensitivity as viewed from a South African context. Therefore, the research question: "How do South African 'expert' nature-based extreme sports participants develop an eco-sensitivity as a result of their participation?" can be answered by following the theoretical underpinnings of Heidegger's and Merleau-Ponty's interpretative phenomenology and the context it provides for the implementation of the IPA method.

Four constructs of interpretative phenomenology identified by Mackey (2005), namely being-in-the-world; hermeneutical process; concepts of time; and concepts of space, that guides the manner in which the research is approached has been highlighted. The selected data collection strategy involves one-on-one semi-structured interviews guided by a semi-structured interview schedule. Interviews are audio-recorder while concise hand-written notes are taken, whether the interview is conducted in person or telephonically. This follows a manual transcription of each recorded interview, where the researcher considers a five to eight hours transcription period per hour interview done.

The adopted interpretative phenomenological analysis involves a four-stage iterative process encompassing the (1) searching of themes; (2) connecting of themes; (3) continuing the analysis with the next transcript, and (4) the write-up of themes into concluding statements.

Moreover, the researcher's reflexivity in the study is addressed to showcase her active and subjective involvement in the interview process, transcription process, interpretation and analyzation of data gathered; as directed by the interpretative phenomenology. Not only does the adopted qualitative approach recognise the researcher's pre-understandings of the phenomena, it also recognises the internal reality of the subjective experiences of the selected nature-based extreme sports athletes. Noteworthy ethical considerations reveal that the nature-based extreme sports athletes are informed of the true nature of the study; they willingly choose to participate; they are required to provide written consent without coercion; and are aware that they have the liberty to withdraw from the study at any time, as to rule out any misconduct. These ethical considerations are attended to before any data collection commences. The interpretation of the findings from the semi-structured interviews conducted with the South African 'expert' nature-based extreme sports athletes are discussed in the next chapter.

CHAPTER 5: FINDINGS AND INTERPRETATIONS

5.1 Introduction

This study undertakes to explore the facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context. Theoretical underpinnings of Heidegger's and Merleau-Ponty's interpretative phenomenology and the context it provides for the implementation of the interpretative phenomenological analysis (IPA), are used to answer the research question. This study's research question of ***How do South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity?*** is thus kept in mind during the data analysis. Hermeneutics (interpretation) and ideography (representation of ideas) is firmly rooted within the employed IPA (Smith et al., 2009).

The three objectives, which support the overall purpose of the study are aligned with the findings and attempt to answer the aforementioned research question. The objectives set out to determine if a transformational process has occurred due to nature-based extreme sports participation; to investigate if this transformational process contributed to an increased awareness and sensitivity towards the self (body); the natural world; their fellow-man and their equipment; and to explore whether there is a triadic relationship (interrelationship) between the self (body); the natural world; and other people.

As part of this exploration, personally lived experiences of 10 South African expert nature-based extreme sports athletes[105] are considered. This is in done in response to traditional findings regarding nature-based extreme sports, which neglect to include data collected directly from the participant as identified in the problem statement (Sparks, 2016). Each participant is introduced through a name code[106], which is allocated to them based on the order in which an interview is conducted with them. Name coding ensures that their identities are kept anonymous and allows for privacy and confidentiality (Jones, 2015). Once a one-on-one semi-structured interview is completed with each participant as guided by a semi-structured interview schedule, manual transcription commenced.

[105] Non-probability key informant research sample is chosen based on the specific knowledge and "expertise" of each nature-based extreme sports participant (Jones, 2015).

[106] In a table format, the type of nature-based extreme sports activity is indicated next to the name code of each participant. In the same table, each participant's gender, race and level of experience in years is presented (view Table 5.1). E.g. Extreme Sport Participant 1 (male) – ESP001M; or Extreme Sports Participant 9 (female) – ESP009F).

Idiographic data analysis focusses on the nature-based extreme sports athlete's perceptions and experiences, from data collected directly from the participant (Smith, 2004). Four constructs of interpretative phenomenology identified by Mackey (2005), namely being-in-the-world; hermeneutical process; concepts of time; and concepts of space guide the manner in which the data analysis is approached. Each audio-recorded interview is **manually transcribed** which allows familiarization with the collected data (Smith & Osborn, 2007). The whole interview with the relevant interview questions are all part of the transcription (Smith & Osborn, 2007). A margin on both sides of the paper is left open for the analytic notes (Smith & Osborn, 2007). As this study follows an interpretative phenomenological approach, the transcription process follows a **semantic structure** (Smith & Osborn, 2007). Therefore, all the spoken words comprising the false starts, notable pauses and laughs or any other momentous expressions are captured in the transcripts (Smith & Osborn, 2007). Each transcript is then read through, while listening to the recorded audio to ensure that the transcription is an accurate account of the relevant interview. Listening to the recordings while confirming the information on the transcripts provides a holistic perspective of the interviews before analysing the data.

An overview of the **interpretative phenomenological analysis (IPA**) process is provided before presenting a discussion on the final themes. The employed IPA of the collected data incorporates a four-stage iterative process encompassing the searching of themes; connecting of themes; continuing of analysis with the next transcript; and write-up of themes into concluding statements. The searching of themes involves the initial encounter with the data (text) and identification of preliminary themes. Connecting of themes requires grouping the preliminary themes into clusters which are then tabulated into primary (superordinate) and secondary (subordinate) themes which represents a theme topic. The **master list of themes** including applicable quotes from the nature-based extreme sports participants are linked to relevant literature and interpreted by the researcher. Analysis of final themes are presented under the set objectives, which serves to answer the research question.

The researcher's reflexivity is addressed in a **researcher reflexive box** to demonstrate her active and subjective involvement in the interview process, transcription process, interpretation and analyzation of data gathered. Throughout the research process the researcher accepts and is aware of how this subjective role may influence the findings and interpretation (Merriam & Tisdell, 2016). The researcher's pre-understandings of the phenomena are therefore recognised.

5.2 Analysis of interview process

Interviews were conducted by the researcher between the time period of **29 April 2019** and **4 July 2019**. Five interviews were done in person, face-to-face with the nature-based extreme sports athlete and five interviews were completed telephonically. All 10 interviews were **audio-recorded** and transcribed for interpretative analysis. Each interview was arranged and individually conducted at a convenient time and place suggested by the nature-based extreme sports participant. Only the researcher and the nature-based extreme sports participant were present in the interview process. The participants were not coerced into completing the interview and were reminded that they are free to withdraw from the study at any time should they feel inclined to do so (Jones, 2015). Before the start of each interview the participant was thoroughly informed of the interview process and the purpose of the study. Opportunity was given to them to ask questions about any concerns, which the researcher clarified before commencing the interview.

Although the nature-based extreme sports participant read through, completed and signed the **informed consent** form provided to them prior to arranging an interview, the researcher verbally confirmed with each participant their willingness to participate in her study. Once their willingness was established, the researcher reminded the participant that the interview will be audio-recorded and then typed up as a written document or transcript for the purpose of presenting it in this dissertation. They were also advised that some of their comments may be included in a journal article or conference paper/presentation, however, that their identity would be kept anonymous (via use of name coding).

The researcher followed the same **semi-structured interview schedule** throughout each interview. However, due to the conversational nature of the interviews, each participant was not asked the questions in the same exact order as the previous participant as to ensure the flow of the interview continues. Since the semi-structured interview schedule served to navigate rather than force the interviews, it allowed for natural conversations between the researcher and nature-based extreme sports participants. The natural conversations allowed for a comfortable setting and ensured the flow of the interview and data collection process. In cases where the participant did not understand the question or seemed unsure, the researcher provided examples related to the question and clarified or restated the question differently. Clarification of questions was also given when the researcher noted that the participant's answers did not correlate to the question being asked.

Both open-ended and a few close-ended questions were asked during the interviews, which enabled data rich conversations with each participant. The participants were allowed to share as much or as little as they wanted to regarding their nature-based extreme sports participation. The questions asked, elicited various emotions in each participant ranging from happy, joyful, positive, content, angry, sad, negative and hopeful. None of the manifested emotions caused a disruption in the flow of the interview or overwhelmed the participant in such a way that the interview had to be stopped. All the participants willingly chose to complete the interview. It was evident that each participant had a different energy when they answered the questions. Some participants talked very fast, their answers were short and straight to the point. Some really enjoyed elaborating on the topic, sharing in-depth moments and reminiscing on the question asked. The participants' voices varied from soft and shy, informal, confident, vibrant, loud and passionate.

The participants energy enabled the researcher to decide what questions to ask next. In some instance, the researcher noted that the next question has already been answered by the participant, therefore the researcher knew the flow of the semi-structured interview questions of by heart and was able to keep the conversation going without repeating an already answered question. These observations of the researcher permitted a time effective interview. **Time effectiveness** was important during the interview process, since the participants have a fully booked daily schedule between their job and training. The time it took to complete each interview ranged from 42 minutes to 93 minutes, with the average interview time at 67.3 minutes. Transcription of each interview took place shortly after the interview concluded to ensure the reliability of the data and that its related emotions, atmosphere and interview experience are transferred into a written document to be analysed.

Researcher reflexive box *– interview process*

I found the interview process particularly challenging since I did not have any formal training or background relating to conducting interviews, either in person or telephonically. The idea of semi-structured interviews put me at ease, as I knew that it was less structured and gave opportunity for a 'conversational interview' where questions could be modified. I quickly realised that there is not a specific way of conducting interviews, because every person's environment and personality differs. After applying my experience and knowledge from the first to the second, third and tenth interview, it was important to remember to be flexible and think on your feet when asking questions. I shared my own personal views and interests concerning the research topic with the participants. Observing the participants body language and emotions during the interview guided me as to what question to ask next, to sympathise in certain instances and also to be assertive if answers tend to linger on into a completely different study topic.

Telephone interviews were harder, especially since I did not have a person's body language to read. Instead I had to read their voices. These types of interviews allowed me to use other senses (hearing) to "read" the emotions and pauses of the participant. During pauses, I had to decide whether the participant completed his answer or was thinking, as I knew my interruption might cause them to omit sharing important information and break the interview flow. A concern of mine was whether I would gain and had gained valuable and rich enough data to answer the research question. In some instances, I felt that the participant's information or answer to the question wouldn't be sufficient. However, as soon as the transcription process began these feelings dissipated as I did have enough and valuable data to work with. This anxiety was addressed by acknowledging that not every person elaborates on a question and that even though an answer included a few words or sentences, it is just as information rich if not more so. It is not what is said, it is how it is been said and also the word choices made by the participant.

Overall, my confidence in conducting an interview grew as I applied and improved the knowledge from the previous interview I conducted to the next. The confidence came with knowing how to efficiently probe for information, be self-aware of what questions to ask and how to ask them, and to trust the interpretative phenomenological interview process.

Researcher reflexive box *– highlight of first interview*

At my first interview with ESP001M, I had the opportunity of experiencing white-water kayaking first hand. It was my very first time kayaking on the Vaal River through small rapids, however they seemed huge to me at the time. Interacting with the natural elements and being submerged from head to toe in the water, I really felt as if in a conversation with the forces of nature. I personally experienced how powerful moving water can be. Being deeply afraid of water, after a few 'swims' I realised I had to let my fears go and not fight against the water but almost be a part of it. This really gave me, as researcher a personal connection to the collected data during the interview as I could physically understand what is meant with certain terms, feelings, experiences et cetera. After the completion of the interview, I still felt the motion of the river-water and steering the kayak, as well as seeing and smelling the river-water. I could instantly relate to literature on white-water kayaking due to this personal experience. In short, I guess since nature-based extreme sports are not typical or traditional, I should expect the interview to be out-of-the-ordinary and definitely not traditional.

Since I, as the researcher, knew whom I would be doing the interviews with, although their identity is kept anonymous to the reader through name coding, I decided to get a 'virtual' feel of what their activities entail by watching related television programmes and you tube videos. Although this is not the same as doing it yourself in the natural setting, it still provided an idea of the activity and imagining placing myself there. This was put into motion by the experience of INT001 with ESP001M. Some of these videos included the respective participant, others were just a general overview of the nature-based extreme sports activity.

Researcher reflexive box *– observation of all participants during interviews*

It was interesting to me to observe that all of the selected participants have not been selected or asked to be part of such research or study before. To some of the questions the participants responses were that 'nobody has asked me this before.' This confirmed to me that there was definitely a niche to perform this study. They found it a very interesting topic and were eager to find out what the results will reveal. Most participants said that they felt honoured to be chosen for such a study and hope that their information can assist in the contribution my study wishes to make. Another observation was that the selected athletes who were in a sense 'famous' were surprisingly open and vulnerable to share stories with me as a student. This is in contrast to the nature-based extreme sports athlete having a certain set framework of doing interviews answering questions with a reporter/journalist/media. I felt that the participants did a lot of extra effort for this study especially during the interview process. During face-to-face interview scheduling the participants suggested places that would be reachable for me as well and not just them, since most participants reside in other provinces. For example, ESP003M (who lives in the Free State) suggested to meet in Johannesburg when they were on a work convention. This indicated to me that the participants were considered of me as the researcher. After the completion of the interviews the participants willingly and 'out-of-their-own' shared information on their activities and projects, other people whom I can also ask to interview, books and articles I should read and were open to confirm and give feedback on information that I placed in my study.

5.3 Research participants

Ten South African 'expert' nature-based extreme sports athletes who participate in one or more nature-based extreme sports, are **above 18-years of age** and are either **male** or **female** comprise the final sample. All the participants are **South African citizens** and have **at least a two-year experience** participating in any nature-based extreme sports activity as defined in chapter two and four[107]. This includes the participation of one or more of these nature-based extreme sports activities in those two years. Selected participants practice these activities altogether at least three to four times a year, and includes their preparation/training and an expedition/tour/race. Table 5.3.1 introduces the nature-based extreme sports participant with their respective type of nature-based activity through name coding. Their gender, race and level of experience in years is also presented. This demographic information was identified through a **must-have personal information box** for each participant and completed during the interview process (view Appendix C).

This **must-have personal information box** provided data such as how the interview was conducted (face-to-face or telephonically), the number of interview, type of extreme sports activity, date of the conducted interview, place where participant resides, their current age (and year of birth), the age (and year) they started their activity, the main earthly element on/in which their activity is performed, followed by a description of that element. Anonymity is ensured by a name-code and blanking out the interviewee's name (only available to the researcher). The nature-based extreme sports participant is coded according to the order an interview[108] conducted with them, including their gender. For example, Extreme Sport Participant 1 is male and coded as ESP001M; or Extreme Sports Participant 9 who is female, is coded as ESP009F.

[107] **Nature-based extreme sports activities** include unconventional fields of high-risk sports, which take place outdoors, in natural spaces where the likelihood of a mismanaged action can lead to an injury or fatality. These activities involve the interaction of natural elements, which are oriented towards a combination of endurance, adventure, risk and action. Commonly, expeditions are performed in isolation with minimal availability of human and medical resources in case of an emergency. Athletes must safely mitigate challenging unpredictable environmental conditions; complete long distances; and endure long-lasting movement tasks. Nature-based extreme sports participation requires physical attainments of unusual body movements and body-positions via the utilization of specialized equipment and/or the disuse thereof. Although deliberate risk-taking is involved, the athlete's survival depends on precautionary measures. This excludes extreme sports activities in artificial settings, where the surroundings are primarily man-made structures.

[108] **Only one interview** was conducted with each participant.

Participants in this study included FIVE males (*mean age= 36 years*) and FIVE females (*mean age= 34.4 years*) ranging in experience level of two to 22 years in their respective nature-based extreme sports activity/activities. ELEVEN different type of nature-based extreme sports activities were identified. *White-water kayaking, downhill mountain biking*, *ocean rowing*, *high-altitude mountaineering*, *scooter safari*, *mountain running*, *rock climbing*, *adventure racing*, and *ocean wave surfing* were all part of the nature-based extreme sports activities in this study. *River canoeing* follows the same principles as white-water kayaking, although the sport is performed on a canoe on rivers. *Mountain hiking is* essentially part of high-altitude mountaineering.

Table 5.3.1. *Nature-based extreme sports participants introduced through name coding*

Name code	**Age in years/ Year of birth**	**Gender**	**Race**	**Experience level (years)**	**Type of nature-based extreme sports activity**
ESP001M	**36** (1983)	Male	White	6	White-water kayaking
ESP002M	**38** (1981)	Male	White	22	Downhill mountain biking
ESP003M	**31** (1987)	Male	Black	7	Ocean rowing & Mountain hiking
ESP004F	**34** (1985)	Female	White	2	High-altitude mountaineering
ESP005M	**46** (1973)	Male	White	15	Scooter safari
ESP006F	**27** (1992)	Female	White	8	Mountain running & Rock climbing
ESP007M	**29** (1989)	Male	White	8	Rock climbing & Mountain running
ESP008F	**47** (1971)	Female	Black	7	High-altitude mountaineering
ESP009F	**39** (1980)	Female	White	10	Adventure racing & River canoeing
ESP010F	**25** (1994)	Female	White	12	Ocean wave surfing
10 *participants*	*Mean age:* ***35.2 years***	**5** *males* **5** *females*	**8** *white* **2** *black participants*	*Average experience level of* **9.7 years**	**11** *different types of nature-based extreme sports activities*

5.3.1 Environmental contexts of research participants

As a researcher, it is suggested that "if we want to move beyond sharing an experience with our participants, and understand their experiences well enough to explain them, we need to be aware of the conditions that gave rise to these experiences in the first place" (Willig, 2001, p. 65). The researcher applied Bronfenbrenner's socio-ecological systems theory to identify the influences of and on the participants' surrounding micro-, meso-, exo-, macro-, and chronosystem, which determine (influence) their environmental behaviour during and outside their activity (Bronfenbrenner, 1994; Visser, 2007). In Table 5.3.1, the researcher identified the **chronological age** of each nature-based extreme sports participant, which signifies the generation in which the participant was born into and became a *being-in-this-world* (Krishnan, 2010; Kruger, 1988).

The South African nature-based extreme sports participants of this study were all born before the year 1995, where many of them experienced similar **significant events** within that given time period. Significant events in South African, that all of the participants experienced was the transition from an apartheid-era with its relevant laws into a democratic regimen. Having this background information provides us with an understanding of the type of living conditions, education systems and accessibility to them, the laws and rules of society and the governing bodies of sports federations that could influence the participants choices and motives for their environmental behaviour. The technological and industrial advancements that took place during that time, showcases the influence of the availability of the type of equipment used by the participants and how it could potentially influence the natural environment. It also sketches a picture of how the **physical environment,** including the natural and built environments, looked like prior to and at the time of the participants existence, and the various changes over the years.

The **area** and **province** the participant grew up and currently resides in, demonstrate that participant exists not only at a particular time, but also in a particular **place and space** in **this world**, in which they interact with their surrounding physical world that influences their environmental knowledge and behaviour (Matthews, 2006). Five out of the nine South African provinces are identified as the residence of the 10 nature-based extreme sports participants (view Table 5.3.1.1). Four participants reside in Gauteng; two reside in the Free State; two reside in the Eastern Cape; one resides in the Western Cape; and one in KwaZulu-Natal.

Downhill mountain biker, **ESP002M**, who resides in Pietermaritzburg describes the surrounding natural environment:

> *Pietermaritzburg is really great for outdoors, so, you know I ride mountain bike, kilometres from my house. I trail run in there as well, there in the forest – the local forest.*

Although, rock climber, **ESP007M**, currently resides in Gauteng, he describes growing up on a wine farm in the Cape Town, providing an understanding to the reader of his physical surroundings growing-up and how it may have influenced his environmental behaviour:

> *I grew up in Cape Town, in Rosenville, about an hour north from Cape Town, so, in the Boland area. So, I kind of grew up there on a wine farm. So, I guess kind of living outside most of my life.*

Table 5.3.1.1. *Number of participants in each identified South African province*

Research participant	City/Town participant resides in	South African Province
ESP001M	Parys	Free State
ESP002M	Pietermaritzburg	KwaZulu-Natal
ESP003M	Phuthaditjhaba	Free State
ESP004F	Johannesburg	Gauteng
ESP005M	Cape Town	Western Cape
ESP006F	Johannesburg/Pretoria	Gauteng
ESP007M	Johannesburg/Pretoria	Gauteng
ESP008F	Johannesburg/Centurion	Gauteng
ESP009F	Port Elizabeth	Eastern Cape
ESP010F	Jeffreys Bay	Eastern Cape

A summary of **background information** in terms of each participant's *profession*, *personality traits*, *life motto*, and *significant people to the research participant* provides the reader with an insight into the **environmental contexts** of the selected nature-based extreme sports participants (view Table 5.3.1.2). During the interview process, each participant had the opportunity to tell the researcher a bit more about themselves and their nature-based extreme sports activity. Remarks concerning the participant's direct and indirect environmental settings during the entire interview process were noticed and recorded by the researcher. The researcher payed specific attention to the *who* and *how* the participant described themselves, relationships with other people and their activity. The identification of the environmental contexts sets the stage to understand the manifestation of the participants' sense of adventure and their motives for choosing unconventional sports activities above conventional sports (discussed in subsection 5.5.2).

Researcher reflexive box *– reference to extracts*

Conducting data analysis by way of the outlined IPA stages, enabled me to create a **"reference of knowledge and data"**, which assisted the easy identification of certain extracts, especially extracts that support the objectives and research question of this study.

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Table 5.3.1.2. *Summary of background information of each nature-based extreme sports participant*

Research participant	Personality traits	Profession	Life motto	Significant people to participant
ESP001M	Hyperactive; compassionate	Adventure guide/safety kayaker; helps at parent's farm; Was involved in corporate world in Johannesburg	"I don't work for a boss! I am my own Boss" "Life is a waste of time and time is a waste of life, so stop wasting all the time of your life and have the time of your life" (A poem his mom wrote in his homework book in matric)	Wife, two sons and mother Steve Fisher
ESP002M	Introvert; determined	Professional athlete; involved with his parent's bike shop and property development, and a jewellery company; director of rush sports	To know how far to push yourself, know your capabilities Keep moving!	Sister, niece and nephew
ESP003M	Determined; persistent; courageous	Studied chemical engineering at University of Johannesburg; worked as a trainee for a year; entrepreneur and life coach	Finish what you start	Wife, two daughters, mother and grandmother Brother R. Susaki; Andile; Riaan Manser
ESP004F	Fun and loving; adventurous; passionate; tenacious	Pharmacist by background; Businesswoman and entrepreneur	"May you learn to embrace the freedom that has long been calling your name, so you can liberate courage in others to do the same"	Daughter, son and fiancé Sibusiso Villani; Alex Harrison
ESP005M	Determined; persevering; perfectionist	Chef by background; writer; motivational speaker; adventurer	"Life is either a great adventure or nothing" "Just because I don't have sight, doesn't mean that I don't have vision"	Wife and baby boy James Holman
ESP006F	Determined; competitive; introvert; soft-spoken	Professional athlete; Veterinary science student	Try your best	Parents, Boyfriend
ESP007M	Determined; disciplined	Pilot by profession	If you resist, you will not survive	Girlfriend, mother and sister
ESP008F	Resilient; analyst; introvert	An executive at a top financial institution in South Africa	Never give up	Two sons; grandmother; Scout's club
ESP009F	Determined; persevering;	Qualified professional personal trainer; fitness instructor; spinning instructor; has an OD ETDP qualification; and is a qualified nutritional therapist (the Health Science Academy)	To create your own happening	C'HO surf club Team members
ESP010F	Joyful; adventurous; compassionate	Professional athlete; student	"It is your attitude not your DNA that determines much of the quality of your life" (Dr Caroline Leaf)	Parents

The following extracts from some of the participants' accounts validate the researcher's summary of the background information, in terms of identifying personality traits, profession, life motto's and significant people in the nature-based extreme sports participant's life. All the findings presented in the Table 5.3.1.2 were analysed as follow:

White-water kayaker, **ESP001M**, displayed a very energetic personality during the interviews and confirms the choice of classifying him with **hyperactive personality** traits:

> *I struggle to focus, because my brain is so busy. I have ADHD – I see life in high definition.*

Compassionate traits are showcased through the following story he shared, which also indicates the interaction of and influence on his surrounding microsystems:

> *There was this boy in town, 13-14 years of age, and I gave him a boat I got from a guy, De Wet. I did not buy it. I got it and gave it to this boy. De Wet is also someone I look up to when it comes to kayaking in South Africa. Because it was one of a kind – it was this yellow, mix with green. It was a beautiful boat. He told me it was damaged. But I said it was fine, I will fix it. I fixed it 100% and when I fixed it I gave it away to a small boy in Parys who wanted to start rowing. I gave it to him for his birthday, and he still rows it today. I got someone into the sport.*

ESP002M describes his close relationship with his family and appreciates their support during a downhill mountain race. His narration also reveals personality traits of an **introvert**:

> *I have got to elder sisters; I am the youngest. And I have two nieces. So, I do spend a lot of time with them. My nephews live in Durban, so they are little bit away, but nieces are nearby. I enjoy having them there, I love having support. I am a very loci person - I really enjoy hanging out with my friends and family. I don't need to be seen in places or be liked just be quite and just chill. I don't prefer being out of public generally.*

ESP003M's upbringing presents notions that he had encountered some sort of **being-towards-death** when his brother scared him as a child. That fear and how it became a catalyst for his mountain hiking and ocean rowing adventures, is narrated as follow:

> *My life, growing up lead me to adventure. Because at a young age, I grew up with my granny, my mom past away at an early age, I came from a poor background, but more than that I always found myself in tough situations – I had to figure out, I had to experience darkness from a very young age where I needed to watch TV in the next door house and there is no lights. So, coming out of that house going to my home, my brother would always scare me, you know, he would always jump out [boo]. So, eventually I got used to that there is nothing there. And that is when I realised that fear is nothing, so I wanted to discover more of this fear. So, if I feel fear – is there anything there?*

Similarly, high-altitude mountaineer, **ESP004F** experienced the fear of losing her child to a rare lung-disease. Her experience describes a linkage between a significant person in her live and her profession and how she considers her purpose in life due to this life event:

When my daughter was born, she was diagnosed with cystic fibrosis, which is a rare life-limiting lung disease, mostly affecting the lungs and that changed everything for me because suddenly, I was faced with a future...a very uncertain future for her. And I had to really prioritise my life – who do I want to be and want to become? I needed to be her doctor, her physio, her pharmacist [I mean I am pharmacist by background – I knew there was a reason I studied pharmacy].

ESP005M describes **how his sight loss**, manifested a **perseverance** within him to push through his struggles and turn them into steppingstones:

Maybe having a challenge of sight loss, it just forced me to be a fighter, it just forced me to not be beaten by it. You try to find those things you've lost and turn them into steppingstones.

The way **ESP007M** describes his **adaptable mindset to life**, forms the basis to how he approaches his rock climbing. He considers that an individual's survival depends on your adaptability:

I have a big thing about adaption. If you resist, you will not survive – and only the adaptable, kind of survives. So, you have to adapt to your environment, adapt to situation, you know. If your one piece of gear breaks, how would you adapt to carry on and if it will be safe?; and, if the weather changes unpredictably, how are you going to be safe?; I feel, when people are very set in stone or resisting being adaptable, they kind of don't survive. I guess, the more you know, the less you need.

ESP008F demonstrates how her upbringing with her grandmother (significant person) sparked a **sense of adventure** within her, which led her to being part of a scout's club and how that influenced her views on the outdoors and mountain climbing:

I am one of seven sisters, but I was the tomb boy of the lot. When I was six [years old], my grandmother bought me a bicycle, she used to ride bicycle, she was like a missionary's wife. And I would be following her on my four-wheeler. I always liked to be outside. Adventure started when I was part of a club, it was called a pathfinder-club. It is a scout's club. So, we went for camping during holidays, not that I loved it all the time, it was very tough, like they would leave us in the middle of nowhere and leave signs like a broken branch to know they went this way. We had to make our own accommodation in the bush. I think it started there. I did it for quite a while, getting into varsity and getting into corporate. Life just went on. And, when I turned 40, I decided to give back. So, I went back to church and I became a director for one of the clubs, because I am a master guide for the club, and what I realised is that parents when I say let's go camping, they want to know is there a chalet is there a pool. Their interpretation of camping was totally different. And, when I started climbing, Kili [Kilimanjaro] just brought that back to me.

Ocean wave surfer, **ESP010F**, states that her love for the ocean was instilled through her upbringing, where her parents always supported outdoor play and family holidays at the ocean:

My childhood, we were always encouraged to be outside and family holidays were always outdoors and the ocean.

5.4 Interpretative phenomenological analytic process

This study chose to analyse the transcripts through **interpretative phenomenological analysis (IPA)**. This analytic process is subjective in nature and is comprehended in terms of an empathetic understanding (Smith & Osborn, 2007). Therefore, the researcher's perceptions and pre-understandings of the phenomenon are included in the analysis which provides a sense of closeness to the data (Terre Blanche et al., 2006). The employed IPA comprises of four stages which allows for the searching and identification of preliminary themes; connection of preliminary themes; the method used to analyse the next transcript; and write-up of final themes with associated notions and perceptions of the nature-based extreme sports participant. Final themes are tabulated and presented in a master list of themes, including the final theme topics, primary (superordinate) and secondary (subordinate) themes. Further discussion and interpretation of the identified final themes are then presented in a form of storytelling.

Firstly, the researcher chose to present and interpret the participant's motives for choosing nature-based extreme sports over conventional sports; characteristics of the given nature-based extreme sports activities and the involvement of risk, based on personal lived nature-based extreme sports experiences of the participants. It sets the groundwork for identifying the transformative value of nature-based extreme sports participation. Relevant literature is linked to each theme topic and related primary (superordinate) and secondary (subordinate) themes. Discussion of the final themes is done in accordance to the three objectives of the study, which serves to answer the research question.

The researcher engaged with the data by thoroughly reading and re-reading[109] the transcripts. Re-reading the transcripts, revealed new insights[110] to the researcher and were documented on the left and right margins of the transcripts (Smith & Osborn, 2007). The left-open margin was used to mark whichever impression, observations and reflections of the researcher next to the associated actual spoken words of the nature-based extreme sports participant (Smith & Osborn, 2007). **Theme topics** were logged on

[109] **Re-reading** the transcripts assisted in the discovery of new findings or identification of comparisons and dissimilarities. It also gave opportunity to find more suitable extracts which supports already identified themes. In order to check how clearly and precisely the interpretations reflected the data, documentation and discussion of data including the related extracts were compared thoroughly. In cases where the researcher was dissatisfied, data extracts were reviewed and missing accounts or misunderstood aspects have been addressed. This involved placing the extracts back into the original text to be read in its whole context.

[110] **Insights** included *descriptive* remarks which involved the rephrasing/summary of the participant's accounts; *linguistic* notes where careful attention was given to the words and expressions that the participant used; and *conceptual* observations which incorporates the researcher's academic knowledge from the literature and life experiences. Different fonts or an underlining was used to distinguish between the three kinds of remarks.

the right-hand margin as they manifested. A theme topic consists of one to three words and provides a holistic summary of the related spoken words of the nature-based extreme sports participant. Repeated phrases, similarities and dissimilarities, and the type of language used were also indicated on the text (Biggerstaff & Thompson, 2008).

Overall, the researcher was able to identify the personality of the nature-based extreme sports participant, based on their use of language (Smith et al., 2009). The "intention" of the text (its voice) was therefore captured. Initial notations were then transformed into preliminary themes in a chronological order (Smith et al., 1999). Associations between the preliminary themes were then identified and grouped into clusters which represent a theme topic (Smith & Osborn, 2007). Preliminary themes consist of a primary (superordinate) theme, which branches into secondary (subordinate) themes. Secondary or subordinate themes assert a hierarchical association (Smith et al., 1999).

A comparison between the primary and secondary themes and the actual words of the nature-based extreme sports athlete are then made to ensure the consistency of the findings (Smith & Osborn, 2007). A table of themes involving the theme topics, primary (superordinate) and secondary (subordinate) themes is then constructed for each transcript (Smith et al., 1999). Quotations of the nature-based extreme sports participant, which best represent the ethos of the theme topic, primary and secondary themes are highlighted on the transcript (Smith et al., 1999). The researcher was able to effectively refer to the quotations by indicating the page number followed by the line in which the quote starts of the related transcript next to the theme in the table (for example, 3.12 will indicate page 3 – line 12). Identified themes from the initial transcript were then used as a template to direct the analysis of the next transcript. However, new ideas or themes that surfaced were documented and recognised by the researcher. Similarities and differences in the data were recorded by the researcher on the transcripts for further discussion. Once all 10 transcripts had been analysed and their themes identified, the researcher subjectively considered the final themes which best represent the purpose of the study.

Final themes are documented in a **"master list"** of final themes from which concluding assertions and interpretations are drawn that delineate the inherent meanings of the nature-based extreme sports athlete's experiences (Smith & Osborn, 2007). Through name coding and the actual spoken words of the nature-based extreme sports, the reader is able to clearly distinguish between the accounts of each nature-based extreme sports participant and the researcher's interpretations (Smith & Osborn, 2007).

Analysis and discussion of themes are done in accordance to the set research objectives, which serves to answer the research question of ***How do South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity?***

> ***Researcher reflexive box*** *– interpretative phenomenological analysis*
>
> The interpretative phenomenological nature of my study permitted the development of a so-called **co-constructed reality of experiences**. Essentially, my ideas, understandings and experiences fused with the ideas, understandings and experiences of the participants to produce findings (themes) that best answer the research question. Another researcher may have selected and emphasised other themes. It was important for me to have each participant share their stories in their own unique way, as it allowed for their 'voices' to be recognised.

5.4.1 Identification and connection of preliminary themes

Identified themes were listed in chronological order as they surfaced during the reading of each transcript (Smith & Osborn, 2007). To assist the researcher with data analysis, noted primary-, secondary-, and theme topics of each individual nature-based extreme sports participant's accounts as transcribed from the conducted interview were presented in a table format. A column next to the preliminary themes was used to indicate where the quotation/s of the nature-based extreme sports participant can be found on the transcript to confirm the validity of selected themes. Table 5.4.1 provides a segment of an analysed transcript, which demonstrates how a table was used to assist the researcher to identify preliminary themes (primary-, secondary themes) and theme topics, as they emerged chronologically during transcript analysis. The interview topics used in the semi-structured interview schedule and literature review assisted the manifested theme topics.

Table 5.4.1. *Chronologically identified and connected preliminary themes with quote references of a segment of ESP007M's (rock climber and mountain runner) transcript*

Preliminary themes		**Quote**	
Primary themes	**Secondary or subthemes**		**Theme topic**
Motives for molar activities	*Dramatic change in interpersonal relationship*	1.3	**Microsystem**
Precautionary risk-taking	*Calculated decision-making*	2.1	**Involvement of risk**
Motives for participation	*Discover new places*	2.33	
Accessibility	*Level of exploration of the wilderness*	3.1	**Characteristics of nature-based extreme sports activity**
Leading orientation	*Likelihood of mismanaged action can lead to a tragedy*	3.11	
Calculated risk-taking	*1. On being an expert* *2. Being in control*	3.20 3.30	**Involvement of risk**
Leading orientation	*Unpredictability of natural element*	4.17	**Characteristics of nature-based extreme sports activity**

A **hierarchical node tree** was designed and used to organise and connect superordinate (primary) and subordinate (secondary) themes with a theme topic. Preliminary themes take on a hierarchical relationship where primary themes branch into secondary themes. This indicates to the reader how the researcher connected the themes to each other and selected theme topics. All the analysed transcripts with their relevant hierarchical node trees were then connected to help structure the master list of themes (view Figure 5.4.2).

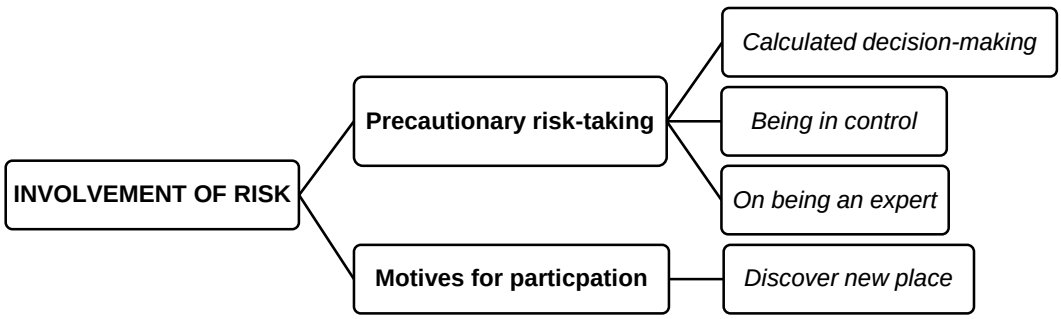
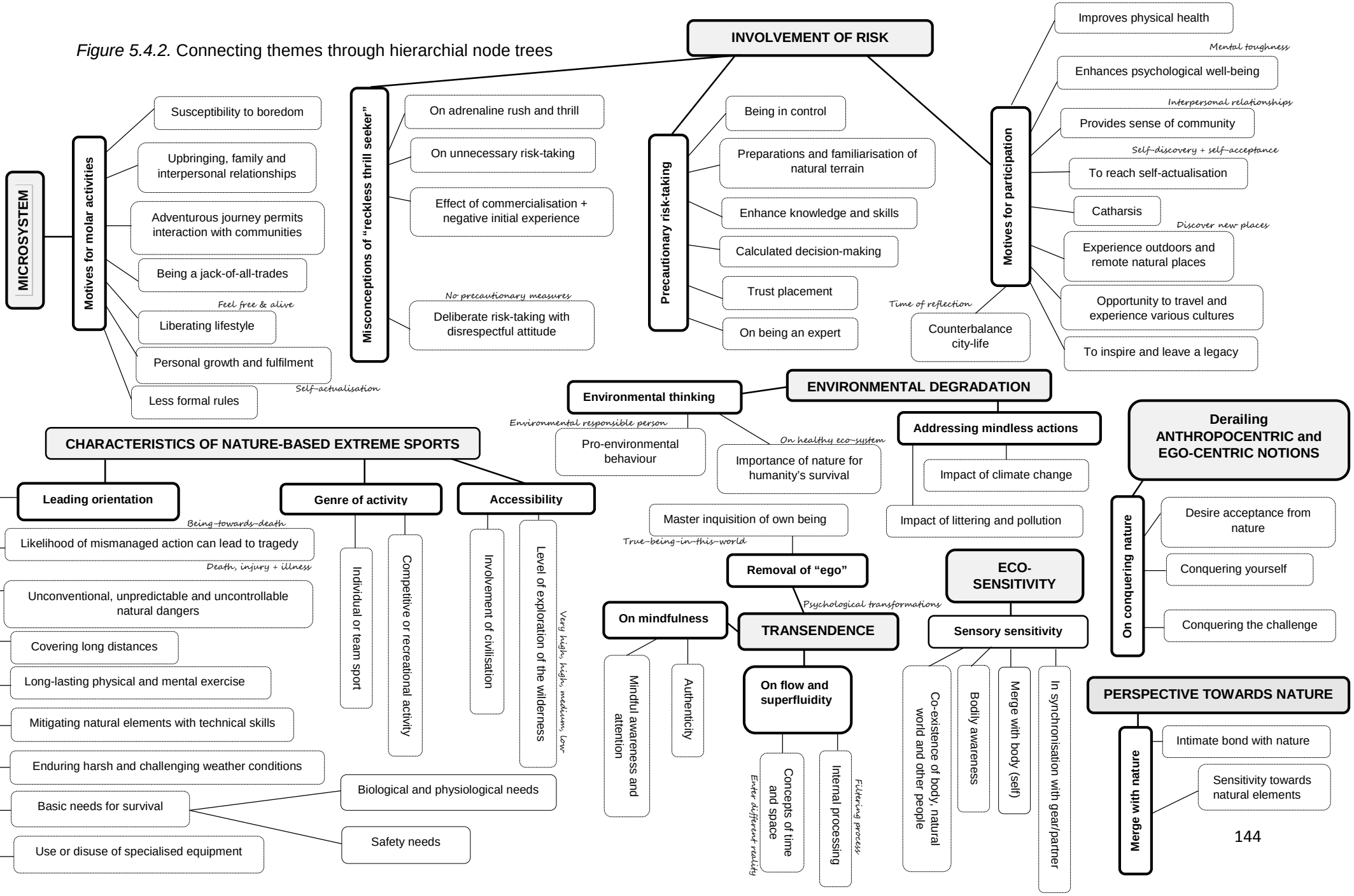


Figure 5.4.1. Example of how a hierarchical node tree assisted in connecting preliminary themes (primary and secondary themes) with a theme topic

Evidently, the **hermeneutical process** guided the organisation of the different secondary themes (parts) under the relevant primary themes (whole). Each primary theme (part) ultimately contributed to the manifestation of theme topics (whole). The "parts" and the "whole" of the identified themes of each transcripts were initially incomplete, but continuous interactions and advancing between its parts and the whole, illuminated contextualisation and meaning of the studied phenomenon[111] (Paterson & Higgs, 2005). Once significant disagreements between primary and secondary themes from certain participants were noted, the researcher referred to the original data as a measurement of its validity. Consequently, this process enabled the discarding or altering (rephrase) of previously indicated primary and secondary themes and/ or adding of new primary themes during the analysis of the current and next transcript. Interaction between preliminary themes and literature, associations of primary and secondary themes, the whole theme topic and particular experiences of the participants, and links between the data attained from the different nature-based extreme sports participants contributed to the presence of the hermeneutical circle of data analysis.

[111] The facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context.

Figure 5.4.2. Connecting themes through hierarchial node trees



Researcher reflexive box *– hermeneutical process*

I found the discarding and altering of themes, prior to the development of final themes, a necessary and unavoidable step of data analysis.

5.4.2 Master list of themes

Interpretative phenomenological analysis of the 10 transcripts resulted in the construction of a master list of final themes. Manifested final themes were supported by the idea that "as one begins to write, some themes loom large, others fade, and so this changes the report" (Smith et al., 2009, p. 110). The following significant primary (superordinate) themes, secondary (subordinate) themes and theme topics were identified, whilst remaining true to the personal accounts of the nature-based extreme sports participant (Eatough & Smith, 2006). Chosen themes in accordance with the participants accounts are a subjective analysis[112]. The researcher focussed on these specific themes[113] and accounts of the participants as she considers they best represent the purpose of the study.

Table 5.4.2. *Master list of final themes*

THEME TOPIC	PRIMARY THEME (Superordinate theme)	SECONDARY THEME (Subordinate theme)
Microsystem	**Motives for molar activities**	1. Susceptibility to boredom 2. Upbringing, family and interpersonal relationships 3. Adventurous journey permits interaction with communities 4. Being a jack-of-all-trades 5. Liberating lifestyle 6. Personal growth and fulfilment 7. Less formal rules
Characteristics of nature-based extreme sports activities	**Leading orientation**	1. Likelihood of a mismanaged action can lead to a tragedy 2. Unconventional, unpredictable and uncontrollable natural dangers 3. Covering long distances 4. Long-lasting physical and mental exercise 5. Mitigating natural elements with technical skills 6. Enduring harsh and challenging weather conditions 7. Basic needs for survival (1) Biological and physiological needs (2) Safety needs 8. Use or disuse of specialised equipment
	Genre of activity	1. Individual or team sport 2. Competitive or recreational activity
	Accessibility	1. Level of exploration of the wilderness 2. Involvement of civilisation

[112] Other researchers may have focused on different aspects of the accounts.

[113] Subsection 5.4.3 explains the manner in which theme topics, primary themes, their related secondary themes and linkage with verbatim extracts from the nature-based extreme sports participants are approached.

Involvement of risk	**On misconceptions of the "reckless thrill-seeker"**	1. On adrenaline rush and thrill 2. On unnecessary risk-taking 3. Effect of commercialisation and negative initial experience 4. On deliberate risk-taking with disrespectful attitude
	Precautionary risk-taking	1. Being in control 2. Preparations and familiarisation of natural terrain 3. Enhance knowledge and skills 4. Calculated decision-making 5. Trust placement 6. On being an expert
	Motives for participation	1. Improves physical health 2. Enhances psychological well-being 3. Provides sense of community 4. To reach self-actualisation 5. Catharsis 6. Counterbalance city-life 7. Experiences outdoors and remote natural places 8. Opportunity to travel and experience various cultures 9. To inspire and leave a legacy
Derailing anthropocentric or ego-centric notions	**On conquering nature**	1. Desire acceptance by nature 2. Conquering yourself 3. Conquering the challenge
Environmental degradation	**Addressing mindless actions**	1. Impact of littering and pollution 2. Impact of climate change
	Environmental thinking	1. Importance of nature for humanity's survival 2. Pro-environmental behaviour
Perspective towards nature	**Merge with nature**	1. Intimate bond with nature 2. Sensitivity towards natural elements
Eco-sensitivity	**Sensory sensitivity**	1. Bodily awareness 2. Merge with body (self) 3. In synchronisation with gear/partner 4. On co-existence of body, natural world and other people
Transcendence	**Removal of "ego"**	1. Mastering inquisition of own existence
	On mindfulness	1. Mindful awareness and attention 2. Authenticity
	On flow and superfluidity	1. Concepts of time and space 2. Internal processing

Researcher reflexive box *– development of master list of final themes*

I appreciated the recommendations of Smith et al. (2009) to compress the themes in such a way that they were concise and expressive enough for me (the analysist) to make reference to the original data from which each theme manifested.

5.4.3 Interpretation and write-up of final themes

Opposed to quantitative data which is clear, objective and unbiased, **qualitative data** is subjective in nature and allows for deliberation and open interpretation (Jones, 2015). The write-up of the final themes provides an interpretative phenomenological narrative of the research findings. Nature-based extreme sports participants were asked to reflect on and share their nature-based extreme sports experiences and relationship with nature, their equipment and other people. It was purposed to understand if and how eco-sensitivity can be facilitated through nature-based extreme sports participation. A **semi-colon** is used to separate the respective theme topics, followed by a comma to indicate the primary themes within those topics and subsequent themes. The participants' accounts clustered around **seven theme topics** including microsystem; characteristics of nature-based extreme sports activities; involvement of risk; derailing anthropocentric or ego-centric notions; environmental degradation; perspectives towards nature; eco-sensitivity; and transcendence. Each theme topic, emerged from the interpretative analysis, branched into primary themes and secondary themes. **Fifteen primary themes** were identified, respective to the aforementioned topics: motives for molar activities; leading orientation, genre of activity, accessibility; on misconceptions of "reckless thrill-seeker", precautionary risk-taking, motives for participation; on conquering nature; addressing mindless actions, environmental thinking; merge with nature; sensory sensitivity; removal of "ego", on mindfulness, on flow and superfluidity.

The primary themes were supported by **56 secondary** or **subthemes**: *susceptibility to boredom, upbringing, family and interpersonal relationships, adventurous activities permits interaction with communities, being a jack-of-all-trades, liberating lifestyle, personal growth and fulfilment, less formal rules**;** likelihood of a mismanaged action can lead to tragedy, unconventional, unpredictable and uncontrollable natural dangers, covering long distances, long-lasting physical and mental exercise, mitigating natural elements with technical skills, enduring harsh and challenging weather conditions, basic needs for survival (biological, physiological and safety), use or disuse of specialised equipment**;** individual or team sport, competitive or recreational activity**;** level of exploration of the wilderness, involvement of civilisation**;** on adrenaline rush and thrill, on unnecessary risk-taking, effect of commercialisation and negative initial experience, on deliberate risk-taking with disrespectful attitude**;** being in control, preparations and familiarisation of natural terrain, enhance knowledge and skills, calculated decision-making, trust placement, on being an expert**;** improves physical health, enhances psychological well-being, provides sense of community, to reach self-actualisation,*

*catharsis, counterbalance city-life, experiences outdoors and remote natural places, opportunity to travel and experience various cultures, to inspire and leave a legacy**;** desire acceptance by nature, conquering yourself, conquering the challenge**;** impact of littering and pollution, impact of climate change**;** importance of nature for humanity's survival, pro-environmental behaviour**;** intimate bond with nature, sensitivity towards natural elements**;** bodily awareness, merge with body (self), in synchronisation with gear/ partner, on co-existence of body, natural world and other people**;** mastering inquisition of own existence**;** mindful awareness and attention, authenticity**;** concepts of time and space, internal processing.*

Theme topics were shared in some form by all 10 nature-based extreme sports participants and are discussed and interpreted by the researcher in the following sections. Even though these themes have been separated during the interpretation and write-up process, the themes are related to the three objectives, which becomes apparent throughout the narrative account. It is essential to acknowledge each theme in relation to the holistic nature-based extreme sports experience and the hermeneutic circle. Transcript extracts from each nature-based extreme sports participant in the form of quotations[114] are included in order to present the **interpretative phenomenological core** from which interpretations have been developed. **Name codes[115]** ensured anonymity of the participants when quotations were used. The researcher has aimed to **sample quotations proportionally** across participants in order for individual voices to be heard and individual experiences to be illuminated. Throughout the narrative further significant extracts have been included, which highlight both shared and distinct experiences by the different nature-based extreme sports participants. Therefore, convergence and divergence between experiences are captured. To improve the readability of the **verbatim extracts** in this section, minor hesitations such as "uhm" "eh" "so yah" have mostly been removed by the researcher. Intentional omission of words, sentence or paragraph from the extracts which do not alter the original meaning of the text are indicated by ellipses. Ellipses essentially implies that the participant was talking prior to or after the given quote, but that the researcher intentional omitted the spoken words and provided an extract that captured the essence of the participant's experience. Square brackets are used when additional information has been added to the extract to explain what the participant refers to.

[114] Quotes have been included to provide an in-depth illustration of the personally lived experiences of each nature-based extreme sports participant in this study sample, that supports the researcher's interpretations.
[115] Information that could identify the research participant has been replaced with a name-code. Other identifying information, which does not compromise the purpose of the study has been highlighted in black.

5.5 Microsystem

Within the participants' microsystems, **molar activities** are meaningful and purposeful activities to the participant and persists until its fulfilment (Krebs, 2009). In this case, nature-based extreme sports activities (unconventional) are seen as molar activities, which the participants' find meaningful and choose to invest more time in. Conventional or traditional sports activities correlate to molecular activities, which the participant analyses as meaningless or having no purpose. Therefore, conventional activities are therefore not pursued (discontinued) (Krebs, 2009). This lays the groundwork for identifying the motives for participation (view *Involvement of risk*), which supports the notion that risk is a by-product, rather than the main goal for nature-based extreme sports participants. The following reasons are provided by the nature-based extreme sports participants for choosing unconventional sports above conventional sports.

5.5.1 Motives for molar activities

Participants reported choosing nature-based extreme sports over conventional structured sports due to its lower susceptibility to boredom. They consider their nature-based extreme sports activity as a way to display their variety of skills and liberate themselves from real-life troubles. Some participants assert that the less formal setting, which their nature-based extreme sports activity provides, permits self-actualisation. Other motives included the easy accessibility to the natural terrains/settings in which their activity is conducted in, and the healing nature of the natural setting that provides an opportunity to deal with changes in interpersonal relationships.

5.5.1.1 Susceptibility to boredom

Two of the participants indicated that they have an **intolerance of routine** and **wish to steer clear of repetition** (Zuckerman, 1990). Their choice to invest more time in unconventional sports rests on the fact that conventional sports has a higher susceptibility to boredom and unconventional sports has a lower susceptibility to boredom. **ESP002M** emphasises that there **needs to be variety in sport** activities:

> *What pushed me from conventional sports…well I played all sports; I love all sports. I just found a lot of sport boring too. I mean it is really fun when you've got a group friends and you are having a good time. When you do the same thing regularly – there needs to be a variety. My mom loved tennis, and obviously got me into tennis at a young age. And just the same white lines and red heights just didn't do it for me, time and time again.*

Further notions indicate that **ESP002M** could not just watch someone perform an activity, he had to try and do it himself. Essentially, **his restlessness** to sit and watch led to the enjoyment of downhill mountain biking:

> *I am not a big fan of watching sports, to be honest. I prefer to be doing the sport, rather than watching it. So, my sister started riding mountain bike – and as I said earlier, I hate watching events [I need to do it myself], so I went - I decided I'd ride. I thought well, I got to go there anyway to support her and watch - I might as well take a bike and ride. And I rode and I kind of enjoyed it!*

ESP004F supports finding conventional sports boring, in terms of **being a rebel**:

> *I think a part of me is a rebel. I don't like the conventional sports – they are really boring! I never really enjoyed conventional sports – it feels like something you have to do, like a school sport, every Tuesday is required. Extreme sports are fun, because I think it's because it's something you shouldn't do. Not many people do it. Maybe it is the rebel in me that actually enjoys it.*

5.5.1.2 Upbringing, family and interpersonal relationships

Four of the participants showcase that their **upbringing provided easy access to start** or continue nature-based extreme sports activities. The first two participants showcase their **sense of adventure supported by natural surroundings**. The other two participants indicate that their reason for directing their attention towards unconventional natural settings was supported by **underlying negative interpersonal relationship changes**. **ESP006F** decision to analyse mountain running as meaningful, was based on her upbringing on a game farm, which **provided access to trails**:

> *…having access to a trail, I guess it started like that. My grandparents have a game farm. I grew up, surrounded by nature. I kind of naturally, I enjoyed it. So, there was no tar road, it was just game paths. It was trail running, from the beginning. I just started increasing my distances gradually, and I found that I actually enjoyed longer distances.*

Safari scooterist, **ESP005M** explains that his **affinity towards adventure** and exploration started when he was a little boy and **participated in boys-scouts**:

> *When I was a little boy, it was probably I think, the boys-scouts that got me excited about exploring and discovering the unknown and figuring things out in nature.*

Rock climber, **ESP007M***,* who also participates in mountain running, demonstrates that his patterns of activities were influenced by school traditions and the attention he gained from it. However, traditional activities turned into molecular activities as a result of a **dramatic change in an interpersonal relationship.** It became a purposeful decision to use the nature-based extreme sports activity as an outlet for his "traumatic" experience and to heal from it.

The tranquillity of the natural surroundings provided a **peaceful setting to deal with real-life troubles**, which supported his choice to pursue nature-based extreme sports activities:

> *I was in a very traditional Afrikaans school, so we got forced to play rugby, luckily, I was quite good at it. So, you get a lot of attention, so, you just play more rugby and there you go. But, then after school, I have always stayed relatively fit, because I have spent a year in the UK working there and came back. And then basically, a lot of that came from… I had a bad break up from a relationship and you can either go into, I guess, bad things or you can start running. You need an outlet somewhere. And, I found just peace and I don't know, it is like you say, calm and tranquillity among the trees. Running on the road didn't do the same for me. It wasn't the running that made me feel better, but I think it was the area as well where I was running. Luckily, being in the Eastern Cape, it is very rural, so you can literally walk outside your door and go run for an hour and not see one single person. And, all of a sudden, I started realising that, I started knowing the trees or knowing the different animals and birds and stuff. And, it was kind of like a whole new world that opened up to you and before you know it you want to go to the top of the mountain, well, because there is more there. And, then before you know it, you don't just want to climb up on it or like run up the ridges, you also want to climb the rock as well. It just leads into the next.*

Similarly, **ESP001M** chose to pursue white-water kayaking, as a way to **cleans himself from a toxic personal situation,** that affected his interpersonal relationships. The pursuit of the molar activity was further supported by **having easy access to the adventurous community** through his parents' lodge/farm:

> *I had a [redacted] problem. And with that other bad things came and I told my wife listen I have to do something. My father had a lodge just outside Parys. From there I went to the farm. And from there I interacted with people who participate in adventurous activities. And I said, okay I also want to do that.*

5.5.1.3 Adventurous journey permits interaction with communities

ESP003M points out that nature-based extreme sports offer an adventurous journey, where **success is associated with achievements along the way**, opposed to conventional sports, which demand competition where failure is associated with whether the target is reached:

> *Competitive sports, unfortunately, you always feel like you are competing. You feel like you have to race. But, if you do something where you set your own target, and this is what I want to finish, and you count the journey, instead of a demand. Then it feels different. But, if it is a demand – if you don't get there at a certain time then you feel like you have failed, rather then what you have achieved along the way. So, I prefer adventure for that reason. Sometimes if you are in a competitive sports environment and you try and win the cup, it is hard to enjoy. Because it is always target, target, target. And if you don't get to the target it is 'no, you are messing up, get to the target!'*

The ocean rower continues to explain that the adventurous journey that the nature-based extreme sports activity offers can lead to **interactions with communities,** because there is time for exploration, which is not the case in conventional competitive sports:

> *If you get to a point where you are exploring other elements of the sport or of the adventure that others wouldn't. Let's say you are riding a bicycle: You can stop along the journey and see the communities around you. But if you are racing and you have a competition, there is no time for that – you just have to finish the journey.*

5.5.1.4 Being a jack-of-all-trades

For **ESP009F**, unconventional sports such as adventure racing provided opportunity for her to **apply a variety of skills all at once**, rather than focussing on just one specific skill during a sports activity:

> *For me, personally, I am a jack-of-all-trades, but a master of nothing, so adventure sports is kind of for someone who wants to do everything.*

5.5.1.5 Liberating lifestyle

ESP010F describes the **liberating lifestyle** associated with ocean wave surfing, which draws her to become an open and happier version of herself. She asserts that the lifestyle improves her quality of life, **provides security** and does not discriminate against demographics:

> *It becomes a lifestyle and surfing made me a much happier, healthier, humble and more open version of myself. My quality of life is better being so close to nature and I am exposed to so much more. The lifestyle is incredible and life-giving - an escape and safe place for so many people where class, age, status or race don't matter. I love that!*

5.5.1.6 Personal growth and fulfilment

High-altitude mountaineer, **ESP008F**, asserts that the mountains provide a setting in which she can grow and develop herself. Essentially a place for **self-actualisation** with intrinsic improvement, rather than materialistic gain:

> *…but I don't go there and say I want to take the medal, but rather "can I be better than I was yesterday?" - Absolutely, and mountains are that for me.*

5.5.1.7Less formal rules

ESP003M explains that the ability to determine your own rules and that there are no scoresheets permits **self-growth** and **discovery**:

> *The difference for me with adventurous sport and conventional sport is that sometimes I determine the rules. There is no one keeping score, so it's open to the growth I'm willing to experience. You go into unknown territory, do what few people have ever done, learn things that no one has seen or heard of and you create your own way.*

5.6 Characteristics of nature-based extreme sports activities

By means of Sirch's (2014) AQAL-model of extreme sports, each nature-based extreme sports activity[116] has been analysed according to their leading orientation and the main natural element, with which the participant interacts with. Subjective analysis of activities involves both the explanations/ descriptions narrated by the nature-based extreme sports participants and the researcher's understandings. The interview process allowed each participant to describe their reason for classifying their nature-based extreme sports activity as EXTREME. The following concepts characterise nature-based extreme sports, which are unveiled through the extracts of the participants. It provides a foundation for the researcher to identify each nature-based activity, according to their leading orientation on the AQAL- model involving extreme endurance, adventure, risk and action (view Figure 5.6.1).

5.6.1 Leading orientation

Extreme endurance, risk, adventure and action form the four leading orientations of the given nature-based extreme sports activities. Analysis allowed for each of these leading orientations to manifest randomly through the building blocks of the definition of nature-based extreme sports in terms of their level of aesthetics, risk, exploration and performance (Sirch, 2014). Figure 5.6.1 showcases the placement of the analysed nature-based extreme sports activities on the AQAL-model. The identified building blocks of the given nature-based extreme sports activities include:

5.6.1.1 Likelihood of a mismanaged action can lead to a tragedy

Each of the nature-based extreme sports activities include an **element of high-risk**, in which the likelihood of a mismanaged action can lead to a tragedy (Brymer, 2005). **ESP009F**, a high-altitude mountaineer confirms that there are **fatal repercussions for decisions made** during a nature-based extreme sports activity for both the participant and other people:

> *Decisions you make on the mountain can be fatal, not just for you, but for other people with you too.*

Her observations during mountaineering further support the idea that a **mismanaged decision can lead to a fatal consequence**:

> *The most dangerous thing for mountaineers, they call it the summit-fever…If I use my all if I summit, I still need my oxygen to come back, I still need energy to come back*

[116] From the sample identified in Table 5.2.1.

down. And, if I am tired, I need to be extra vigilant. That is also why a lot of people climbing, actually die coming down and not necessarily going up.

ESP007M, rock climber and mountain runner, adds to this notion by asserting that **determinantal consequence** can result due to the **neglect** to use certain equipment:

I think the possibility of detrimental consequences – if something has to go wrong, it can go horribly wrong. I guess, without with any form of rope or harness, or gear or anything. Then, it becomes late in the day, it becomes colder… the other person will tell you like if you fall now you are dead, because you are now 300meters up in the air.

ESP001M explains his **near-death experience**, where a mismanaged action during white-water kayaking almost cost his life:

There are situations that I have put myself in danger. They had to resuscitate me. It was during an advance search and rescue course. I had put myself in a situation where I almost lost my life…

ESP008F emotionally describes the death of a team member during a high-altitude mountain summit, which implies that due to the extreme and harsh natural condition, a participant's survival cannot fully be guaranteed and mortality is possible during a climb:

…because we were all together when we summited and he fell off when we were coming down. I know that people die on Everest, but a life that I knew and that I spend time with and that had so much hope and life.

Sickness during a nature-based extreme sports adventure is also a possibility, and is supported by **ESP005M**'s experience, who contracted a virus during his expedition and permanently lost his sight:

…I contracted a virus…I will say that I knew that there was a chance that I would die, I accepted it and I was prepared for all of that. But I never for a second thought that I would go blind. So, sometime even though you do not expect great challenges then they kind of just sneak up on you…

ESP004F also got sick during an expedition due to the environmental demands and weather conditions exerted on her body and affected her bodily functioning:

…so, I actually had altitude sickness before – my first climb I got very, very sick!… I started getting fluid on my lungs.

Injuries can occur during a nature-based extreme sports activity, which **ESP002M** confirms through his downhill mountain biking experiences:

The most common injury is probably a broken collar bone. I broke my arm last year so that can happen. Injuries can vary from knee- ACL, that's a kind of the worst injury, [but it can be any injury from] arm…to legs…so it can be really bad…

The downhill mountain biker adds that although injuries can occur, that **safety precautions are considered to minimise them** during his activity:

> *…but you know, it definitely feels like we have the right equipment on…with protection and everything and on the right road to possibly make it a bit safer and a safe course design and safe gear aspects.*

5.6.1.2 Unconventional, unpredictable and uncontrollable natural dangers

The **unconventional nature** and **unpredictability of weather** is shown by **ESP006F**'s description of mountain running. The unconventional nature lies in the fact that natural trails involves a variety of vegetations, opposed to conducting their activity on a man-made structure such as tar road:

> *Trail running is just never on tar road, seldom on dirt road, but mostly trails – so it could be like mountain bike trails or game paths or in areas where the vegetation is not to dense like grassland, or short grass, then it is like cross-country running. It is very variable, it depends on the vegetation and the area that you are in. Part of trail running is mountain running, more in mountain running than trail running you are at higher altitude. And the weather is much more unpredictable.*

ESP003M emphasises the **rapid change** and **unpredictability of weather conditions** during his ocean rowing expedition by asserting that:

> *You might know what the weather is today, but tomorrow it changes…Before we were hit by that other storm, it [the ocean] went calm, like calm, like you know what I mean by calm, and I said to Riaan this is way to calm. And, you know what he said 'this is what they mean by the calm, before the storm'.*

Notions of unpredictable natural dangers are provided by **ESP010F**, who describes the **power of the ocean** and that its ever changing nature surpasses conventional sport structures:

> *The ocean and its elements are extremely unpredictable. The ocean doesn't stay the same like on a field. You can never 'master' or perfect certain conditions – every wave is different! The ocean is powerful and much stronger than humans. The elements can be extreme wind, currents, snow, rips, bluebottles, jellyfish and powerful and always-changing tides and waves etc. Constant dangers during every surf are sharks, currents, board hitting or injuring you, rocks…*

By way of a simple experimental example, **ESP001M** illustrated that the **power of water is beyond human control**. The uncontrollability of nature is captured as follow:

> *Water is changing constantly. You cannot control water. I say if you want to control water put it in a teaspoon. Then you might have control over it. You don't have control over water even in a cup or a bottle. And there [referring to the cup/bottle and then the river], there is just more volume of water.*

5.6.1.3Covering long distances

Moving across, over and under natural terrains via unusual body movements for a long distance an extensive period of time represents the orientation towards **adventure** within nature-based extreme sports. During **ESP005M**'s scooter safari expedition a large physical distance was covered, through different body movements on his scooter:

> *I travelled by scooter, 9 500km around South Africa… the reality is when you travel on a little scooter that has 10inch wheels on roads that are sometimes incrusted in mud that is deeper than 10inches. And you having to run extra and push and ride -push it, you fall more over than your upright, you get beaten and battered around little bit…*

ESP003M's ocean rowing expedition demonstrates **the extensive period of time they have spent** on the ocean waters to travel from the Canary Islands to Barbados:

> *…45 days on the ocean is no child's play.*

5.6.1.4Long-lasting physical and mental exercise

Extreme endurance is identified as **going non-stop with minimal sleep** by **ESP009F**, who partakes in adventure racing and river canoeing, to illustrate the physical and mental long-lasting component of a nature-based extreme sports adventure:

> *It is the ability to go non-stop with minimal sleep. To be able to keep going even though you are mentally and physically exhausted.*

5.6.1.5Mitigating natural elements with technical skills

Nature-based extreme sports activities require the participant to **mitigate natural elements** to **the best of their ability using technical skills** (Sirch, 2014). **ESP006F** explains that the natural surroundings with its natural elements ensure for a "stage" (unlike traditional manmade structures), that permits the use of technical skills:

> *…some trails are technical with rocks and stuff, and I suppose that is for most people the scary part about trail running that it is technical, you can't switch off like you run on the road.*

Action nature-based extreme sports activities involve movement tasks which have an **increased level of difficulty and style**. **ESP002M** describes that downhill mountain biking is an activity which doesn't take place in a remote area, but that natural elements are cordoned off for a race-setting. The chance of getting injured is high due to the intense speed involved during the activity and therefore may **point out elements of a risk sport**:

> *[Downhill mountain biking] isn't very exploring; it is a designated track. It has got to be on the steepest hill with certain criteria…they do have technical delegates who make sure the tracks up to safe standards…trees have quite a bit of technical aspects of routes and adjust your terrain.*

But between the skill and the speed of downhill… it's a time trial from the top of the mountain down to the bottom on a track going through rocks and routes. It is a lot of risk with a lot of reward. So, if you can ride a section a lot faster than everyone else, you make a better time you know you obviously you can …. with a guy or another rider. The tough part is, to know how far to push it, because every time you try and do gain time you increase the chance of crashing or something like that happening. For me it is a risk management during the four minutes of intense racing.

Ocean wave surfing, described by **ESP010F** can be viewed in the same light, since difficulty and **technical skills** are used to control their body movement on their equipment on the natural element (ocean wave water):

Surfing and the ocean have so many uncontrollable and extreme elements, you have to control your board on the wave…

The **unpredictability of earthly elements** such as rock and dirt on which the activity is performed represents the activity's **orientation towards higher risk**, **ESP007M** explains this through the different rock textures during his rock climbing experiences:

…in the Magaliesburg – the rock is like super good, super hard-core type, which you can trust. In the Drakensberg, you have got dust-salt, a lot of times you've got dust-salt rocks – I climbed there, where I have broken pieces of, just from my bare hands. So, it is a bit more dodgier. It is like a four to five meter high wall. So, not a lot of guys do climb there…

5.6.1.6 Enduring harsh and challenging weather conditions

An element of survival is represented by **ESP008F**, where high-altitude mountaineering **takes an individual away from civilisation** for several days, weeks to even months in which they have to **endure harsh weather conditions**:

If you go to higher mountains, it is absolutely more extreme. When you start climbing something like Everest, the higher you go, there is less oxygen. You need to be technically equipped, in terms of, not necessarily rock climbing, you need to be comfortable with the rocks and in yourself – how will you survive should curveballs be thrown at you? So, I think that is what makes it extreme.

5.6.1.7 Basic needs for survival

During nature-based extreme sports participation, to ensure a functioning body and survive the extreme challenge, the participant needs to satisfy their biological and physiological needs (Jerome, 2013). This includes attaining appropriate oxygen levels, staying hydrated, consume necessary amounts of food, maintaining a constant body temperature, seek shelter when necessary, and gain certain amount of sleep to complete the journey through the wilderness.

5.6.1.7.1 Biological and physiological needs

Having **appropriate oxygen levels** are essential to efficient bodily functioning during nature-based extreme sports activities such as mountaineering. **ESP004F**'s high-altitude mountaineering experiences, point out that **deprived oxygen levels in the brain affects life-or-death decision making** in a nature-based extreme sports activity:

> *When you get to high altitude you have less oxygen in your brain. This is what Sibusiso taught me of why people die – it's because they make bad decisions. Because you have to make life or death decisions. Things that are small become important: do you climb a section or do you pull back? Do you take another day to acclimatise or not? How hard do you push your body? Do I take this route or that route? That is completely dependent on your ego. Your ego and bravado and I can… to even when you are oxygen deprived, sleep deprived, hungry, cold – you need to think very carefully before you decide…*

Clean fresh water regulates the athlete's body temperature and lubricates their joints. The oxygen in the water can also assist in providing their muscles with enough oxygen to contract. Furthermore, nutrients can be transported to keep their bodies healthy and energised to optimally perform in extreme and risky situations (Arnaout, 2003). Ocean rower, **ESP003M**, confirms that **staying hydrated** is most essential to a nature-based extreme sports athlete during their activity, even more than having food:

> *A bottle of water is the one thing you will not be able to go without…. Essentially, what you will need to survive with, is water, not even food. If you keep hydrated, you can go further.*

High-altitude mountaineer, **ESP008F** concurs to **ESP003M**'s notion of the importance of water and staying hydrated, by asserting that "you HAVE to drink water! About 4.5L a day – to stay hydrated." The ocean rower continues to highlight the **survival-mode** and **determination to get drinking water** to avoid dehydration and bodily disfunction, during an expedition:

> *This one day, we were running out of water; we had problems with batteries, because the sun wasn't enough, and we were running out of back-up water [the solar panels converted the salt-water to clean fresh water]. So, we decided when we see a boat, or when we see a ship or a tanker, we were going to ask it for water…We didn't give up, until we got the water, which is something, we need it - we need the water! It was the happiest moment we had on the ocean when we got it.*

ESP001M emphasises the importance of **having enough food sources** during a white-water kayaker trip, but that having minimal nutritional sources **becomes part of the adventure**:

> *Food definitely. On a trip such as a 30km gorge, I will make sure to pack enough snacks. My life-jacket is full, my dry-bag – there is enough fresh water and food. But to survive on only snacks for two to three days is tough. It's not a place where you would want to be. But it is an adventure. At the end of the day, if you climb out – you had an adventure.*

ESP003M demonstrates that having **energising foods with nutritional value** during an expedition **can keep a participant strengthened** during extreme endurance tasks and maintaining long lasting unusual body positions or movements (Arnaout, 2003; Sirch, 2014):

> *… I have used at the Odyssey what they call freeze-dried. Freeze-dried food is the same food that Astronauts eat. So, it's food, like a normal meal that is freezed and then dried and then packed up. And all you have to do is boil water and put water in, wait 15 minutes and you are ready to eat. It is balanced, it is proper nutritional food. Low fat – so you don't need to gain any fat along the way.*

He further explains that food was used as a **reward to motivate progress** during their ocean rowing expedition:

> *[During the ocean rowing] … chocolate was for a reward, so you don't want to eat too much sugar. So, what we do is we ride our 7 days [and reward ourselves once we have accomplished that goal] - we had coke zeros as well. We rationed out our food.*

Besides water and food sources, **ESP004F** highlights that it is important **to have warm clothing** during high-altitude mountaineering, which helps regulate a constant body temperature:

> *The most important thing is warm clothes!*

ESP008F, high-altitude mountaineer, confirms this by asserting that **being cold, slows progress** and can compromise survival.

> *And, the thing is, if you don't have the gear that keeps you warm, you become cold, you become slower.*

Adventure racer, **ESP009F** explains that thermals during her nature-based extreme sports activity is **a matter of withdrawing** or **continuing**:

> *Definitely get your thermals and rain kit spot on, and something warm in a race like that is obviously it is a matter of withdrawing or carrying on. Main kit that you need is your thermal longs and thermal tops; rain pants and jacket; a decent set of trekking shoes and cycling shoes; life jacket…*

5.6.1.7.2 Safety needs

It is important for the participants to know that in terms of safety there is an **additional party who can help** them in case something goes wrong. **ESP007M** provides evidence of this notion during his rock climbing:

> *…it is you climbing, your belayer is belaying you and catches you if you fall.*

During white-water kayaking, **ESP001M** explicates the importance of safety and that there are people who wait at the end of the rapid, and can **assist the participant in case of an emergency**:

> *SAFETY comes first! You usually have people at the end of the rapid who wait with throw-bags in case something goes wrong in the rapid. They will then either life bate you with a guy that has a life jacket who jumps into the water and swims to get you to safety or they just throw the throw-bag towards you grab it that is if you are still on the surface of the water.…A safety kayaker ensures that when there is a group of people where there is high volume water that he is the go-to-guy.*

However, **ESP001M** explains that the participant themselves also need to apply safety and precautionary actions without the help of an additional party:

> *Before you can blindly run a rapid, you will scout the rapid. You will walk to the end of the rapid and slowly walk back and build a 3-D picture of the rapid in your head. You will point out certain things, such as there is a pinnacle; against that pinnacle, water will push upwards and create a cushion wave. Just right of that cushion wave, there will be a fast-flowing current. You have two options there: You can either go for the cushion wave and you are going to have a great time. Or you can just flow straight through and take the fast-flowing current. In your head you are going to make a decision on how I am going to do my run. I will push my nose against the pinnacle and then go on. The chance that the water will push me over is 90% higher than flowing through the fast-flowing current.*

5.6.1.8 Use or disuse of specialized equipment

Both **ESP001M** and **ESP002M** highlight that a "helmet is a compulsory" item during their nature-based extreme sports activity as it ensures for safety and protection against falls on hard surfaces. **ESP002M** elaborates that the as a downhill mountain bike professional athlete he could contribute to the special design of a helmet and mountain bike that could help improve performance:

> *I have launched a Helmet with Oakley, called the DRT5. I helped with the design and pull the helmet from the ground up. I have also done a mountain bike called the Santacruz V10 29.*

Since, white-water kayaking and ocean rowing are completed on bodies of water it is essential to wear a "lifejacket." Interestingly, although ocean wave surfing is also performed on a body of water, **ESP010F** points out that she does not commonly wear a life vest as it **constricts your motion during surfing**. It is confirmed that she disuses a life vest, but makes use of specialised clothing and equipment that allows for buoyancy on the ocean water: "we never ever wear a life vests, but we wear wetsuits when we surf." More specialised equipment, according to **ESP001M,** involving buoyancy is required for high-volume white-water kayaking to ensure safety:

> *A high-volume creek kayak will be ideal when you have enough buoyancy to safely navigate rapids. A paddle is also important, because it will steer you forward in the water.*

The use of specialised equipment in terms of **advanced technological systems** is used during ocean rowing, **ESP003M** states:

> *During ocean rowing- in the boat, we had navigation equipment; a water maker – it filters salt out of seawater to drink; we had solar panels to charge our phones and equipment.*

When a participant is essentially **cut-off from civilisation** during an expedition, according to **ESP008F**, trackers can become a useful tool for additionally parties to identify the location of the participant:

> *I have a tracker that tracks me and other people can see [my location]. Let's say that I am buried under snow, that at least we know she [referring to herself from outsider perspective] is somewhere here…*

The high-altitude mountaineer further describes that a relatively simple piece of equipment such as an axe has a valuable purpose during climbing:

> *…you have an axe – so if the snow is powder-ish, you dig yourself out. If you are falling in a crevasse, you have an axe. That is the other thing that has changed, you don't need an axe. But if you drop into a crevasse it can actually help you arrest the fall.*

ESP008F further explains that the **collective use of specialised equipment** contributes to the success of an expedition:

> *On a high-altitude expedition – down jacket, down pants, thermos and fleeces; mittens; hard gloves for rocking; crampons; harness; carabiners – you hook yourself onto the rope; oxygen tank; balaclava helps protect your face; a light – the summit push you usually start at night. Collectively they contribute to the success of the expedition…*

ESP009F demonstrates that during an adventure race, specialised equipment determines the effectiveness of the race, in terms of its lightness:

> *…a bivi bag that you have with you like a camping blanket (sleeping bag) – it is super light…*

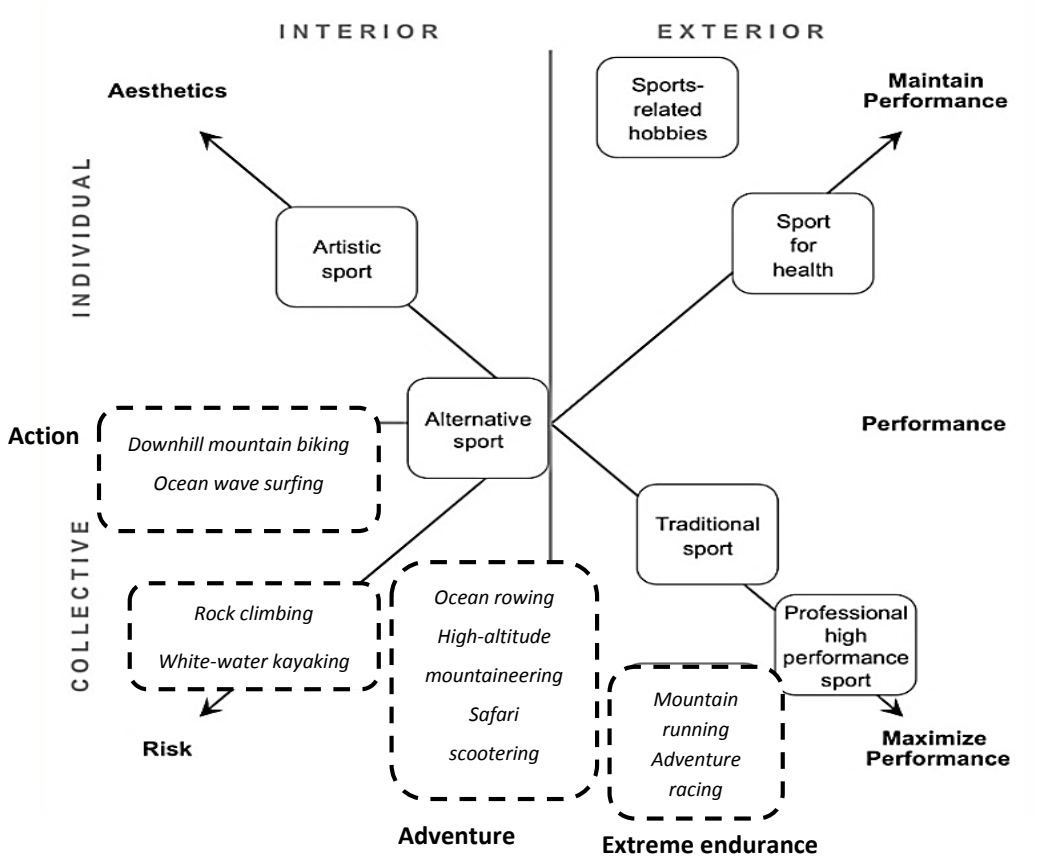


Figure 5.6.1. The position of the given nature-based extreme sports activities on the AQAL-model according to their leading orientation

5.6.2 Genre of activity

Acknowledging the characteristics of traditional sports such as the high degree of competition, teamwork and performance (Willimczik's, 2007), the researcher made co-constructed distinctions between the tendency of the given nature-based extreme sports activities to be more of an individual or team sport; and more competitive or recreational. In Table 5.6, each activity of the participants has been 'subjectively' classified according to its inclination to either be an individual or team sport and a competitive or recreational activity.

5.6.2.1 Individual or team sport

The difference in individual and team sports activities are demonstrated by **ESP003M'**s notions, with regards to the involvement of **communication with other people** and **leadership during the activity**:

> *The mission is, you work on issues like trust, issues like communication, issues like leadership. So, that is a different ball game all together. Whereas you do it alone, you don't really have to communicate with anyone. You have your communication with yourself.*

Individual sports activities within this sample, are considered as activities where the participant does not need to collaborate with other people or a team member during the activity and it doesn't require team work to accomplish the race or expedition. The individual therefore relies on internal communication and decision making. Three of the given activities are classified as an individual sport namely, downhill mountain biking, mountain running and ocean wave surfing. This decision is mainly based on the disuse/ or no mention of team dynamics, working together with other people during participation, or the term "we", but rather the use of terms such as "I" and "me."

Mountain runner, **ESP006F**, describes her attraction towards an individual sports activity:

> *I didn't want to do a team sport, I wanted to do a solo sport. So, that ruled out team sports.*

This illustrates that she, as the participant makes all the decisions and planning herself without collaboration with other people. This indicates that "team members" are not affected or dependant on her during a race and vice versa:

> *…if it is a race, I know what the route profile looks like, I know what the map looks like in my head, I know where the water points are, what equipment I need (I always have it on me).*

Downhill mountain biking requires an individual to complete a section "from the top of the mountain down to the bottom on a track going through rocks and routes" in the fastest time possible and that "during the four minutes of intense racing" there is no external communication with other people. **ESP002M** state that the mission is therefore to see "if you can ride a section a lot faster than everyone else, [and] make a better time":

> *…when you think about it, you are competitive against your own time.*

Six nature-based extreme sports activities within the sample demonstrate a **high level of team work**, including white-water kayaking, high-altitude mountaineering, adventure racing, safari scootering, ocean rowing and rock climbing. **ESP001M** explains teamwork within white-water kayaking in terms of placing one's trust in a fellow kayaker, and that one needs to be considered of the other participants, kayaking with you:

> *I get a team together and we kayak… I place all my trust in my gear and fellow kayaker.…You don't have just yourself to think about. There are people that are with you.*

ESP003M showcases the **team dynamics** involved during a duo ocean rowing expedition, where the challenge and decisions made are experienced by both team members:

Through experiencing together, not alone…Every decision we made was a team effort, because whatever happens it affects us both. So, if you are an individual you will probably reach a much higher level of intuition than when you are with a team. When you are working with a team, you are working with people's strength, you are working together. So, it is a whole new dynamic. It is leadership more than anything else. So, the mission will be achieved, but differently.

During high-altitude mountaineering, there is a team leader who leads the team during the summit push. **ESP008F** confirms the team dynamics of having a team leader and team members who follow:

Team dynamics is another one… During the summit push, I was leading a team all the way up [the mountain].

ESP004F, who is also a high-altitude mountaineer, solidifies the team dimension of climbing and that the team members collaborate and communicate decisions:

But I mean you also have a team with you, that tells you - maybe don't go too far or whatever the case might be.

ESP009F supports teamwork during adventure racing by asserting that decisions are made as a team and not individually:

…you also need to work together as a team. You can't be a solo person and only think about yourself. As soon as you have an ounce of doubt or if 'I don't know if I can't do this' it will come out in your team and it will affect your team. Assess the situation and agree [as a team]. So, if someone is like 'okay, I want to climb that cliff, but it is super sketchy', we will discuss it as a team (listen guys how is everyone feeling about climbing that cliff??) and how safe is it going to be. We asses risk with our safety knowledge and as a consensus as a team.

She continues that an individual **decision affects all the involved team members**:

Because you are not doing it for yourself, you are doing it for your team. So, if you decide to give up it is not just you giving up, you affect the results of three other people - your team members.

ESP005M's safari scooter tour demonstrates the notion of the involvement of more than one person that represents a "team", in terms of the ability to support each other should a problem occur along the way:

… I choose the four of us to travel together, because I believed that if one of us had a problem – it would always be two to go and one to stay.

5.6.2.2 Competitive or recreational activity

Nature-based extreme sports activities within this sample, which have a **higher tendency to be competitive**, where winning results in extrinsic reward include downhill mountain biking, mountain running, adventure racing and ocean wave surfing.

These activities display an event or race in which a monetary or materialistic reward is at stake and sponsors are usually involved. Notably, downhill mountain biking, mountain running and ocean wave surfing, which have a high tendency to be more competitive correlate with being classified as an individual sports activity. **ESP002M** uses phrases such as "I am going to compete" and "it is a very competitive sport", which indicates that the sport setting is more of a competitive nature. He refers to competition in downhill mountain biking to being a professional sportsman and that **"fun" transitions to work**:

> *Well, this is probably the hardest and worst thing being a professional sportsman, you know what you do for fun is now your job. Every time I put my leg over a bike, it is usually for a purpose. It is very rare that I can just get on my bike and ride for fun with my friends. So, if I am racing, I am racing to win. If I am training, I am training to train harder and to complete what my task is for the day.*

ESP006F acknowledges the competition part of mountain running by asserting that sponsors are involved:

> *…and I have sponsors and so, and you have to kind of win.*

Through the terminology such as **contest, scoring** and **pressure**, **ESP010F**'s participation in ocean wave surfing can be seen as a more competitive nature, since she competes against other people to obtain a better score:

> *In a heat (contest) knowing which wave will offer scoring potential. Right speed and type. Only having 20 minutes with top two waves counting and using priority system means constant decisions making in the heat and in pressure…*

White-water kayaking, safari scootering, ocean rowing and rock climbing comprise activities through which leisure may be experienced and enjoyed and are classified as having a **higher tendency to be recreational** (Cushman & Laidler, 1988). These activities are practiced for its intrinsic rewards, where minimal monetary reward is to be gain by the participant themselves, and where the athlete seems to raise awareness to a specific cause. **ESP001M** states that it is the recreation part of the activity that draws him to pursue white-water kayaking:

> *It is the recreational part that draws me to kayak…You get individual people who do it as a sport and as a career. I do it as a recreational breakaway.*

ESP005M demonstrates that safari scootering allowed for raising awareness to a specific cause in terms of fundraising and publicity. However, these funds or monetary aspect were not gained for the participant, but rather for a charitable cause:

> *But, for example we visited children's hospitals, the children's homes and schools and things like that along the way, just to send a message of hope and give the press opportunity too [to raise awareness] … It was a fundraiser for the red-cross hospital…*

5.6.3 Accessibility

The term “accessibility” within this study has a two-way understanding. It refers to the quality of being able to be reached or entered; and the quality to be easily obtained and used. The **quality of being able to reach remote natural places** links to the level of exploration of the wilderness of an activity. The **quality of easily obtaining human** and **medical resources** associates with the involvement of civilisation of an activity.

The level of exploration of wilderness and the involvement of civilisation during the participant’s activity has been indicated as very high, high, medium, or low. Table 5.6.3 provides a subjective compilation of a scale indicating the various levels of exploration of wilderness and involvement of civilisation, in accordance with the activities of the research sample. The co-construction of the nature-based extreme sports participants’ and the researcher’s understandings of “accessibility” of the involved activities are supported by extracts:

Table 5.6.3. *Scale indicating level of exploration of nature and involvement of civilisation*

Level of exploration of wilderness	**Description**	**Involvement of civilisation**	**Description**
Very high	Extended period spent outdoors with nature, interacting with natural elements during an expedition	*Low*	Relying on one’s own ‘medical’ skills to survive in isolation/ solitary in the wilderness
High	Considerable amount of time spent observing fauna and flora during an expedition/tour	*Medium*	Having some form of human resources to get medical attention or assistance during an emergency
Medium	A relative amount of time spent observing fauna and flora and exploring natural elements during activity	*High*	In case of emergency, sufficient human and medical resources are available during activity/ race. Not necessarily relying on own medical skills to survive
Low	Although activity is outdoors, minimal amount of time is spent exploring natural elements during a race/competition setting	*Very high*	Optimal human and medical resources available during race/ activity especially in cases of emergency. No need to rely on own ‘medical’ skills for survival

5.6.3.1 Level of exploration of the wilderness

ESP002M’s description of downhill mountain biking represents **low levels of exploration of the wilderness** indicating that although the activity is outdoors, minimal amount of time is spent exploring natural elements during a race/competition setting:

> *My discipline isn’t very exploring; it is a designated track. You can’t just do downhill mountain biking anywhere. It has got to be on the steepest hill with certain criteria…so I guess it is more extreme than just regular mountain biking.*

ESP007M confirms that during rock climbing and mountain running, a relative amount of time is spent observing the fauna and flora and exploring the surrounding natural elements, which indicates a **medium level of exploration of the wilderness**:

> *So, in the Drakensberg, I have this thing, the further you go [the more you see] – if you go 5km you are going to see cool flowers and stuff; and if you go 10km, you might see a waterfall; and if you go 20km, you are going to see a few waterfalls; and if you go 30km, you are going to see the top of the escarpment. Literally, the further you go, the more you see and the more you learn and the you start exploring, I guess.*

ESP001M reveals that during white-water kayaking, a considerable amount of time is spent observing the natural surroundings involving the fauna and flora and natural elements (river water), pointing out a **high level of exploration of the wilderness**. The white-water kayaker emphasises that it is "about where we can go, what we can experience." Two sets of extracts showcase a *wider-view* of exploring the wilderness, illustrating the discovery of remote places; and a *narrow-view* of exploring the wilderness, which represents experiencing the encountered natural element to its fullest.

A **wider-view** of exploring the wilderness describes a limited accessibility of untouched natural spaces by the human hand:

> *You get to explore places which only few people have seen… No river is the same twice, so you get the chance to kayak "new" rivers every time…I have to say this, kayaking does make you more aware of nature, especially birds if I don't know them. You get your LBJ's your little brown jobbers. And I will try and take a mental picture. The remoteness of the places you kayak in – I have gone to places where people don't get to. Some people might have been there before me, but it is so untouched. And that is what you look for – that 'okay, now I am REALLY in NATURE!'.*
>
> *(wider-view)*

A **narrow-view** of exploring the wilderness illustrates a closeness and intimate discovery and connection with the natural element:

> *I want to experience every single aspect of that rapid to its fullest. So, I will scout it, I will go over left and right and will go back again and will try and catch "Eddies" the whole time and catch waves o surf and do a cartwheel in the rapid. You want to live that rapid. You want to feel that water as it flows through that section. Even experience the rapid under water and hear the sound [demonstrates sounds- grrhhghh-it's like placing your head in bowl of water]. People don't hear that. It is not part of our lifestyle.*
>
> *(narrow-view)*

ESP008F describes that the vastness of the natural surroundings permits an "intimacy with nature" which ultimately leads to an ineffable moment with nature. Since an extended period of time needs to be spent in the wilderness to reach an "untouched" and seldom unseen natural space, it associates with **very high level of exploration of the wilderness**. The high-altitude mountaineer describes her journey as:

…being there [on Kilimanjaro], climbing up [journey climbing up can take on average five to nine days] and the clouds are lower than me!! Like WOW! You see that the birds are down…

ESP004F, who is also a high-altitude mountaineer, solidifies the **ineffable moment** surrounded by nature when climbing up the mountain, in terms of a **release of emotion**:

When I saw Everest…It is the most incredibly journey hiking to base camp. When I saw Everest for the first time from Namche – there is a viewpoint above Namche- I cried! Like a baby. I just fell in love with the mountains…

An additional view of the **very high exploration of the wilderness** can be understood through **ESP003M**'s experience when the changing natural elements essentially permit the participant to **"explore" different unplanned parts** on their way to their destination. During his ocean rowing expedition, unplanned routes were taken and discoveries of other parts of the ocean due to changing weather and allowed for an adventure:

We had a storm on the Odyssey. So, in the northern hemisphere the weather system is always clockwise, always clockwise. And, in this incidence we had an anti-clockwise system waiting for us. You understand… there was a storm headed towards us which was basically going to take us maybe about 100 miles, which was about 300km or more away from where we were going. So, we had to realise, okay things have changed now.

5.6.3.2Involvement of civilisation

Having to relying on one's own 'medical' skills to survive in isolation or solitary in the wilderness demonstrates very **low levels of the involvement of civilisation**. Ocean rower, **ESP003M** gives an example from his mountain hiking experience by emphasising the importance of having practical first aid knowledge and being able to take care of yourself or team members, when an injury is acquired during participation:

[On the boat] we had medication as well - first aid kit is vital even if you are hiking. The other time we were hiking with someone, in mist. It was misty, you couldn't see where we were walking, it was so thick [the mist]. This lady, she tripped and fell on a rock. It's misty, we're looking where we are going and next thing, we have an injury. If you don't know how to dress a wound, if you don't know how to take care of a broken fracture, you are going to have challenges out there. Knowing how to do first aid, not just having a kit but being trained on how to do first aid [is crucial]. Being proactive is a must!

ESP004F shows that a participant is isolated form civilisation during high-altitude mountaineering and that emergency services are not immediately available during an accident/ emergency. This indicates the necessity to rely on one's own human and medical skills to survive until help can be found:

So, I started getting fluid on my lungs and as I started hiking back down, because I was going to back down via 'gockio lakes?' – yah my lungs just filled with fluid. And we were supposed to get back to a lodge about 4/5pm and were still wondering around at night on the edge of a cliff, and eventually found our way to a lodge and got air support the next morning to the clinic.

During adventure racing, **ESP009F** asserts that the participant needs to deal with the current situation to the best of their ability since the **involvement of civilisation is low**:

> *You just have to learn to cope with that situation, and do what you can, and push on…*

Having some form of human resources to get medical attention or assistance during an emergency, displays **medium involvement of civilisation**. Medium involvement can also indicate that there are other people (human resources), although not medical professionals, but who can assist in case of an emergency with a rescue mission. During white-water kayaking, **ESP001M** explains the importance of a first aid kit and rescue gear and that the safety kayaker is there to ensure the safety of others during an emergency:

> *First aid kit and a dry bag will be important in case of any emergency. In your lifejacket pockets you have rescue gear at all times (a sling or webbing which you can use to tow boats; Carabiners (x4) to build a pully system in case a boat is stranded or to abseil or to drop boats from a creek; a throw bag of 20m- 25m is ideal to take with you at all times (it's the bag with the rope in) …A safety kayaker ensures that when there is a group of people where there is high volume water that he is the go-to-guy. He must be agile enough to get to people when they fall out of their boat and are taken by the water stream.*

However, due to the high levels of exploration of wilderness and accessing remote areas during white-water kayaking, it may also display low levels of civilisation. ***ESP003M*** confirms that you need to survive on your own at certain stages:

> *Because you go to places that are so remote. For hours, you don't have cell phone signal or exit points or any of the sort. You literally climb into a gorge and for 20 to 30km you have to survive on your own. You have to row till the end until where you agreed upon meeting each other.*

Having optimal human and medical resources available during race/ activity, especially in cases of emergency, where there is no need to rely on one's own medical skills for survival, reveals **high involvement of civilisation** during an activity. This is displayed by **ESP006F**'s observation, which indicates that during mountain running races and a competition setting there are check-points and medical services on the route to assist the participant:

> *[like with mountain running races] …where you do have water check-points and people waiting and medics on the route…*

Table 5.6. *Characteristics of nature-based extreme sports activities*

	Leading orientation	Main natural element	Individual (I) or team sport (T)	Competitive (C) or recreational (R)	Level of exploration of wilderness	Involvement of civilisation
Nature-based extreme sports activity						
White-water kayaking	Extreme risk	White-water (river-water)	T	R	High	Low- medium
Downhill mountain biking	Action	Vegetation; dirt; rocks	I	C	Low	Very high
Ocean rowing	Adventure	Ocean-water	T	R	Very high	Low - medium
High-altitude mountaineering	Adventure	Rock; thinning of air; ice	T	R	Very high	Low
Scooter safari	Adventure	Dirt; vegetation	T	R	Medium	Medium
Mountain running	Extreme endurance	Vegetation; dirt	I	C	Low	High
Rock climbing	Extreme risk	Rock; plants	T	R	Medium	Low
Adventure racing	Adventure with higher extreme endurance	River-water; vegetation; dirt; rock	T	C	Medium	Low
Ocean wave surfing	Action	Ocean-water	I	C	Low	Very high

5.7 Involvement of risk

An essential part of this study, is to acknowledge that seeking 'risk-itself' during nature-based extreme sports participation can be understood as a by-product, rather than the participant's main priority (Krein, 2007). Findings confirm that nature-based extreme sports participants in this study, strive for settings which, they can control and which, their survival is determined by experience, skill and judgement. Personal lived experiences of each participant provide evidence, that derails typical misconceptions of "reckless thrill-seekers", who carelessly gamble with their lives and leave survival up to chance during their nature-based extreme sports participation (Krein, 2007). Insight into the involvement or risk provides the cornerstone for divulging the inherent transformative value of the nature-based extreme sports experience (Brymer & Gray, 2009).

During the interpretation of the nature-based extreme sports participants' reasoning for classifying their activity as EXTREME, a striking perception of **ESP002M** revealed that **risk perception and "extreme" is in the eye of the beholder**. The researcher correlates this interpretation to Zuckerman's (1979) study, which showcases that the more experienced a person is in an activity, the less risky it is rated by that person. The downhill mountain biker has 22-year experience in his respective activity and states:

> *I think it is truly hard to define what's extreme, really. Because what I find is and something that I do on a regular, I find relatively easy to ride down – someone who has never been on a mountain bike might find it almost impossible. So, it's hard to define what is extreme, really. I mean extreme sport for me is something that provides risk when competing or maybe more risk than most sport. Then, yah I guess it can be extreme. I don't think you can just pick up a mountain bike and go ride one downhill, I don't think that would work out very well.*

An observation from mountain runner, **ESP006F**, solidifies the idea that "extreme" is ranked according to your competency in the activity and can differ within different types extreme sports activities:

> *Until you become very good at it or competent then you probably see it as extreme. It is all about perception. My perception of B.A.S.E jumping is that it is quite extreme, dangerous and possibly reckless whereas my perception of mountain running is hundred percent safe.*

The researcher considers that perhaps classifying a nature-based extreme sports activity as "EXTREME" is done through the lenses of novice or non-participants of the activity. It does not mean that extreme is necessarily negative or positive, it simply implies that it is a non-traditional activity which surpasses societal norms.

5.7.1 On misconceptions of the "reckless thrill-seeker"

In the world or reality of the nature-based extreme sports participant, 'extreme' implies calculated risk. Most people in society would assert that conventional sports apply calculated risk, since the activities are performed in a structured and controlled setting. Some novice and naïve perceptions of society regard nature-based extreme sports participants as reckless thrill-seekers, and assert participants perform uncalculated risk. The researcher associates uncalculated risk with deliberate risk-taking, which considers the action of purposefully subjecting oneself to a threatening situation and its relevant environmental conditions, neglecting any precautionary measures to safeguard themselves from a tragedy (Woodman et al., 2013).

Nevertheless, the researcher acknowledges the personally lived experiences of each nature-based extreme sports participant and found that the **participants take calculated risks**, which associates with **precautionary risk-taking**. Precautionary risk-taking involves calculated actions by the participant where they subject themselves to threatening situations, but apply safety provisions to mitigate the risk accompanying that situation (Llewellyn & Sanchez, 2008; Pain & Pain, 2005). Each nature-based extreme sports participant gave their opinion on the misconceptions during the interviews.

5.7.1.1 On adrenaline rush and thrill

Downhill mountain biker, **ESP002M**, suggests that misconceptions can rise due to its association with an "adrenaline rush" and that the high adrenaline levels might compromise the participant's sanity. However, he corrects these "narrow-minded viewpoints" by stating that high adrenaline levels need to be contained (controlled) during participation:

> *I think there is definitely a stigma around the sport and maybe because we compete in stuff that gets our adrenaline pumping at such a level, maybe yah, things… we are not competing, we also have to keep us sane by keeping the same adrenaline level so maybe it can seem reckless, but it is generally not. You know, <u>everything is calculated</u> and it is all about risk management.*

He further asserts that decisions the participant makes **might seem reckless to the outside-observer**, but are generally calculated:

> *I think it is very narrow-minded viewpoint. Anyone who is racing downhill recklessly is not going to make it down. You know, just because it is extreme in a sense doesn't make it reckless at all. I mean, I think anyone who would try to ride down recklessly would not feature at all. I think there are moments where, you have a calculate mindset or decision through a very instant split second where I have lacked time that I maybe need to ride recklessly for a moment to try and catch the time up. I think that is a calculated decision and not a reckless decision.*

Rock climber, **ESP007M**, explains that participation **requires becoming calm** and that unnecessary risks are not taken, since he holistically attempts to control that which is controllable and not just leave survival up to chance:

> *…making and being calm or becoming calm during a certain scenario, that helps a lot. And kind of taking a step back and looking at it – the whole thing of don't try to change what you can't change, or don't control what you can't control. You know, control what you can control and let the rest be. Because I'd rather try and control something, you know, I wouldn't just sit back and let things unfold.*

ESP004F further solidifies **acquiring a state of calmness** in mountain climbing, which serves as a precautionary measure to help her acclimatise effectively:

> *So, when I go climb, I have to put on my calm face. You calm down, you breathe slowly and you walk slowly and your acclimatisation is so much better when you climb slowly.*

ESP001M explains that although you do experience a rush during white-water kayaking, that **it is not about placing yourself in danger to die**. It is about understanding and respecting nature:

> *It is not about that I want to almost die. I understand the water and I respect the water.*

5.7.1.2On unnessacery risk-taking

ESP004F, who participates in high-altitude mountaineering confirms that there is a **stigma surrounding** extreme sports participation and that people consider it to be **irresponsible**. However, she argues that driving on the roads in South Africa are just as dangerous and unpredictable, but is seen as socially acceptable:

> *…people say that to me a lot – that I am not supposed to be doing this because I am a mom and I am supposed to responsible. And that is a tough one, because I do feel the guilt and the fear is very real. At least two humans rely on you to come home. But you drive on the Johannesburg roads…it is dangerous. You live a life where last year my mom got cancer, my daughter has a rare disease, I don't know life is never predictable. But I don't go do a reckless extreme sport. I think that, that is the misconception of most extreme sports. Most of them are not extreme, it just needs to be calculated.*

Adventure racer, **ESP009F**, similarly asserts that although extreme sports contain danger, an individual has a greater chance of being mugged or in a car crash:

> *…you do push the envelope more and you put yourself in situations that are dangerous, but walking across the road, getting into your car, getting into a plane, going to a shopping centre and possibly getting mugged, I mean you put yourself in dangerous situations in your day to day life. For me, if I go out, I want to go out and do something that I enjoy and love, rather than to be in a car crash or being mugged.*

ESP008F expresses her frustration towards those individuals who act recklessly during their participation, because they put other peoples' lives at risk and it all contributes to the stigma of extreme sports. She emphasises that the reckless person is not prepared, and that she encourages preparations and calculated actions during an expedition:

> *I have a problem with people who are doing extreme sports, but they are not prepared for it. Because they don't only put their lives at risk, they put other people's lives at risk. If you take a calculated risk and train for it – go for it, I am cheering you all the way.*

Rock climber, **ESP007M**, views extreme sports in terms of the **confidence** in the amount of risk one is prepared to take and when you are prepared to take that risk. He compares rock climbing with the risk and consequences involved with driving a car, where he analyses driving a car as riskier:

> *There is a consequence and risk involved [during rock climbing], but so is there a consequence and risk involved, you know, in driving your car or going out at night going from one club to another club – I think that is riskier. It is just where I am I happy to take that risk – I drive my car slower, and I put my safety belt on, you know, it is not somewhere where I want to die. Where in the Drakensberg - I am happy there!*

5.7.1.3Effect of commercialisation and negative initial experience

The rock climber, **ESP007M**, further provides two reasons of why he believes misconceptions emerge. The first reason indicates that **commercialisation of extreme sports** can provide opportunity for outsiders/novice/ non-participants classify extreme sports as thrill seeking. Therefore, he argues that he keeps his experiences to himself and doesn't overly share it on social platforms:

> *I also think a lot of these things have become commercialised, so every person just carries a go-pro and that is why I don't really share my stories, because I feel it is very personal, it is my journey. I don't want a lot of people to go, like insult it like 'ag you are just seeking thrill'. So, that is why I keep a lot of it to myself. You don't want people to think the sport is reckless.*

The second reason involves a **negative initial experience to the sport**:

> *I think a lot of people go with someone and have a very bad experience and maybe the person wasn't equipped or qualified to take them on the expedition or whatever, so they have a bad experience. Then all of a sudden, they say it is some kind of an idiot that does these sorts of activities. I think people have a very bad initial experience and then kind of don't give it another go. And, it just for not some people. Some people prefer just to sit at home, I guess.*

5.7.1.4On deliberate risk-taking with disrespectful attitude

ESP004F believes people who have a **disrespectful attitude** towards the climbing and **those who want to 'brag'** that they have done something dangerous, contribute to the reckless misconceptions:

> *That's where the misconceptions come from people who get hurt like that. So, had I gone to base camp and came back with the attitude of "Ha-ha climbing is dangerous, you know, I almost died" – that would be contributing to that misconception around extreme sports. No – you just actually need to be prepared, respect the elements, respect the sport you are doing and take some time to prepare properly.*

ESP005M confirms that the "reckless" participant would be someone who does not take safety precautions:

> *…they don't understand, they just don't know! I mean you do get reckless people and they just try things without taking safety precautions.*

but that an extreme sports person is calculated and confident, because they are well-prepared for an expedition:

> *Most people who do extreme things are quite well prepared for it and they have done their homework. I think some people sit on the sofa and they look at someone swimming across the ocean single headedly and they think 'jiss that guy is stupid, he is crazy'. However, that guy [swimming across the ocean] is confident. It would be stupid for them to get on a little boat and row without being trained, skills or experience. Those people [swimming across the ocean] are prepared and they have calculated the risk.*

5.7.2 Precautionary risk-taking

In this section, the ability of the nature-based extreme sports participant to **approach their activity with control** is discussed. Although, there are unpredictable weather conditions and uncontrollable environmental situations, all the participants emphasise that they take calculated risks, and do not wish to gamble with their lives. Findings reveal, that participants acknowledge the seriousness of a misstep and do not seek to present the illusion that extreme sports are safe, but rather that their awareness and acceptance of the involved danger allows them to take precautionary risks. They demonstrate **precautionary risk-taking** by addressing the encountered environmental challenges through using their skill, knowledge and good judgment. The nature-based extreme sports participants believe that during an expedition/tour/race their **survival is determined by** balancing risk and reward, being safe, having the right attitude, being adaptable, having an awareness of where you are and respect for what you are doing, the ability to think very quickly, and in who, what and where you place your trust. The participants narrations reveal that they aim to learn and understand as much as possible regarding the constraints of their nature-based extreme sports activity, with the purpose to confidently participate.

5.7.2.1 Being in control

High-altitude mountaineer, **ESP008F**, explicates that being in control for her means **being in control of her personal capabilities** during her activity. She understands and is aware that she cannot control weather, but that she can apply her skill, knowledge and equipment to mitigate the challenge to the best of her ability:

> *The risk I can manage is me. I make sure that I am ready, that I know the people who I am climbing with and where we will climb. But things like the weather or if an avalanche comes, I don't have control over it, but I do have equipment I can use in those instances.*

She continues that although she wants to be certain of her capabilities and the environment she will face, she **enjoys being amazed in terms of what she will see**, **feel** and **experience**:

> *I want to be certain. But I know that there are things that I cannot control. I like surprises in terms of what I will see, feel and experience. That I will leave up to chance. But I definitely want to be certain.*

ESP001M explains that there are certain preparations and skills a participant needs to accomplish, before taking on white-water kayaking. This signifies that the white-water kayaker does not just approach his nature-based extreme sports activity with a lack of control, but rather **gains necessary skills to approach it with control**:

The first thing you will have to do before you can take on white water kayaking – You must be able to roll in the water. Whether it's sea-roll, eskimo-roll, backdeck-roll, hand-roll or whatever it is, you'll have to be able to bring that boat back up so that you can breathe. Most importantly, if you start you just run rapids. It's like everything goes like this [demonstrates with his hands the movements]. Then you see, okay there is a wave in this rapid, I can surf it. Now all of a sudden you run the rapid backwards. And when you are at the wave you paddle it stream-up and you surf that wave. So, the whole time it's a step forward, step forward, step forward. Where I am at a point where the step I am taking, when I reach a rapid, I can't just run it.

ESP007M states that he takes a step back and **reassess** the situation when he feels he is not in control and then debates whether he should commence or halt his current task. The rock climber calls it a **threat-and-error management process**:

I think I approach it with complete control. If I don't feel in control, I don't think I would… I would probably take a step back and wonder why I am not in control. And, if it is because of a scenario that I cannot control, then I will decide to continue or not. If it is something that I should be controlling, then I would probably, well, I'll stop or start thinking 'why are you not in control'. I even think, if you look at those really good downhill mountain bikers and guys like that, you know, they look (from the outside) completely out of control, but I think that they are in control the whole time. So, I try to isolate everything and go, okay this is the threat, how do I mitigate it, how am I going to handle it and then ask "Am I happy with the probable outcome?". If I am not – I won't continue. If I am happy with the consequences then I will continue. So, I constantly have a threat-and-error management process that I run.

Downhill mountain biker, **ESP002M**, solidifies the statement made by **ESP007M** that it might seem from an outsider-view that a downhill mountain biker is completely out-of-control, but is in fact in control the whole time. He explains that he continuously applies **risk-management** throughout his intense downhill race:

For me it is risk management the whole time during the four minutes of intense racing.

ESP009F illustrates she **will not push herself** to a **point where she feels the challenge** or **situation exceeds her capabilities**. She explains this through her adventure racing experience:

You won't go to a point where it is super dangerous. So, I have quite a big issue with heights – the guys know that they will find the safest, best route up somewhere. It won't go to a point where I am too uncomfortable that I am going to break down.

ESP005M confirms that he plans in advance, but it is important to know that you cannot plan for everything:

I like to plan well in advance – but, you can't plan for everything.

5.7.2.2 Preparations and familiarisation of natural terrain

ESP006F believes she does not approach her activity with a lack of control, because she **prepares maximally** for an event:

> *I prepare maximally for a race and for a Drakensberg excursion.*

ESP004F asserts that she approaches her nature-based extreme sports activity like a sportsman who is calculated, opposed to a stuntman who may add to "reckless" risk-taking misconceptions. She claims that she only **embarks on an expedition once she is capable** of a successful outcome by pre-planning the activity and training her body. Essentially, it is not seen as a risk, since calculated preparation are performed:

> *The biggest difference between (in all extreme sports) – you get a stuntman and a sportsman. A stuntman goes out there and does a stunt. A sportsman is a calculated, planned, trained and it's not a risk, it's actually not a risk. So, when I say I am going to climb Everest one day – it's when I know the conditions are going to be perfect, my body is going to be trained fully and it's going to be like walking up a highway, because you have pre-planned every step. It's not like a stuntman and that I am going tomorrow and climb Everest and then you die.*

ESP003M emphasises the need to be prepared for an expedition, but not a know-it-all, which implies that preparation requires **being adaptable to changes**, especially the weather:

> *You need to be prepared! You need to be prepared as much as possible. Being prepared helps you foresee imminent danger, however be ready for anything. Don't be an idiot! But at the same time, don't think you know it all, because things may change very quickly. So, always know what the weather is, but always look where you are because things may change. So, we needed to know how to adapt on the spot.*

ESP009F explains that during adventure racing training, the participant needs to get their body "familiar and comfortable" with the distress they may experience. Essentially, **forming simulation training settings in preparation** for the three different disciplines of the adventure racing:

> *It takes long hours of training. Your training requires a build up to events – like six months before the event. You do have your training camps that will be a 24hour to 30hour weekend of training non-stop. Just to get your <u>body to be comfortable just being in that kind of distress</u>… you need to train with a heavy back-pack, because you are going to race with a heavy back-pack. You need to kind of simulate the elements of the race you are going to be in. so, if we know it is going to be a harsh terrain with lots of hiking in it, we put on a heavy back-pack and train in a harsh terrain. So, the best is actually to try an simulate what you are going to go through…because it is three different disciplines, you need to make sure you do them at least three times a week – a few runs a week, a few paddles a week, a few cycles a week. And incorporating a long paddle with a run or something like that, just to get used to that changing over, without fatiguing too much.*

Similarly, **ESP006F** discusses incorporating elements of the potential mountain race into her training plan:

> *Look at the map profile of the race and kind of look at the elevation gain and how much it is. And if you have that and incorporate that into your training plan. You know that your races have two big climbs, one is 500meters, you can go do a training run where you do x2 500meters elevation gain…Because I train constantly, I feel like I am almost always prepared from a physical point of view for a race and I just prepare myself mentally by looking at maps and water stations and anything I can't get on the route I carry with me.*

Conducting pre-research on the rainfall, the water level of the potential river to be kayaked, and where the different rapids and exit points are, showcases that **ESP001M** purposefully familiarises himself with the physical environmental setting of the expedition:

> *for us to go and kayak a river, we need to go do proper research – I need to check what was the rainfall, what was the level of river. What is really nice (if it works), the water-and-sanitation website gives you the measurements of the dams and river levels. For example, if the dam is on 'this' level and the exit is 20 cubics…That flows in and now all of a sudden, the level of 60 cubics. So, you'll have to do this kind of homework to ensure this and that is in place for safety – we are only able to row up to a certain point. You can use google earth – you can zoom in and search where what kind of rapids are, the exit points, camp sites and these sorts of things. We do these types of things before we just go and kayak on a river.*

ESP001M explains that he has **become comfortable through his experience** to know the rivers he kayaks, like the veins and cracks on the palm of his hand. The veins are compared to the different routes a river branches into, which implies being prepared and familiar with the layout of river to be capable of making calculated decisions on route:

> *I have come so far and I am comfortable with everything I do. But that is also because of rivers you get to know, like the palm of your hand. You know the different cracks and exactly where each crack leads to. The Vaal River is like that, I know it from here to the other side of Parys to Schoeman's drift and further on.*

5.7.2.3Enhance knowledge and skills

ESP001M enhances his knowledge regarding a specific area by **reading articles** or **watching documentaries** and **making notes,** which indicates that he wishes to have good knowledge of the area prior to embarking on a kayak trip:

> *You'll have to make notes. If there is an article about kayaking, I often read it. It is my passion and sometimes you go find articles. …if an article is written about the sport or if a new short film is released – for example CONGO: the grand Inga project. I remember our trip through Botswana, Zambia back through Zimbabwe – I sat down (it was one of the best trips of my life) and did research, I took a file with me – something I would never have done in school. Our logistics was organised, our accommodation etc. And then you gain knowledge about the area. Obviously, what activities are available… can I go kayak on the Chobe River – No, you can't, there are crocodiles! To have knowledge of an area is a must!*

By knowing what dangers are involved if you swallow water from the Vaal River, is evidence that **ESP001M** applies his learnings practically:

> *For example, the Vaal River – if you swallow a lot of water (it is dangerous for your immune system). If you swallow a little bit of water then I will tell you to drink Imodium when you get back home. It's small things like that, that always run in the back of your mind [because of rea – what line to take on the river. I work it out beforehand.*

Mountain runner, **ESP006F**, also relies on **literature** and the variety of perspectives from fitness and health professionals to improve training and nutrition plans:

> *I read a lot of literature and different people's perspectives on coaching and training plans and nutrition. Because in sport in general, I have so much to learn!*

ESP002M states that he uses his **personal feedback to improve** and enhance his skills:

> *I mainly use my own feedback.*

ESP007M explains that an individual can enhance their skills by **gathering information learning from their own and other people's mistake** to always develop and grow your abilities. His notions are based on his flying background:

> *I always draw it back to my flying background, flying and planning is meticulous. Yourself – are you prepared? Physically: are you healthy or unhealthy? what stressors do you have? – do you have a debt, are you in a bad relationship. Because, if stuff goes bad, everything comes out.*
>
> *So, you know, you look at yourself and then you look at our equipment – do you trust your equipment? do you have the applicable/appropriate equipment for the task at hand? Then, you look at the stuff you can't really control. You start looking at the weather, the environment, maybe what threats are there and with regards to let's say Lesotho – we would take into consideration [weather], but the locals are also a big thing and the local dogs are a big thing, so, we need plans for all those types of things.*
>
> *And, if x, y, z happens, how are you going to treat it. So, I think, once you have ticked all those boxes, then you kind of go, and there is always something that comes up that you didn't plan for – to make note of that and then obviously next time, don't go without it. And, this is sort of with these sort of extreme activities (if you want to call it that), you can't really, because people always go you have to learn from your mistakes, but what if your mistakes are fatal, you can't really learn from them.*
>
> *You need to learn from other people's mistakes. So, read books, phone people, email them - gather information! And, also try and figure out – why are they still alive? What quality is keeping that person alive.*

ESP008F asserts that **learning from others successes** helps her enhance her own abilities. The high-altitude mountaineer said she learns by interacting with the people who perform/ed well and also **keeps track of** the **outcome of her own practices**:

Learning from others. In 2014, all I did was gym work. I gym-ed five times a week and that was it. I noticed that people where a lot faster, more comfortable. I then spoke to them. Some of them were runners, they also did a lot of cycling as part of their training. That is also why I started incorporating that into my training. So, it is learning from others, and be honest with myself, how did I feel today, so, I take a lot of stock of what I have done. The year that I have gone, and there was an earthquake, I was doing CrossFit, I was a lot stronger. So, what are the things that I have done. I have become very good at listening to my body, you know, that I have never used to. And, that is actually very important, because that helps me to know what I need to do more of, what I need to do less of, and what I need to focus on.

She continues that through her experiences she improved her risk-management strategies by doing **interviews with the team leader** and getting to know the team members who she will summit with:

I interview the leader, which I never used to do – asking them questions "so, you have summited eight times? what else have you done?"…I try to figure out, who are the people I am going to climb with, I never did that previously.

ESP007M claims that the absence of a training regime will **lead to a Plato and hinder self-actualisation:**

If you don't have training structure or programme and goal, then I don't think you are going to progress that much. You will definitely Plato and not carry on.

He proves that **self-actualisation can be reached through training and preparation**. The collective application of learnings through participation leads to improved self-confidence:

Running for multiple races like in the Drakensberg. You know what we plan completely didn't happen, because of weather and navigation stuff, so, we just had really bad weather for the first few nights and days and we didn't see much, we moved much slower, we didn't reach any of the cages we had to reach. So, we literally made due – we slept under a hanger one night and just like under a rock, the second night. You just make due and you realise how equipped you have become to adapt. And, normally you would go, ag let's just turn around and go off, but you realise you don't and then because you now say your total distance you wanted to cover was like 30 and 30[miles] and now you have only covered 15 and 20 and now you need to make up your mileage. And, then you realise how off your training base is, because now the next day, you need to 55 or 65[miles] and not 40 – and you can do it, you get to the next point and you get there in a good time or whatever and it makes you very happy and you think everything is going well again.

On the last day, we actually decided to turn back and well, get off the mountain, we were quite deep into Lesotho by that stage. We had to run like the straightest line possible to the escapement, but we couldn't get off still and we slept a night at the top there as well. And, we went back the next day. So, you just realize, just ***how self-sufficient you have*** *become and all these small adventures that you do collectively pays off eventually. If you do a big one… although we didn't achieve our goal – by far that trip, we have learned so much more, you know, you are now confident, which you didn't have before, because you only get that confidence when stuff is wrong and you learn from them to make the right decisions.*

5.7.2.4 Calculated decision-making

ESP003M emphasizes that decisions-making during an expedition is based on experience:

> *When I say 'let's do this' it is a well calculated decision based on the experience.*

ESP006F illustrates the **importance of thought processing** and decision-making to ensure the successful outcome of an excursion:

> *By using your gear and ability, I suppose to get out of the risky situation. If you are on top of the Drakensberg, and the weather is really bad, you need to either find shelter or you need to put on all your protective gear, that is why you carry it. You need to decide, if you are going to find shelter or if you are going to go off the mountain. You need to decide which is more feasible at that stage – it is harder to find a cave in the middle then to find a path to get off the Drakensberg, you can't just go down there… there are very few spots where there is actually a trail and a route, you can go down with. It is very dependent on the situation. Having a very big storm come over, and by not knowing where we are and it was raining and cold and everything was wet, everything was flooded and it wasn't very easy to go down. We ended up finding a path and got to down, but we slept under a rock.*

ESP003M demonstrates that participants prefer to **postpone their expedition when variables** (equipment and weather conditions) **exceedingly uncontrollable**. He explained that they only went on their 45day-ocean rowing expedition once the water and weather conditions were clear, even if it meant postponing it with a few weeks:

> *So, we left for Spain and we had other challenges – the boat was not finished. And [redacted] said it, even his wife, [redacted] it is not going to be an adventure if it is smooth. It has to have all of these elements…we were supposed to spend a week max in the Canary Islands and go out. But we spend a month! Until the moment that we left. And he was like, open waters now – let's go!*

ESP004F also supports the notion **to postpone an expedition**, because **she values her life**. She states that the mountain will still be there and she will first regain her strength and wait until the weather circumstances are less fatal:

> *That is why I came back down in 1990, because life as we know it is fragile, but the mountain will always be there. I would rather retreat and go fight another day.*

ESP005M expresses that a person who proceeds with an activity without considering the weather and environmental challenges is foolish and does not have the knowledge, skill and experience, opposed to an expert:

> *If you are an expert, you know not to be foolish. And if you are a fool, you will proceed, regardless of the weather or other challenges. If you go and proceed then you don't have the experience, you don't have the knowledge, you are not an expert, you are just an idiot. So, absolutely not. Risk needs to be calculated. Otherwise they are not risks, they are just [reckless stunts].*

ESP007M applies his flying background (being a pilot) on **threat-and-error management** during decision-making in rock climbing and mountain running on whether to cease or continue with an activity. He states that in certain situations it's sometimes safer to continue then to turn around:

> *I might not feel comfortable proceeding for some reason and I just won't carry on. I also try to look at it – is it safer to go on or is it safer to go back. Because in flying [referring to being a pilot] especially, you get to a point where it is now just safer to just continue than to turn around. So, with running it is a lot of times the same, you just try to make that decision is it safer to turn around and carry on or divert. So, it is all very situational, dependent, I guess. But I think if you go beforehand with the mindset of if things get dangerous, I am going to continue I also think you have limited time left.*

Participants **acknowledge the seriousness of a misstep** and do not seek to present the illusion that extreme sports are safe, but rather that their awareness and acceptance of the involved danger allows them to take precautionary risks. Acceptance and commitment to the challenge is demonstrated through precautionary risk-taking. Because **ESP002M** is aware of the heat the sun causes and is committed to his training schedule. Accordingly, he starts his downhill mountain bike training routine early in the mornings:

> *… through the summer it's really hot so I try and train early, I get up at about 4:10 in the morning and I ride at about 4:30, so I do have some early starts. My training is probably five to six times a week either running or riding and gym four times a week. So, my routine is pretty tight.*

5.7.2.5 Trust placement

Some participants report that they place their trust in something greater during their nature-based extreme sports activity. **ESP001M** refers to this greater power as "bigger hands" that protects him:

> *I do believe there is something greater than you and I. Sometimes I find myself sitting and thinking of who looks out for me and then my thoughts float away to 'bigger hands' that protect me and then I find myself believing. But what I believe will always be a question I need to ask myself.*

ESP003M views this spiritual power in terms of an "intention" that he sets at the start of an activity. He explains it as follow:

> *I believe in a higher being, in a higher universe. I set intentions. So, that is something I learned from another coach of mine, is setting intentions. The intention is saying the outcome you want. What do you want out of the day? So, only say what you want. I usually say when I drive 'safe travels' – that is my intention, then I am done. Which means I don't have to worry about accidents. Not that I am not alert, but because I have set a safe travels intention. The beginning of everyday, we would start the row with a prayer. [redacted] prayed for what we wanted for our families and for the day – everyday that is how we did it. Me, on the other hand, I set an intention, just behind, for myself, for us. So, spiritual, I call spiritual powers to come to us. So, I trust the intention.*

I trust the powers to be with us, whatever the powers are. Because now I am chilled, and nature just works with me.

Other than placing their trust in a higher power, the nature-based extreme sports participants assert that they **place their trust in themselves**, their **team member** and **gear** to ensure a safe outcome during an expedition/tour/race. **ESP007F** provides a rock-climbing example, pointing out that when you do not trust your fellow climber (belayer), having the right skills and gear are useless. Essentially, their mistake can lead to your death:

So, first of all you need to trust yourself, and that goes deeper, you know, you need to know why you are doing it, your goal and that kind of stuff. And, then whoever else is involved. So, if there is no-one else, then obviously it is not applicable. But, let's say climbing, it is you climbing, your belayer is belaying you and catching you if you fall. So, if they are paying attention if you fall, if they don't know what they are doing, then what's the point of having all the gear or what's the point of having all your skills or whatever. If they make a mistake you can die.

So, you need to trust the other person completely and then your gear. So, I always look at these things in a circle, and if there is a hole anywhere you would probably not go ahead. So, any other people involved, the gear needs to be all trustworthy and good, and if that is good, I am quite happy to take on non-controllable elements like the weather and stuff like that.

ESP003M confirms that he also places his trust in his fellow kayaker and gear:

I place all my trust in my gear and fellow kayaker. You must have fellow kayakers who you can trust when your situation turns south.

ESP005M explained, using a story someone told him on one of his executions, of how a blind-individual has essentially no-choice but to rely and place their trust in other people to direct them through obstacles in the physical world. This became a lesson for him in his own life:

I am going to tell you a story… this was in Nigeria or Ghana…and a blind guy was talking about trust. And, his friend said... the gutters were quite big! And he was walking with his friend and when he got to one of these gutters and his friend would say (let's just call him Giddy), "Jump Giddy" and he took a big leap to get across the gutter. And did this for a while, and then one day someone said to him, 'listen dude, these people are making fun of you, they are telling you that jump when there is no gutter'.

And he [Giddy] was like, "these people are making a fool out of me, I am going to teach them a lesson, next time I am only going to step, I am not going to leap!" And, he didn't leap, and he fell into the gutter! He had no choice, but to trust people. And, it was a big lesson to me as well. Luckily, so many people I have lost – they couldn't face a blind person. And that is fine. But, luckily, I am very lucky, I guess I have been able to have overcome this, because I have people who I quickly put my trust in.

5.7.2.6On being an expert

ESP003M showcased that he built his way up to becoming a safety kayaker, which indicates that **gaining knowledge builds a participant's experience level** and defines a participant's level of expertise:

> *I started at bottom of the log guide, where you are told you get into that boat, you kayak with that client and you ensure that client stays safe. So, I had to start somewhere.*

ESP005M states that being an expert in your field of nature-based extreme sports requires knowing as much as possible, constantly educating yourself and preparing properly for an excursion. He also describes that there are different levels of expertise:

> *It is about knowing as much as you possibly can, educating yourself properly, and having a little bit of experience and doing your homework, doing as much ground work as you can before the time so that you don't just go into the dark. I think there are different levels of expertise – where did you cross that point where you really now classified as an expert, I don't really know. Because it is obviously easier becoming an expert in a bicycle rider than an expert in formula 1.*

ESP007M demonstrates a different understanding regarding being an expert, as he does not regard himself as an expert, because there is always space for improvement. He states that your experience level does not depend on the number of hours or years you have been doing an activity, but rather your sense of awareness with which you approach it:

> *That's the thing, I don't really refer to someone as being an expert or to myself. I think if you have reached that point, you should stop doing it, because then you are probably going to come short very soon. So, in flying we always refer to 10 000hours or you know, if you want to be an expert in an activity you need 10 000hours of experiences kind of thing. And, I wouldn't always judge people, you know, on the number of hours or experience they have, but yah, ag, I think you don't want to reach that point where you call yourself an expert, because there is nothing new to train. Yes, you need to be aware what you still need to learn and what your shortfalls are. I guess, I am someone with an acute sense of awareness as where awareness would be defined as an expert in different fields.*

5.7.3 Motives for participation

The participants reported the following benefits, which draw them towards participating in nature-based extreme sports activity. None of the participant specifically said that it was the “rush” or the “risk” that attracts them to participate (derailing the stigma of “reckless risk-taking” and for participating purely for the adrenaline rush). Their answers clustered around improvements in their physical and psychological well-being; building unbreakable interpersonal bonds, which provides a sense of community; reaching self-actualisation that involves self-discovery and self-acceptance; the release of emotional tension in a curative way allowing catharsis; opportunity to reflect and counterbalancing busy-city life; experiencing the outdoors and remote natural places that creates ineffable moments; inspiring and leaving a legacy behind. Since a nature-based extreme sports experience is difficult to put into word as **ESP007M** asserts: “It is really difficult to explain to someone, if they are not doing it themselves.” The following motives have been identified as reasons and benefits associated with nature-based extreme sports participation, other than doing it for an adrenaline rush or thrill:

5.7.3.1 Improves physical health

ESP005M describes the **physical improvements** that can result from nature-based extreme sports participation:

> *From a physical point of view, depending on what you do, if you paddle across the ocean, you are going to come out a hell lot stronger than you when you started – both physical and mentally. And, if you ride a scooter though Africa you are going to shake off a few kg’s and you are going to be tough – your forearms are going to bulked up. If you’re going to paddle two rivers and an ocean for one week stretches – you are going to be a good paddler by the end. Because you will encounter situations where you have to become good, you have to learn, you have to overcome things that you otherwise wouldn’t. I am fitter and stronger than I have been in many years, but I work hard to get to that point. I don’t just go into it; I want to calculate those risks. I am definitely a lot stronger and fitter both, physically and mentally than I was before I started my scooter trip.*

ESP004F claims that high-altitude mountaineering became a reason for her to get out of bed early mornings to **become physical healthy** and **fit**:

> *So, if you want to exercise to be healthy, get a goal – any goal, it can be stupid. But something to motivate you to train. You’ve got a goal: to go train every day to keep healthy and active is actually quite tough. Life gets in the way, you know, you get busy, you don’t feel like it and other things become more important. But when you know that you’ve got to climb a mountain in three months – you’ve got a reason to climb out of bed at 5am and go train. That for me is the physical benefit, it actually does keep you healthy.*

ESP006F describes how becoming **physically stronger** can translate into a healthier lifestyle:

> *Physically you become stronger, which has mental benefits, because you feel better about yourself that basically translates to a better lifestyle, you improve your diet and daily activity and your mindset.*

5.7.3.2Enhances psychological well-being

ESP003M explains how he had to deal with a death of a family member, while on his ocean rowing expedition. It helped him become mentally stronger, but was extremely tough. He explains that he dealt with the loss in a different space and made peace with the reality on the ocean. His explanation illustrates elements of time (chronosystem):

> *Learning how to deal with those human things – dealing with them in a space… find your strength, find it here, now! I was rowing while crying. It was days. As you are rowing, a thought comes to mind and you are still rowing. By the time I finished, I was so strong – emotionally, because I needed to find a way for me to get over [not get over it] but to heal from it, while I am there [on the ocean]. So, when I got home [oh they waited for me], we only had the funeral when I got back home, while everyone else was crying – I already made peace with the reality. I had to accept that when I was very far away [on the ocean]. Imagine an astronaut being in that space station, learning that their wife passed away, and according to the contract they can't do anything. You feel helpless – defeated!*

The importance of **mental toughness** is emphasised by some participants and how it has an influence on their physical fitness. **ESP003M** describes how an increase in mental strength leads to an increase in physical strength:

> *Mental fitness-and-strength is very important. The stronger you are mentally, the more you can achieve physically.*

ESP008F provides a practical example of the linkage between mental and physical strength during a mountain climb:

> *I think you become tougher the more experienced you are as well as your training. I have realised that over time that your mental fitness is very much linked to your physical fitness. Because, if you are physically fit, you worry less about what you cannot do. There is a huge link, and in this expedition, there was like an 'aha-moment', can I do that? – I can. And, that confidence, propels you. Your physical strength takes you there, that confidence pushes you the extra mile. You need to be tough, because not every day on the mountain is a success. Some days you just suck, and then the next day you just need to see it as a new canvas. If you have failed, learn from it, and move on.*

ESP002M describes how his activity permitted **mental toughness**, in terms of "not breaking" and making it through a downhill section, which you thought would break you:

> *The best moment is when making it through a section when you thought you'd break, but you never broke! By pushing the absolute limits, to me, it is just an incredible feeling.*

5.7.3.3Provides a sense of community

Participants report that unbreakable **interpersonal bonds are formed** during their nature-based extreme sports activities. **ESP001M** explains that white-water kayaking **provides a sense of community**:

> *You meet incredible people and that is really priceless. You build unbreakable friendships with people who you kayak with, because there is so much trust involved.*

ESP009F asserts that her adventuring racing participation has led her to **meeting a lot of like-minded people** with similar life goals:

> *The people you meet are just super awesome. You meet a lot of like-minded people that have very similar life goals. And, I have made some amazing friends through adventure racing. It is such a small niche, then it's so cool it is like we have become like a family of adventurers. A community to belong – it is small it is very intimate.*

5.7.3.4To reach self-actualisation

ESP007M asserts that his drive to participate in rock climbing is imbedded in self-discovery, self-acceptance and reaching self-actualisation:

> *Many climbers will tell you it is not for materialistic reward, because there is not much money or sponsors or rewards and stuff in there. It is a very self-achievement kind of thing…I think I strive to get to know myself better. The further I put myself into different scenarios and see how I react and I get to know myself better. So, a big benefit is literally being happy with who you are; accepting yourself and happy being out there, I guess – the freedom and happiness you get from it.*

Similarly, **ESP001M** describes his journey of self-discovery through his activity in nature:

> *You become aware of your soul, which requires nature and you find yourself.*

5.7.3.5Catharsis

ESP004F describes how mountaineering **sets her soul on fire**, which demonstrates notions of catharsis of releasing emotional tension and restoring her spirit:

> *It literally sets your soul on fire and I never experienced that before. I feel like I was dead, that I wasn't living until I found my passion – mountain climbing!*

ESP003M encounters catharsis in a curative form of the process of releasing:

> *To be honest, it is so healing, to just let loose!*

5.7.3.6Counterbalance city-life

ESP001M found participation in white-water kayaking beneficial, because it counterbalances the busy city-life:

> *You build knowledge regarding the environment, plants, animals and water conditions. One benefit that it really gave me, was to leave the busy city-life behind. I really started focussing on the different weather patterns and nature conservation.*

ESP008F states that mountaineering provides **a setting for reflection** and helps you appreciate something outside build environments, she calls the concrete jungle:

> *It is a time of reflection for me. It helps you appreciate something outside the concrete jungle we are all living in.*

5.7.3.7Experience the outdoors and remote natural places

ESP001M describes the opportunity white-water kayaking provides him to experience the outdoors and explore places only a few people have seen. As part of this exploration through his participation in a nature-based extreme sports activity, he is able to kayak new rivers every time:

> *You get the chance to enjoy the outside world. To explore places which only few people have seen. No river is the same twice, so you get the chance to row "new" rivers every time.*

Also partaking in mountain hiking, **ESP003M** explains the **ineffable feeling** he gets when he discovers a **never-seen-before** mountain area:

> *Best moment is discovering something I have never seen before. Because I don't just hike to explore the mountains, seeing something I have never seen before. And, the funny thing is, you can't even explain it. It's a feeling I can't even describe. If I am alone, I just get this buzz feeling inside.*

Mountain runner, **ESP006F**, describes how her motivation for participation and completing her race is grounded in the **discovery of new trails**:

> *I look forward to seeing a new trail, so, I don't like to do the same race over and over again. I enjoy racing on a new trail and seeing a new environment and vegetation. That kind of motivates me along the way.*

5.7.3.8Opportunity to travel and experience various cultures

Both, **ESP002M** and **ESP010F** describe the opportunity their activity provides them to travel the world and experience different cultures. **ESP002M** says that he has been fortunate "have travelled the world." Ocean wave surfer, **ESP010F**, describes the benefits of participation as follow:

> *The lifestyle, travelling, every surf and place is different, the culture, the mental and physical strength...*

5.7.3.9To inspire and leave a legacy

Upon asking **ESP005M** what he wants to accomplish with his nature-based extreme sports activity, he said he purposed to leave a legacy:

> *To leave a legacy or something behind, to reach your goals, complete what you set out to, achieve your dreams. For me, it is all about creating a story…*

5.8 Derail anthropocentric or ego-centric views

Anthropocentric views, that the human-nature relationship becomes a rivalry in which humans perceive themselves as superior to the natural world, are addressed by the participants. Ego-centrism perceives humans as apart and superior to the rest of the natural world (Schultz, 2002). **Eco-centric** viewpoints are displayed by participants, who consider themselves as a part of nature (Thompson & Barton, 1994). Their desire to be accepted by nature, permits an understanding that humans are interlaced within a larger functioning ecosystem, including the fauna and flora, which requires harmonious co-existence.

5.8.1 On conquering nature

None of the participants feel the need or desire to conquer nature, but rather **conquering the challenge. ESP005M** states:

> *I don't want to conquer nature. For me, people who want to climb to the top of Everest, I have no desire to. I would love to stand and see and wish some things. Or for me, it's about becoming comfortable in nature, and enjoying nature and experiencing nature and everything it can have. It is not about conquering nature, it is perhaps about conquering the challenge, overcoming a certain distance or reaching a certain point, or goals or things like that. But, definitely not conquering nature. I rather want to be at one with it, and enjoy it.*

ESP008F desires an **acceptance from nature**, rather than conquering it. Her philosophical explanation describes how the mountain allows you to summit her. The way you approach the mountain will therefore determine whether she lets you in – accepts you:

> *I conquer myself. I almost feel the need to be accepted by this mountain. Everest is a girl, she can be temperamental, she can throw all these winds and blows at you, but she almost allows you to summit her. At the same time, I also know she is a mountain, she is God's creation. She almost identifies the respect she is approached by and lets in, and you almost like you becoming one with her. It is a spiritual journey.*

ESP003M believes nature-based extreme sports participation is about **conquering yourself**, and that you are not fighting against nature. His narration explains that nature-based participants **do not view nature through anthropocentric lenses**:

> *Never conquer nature. It is not about conquering nature; it is always about conquering you. Never conquering nature, nature is not something against you. It is you against you. I always use this line when I am out hiking with people: This is not you against the mountain, this is you against yourself.*

5.9 Environmental degradation

Participants' show high levels of an **environmental-literate-being-in-this-world**, who illustrates a fundamental consciousness, awareness and comprehension towards environmental degrading problems (Roth, 1968).

5.9.1 Addressing mindless actions

Pro-environmental behaviours in society are governed by **environmental literate beings'** knowledge and comprehension of the environmental degrading state and its relevant issues (Roth, 1992; Teksoz et al., 2012). South African societies have a higher tendency to conform to environmental degrading behaviour such as littering and pollution, which add to the environmental degrading state of the earth (Garg & Mashilwane, 2015; Leijdekkers et al., 2015). The earth's degrading state is attributed to mindless actions of people, which the nature-based extreme sports participants showcase, through the impact littering, pollution and climate change have on their activity:

5.9.1.1 Impact of littering and pollution

ESP007M describes how humans play a part in the **deteriorated state of the earth** and **that littering** has become **an automatic response** when there is traffic of people. It solidifies people's mindless actions, when their practice of behaviour becomes habitual or automatic, where their attention is scattered and awareness of the present moment dissipates (Gardner & Moore, 2006):

> *Climate change, I think it is a name people give for what we[humans] are causing. We are definitely deteriorating the earth. Our impact, especially the last two decades have been severely detrimental if you look at the holes are getting bigger in the ground. You know, the gaps I fly into – you know, flying from, descending from 5000ft to low ground level, we fly through horrible smog. The biggest one I am worried about is littering. I think litter just reaches everywhere. There is definitely less up in Lesotho and in those areas. Wherever there is frequent traffic of people there is litter.*

ESP001M asserts that **climate change is a global problem**, but that water-pollution and rubbished dumped in rivers in South Africa, mostly affects his kayaking:

> *Climate change is a global problem and currently doesn't really affect what I am doing. We are fortunate to have great rivers in South Africa, which have water all year round and it will only get better despite the changes in weather. The biggest problem with the rivers is sewage and rubbish dumped into them! It affects my kayaking.*

5.9.1.2 Impact of climate change

ESP002M describes how climate change has **impacted his training routine**:

> *We are a sport that survives in summer. In Europe when we are racing in summer, we have noticed that the summers are a little later or little earlier. And we can feel it. Our season usually runs from April through to September, we are very dependent on the climate. And making sure there is no snow when we ride in the skews? Or in the summer. We do have some really absurd weather patterns, recently.*

ESP004F describes how experienced **climbers can actually see the impact** of climate change on the natural area that they climb:

> *It's actually nice climbing with experienced climbers who have climbed for years and years, because someone like Sibusiso will show you as you go. He will tell you "well when I first climbed this, this was a lake, now I am here and it's dry, it's empty." And he obviously when you study different mountains, different regions you see the pictures and history of the first people who have summitted and what it looked like then compared to now.*

ESP009F also describes seeing a **change in weather patterns** and absence of living organisms during adventure racing:

> *Things have been shifting and chancing. Winter gets a bit later every year, summer gets a bit hotter. We don't often in the same places, but I mean you can see like with even like paddling, we would go like where we paddle little fish, where they don't release water. It is so much lower than it was then I started paddling. You can see the deterioration as you go along.*

5.9.2 Environmental thinking

Participant's indicate environmental thinking through their thoughts on the importance of nature on humanity's survival. Pro-environmental thinking involves a mindset of consciously thinking of how your actions performed are aimed to reduce the detrimental impacts of human activities on the environment. It involves thoughts of protective environmental behaviour that benefits and enhances the quality of the environment, which participants demonstrate through acknowledging and not denying their carbon footprint (Krajhanzl, 2010; Sawitri et al., 2015; Steg & Vlek, 2008).

5.9.2.1 Importance of nature on humanity's survival

Notable responses from the nature-based extreme sports participants describe how important they think the natural world is to humanity's survival. **ESP007M** states that **without the natural world, humanity will not survive**. He demonstrates this through an ego-centric and eco-centric example:

> *Well, there is no US without the WORLD. So, I saw this picture once, it is a circle it is about the egotistic and eco-tistic or egocentric versus eco-centric:*

A lot of people see themselves in the middle with the circle around us, and we are actually in the circle with nature and we are all in the same circle – you are not separate form it or it doesn't revolve around you. Nature would probably carry on with us, better! We cannot carry on without nature.

ESP002M says green spaces provide the opportunity for humanity to **free their minds** to **maintain their sanity**:

Even if we were to live in the cities, we still need parks – we still need to find the green area/space to let our minds free and to be closer to nature. People in general still need the open space and get away space to be able to maintain sanity.

ESP005M points out the **importance of bees** and the role they play in the survival of the human race:

Bees are essential to humanity's survival… People are quick to go to a can of doom, but without bees we all die. If we don't have trees, you know, nobody breathes. It is essential, essential, essential! You know we have gone down this wormhole – it is really bad. There needs to some drastic, drastic changes.

ESP004F illustrates an understanding of **humanity's carbon footprint**, and that it is unrealistic to think that our actions do not have an impact on nature:

We cannot have NO impact [on nature] – it's not possible. You know, you cannot go out there and say I won't take away, but you spend 24hours on Kilimanjaro summit night – where are you going to the toilet? Collectively, how are the 50 000 people that are climbing during the year contributing to the ground of those mountains…disgusting, it's gross. You are all contributing whether you like it or not. So, don't be ideological be realistic.

ESP001M recognises that he leaves a carbon footprint, but his **acknowledgement** shows his **awareness of the impact of plastic** on the earth's degrading state:

I am not saying that I am not leaving a carbon footprint, If I move through it. Obviously, my boat is made out of plastic and if it hits a rock a piece of plastics scrapes off.

ESP007M suggests that a **healthy eco-system** would be where everything works to the advantage of each other in the eco-system. He states:

There is no certain species or being that are exploiting the others.

5.9.2.2Pro-environmental behaviour

Participants do not just think pro-environmentally, but also act pro-environmentally and contribute to being environmental responsible citizens. **ESP007M** describes his contribution to a healthy eco-system by being an environmentally responsible citizen through the mindset of "the power of spending":

So mainly I have…and this started quite recently actually, it was more my spending habits or the power of spending. Where am I spending my money, which companies am I spending my money on, which companies do I invest my money in. Like, to try and research more about them, specifically.

Because I think the consumer has power and I think a lot of us don't realise that. And, then also single use plastic is one of my biggest things of late – like, I have really become aware of the amount of single use plastic we go through and not just replacing something because you want a new one. But using it until it can't be used anymore. Where I think we waste to much – so I try to decrease my footprint on earth, I guess. I think a lot of people want to do good, but they don't realise that they can actually do so much better doing less, or using less. Wasting is a big thing for me, so, whether it is wasting food or wasting products or materials or money or whatever – just waste less!

ESP009F similarly states that she recycles and maintains an organic lifestyle:

Basic things like recycling. I am vegan - having your own natural vegetable garden.

ESP008F demonstrates pro-environmental behaviour during her mountaineering training and summits by **picking up litter** that she sees and placing it in a bin. Her pro-environmental behaviour is supported by her mindset that she **wishes to create a healthier eco-system for the next generations**:

So, in my small way, I try not to leave anything, if I take stuff, I try and take them back down. The same with hike. Locally, I try to if I hike, collect the litter, I hike at Hennops, Dikokeng, and try put it in the bin. I want to one day when my kids bring their kids on the mountain, experience what I experience.

ESP005M explains that **environmental education** is an important tool to assist with pro-environmental acts and develop more environmental responsible behaviour in citizens:

EDUCATION, EDUCATION, EDUCATION! People need to understand it is better to ride a bicycle than a car, it is better to use public transport, you need to understand to not litter, you need to understand what trees are for and things like that. And actually, respect and enjoy the outdoors. And, just get of that phone and things like that. Because then they'll understand every time a person throws some garbage down the street – it boils down to education, they will understand the devastation they are causing.

5.10 Perspective towards nature

Participants' perspectives towards nature are evidently influenced by their participation in their nature-based extreme sports activity. **ESP003M** describes how his nature-based extreme sports activity has **changed his whole perspective towards** the fauna and flora and how **his sensitivity and awareness** contributed to being a **catalyst for change** by educating those in his community:

I mean I didn't care before. Actually, I grew up in an environment where even animal abuse was okay. And seeing what I have seen, doing what I have done, where I can see some of the things were okay are not okay anymore. And, that changes how I have seen nature. Now, I am an activist, although I am not active on social media. But if someone was to do something, I would go to them and say are you aware what this does – so I give out education now based on the education I have received.

ESP004F describes **the development of a sensitivity towards rock,** facilitated by her participation in mountaineering:

> *I didn't appreciate rock too much and that developed a much greater appreciation – perception of the texture of the rocks and layers. The more you work with rock you can differentiate between the quality rock and what is nice rock or not so nice rock, the types of plants that grow in it.*

5.10.1 Merge with nature

The nature-based participants describe a **merge with the natural world. ESP004F** describes that nature becomes an **extension of you**:

> *Definitely feeling at one with nature. It is a part of you – it is an extension of you.*

ESP008F outlines she feels that if **being in synch with nature** means becoming one and also only leaving her footsteps on the mountain, she definitely merges with nature:

> *In synch, I don't know if that means becoming one. I think, I definitely have much more respect for the mountain than I did previously. I want to be able to only leave my footsteps on the mountain, I want to allow other people when I come back, to experience what I experience today, a few years from now as well.*

5.10.1.1 Intimate bond with nature

ESP009F describes the **intimate** but **challenging** bond she develops due to the extensive period she spends in nature during her activity, creates an appreciation for nature:

> *Because you spend such a long time out there. You create a bond with it. It is something you appreciate, but it also challenges you in the same breath.*

5.10.1.2 Sensitivity towards natural elements

ESP007M describe merging with nature as a **symbiotic relationship and gaining an acute awareness of surrounding environmental stimuli**:

> *…as far as we can merge that's the symbiotic relationship you have with it. You become very acutely aware of your circumstances, well, if your circumstances are in nature you merge with it.*

ESP001M states that his **feelings become in tune** with the way the river feels. The type of river elicits a certain emotion within him:

> *If I am out there on the river, I feel at one with nature. If that makes sense. It depends on what type of river it is- if it's a heavy white-water river then the adrenaline is obviously so much more, and the area you are in makes it so much more exciting! If it's a calmer river, then it is like I told you (referring to the time he took me on the river for a white-water kayaking beginner experience) is more of a nature paddle on the river and you embody/submerge yourself within nature.*

ESP003M describes merging with nature in terms of **sensing change in weather, without any weather reports, but by observing nature**:

So, with hiking, you can actually sense when the weather is about to change. I have become so good at monitoring the weather, that I can look at it, even if there are no clouds, and I assume at a certain time, things are going to change. And, I tell the people that I am with.

And at that time, it happens… rain – I can see how long it will take, with no weather reports, just looking at nature, right. I can tell which tree is right for me if I want to make a fire. I don't touch any of the animals, we don't uproot any plants, but if I need to make a fire, I know where to go and what to do. I use cow dung to make fire sometimes. So, you blend in nature. I can sense an animal – there were several close calls with me, almost stepping on a snake, several close calls, some very recent, but I wouldn't step on it. I would see it and just jump over, so that I don't step on it and just walk around it and let it go. I don't kill a snake, because I appreciate animal life. So, you do blend in with nature.

ESP005M describes a different take on having a sensitivity towards nature, by explaining that it's about **passing through nature without damaging it**:

It is not about merging with nature, it's about just passing through nature and enjoying it without doing damage to it.

Similarly, **ESP001M** asserts that during white-water kayaking **reflex and focus** assist you to change direction to ensure a safe outcome, which indicates the importance of becoming one and in synch with the natural element:

Reflex and focus are constantly in play with one another. You use them 90% of the time and that's because of balance in your boat/kayak and to look where you want to go. If things don't work out with direction then you focus on doing a 'reflex,' which will allow you to change direction.

5.11 Eco-sensitivity

Aforementioned findings demonstrate that the nature-based extreme sports participants have a clear sensitivity and deep appreciation of the nature world, as well as synchronising with it during their respective activities. Their **environmental sensitivity** embodies a sense of care and compassion towards the natural environment, accompanied by a positive affection for it (Peterson as cited in Nunez & Clore, 2017). Nature-based extreme sports participants take an interest in learning about the environment, feeling concerned for it, and acting to conserve it, on the basis of their nature-based extreme sports experiences (Chawla, 1998).

5.11.1 Sensory sensitivity

Participants report experiencing a sensory sensitivity during their activity, which implies having an awareness of relaying information in terms of one's senses (smell, sight, sound, taste, touch, pain) (Csikszentmihalyi, 1975). Ultimately, they experience a sensitising process of becoming highly sensitive and attentive to specific stimuli and behaviours. **ESP002M** describes experiencing a **sensory sensitivity** in downhill mountain biking:

For us, it is to think very quickly: visual sense always, your memory – you know we pre-run a track using your memory, body – understanding your body's position, processing-so you processing and deciding on evaluating the time that is either made or gained on your feeling and then try and better it or maintain it throughout the track.

ESP008F demonstrates the **importance of one's senses** during mountain climbing:

I don't put on ear phones if I trek, that little crack, you hearing it in advance could save your life. Senses are heightened. The air feels different. Sense of hearing, I appreciate the most, because I can pick up stuff before I see them. Andy, the guy I was telling you about he had two guides he was following, and the one guide had a little bell on his boot, so he could follow him.

5.11.1.1 Bodily awareness

Upon asking the participants what they understand by the term bodily awareness the following answers stood out. Downhill mountain biker, **ESP002M**, states:

Generally, is not necessarily agreeing or disagreeing between, and knowing. Bodily awareness is a way to improve yourself and improve your sport. Finding faults – managing them.

ESP003M asserts that **awareness is being present** an that a bodily awareness implies directing one's attention to bodily sensations:

Awareness to me, is presence. Presence to what is happening to you right now around you; in you and inside of you; and outside of you. Being led to all of your senses, being led to all of your emotions, spiritually. That is what I understand what awareness is in that context [extreme sports/adventures]. Bodily awareness would be heart rate – how is my heart beating; how is my breathing; pains in my body; changes.

ESP006F describes being bodily conscious through what **she feels physically** and **mentally**:

It means being aware of how I am feeling, and being aware of my environment. Body awareness is how I am feeling – mentally and physically.

ESP007M describes having bodily awareness in rock climbing by **considering his past, present and future.** He states that you need to be aware of every part of your body during climbing "knowing where I am coming from, knowing where I am and where I am going."

I think body awareness is especially applicable in climbing. So, you need to be aware of every part of your body. Because you throw your finger tips to your toes, so you need to trust, you can't just put your foot down, because if you don't trust it and give it the responsibility it needs to carry and then the other foot is going to fail or… or take up the slack. Same with running, if you loose body awareness, you end up hypothermic, dehydrated or overheated. So, body awareness is really, going back to where you are and where you have come form, knowing like, kind of taking a stock take of where you are right now (am I feeling good or not? And how far do I need to go? – if I have a kilometre to go, it doesn't really matter I can just push through, if I have 50km to go, well, I need to conserve myself a bit or fix myself, or).

You can't see safe awareness and body awareness apart, you can't break them up, they need to be together. You need to move. You are moving in a changing environment, *if you are not aware then you are going to come short.*

5.11.1.2 Merge with body (self)

ESP009F explains how she feels that **she merges with her body** during adventure racing, and that her senses help her recognise and manage fear:

> *You become very aware of how you feel and how your body reacts to different circumstances. You put it under so much stress. At a point my body is going to show fear, and I need to be able to handle that.*

ESP007M notion indicates a sense of **becoming a "true-being."** Over time an extraordinary psychological transformation took place in how he viewed his body. He became **more private self-conscious** and less public self-aware:

> *I think I have MERGED with my body over the years. Where there was a time where I was looking at my body, where now I feel like you are your body. I saw it at a definite stage when I was younger and I might have been doing things for different reasons or whatever. You kind of see yourself as creating your body, you know you are making your body, it is almost like you are outside – you detach it from your person, because maybe you don't like your body or whatever psychological, you know. I definitely feel that I got to a point where I don't care about what people say or whatever or presumptions of what my body should be or look like. My body is now becoming the activities I choose and do. The more you do them, the naturally your body just becomes that, and then you start feeling one with yourself, I guess.*

ESP006F also supports **becoming less public self-conscious**, where her confidence in herself ensured a higher private self-consciousness, which demonstrates the positive transformation of her activity on her interpersonal relationships:

> *Trail running has made me a lot more confident. More outgoing, surer of myself, and happy about decisions I need to make. I don't worry about what other people think. It positively affected my relationships.*

Similarly, **ESP004F** disregards other people's opinions about her and focusses on improving her **private self-consciousness**:

> *Because I am a recovering people pleaser, I used to really care what people think – now I care what the people I care about think.*

ESP007M explains that his rock-climbing lead to few friends, but quality friends whom he trusts and has deeper connections with. He associates his enhanced private self-consciousness with trust as follow:

> *Through doing more of these specific activities, I think I have fewer friends than I used to or fewer acquaintances. But the ones that you do have, you trust completely. So, you know, I am not going to belay me on a line if I don't trust them. Your friends are true friends, I guess. Some relationships you do feel have become more shallow, because I think other relationships have become deeper.*

5.11.1.3 In synchronisation with gear/partner

ESP003M provides an example of how he merges with his equipment during an ocean row, by recognising when something is wrong with the gear through sensory sensitivity:

> *You do merge once your body gets used to it, to a point where something is wrong, it is something…you will feel it quickly. You can even feel if there is a crack in the ore, just by holding it. So, you to merge, they become part of you, you become one with it, because they now become an extension of you. Even if you are sitting, if something is wrong with your seat, you will feel it is not smooth anymore, and you must stop and do something about it.* [redacted] *would actually hear sounds on my seat that I wouldn't hear [there are wheels under the seats that help move the seat back and forth while you row], and if it happens you just keep putting Vaseline to oil it. So, you do, you pay attention to it. You realise when something is no okay, you pick it up fast, if there is a smell – you sense that something is burning. You always know if something is wrong, so you merge with the equipment. You become one with it, because you know.*

ESP003M continues to explain that at a stage, he became so in synch with his ocean rowing partner, implying that a co-existence between the merging with your body, other people and the natural world:

> *So, on that day, we were in the zone, we were playing good music, we were so, like, in sync – me and him, us and nature, us and the boat. The music was playing and it was the best day we have had in the ocean. And, this was after we dealt with, all the crap that held us back with our personalities. We let go of the issues we had, we got in sync – everything just gelled.*

5.11.1.4 On co-existence of body, natural word and other people

ESP001M expresses his understanding of a co-existence of your body, apparatus and natural world during white-water kayaking:

> *All the elements become part of you. If I don't strap myself into my boat, I don't feel part of what I am doing. I need to be one with my boat to be able to feel and experience the flow of nature (water). If you are at one with your boat/kayak then you understand fluid dynamics. As soon as you have mastered it, you want to feel the water splash on your face, you want to feel when the water is cold or hot. And yes, it's weird to say, but you want to feel the true power of the water and live it in your soul. It is difficult to explain, but you become one with nature – you learn to respect her and then she allows you to explore her.*

Downhill mountain biker, **ESP002M**, states that with participation in downhill mountain biking, you have the **opportunity to get to know your body** and the more you are being exposed to the natural world, the closer the bond with nature becomes:

> *I think we get to know how we train, how our bodies works and the more we see the environment and understand the environment - the closely they are related, helps you at better living generally not just what you eat and how you exercises, but how you look after your trash and respect the earth will benefit you too.*

A notable remark from **ESP007M**, reveals more of a circular relationship with the body, apparatus, interpersonal relationships and natural world and that each of the elements hold a different weight at different points in time, but that they should be viewed as a whole:

> *You should always try to see them as a whole, because they might have different weighting at different periods, but I think that they are always there, even if you are alone. Your personal relationships do play a role on you. I think it would be stupid to cut one of them out. They all need to be there.*

ESP008F solidifies this notion that **each element carries different weight** at **different stages**, during her mountain climbing expedition to Mount Everest:

> *There is a level. There is a relationship between everything. We are all in an eco-system whether we like it or not. There is a different relationship that I have with my clothes than I have with my friend or my climbing partner. I think it is a flow, but I think the hierarchy is changing, depending on the situation and the moment you are in. If I am climbing, and I am at camp 4, my relationship with my clothes or my relationship with my equipment, is elevated, compared to my relationship with my friend, I left at base camp. The closer relationship is with the guide, I am with him right now, that can save my life or I can save theirs. And the gear I need! They can possible merge, they have to be in synch!*

Adventure racer, **ESP009F**, describes a pyramid relationship where nature is on **top of the pyramid** and that nature would be able to survive on its own, but that humanity's survival depends on nature. She further describes how you become sensitive towards your body due to the changes in temperature:

> *Nature is kind of on its own, I would say, because you would have your equipment and your body will feel according to what nature depicts. If it is cold, you will have to rethink, your body temperature would drop. I definitely feel that nature would be on the top, like a pyramid and your body and equipment together – your body needs to be warm, you know, you have to bond with your clothing. Nature on its own wouldn't really care about the rest. If nature changes your body and equipment will have to change. If you are climbing, and the temperature drops the higher you get. When we started it was like 20[degrees] and when we summited it was 0. When you get to the top you will have to put on your layers: mid layer, base layer, everything you can to keep warm. Because of the change in temperature and fatigue. If you fatigue, your body temperature drops.*

ESP004F describes how people live in a "city-bubble" where there does not seem to be co-existence between the self, natural world and interpersonal relationships. She emphasizes that nature-based extreme sports participation nurtures comradeship where participants have the same goal, where this bubble dissipates and allows for a co-existence between the aforementioned elements:

> *You realize that collectively we really have a large impact on the environment and that when you live in a city or busy life it's this bubble you live in and your life only impacts yourself. But you are out on a trail you realize that you are one of many people trying to achieve the same goal out in nature and collectively you are all having an impact. It kind of creates that awareness, you are not alone, you are all doing the same thing.*

5.12 Transcendence

Transcendence signifies when human consciousness has reached the sublime "behaving and relating, as ends rather than as means, to oneself, to significant others, to human beings in general, to other species, to nature, and to cosmos" (Maslow, 1971, p. 279). Deep inner transformations are identified by participants, which allow an authentic integration of the self, the natural world and other people (interpersonal relationships).

5.12.1 Removal of "ego"

ESP003M explains how participation in nature-based extreme sports contributed to **removal of "ego"** and how he developed **an increased appreciation** for his family. The realisation of death, permitted mindful behaviour where he started directing his attention to the present, which essentially allowed for an "eco" awareness and sensitivity:

> *You appreciate your family so much more. I missed my family so much – so now I spend more time at home. If I am no working, I am not just galivanting with friends. I appreciate every moment with my wife and kids, way more! Because I could've died. I want to be a better man for my wife and for my kids, I listen better now, I pay attention, you know. So, it helps, really! Your ego is removed! You remove your ego altogether.*

ESP008F applies her mountain climbing learnings, which showcase a mindful approach to making choices, **deciding when to lead and when to follow**:

> *I get a lot of learnings from the climb. Things like knowing when to be a leader, and when to be a follower. And, knowing when to listen to other people. Being cognisant of your environment.*

ESP007M solidifies **ESP008F**'s statement through his rock-climbing experience, stating that his **mindful awareness** (of knowing himself) permits him to make a mindful decision to rather follow a more experienced climber:

> *Let's say I am planning a trip and I go do it with someone else and they are actually more experienced then, there will come a point where maybe they are more conscious than I am – I might be severely dehydrated and not making good decisions. You need to know yourself well enough to know that you are not making good decisions at the moment or you need to identify when they are not.*

ESP004F states that mindfulness to her, **means to prioritise.** She associates ego-priorities to materialistic or extrinsic rewards, and highlights that mindful-beings focuses on the intrinsic and deeper meaning of life:

> *Mindfulness is priorities. It's being aware of what's important to you and keeping those priorities in the front of your mind all the time. I think people that push themselves to hard and hurt themselves their priority is ego, often… and that is okay. You've just got to know if that's your main priority – winning, and looking amazing and looking good on TV - then those priorities come with their own set of risks. Mindfulness is being aware of – what are your priorities and what effect or impact will it have on your sport or your climate.*

5.12.2 On mindfulness

Emotional auto-regulation is part of the sensitising process experienced by participants. They describe directing their attention on experiencing bodily sensations such as having an awareness of their rising heart rate (Castenier et al., 2010). Participants demonstrate an enhanced ability to detect potential "distracting" or "uncomfortable" internal and external stimuli during their activity (mindful awareness), and applying actions that refocus and direct bodily senses on the present task (mindful attention) (Gardner & Moore, 2007). The actions of the participants prove that they act mindfully during their activity.

5.12.2.1 Mindful awareness and attention

ESP003M states that being mindful requires being aware and **directing your attention to bodily sensations**. He describes a mindful attention:

> *Paying attention to what's going on. If you don't pay attention to even the smallest of aches, it grows. I mean I had made the mistake, the onetime… so as part of rowing on the ocean, you don't use your arms, your arms can only take so much. So, you use your arms only to pull back. So, you move forward with your bum, so, your knees bend, and you need to push back with your legs. So, the arms, they only take the ores up and down – that's it- up and down. So, you working here [indicating his hips, side of his legs]. So, sometimes when you cheat, you use the side of your arms. So, I would do that unintentionally, until my Lats [Latissimus Dorsi muscles] were sore! And when they were sore [redacted] said 'you are not rowing properly.' And I thought I was. He said 'keep your arms straight' so when I started doing that, even with a sore Lat, it wasn't that painful. But as soon as I started to do my cheating again, I would feel the pain. So, you have to be mindful of the technique as well and be mindful of how it should be done.*

ESP006F believes mindfulness is **similar to being aware**, and that her activity contributed to her becoming more mindful:

> *Mindfulness is similar to being aware. I think mountain running has made me more mindful.*

ESP008F considers having **empathy and being aware of your environment,** which comprises yourself and surrounding environment, relates to being mindful:

> *Being empathetic, being aware of your environment and that includes yourself and everything that is in your space. It is being present, being aware of you as a person, and whatever there is in your environment. And, if there are people in your environment, trying to put yourself in their shoes. And, being mindful of their interaction with you. On an expedition, you want to know what has changed, you know, at high altitude you not always aware of what you are doing, you can be so dehydrated and you cannot see that you are slowing down, but someone else that is walking with you, can see that. Over time what I have picked up is that I can realise that something is wrong with someone I have worked with, and I will go 'what's up, is it something I can help with or you want a time out.' Then you get their permission to come close, or you leave it.*

ESP009F's narration implies that **understanding yourself and placing yourself in other people's shoes (compassion)** is a part of being mindful in adventure racing*:*

> *For me, mindful is kind of understating yourself and be also mindful of and understand what other people are like. It is quite an important thing with adventure racing, because you also just have got to have to understand not just yourself, but you have to be aware of everyone around you and mindful of your situation. Because you are with people so closely when you are adventure racing, you realise that people break down, and people have weaknesses and people are not always strong all the time. And that is like that in your everyday – people have bad days and good days and you just learn to cope with it easier. Your tolerance with people is a lot better.*

ESP007M associates **happiness with mindfulness,** where **self-realisation** leads to **self-actualisation**:

> *Being aware of myself and being able to be happy with yourself or, strive to be happy with yourself, just be aware of everything and everyone around you where you move. I definitely became more mindful from the first time I started my activity to now. I was doing stuff for stupid reasons, or doing stuff for no reason at all to a point where now I am really specific of what I want from it and then after where I actually do go and sit and have a self-realisation moment and actualisation where you sit and you kind of think, what did I actually get from it.*

To **ESP005M**, being mindful correlates to **being patient.** He indicates that through his participation he transformed **from an impatient to a patient-being-in-this-world:**

> *I mean let's talk about patience – without patience, you can never really be mindful, you will just be annoyed. I was the most impatient person I'd ever, ever encountered. If you are not a patient person you will make life difficult??? You have to quickly learn patience. And now I think to myself… I have to rely on other people, so, I have to be aware of what their capacity is, their capabilities are – it is so frustrating. It is the hardest part of doing things like that is to ask for help. But I had to learn to be mindful, it is not just something that you have. It is something you can learn; it is a skill you have to gain. I think I am now, but I don't think I was at all – was oblivious.*

ESP005M describes how his **interpersonal relationships were impacted** by his nature-based extreme sports participation, in which he transformed from being a bad judge of character to having an **acute awareness of a person's intention**:

> *I was such a bad judge of character. I am now much more aware of people and how they are. I am able to listen to what they say and know. Just the way people treat you when you are blind, the type of character they have. I strive to be comfortable with people, my wife for example strives to be kind to people. For her, the most important thing is kindness. People who are not kind and who are not comfortable around. I am able to quickly pick that up. Before I was "blind." To get rid of people who were not really my friends, people that took advantage. Since, I am blind, I made many new friends and they choose me this way. They are quite comfortable with me, they don't question it.*

He further illustrates how over time he **became more aware, conscious and mindful** of his environmental surroundings:

I think my feelings have come more to the surface, I am more sensitive, I am more aware of things, more conscious, and I guess I am, as I said, more mindful than I was.

5.12.2.2 Authenticity

ESP004F showcases mindfulness by stating that you **need to take responsibility** of your decisions, which essentially correlates to **being authentic and becoming a true-being**:

Taking responsibility for your decisions are key during mountaineering.

5.12.3 On flow and superfluidity

5.12.3.1 Concepts of time and space

Participants describe that reaching a flow state, requires confidence and being comfortable with the challenge you are faced with: **ESP003M** depicts that there comes a point where all your **senses are very active to even the sixth sense**, which demonstrates a superfluid state:

Here is the thing, all your senses are active at that time. When you are on an expedition or a physical adventure, all your senses are active to a point where they even activate the 6th one. Where you have another sense where you just sense things. You can sense that something is looking at you. You can tell that something is coming – and something is coming. So, even your 6th sense gets activated when you are in that type of space. You can hear…you can feel…you can see…you can smell…even if you can hear the waves, you can hear a bird, and you just heard a very strong wave and sometimes an alarm would go on in the boat, while I am rowing here and we have music playing and I would hear a faint alarm in the cabin – so I am alert, you become alert! All your senses are just on overdrive and you still have that 6th sense – you know, that wave is going to hit us, and there is a wave coming there, and by the time it gets to you, you knew…

But I think anyone who is an adventure, has sort of become some sort of Shaman, where they sense some sort of spirits, if I may put it that way. Because, somehow, they know how to prepare for things, that you [someone else] wouldn't see.

ESP009F says **being comfortable** with a challenge that you would not typically feel comfortable with, brings about an extraordinary feeling of being in a superfluid state:

When you are completely comfortable something that you normally would feel uncomfortable. Maybe you are like 60km into a race and everything is just going right, your nutrition is right, you are feeling amazing, you are focused, you are moving forward quickly, to me that would be being in the zone.

ESP001M's narration of a kayaking trip reveals a shift from an ordinary flow state to a superfluid state, becoming **in synch with bodily sensations**:

Everything comes together and you feel the blood rushing through your veins and heart – that's what makes you feel alive. Every breath you inhale and exhale – the rush of oxygen to your brain to make the right decision. AND the feeling of success when you had a 'unicorn run' is something no person can take away from you. It is yours!

ESP003M describes that **confidence comes from experience** helps you attain a flow state, in which your senses are heightened where solutions can be made in the blink of an eye:

> *Being in the zone comes with confidence. You usually get confidence after some time. Once you are used to an activity… or a hike… it is a hike or a row. So, being in the zone, so that's when I say all your senses are heightened and you are just like this with solutions. In a split second, you come up with solutions that keep you going forward.*

ESP008F describes the **easy flow of decision-making**, having complete focus without being distracted:

> *During the summit push, I was leading a team all the way up to, I think it was the Hillary step, I was flipping in the zone. It was almost like, 1, 2, 3, it is steps, let's go, it is one way, I mean the summit is that way, I am not thinking about anything else, I am not thinking about how I put the first step, and when it became harder. There was a point close to the summit, I am just like 'okay, just 5'. So, that is really in the zone, it is almost like focused on this specific thing, and nothing else can distract me from this thing. You are not distracted and it just flows!*

ESP006F provides her version of entering a superfluid state, **becoming calm** and **focussed**:

> *You are not focussed on anything particular; you are just moving and thoughts are coming and going. Like if you run for 15 hours, there will be periods of the run where you feel like, you know you are comfortable and just enjoying the race. That I would say is being in the zone. Its where you are not thinking – ah I am sore, ah I don't feel well, ah I am hungry or where is the next water point or where is that guy. So, if you are thinking about a race and how you are feeling, then you are not in the zone. And, if that kind of ceases and you calm your mind, you are in the zone.*

ESP007M describes a superfluid state through a **filtering process**:

> *A filtering process – filtering everything out and completely absorbing and feeling everything that is necessary. Whether that is your own body, your own heart rate, your sense of "you" first or whatever, the other person's condition, because that is very important (like you need to know the other person is cold, dehydrated, hungry or whatever, because that affects you).*

ESP004F compares flow with being in a **different space** when she climbs and becoming **hyper-aware of her reality** during this stage:

> *You are literally in a different space when you climb, especially when you are in a dangerous position. It's healthy to be in that zone, because it makes you hyper-aware of where you are. You appreciate the beauty so much more. But when you are walking – like the highest sunrise in Africa, which was when I was nearing the summit of Kilimanjaro and it was really hard, you have hiked all through the night and you are broken, you have to find that place of 'super-focus' and it actually comes from the fear – the fear of being on the edge of the mountain; of are you going to make are you not?; are you going to freeze? And then when you see the sunrise it is that much more spectacular! I will never forget those moments when you in that space and see beautiful things.*

5.13 Summary of findings

South African nature-based extreme sports participants' intense and prolonged interaction with the natural world, permits a realisation that human power is incomparable to the forces of nature. The extreme unpredictability of nature implies that you can never 'master' or perfect certain conditions (ESP010F). Nature, as some participants recall, is the "ultimate mother - Mother Nature. She is so much stronger than human beings. If you do not respect her, she will kill you, literally! (ESP004F)." Undoubtably, there is a higher-risk of death involved during nature-based extreme sports participation, opposed to conventional sports structured in built environments. There is a great possibility of fatal consequences, that "if something has to go wrong, it can go horribly wrong (ES007M)." Participants are reminded of their "being-towards-death" through facing their finitude in their extremely high-risk nature-based activity.

High-risk taking is not a primary motive for South African nature-based extreme sports participants, but is rather seen as a by-product. Findings reveal, that participants acknowledge the seriousness of a misstep and do not seek to present the illusion that extreme sports are safe, but rather that their awareness and acceptance of the involved danger allows them to take precautionary measures. **Precautionary risk-taking** is demonstrated by all the participants, in the form of being in control of their personal capabilities, making calculated decisions, preparing maximally and familiarising themselves with the natural terrain, being adaptable to environmental changes and constantly enhancing their knowledge and skills, prior, during and after their expeditions.

Intra-individual processes or internal processing allows all the participants to approach high-risk with caution through utilizing their specialised equipment and carefully consider where to place their trust (Visser, 2007). Their **threat-and-error management** approach to their activity derails misconceptions of the "reckless thrill seeker." Participants explain that although you do experience a rush during your nature-based extreme sports activity, that "it is not about placing yourself in danger to die, but rather understanding and respecting mother nature as you move through her (ESP001M)." From an outsider-perspective it might seem that participants act "out-of-control", from which stigmas surrounding extreme sport can exist, asserting that the high adrenaline levels might compromise a participant's sanity (ESP002M).

Nevertheless, participants report that their activity requires maintaining steady adrenaline levels and acquiring a state of tranquillity (ESP004F). **Motives for participation** clustered around the improvements in their physical and psychological well-being; building trustworthy interpersonal bonds, which provides a sense of community; reaching self-actualisation that involves self-discovery and self-acceptance; the release of emotional tension in a curative way, allowing catharsis; opportunity to reflect and counterbalancing busy-city life; experiencing the outdoors and remote natural places, that creates ineffable moments; and inspiring others by leaving an "extraordinary" legacy.

Lived experiences by nature-based extreme sports participants **derail anthropocentric views** of a human superiority *over* and separation *of* nature. Findings address theory-based claims that assert nature-based extreme sports participants want to parade their human prowess and strength by conquering nature. Participants in this study report that their survival during such high-risk sport in nature, depends on the collaboration and synchronisation with the natural elements, opposed to fighting against and conquering it. Participants describe a desire of acceptance from nature. They consider that the way you approach the natural world, will determine whether mother nature "lets you in" and accepts you (ESP008F). Because the participants spend such a long time in the wilderness, they create an intimate, but challenging bond with "her" (ESP009F). Participants report that their survival depends on balancing risk and reward, being safe, having the right mindset and attitude, being adaptable, having an awareness of where you are and respect for what you are doing, the ability to think very quickly, and in who, what and where you place your trust during your activity.

It seems that this collaboration with natural elements supports a merge or becoming one with "her." Essentially, nature becomes "an extension of you" and your bodily-being-in-this-world during nature-based participation (ESP004F). A participant's feelings become so in tune with the natural element that they "depasseer" with it (ESP001M). Participants view nature as a representation of themselves (Brymer & Gray, 2010). The "temperament" of nature both affects and is being affected by the participants' feelings (ESP003M). When the participants understand nature, they are able to understand themselves (Glendinning, 1994 as cited in Brymer & Gray, 2010). **Depasseren** (Van den Berg, 1950) allows participants to "sense when the weather is about to change" with no weather reports, but just by looking at nature (ESP003M). "Reflex and focus" according to participants assist them in changing and navigating direction (ESP001M).

Anticipation of when, how and what kind of natural "event" will happen next, correlates to what participants refer to as a reflex. Participants essentially gain knowledge of how to "read" the natural environment. **Concepts of time** are displayed through the participants' understanding of their past, being able to address the present situation and to foreshadow future expectations (Kruger, 1988). A sense of time transcends measured time, as participants metaphorically illustrate how their reality changes during nature-based extreme sports participation (Brymer, 2005). Participants connect with an inner-power, enabling them to feel "free" (ESP001M), "alive" (ESP006F), and "set their soul on fire (ESP004F)." The natural setting, participation provides, enables a time for reflection (ESP003M; ESP008F). It becomes a spiritual journey for the participants, who profess that participation allows you "to live your entire life in a few days, where all the emotions that you feel in one lifetime, get exposed in a number of days (ESP009F)." The participants "self" can be restored during this journey and transcend to a truer self (Zimmerman, Bandura & Martinez-Pons, 1992).

Nature-based extreme sport participation initiates extreme and risky movement that fosters a transformational experience. **Concepts of time** and **space** play an integral role. Future endeavours are grounded in past experiences and preparations. Within the superfluid state, the focus of the participants shifts to the present moment, where the "surreal" and "ineffable" moment correlates to transcending to another reality. This other reality can be perceived as experiencing a short moment of eternity (Brymer, 2005). Being in a different space, as participants report, create a "hyper-awareness of where you are and allows you to appreciate the beauty of the natural world (ESP004F)."

Participants indicate that this superfluid zone, manifests from the "fear of being on the edge" and facing their own mortality. Their profound immersion with the natural element does not allow a separation, and enables participants to deal with and undertake the task at hand (Breivik, 2011). **Eco-centric** perspectives to approaching nature-based extreme sports activities are supported by the participants, who consider nature to be an elongation of their bodies and, which they form part of. From their participation in the outdoors, they develop an intimate bond with and positive attitude towards nature. Participants' show high levels of an **environmental-literate-being-in-this-world**, who has a fundamental consciousness, awareness and comprehension towards environmental degrading problems (Roth, 1968). The existential meaning of the participants' Dasein or "Eigentlichheit" is identified as a care or "Sorge" towards Mother nature (Moran, 2000).

Nature-based extreme sports participants take an interest in learning about the environment, feeling concerned for it, and acting to conserve it, on the basis of their nature-based participation experiences (Chawla, 1998). Participants prove to have become **environmentally competent**, where they are able to point out environmental issues, followed by interpreting and studying it (Hollweg et al., 2011). Participation calls for an extensive period of exploration of the wilderness, which permits an affinity to nature, signifying high levels of biophilia (Wilson, 1984). Evidently, an eco-sensitivity is nurtured through their nature-based extreme sports participation.

The symbiotic relationship with nature, participants attain, permits an acute awareness and appreciation of surrounding environmental stimuli (ESP007M). Some describe a sensitivity towards nature as "just passing through nature without damaging it (ESP005M)." Participants collectively utilize their senses during their nature-based extreme sports activity and develop **high levels of sensory sensitivity** (Csikszentmihalyi, 1975). The practice of nature-based extreme sports activities, requires the ability to relay information in terms of what you smell, see, hear, taste, touch and feel. **Emotional auto-regulation** forms part of the sensitising process and is demonstrated by the participants (Castenier et al., 2010). To some, having an **awareness** in their activity considers "knowing where [they are] coming form, knowing where [they are], and where [they are] going (ESP007M)." Participants direct their attention to bodily sensations felt during their activity, such as "how their heart is beating, how they are breathing, pains and changes in their body (ESP003M)." Bodily awareness requires a "presence to what is happening to [them], around [them], inside and outside of [them] (ESP003M)."

Essentially, participants report a merge with their bodies during their nature-based extreme sports participation, in which their senses help them recognise and manage fear (ESP009F). Some participants describe a transition from a reflective to pre-reflective way of viewing their body. They consider that over time as result of this merge with their body, where they were looking at their body, transitioned into the view that they are their bodies (ESP007M). Participants who have identified that "they are their body" demonstrate principles of *I-Thou* (Buber, 1987). *I-Thou* implies becoming the divine, which does not mean that nothing exists except the participant or Dasein, but that "all else lives in the participant's light" (Buber, 1987, p. 21). Confirmation provided by the participants who assert *I-Thou* principles, illustrate that "talking about their body implies talking about their self" (Van den Berg, 1972, p. 50).

Transcendence can be understood as a long-term phenomenon of psychological transformation (Daniels, 2001). The fact that participants spend a considerable amount of time in nature during their nature-based extreme sports endeavours, facilitate psychological transformations. A loss of self-consciousness, attaining tranquillity, steady adrenaline levels, accepting death and being adaptable are psychological internal processes that take place during nature-based extreme sports participation. Deep inner transformations accompanying being-towards-death, is recognised. These **extraordinary psychological transformations** enhance the participants' private self-consciousness, and reduces their public self-consciousness. Enhanced self-confidence enables a "surer" and happier being in this world, without being concerned with other people's opinions (ESP006F). The ability to critically and concisely analyse their own perceptions of their contribution, showcases that the participants reach self-actualisation.

Deeper connections can be formed with other people in terms of trust placement, which enhances quality interpersonal relationships (ESP007M). Participants report the importance of becoming in synch with team members, which requires letting go of personal issues (ESP003M). The removal or loss of self-consciousness, provides space for an integrated and holistic self to foster. Participants have the ability to enter a superfluid state during their nature-based extreme sports participation, which is an enhanced form of the typical "flow state." Superfluidity is characterised as an intense and heightened connection with one's body and surrounding elements. Having this heightened level of sensory sensitivity enables an increased awareness *of* nature and *on* the participant. To reach and move into a superfluid state, the individual needs to be mindful of their behaviour.

Participants prove that they act mindfully during their activity, by stating that a participant needs to take responsibility for the decisions they make (ESP004F). Taking responsibility correlates to notions of an authentic being. Being patient and prioritising are mechanisms of mindfulness, reported by participants. A mindful approach to making choices is illustrated by participants who decide when to lead and when to follow (ESP008F). Transcendence signifies when human consciousness has reached the sublime "behaving and relating, as ends rather than as means, to oneself, to significant others, to human beings in general, to other species, to nature, and to cosmos" (Maslow, 1971, p. 279). This implies that transcendence permits a co-existence with the body (self), the natural world and other people.

Participants point out that the mindless actions of humans play a part in the deteriorated state of the earth. Littering has become habitual and an automatic response where there is "frequent traffic of people" (ESP007M). Environmental irresponsible citizens have scattered attention and no awareness of the present moment (Gardner & Moore, 2006). Participants demonstrate **pro-environmental thinking**, where they acknowledge and not deny their carbon footprint (Krajhanzl, 2010; Steg & Vlek, 2008). They consider that, without the natural world, humanity will not survive. Humans cannot be seen as separate from it. The natural world doesn't revolve around humans. As suggested by participants, "nature would probably carry on without us, but we cannot carry on without nature (ESP007M)." The loss of ego-centric and gain of eco-centric perspectives towards nature have been observed in the participants' experiences.

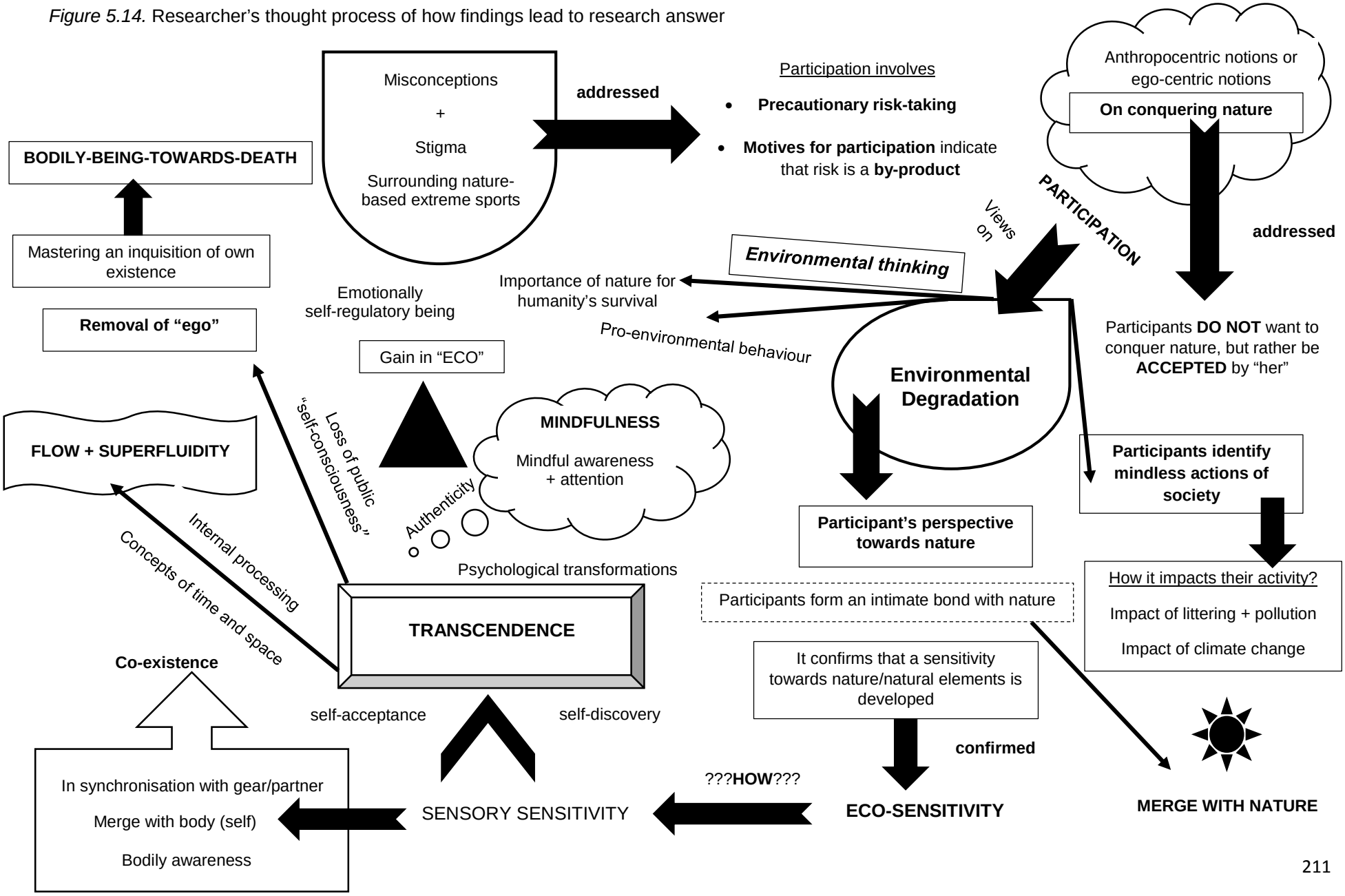
Figure 5.14 illustrates the researcher's thought process of how the findings lead her to answer the research question, discussed in subsection 5.14.

Researcher reflexive box *– Interpretative phenomenological analysis*

Since this was the first time that I used an interpretative phenomenological analytic method to analyse data, I found it be an insightful approach to engage with qualitative data. At first, I felt overwhelmed by the amount of data and didn't know where to start to analyse. Although I was anxious during the process, the clear structure provided direction to approach analysis step-by-step. In the process, I recognised that I was able to make semantic connections between the large amount of data from the transcripts quite easily.

Overall, the interpretative phenomenological analysis supported my creative ideas, which are subjective in nature.

Figure 5.14. Researcher's thought process of how findings lead to research answer



5.14 Research answer

The main premise of this study was to explore the facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context. To achieve the primary aim of this study, three objectives were set. The research question of how do South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity, is answered by acknowledging each of the objectives.

The first objectives set out to determine **if a transformational process has occurred due to nature-based extreme sports participation:** Transformations, be that physical or psychological, do indeed take place during nature-based extreme sports participation. Participants report a psychological transformation that took place due to participating in a nature-based extreme sports activity. The transformation explains a shift in mindset from being focused on the materialistic reward to valuing and appreciating the intrinsic reward, where **self-realisation** is supported:

> *You start to realize it starts getting better and you realize stuff about yourself and it is more of a self-driven, intrinsic reasoning behind it – and that I feel is also more sustaining. [compared to] where the materialistic or the extrinsic goals kind of fade away (ESP007M).*

The **loss of a self-consciousness** and **removal of the "ego",** permits the transcendence of the "self" to an "integral self" (Esbjörn-Hargens, 2009). This separation of the self from the ego or consciousness (Maslow, 1971), is confirmed by participants:

> *I listen better now, I pay attention, you know. So, it helps, really! Your ego is removed! You remove your ego altogether (ESP003M).*

Participation allows for an understanding of just "me" (*egocentric*) in this world, to transform to an understanding of "all beings" (*planetcentric*) and all of reality (*Kosmoscentric*) (Esbjörn-Hargens, 2009). A participant's loss of ego, implies a gain in "eco", where they consider both themselves and the natural world as part of a larger functioning eco-system. Participants have thus become **environmentally literate beings** (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007). The importance of the natural world for humanity's survival is essential, as emphasised by participants:

> *There is no US without the WORLD. So, I saw this picture once, it is a circle it is about the egotistic and eco-tistic or egocentric versus eco-centric: A lot of people see themselves in the middle with the circle around us, and we are actually in the circle with nature and we are all in the same circle – you are not separate form it or it doesn't revolve around you. Nature would probably carry on without us, better! We cannot carry on without nature. A healthy eco-system would be where, there is no certain species or being that are exploiting the others (ESP007M).*

The transformational process can be identified as entering the flow and superfluid state through mindful awareness and attention. Flow is easily achieved, since the participants apply precautionary risk-taking. Participants are not worried by the possibility of the lack of control, because the prepare maximally for an excursion. Environmental demands do not exceed their abilities and they can perform with confidence, indicating an improved self-confidence and "positive self-construct." Participants describe increased self-confidence as being comfortable with the extreme environmental challenge they need to complete. Therefore, the undertaken nature-based extreme sports activity is identified as **feasible to the participants** (Csikszentmihalyi, 1975):

> *I have come so far and I am comfortable with everything I do. But that is also because of rivers you get to know, like the palm of your hand. You know the different cracks and exactly where each crack leads to. The Vaal River is like that, I know it from here to the other side of Parys to Schoeman's drift and further on (ESP001M).*

Some participants consider their activity to be less risky and they are therefore less anxious and can reach the flow state (Zuckerman, 1979). Since the participant's activity is within their personal capabilities, a flow state is easily attained. Participants report that they will not push themselves to a point, where they feel the challenge or situation exceeds their capabilities. Having that balance allows for the superfluid state to manifest:

> *You won't go to a point where it is super dangerous. So, I have quite a big issue with heights – the guys know that they will find the safest, best route up somewhere. It won't go to a point where I am too uncomfortable that I am going to break down (ESP009F).*

Participants proper preparation, therefore produces experiences of flow.

> *The risk I can manage is me – I make sure that I am ready, that I know the people who I am climbing with and where we will climb (ESP008F).*

A "narrowing of consciousness" is experienced by participants, when their focus is on the present moment, and the "past and future" disappears (Maslow, 1971). The participants memory input is so zoomed into the task, that they cannot be distracted by anything else:

> *It was almost like, 1, 2, 3, it is steps, let's go, it is one way, I mean the summit is that way, I am not thinking about anything else, I am not thinking about how I put the first step, and when it became harder – I was like 'no, problem, I am not worried', instead of not counting steps, now, I am going to count, I am going to do 20, and then when I do 20 I am like 'YES!', and when 20 is starting to become tough, I am going to do 10, and there was a point close to the summit, I am just like 'okay, just 5'. So, that is really in the zone, it is almost like focused on this specific thing, and nothing else can distract me from this thing. You are not distracted and it just flows (ESP008F).*

The second objective purposed to investigate **if this transformational process contributed to an increased awareness and sensitivity towards the self (body); the natural world; their fellow-man and their equipment:** Transformations did indeed contribute to an increased awareness and sensitivity towards the aforementioned elements. Ultimately, participation permitted self-acceptance. This allowed for self-forgetfulness, which lead to a "transcendence of individuality" and "fusion with the world", where the participants became in touch with their own physical reality (Maslow, 1971). Being in touch with their self can refer to becoming your "true self", opposed to the "ego-self." Participants have therefore realised their "true-being-in-this-world" through their nature-based extreme sports activity, because they surpassed society's boundaries by re-visiting the wilderness (Duerr, 1985) and attained a sensory sensitivity. This **sensory sensitivity** allows an increased awareness and sensitivity towards the self (body), the natural world, other people and equipment.

Through **self-discovery**, a level of sensory sensitivity is attained by the nature-based extreme sports participants, who reach self-actualisation through growth and self-acceptance. An enhanced bodily awareness is reported:

> *You become very aware of how you feel and how your body reacts to different circumstances. You put it under so much stress. At a point my body is going to show fear, and I need to be able to handle that (ESP009F).*

Participants gain a "biophilia" (Wilson, 1984) through their intimate but challenging bond that they have formed with the natural world:

> *Because you spend such a long time out there. You create a bond with it. It is something you appreciate, but it also challenges you in the same breath (ESP009F).*

Participants indicate the formation of a sensory sensitivity when recognising through their senses, when something is wrong with a piece of equipment:

> *You do merge once your body gets used to it, to a point where something is wrong, it is something…you will feel it quickly. You can even feel if there is a crack in the ore, just by holding it. So, you to merge, they become part of you, you become one with it, because they now become an extension of you (ESP003M).*

Being considerate of other people is a notable sensitive trait developed during participation:

> *You also just have got to have to understand not just yourself, but you have to be aware of everyone around you and mindful of your situation (ESP009F).*

ESP005M describes how his **interpersonal relationships were impacted** by his nature-based extreme sports participation, in which he transformed from being a bad judge of character to having an **acute awareness of a person's intention**:

> *I was such a bad judge of character. I am now so much more aware of people and how they are and I am able to listen to what they say and know… just the way people treat you when you are blind, the type of character they have. I strive to be comfortable with people, my wife for example strives to be kind to people. For her, the most important thing is kindness. People who are not kind and who are not comfortable around – I am able to quickly pick that up. I mean before I was "blind." …to get rid of people who were not really my friends, people that took advantage. And since, I am blind, I made many new friends and they choose me this way and they are quite comfortable with me, they don't question it.*

The third objective intended to explore **whether there is a triadic relationship (interrelationship) between the self (body); the natural world; and other people:** Nature-based extreme sports participation provides the opportunity to get to know your body. Participants explains that the enhanced sensory sensitivity is sustained and increases, the more you are being exposed to the natural world:

> *I think we get to know how we train, how our bodies work and the more we see the environment and understand the environment - the closely they (human-nature) are related (ESP002M).*

Participants states that the self (body), natural world and other people should view the elements as a whole, each part, although it carries different weight at different stages play a significant role:

> *You should always try to see them as a whole, because they might have different weighting at different periods, but I think that they are always there, even if you are alone. Your personal relationships do play a role on you. I think it would be stupid to cut one of them out. They all need to be there (ESP007M).*

Transcendence signifies when human consciousness has reached the sublime "behaving and relating, as ends rather than as means, to oneself, to significant others, to human beings in general, to other species, to nature, and to cosmos" (Maslow, 1971, p. 279). This implies that transcendence permits a co-existence with the body (self), the natural world and other people. Transcendence enables the psychological ego to transform into the eco-self. From gaining an I-Thou pre-reflective stance of considering "the body I have is the body I am", allows an authenticity (Breivik, 2011). Nature-based extreme sports participants become authentic beings, who strive for a potential-to-be-whole, and foster an integrated self. Deep inner transformations allow an authentic integration of the self, the natural world and other people (interpersonal relationships).

Integration of the self, the body and natural world transforms as awareness is enhanced. The superfluid state is described as a filtering process by **ESP007M**, demonstrating mindful awareness and attention and interrelationship between the self (body), the natural world and other people:

> *It's a filtering process – filtering everything out and completely absorbing and feeling everything that is necessary. Whether that is your own body, your own heart rate, your sense of "you" first or whatever, the other person's condition, because that is very important (like you need to know the other person is cold, dehydrated, hungry or whatever, because that affects you).*

Thus, **South African 'expert' nature-based extreme sports participants facilitate an eco-sensitivity through** becoming emotionally self-regulatory beings, who through their participation reflect on themselves and the meaning of life. The removal of the "ego" permits a participant to look into their "true self." Nature-based extreme sports participants master the inquisition of their inner being-in-this-world, as they became aware of their own existence (Spinelli, 1989). Recognising their own finitude through participation, becomes the catalyst for the facilitation of an eco-sensitivity (Moran, 2000). A self-discovery or self-exploration of what it means to be human and the purpose of their human existence, is the fuel that drives psychological transformations. Transcendence enables the psychological ego to transform into the eco-self, giving rise to self-liberation (Shapiro et al., 2006). From gaining an I-Thou pre-reflective stance of considering "the body I have is the body I am", allows an authenticity (Breivik, 2011). These authentic beings strive for a potential-to-be-whole, and foster an integrated self. Deep inner transformations allow an authentic integration of the self, the natural world and other people (interpersonal relationships).

The extensive period of time participants spends exploring the wilderness, permits a realization that both humans and the natural world are part of a larger functioning network. Participants view humans as interlaced with the nature, and not superior or apart from it. A synchronisation with nature transitions into biophilia (Wilson, 1984). The intimate bond that participants form with the nature, nurtures a deep appreciation and sensitivity towards the fauna and flora. At a stage during participation, a superfluid state allows the inner and outer of the "being" to momentarily synchronise. The integration of the "self", the natural world and other people, participation permits, requires mindful attention and mindful awareness, where their consciousness is directed towards a heightened sensitivity to internal and external stimuli (Brown & Ryan, 2003). Participants develop the ability to apply actions that "refocus" and direct bodily sensations to the "now and here" (Gardner & Moore, 2007).

5.15 Conclusion

Interpretative phenomenological analysis (IPA) gave voice to the personally lived experiences of 10 selected South African expert nature-based extreme sports participants. Semi-structured interviews were conducted to explore the facilitative role of nature-based extreme sports participation in eco-sensitivity of the selected participants. A semi-structured interview schedule supported the conversational nature and flow of each interview. Rich and valuable data was narrated by five male and five female South African expert nature-based extreme sports participants. Once the transcription process concluded, data analysis aimed to clarify and refine the findings, and integrate them with relevant literature. Superordinate (primary) themes, subordinate (secondary) themes and theme topics were a subjective co-construction of pre-understandings, experiences and observations of both the researcher and the participants.

Final themes provided a window into the South African expert nature-based extreme sports' world of each participant and were linked to relevant literature. The research question is answered by aligning the final themes with the set research objectives and providing excerpts from participants' interviews to justify the researcher's notions and interpretations. Nature-based extreme sports experiences have transcendental value, involving concepts of time and space, through which the bodily-being-in-this-world recognises its own finitude and attains a sensory sensitivity. The positive transformative value, both physical and psychological, of nature-based extreme sports participation permits an authentic process of becoming a truer and self-regulated being-in-this-world, who strives to protect nature for natures sake.

CHAPTER 6: SYNTHESIS, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

A synthesis of central facets from each previous chapter, is presented to illuminate the purpose of this dissertation and how it is achieved through the research process. Strength and weaknesses of the research process are deliberated in terms of the justification of the applied methodology. This chapter considers how the findings can transform into recommendations for practice and future research into this particular topic. To conclude, the researcher provides her last reflection of the whole research process.

6.2 Synthesis of study

Many of the traditional findings conducted on “extreme sports” are grounded on social and psychological theory and neglect to include data collected directly from the participant (Sparks, 2016). Nature-based extreme sports participation should not only be recognised for the thrill, high risk-taking or display of human power, but also for its possible meaningful environmental contribution. Considering environmentally degrading behaviour as a threat to the sustainability of healthy ecosystems nurtured by mindless human behaviour, exploration into the facilitative role of nature-based extreme sports participation in eco-sensitivity is done. Since misconceptions and stigmas manifest through novice notions of nature-based extreme sports, the study focusses on expert participants’ lived experiences. Positive meaningful transformations of the expert South African nature-based extreme sports athlete’s lived experiences, in terms of a sensitising process that establishes an eco-sensitivity, is obtained through a qualitative approach.

The qualitative study incorporates traditions of Heidegger and Merleau-Ponty’s interpretative phenomenology and fuses the internal reality of the subjective experiences of both the researcher and participant (Terre Blanche & Durrheim, 2002). A non-probability key informant research sample refined the target study population to 10 South African expert nature-based extreme sports participants, involving five males and five females. The modus operandi for the data collection, transcription process and data analysis, from which final interpretations and themes are drawn, are led by an iterative phenomenological interpretative analytic process. A semi-structured interview schedule guided the one-on-one semi-structured interviews. Both, the face-to-face and telephone interviews were audio-recorded and manually transcribed.

Findings were presented in such a way to address the main premise and research question of the study, which are aligned with three set objectives. Namely, to determine if a transformational process has occurred due to nature-based extreme sports participation; to investigate if this transformational process contributed to an increased awareness and sensitivity towards the self and body, the natural world, their fellow-man and their equipment; and to explore whether is a triadic relationship (interrelationship) between the self (body), the natural world and other people.

Personal lived experiences of each participant provide evidence, that derails typical misconceptions of “reckless thrill-seekers”, who are said to carelessly gamble with their lives and leave survival up to chance (Krein, 2007). In the world or reality of the nature-based extreme sports participant, ‘extreme’ implies calculated risk. Most people in society would assert that conventional sports apply calculated risk, since the activities are performed in a structured and controlled setting. Some novice and naïve perceptions of society regard nature-based extreme sports participants as reckless thrill-seekers, and assert participants perform uncalculated, unnecessary and “out-of-control” risk. The researcher associates uncalculated risk with deliberate risk-taking, which considers the action of purposefully subjecting oneself to a threatening situation and its relevant environmental conditions, neglecting any precautionary measures to safeguard themselves from a tragedy (Woodman et al., 2013).

Although, there are unpredictable weather conditions and uncontrollable environmental situations, all the participants emphasise that they take calculated risks, and do not wish to gamble with their lives. Findings reveal, that participants acknowledge the seriousness of a misstep and do not seek to present the illusion that extreme sports are safe, but rather that their awareness and acceptance of the involved danger allows them to take precautionary risks. They demonstrate precautionary risk-taking, where their “intention” is to address the encountered environmental challenges, through using their skill, knowledge and good judgment. This group of nature-based extreme sports participants believe that during an expedition/tour/race their survival is determined by balancing risk and reward, being safe, having the right attitude, being adaptable, having an awareness of where you are and respect for what you are doing, the ability to think very quickly, and in who, what and where you place your trust. The participants narrations reveal that they aim to learn and understand as much as possible regarding the constraints of their nature-based extreme sports activity, with the purpose to confidently participate.

As a result, an enhanced state of flow can be easily entered, since the participants are not worried by the possibility of the lack of control. Environmental demands do not exceed their abilities and they can perform with confidence, fostering an improved self-confidence and "positive self-construct" (Maslow, 1971). Participants describe increased self-confidence as being comfortable with the extreme environmental challenge they need to complete. Therefore, the undertaken nature-based extreme sports activity is identified as feasible to the participants (Csikszentmihalyi, 1975). The integration of the "self", the natural world and other people, participation permits, requires mindful attention and mindful awareness, where their consciousness is directed towards a heightened sensitivity to internal and external stimuli (Brown & Ryan, 2003). Participants develop the ability to apply actions that "refocus" and direct bodily sensations to the "now and here" (Gardner & Moore, 2007).

Through nature-based extreme sports, participants become emotionally self-regulatory beings-in-this-world, who reflect on themselves and the meaning of life. This is supported by the removal of their "ego", where the participant can look into their "true self." Participants become self-liberated through the experience of transcendence. A participant's loss of ego, implies a gain in "eco", where they consider both themselves and the natural world as part of a larger functioning eco-system. Participants thus become environmentally literate beings (Davies, 1996; DeMares & Krycka, 1998; Lundmark, 2007), who attain an authenticity and can behave mindfully, in a largely mindless society. Overall, nature-based extreme sports participation has enabled a deep transformational experience nurturing an eco-sensitivity, where intimate connections with nature was formed through internal processing or sensory sensitivity. Transcendence is brought to light during encounters of finitude and becoming an integrated true-being-in-the-world.

6.3 Quality of qualitative research

The value of this qualitative research study is assessed in terms of its credibility and trustworthiness (Golafshani, 2003). The study's quality therefore depends on the validity and reliability of findings and the methodology used to achieve it (Brink, 1993). Accuracy and truthfulness of the findings depend on the suitability of the selected methodology, its design, sampling strategy and data analysis, which ultimately answers the research question (Brink, 1993; Leung, 2015). The methodology chapter, has made it clear as to why interpretative phenomenological analysis (IPA) was chosen as an appropriate fit to conduct investigations to answer the research question (Yardley, 2000).

The main strength of this study is grounded in the utilisation of an IPA methodology, which gave nature-based extreme sports participants the opportunity to express their lived experiences and to recognise the pre-understandings of the researcher. Traditions of Heidegger and Merleau-Ponty's interpretative phenomenology provided the researcher with interpretative tools such as hermeneutics and ideography, to gather information to compose the study's literature review and interpret the collected data form the interviews with each research participant. Interpretative phenomenological traditions became the golden thread that was interlaced into every facet of the research process and linked the various chapters in this study. Since nature-based extreme sports participants are confronted with extreme situations of confronting danger, fear and possibly death, it appropriately linked with Heidegger's fundamental structures of Dasein (Breivik, 2010). Nature-based extreme sports participant's existence could therefore be holistically interpreted through hermeneutics (Moran, 2000).

Transparency regarding the methodology was improved by detailing to the reader how the research participant is selected, why they are selected, how they are approached, how the interviews are conducted and how the collected data is analysed. For this purpose, the researcher incorporated the semi-structured interview schedule as an attachment. An example of how themes were identified from a segment of a transcript (including a quote reference through a page-line system) as they emerged chronologically, was also included in the findings chapter. It showcases to the reader the steps followed during the data analysis and stating true to the interpretative phenomenological analytic process. The researcher did not stray from the methodology and made sure she referred back to it during the whole research process. Data was presented in such a way that the reader is able to reflect on the researcher's interpretations made and possible alternative analyses (Smith et al., 2009). Verbatim extracts were therefore included as part of the interpretation and write-up of final themes.

6.3.1 Credibility and trustworthiness

Addressing the **consistency** of the nature-based extremes sports participants' narratives, and the researcher's ability to accurately collect and record these accounts, reveals the reliability of the study (Brink, 1993; Grossoehme, 2014). **Reliability** was enriched through designing a standardised interview schedule that guided the interviews; ensuring a consistent interview environment by only allowing the presence of the interviewee and researcher; and recording the interview with the nature-based extreme sports participant's (interviewee's) consent (Jones, 2015).

Transcription took place shortly after the interview concluded, which further enhanced the reliability of the study. The researcher checked the audio-recorder prior to recording each interview and after completion of each interview, to ensure that the battery-life did not run low and that the audio of the whole interview was captured and audible for transcription. **Member checking** was implemented during the interview process by restating and summarising information and the questions with the nature-based extreme sports athlete to determine the accuracy thereof. The nature-based extreme sports participant (member of the sample) either affirmed that the summaries reflect their feelings, views and experiences or restated their intentions.

Credibility was based on the affirmation of the feedback and comments of the nature-based extreme sports athlete, which permitted a decrease in the occurrence of incorrect data and incorrect interpretation of that data (Jones, 2015). During the compilation of the literature review, each overview of the nature-based extreme sports activity was confirmed by the involved or relevant nature-based extreme sports participant to ensure the validity and reliability of the given literature. The continuous feedback and comments, and active involvement of each nature-based extreme sports athlete ensured the authenticity of the research. No participant in this study had a direct relationship with the researcher, which could have represented a conflict of interest and may have imparted bias on the research study.

A discussion on the sensitivity to context is presented below, to demonstrate the **quality of the interpretative phenomenological analysis** method:

6.3.2 Sensitivity to context

The researcher ensured that she had an awareness of the wider context in which the study was situated in (Yardly, 2000). This was achieved by a familiarisation of the applicable literature, and fusing herself into the interpretative phenomenological theoretical underpinnings. As suggested by Elliott, Fischer and Rennie (1999), an awareness of a narrow or more specific context concerning the research participant was achieved by providing a section on the environmental context of the nature-based extreme sports participants through the application of Bronfenbrenner's socio-ecological systems theory. The researcher zoomed into the microsystem of the participant to identify the motives that lead them to invest more time into unconventional sports, which are meaningful to them (molar activity). This laid the foundation to the transferability of data.

The implementation of the IPA method allowed for the researcher to adopt an active role in which she could immerse herself into every aspect of the research process. The positionality of the researcher within the study has been clearly stated in the study's introduction and restated in the methodology chapter. **Self-reflexivity** through the incorporation of *researcher reflexive boxes* illustrates the researcher's acknowledgment of her own perspectives on the studied phenomenon, which enhanced the transparency of the study (Elliott et al., 1999; Tracy, 2010).

Having a sports background and knowledge regarding the 'sports world', the participants were able to share more finer details with the researcher, as they knew the researcher has an appreciation for the type of language used in the 'sports world' in terms of the physiology involved (muscles) or equipment used. Data collected therefore ruled out 'common knowledge of the relevant activity' and included a more in-depth narration of experiences, which allowed for an "insider perspective" into the expertise and knowledge of each participant (Patton, 2015).

Rapport was built through an informal conversational interview with each nature-based extreme sports participant (Yardley, 2000). The conversational nature of the interviews provided a comfortable setting for each participant to share their nature-based extreme sports experiences. The researcher emphasized to the participant that they could share as much or as little as they want to, and that there were no right or wrong answers to the questions asked. Ultimately, the researcher highlighted that she was eager to learn and gain an insight into the lived experiences of each participant. By listening to the participants as they shared their personal experiences, **the researcher showed a sensitive an emphatic approach to gathering data**. Paying attention to and observing their verbal and non-verbal behaviour permitted the identification of their level of comfort regarding the questions asked and how to approach the following questions.

Commitment to and **rigour** of the research process is achieved through the extensive interaction of the researcher with the data and literature involving nature-based extreme sports and eco-sensitivity (Yardley, 2000). *Individually conducting each interview* either face-to-face or telephonically allowed for a personal commitment of the researcher to conduct the interview process and collect the necessary data to answer the research question posed. Prior to each interview, *a rich and valuable literature review was compiled*, which guided the researcher's understanding of the various nature-based extreme sports activities, the involvement of risk during such activities, the role of mindfulness and flow, and how these elements could possible affect eco-sensitivity.

Each interview was analysed through an interpretative phenomenological analytic process, which improved the quality of the findings. Having a *step-by-step framework* as to how to approach the collected data and interpret it, ensured the consistency of data analysis of each interview. *Manually transcribing each interview* demonstrated an intense interaction with the data: having to listen and relisten to the audio-recordings, while typing and transcribing the audio into written text. After completion of the transcription, the researcher made sure the written text is an accurate account of the participants narration of the audio-recordings, by listening to the audio while following the written text.

Trustworthiness was reinforced by the researcher by constantly comparing the data during data analysis from each transcript (Silverman, 2009). Comparison between the preliminary themes and each individual transcript was made; followed by the comparison between the different transcripts by identifying similarities and dissimilarities of preliminary themes. The final themes presented in the master list of themes were therefore a trustworthy construct of all the various themes identified from each transcript. Findings were also presented in tables and figures to make concise and accurate distinctions between each participant's narrations of experiences (Silverman, 2009).

6.4 Limitations

Although, the implemented IPA method has many strengths, which supports the discussion and interpretation of findings, the methodology has a few limitations. Since the IPA method depends on the ability of both the researcher and research participant to express themselves in words, there may exist verbal and non-verbal language barriers, that could affect the way the data is expressed by the research participant and received by the researcher, and vice versa. Language, according to Smith et al. (2009, p. 194), shapes, enables, but also limits our interpretations of experience. Boundaries can manifest, by the inability to effectively convey our insights into our experiences (Jaeger & Rosnow, 1988). It therefore depends on the research participants ability to articulate, possible intricate thoughts and feelings to describe their nature-based extreme sports experiences. For the research participants, complex aspects of their experiences could be difficult to convey to the researcher, particularly when expressing themselves as such, is unfamiliar (Willig, 2008).

Although, some of the participants have previously undergone interviews with journalists, this type of setting and purpose of the interview was completely different. The inability to articulate their answer to a question, was observed when some participants narrated a very long answer (although valuable information was shared), to the question asked.

It became clear that either the participant did not really know how to answer the question, and midway through their narration lost track of the initial question being asked, or that their infinite collection of experiences in a way caused them the inability to express a particular experience in words. The researcher also noticed that, because the participant imagines himself/herself in a particular experience, they sometimes neglect to properly explain it. They jump between scenarios and do not always complete their sentences, which sometimes leads to a jumble of words. In other cases, some research participants had very short answers, and required more prompting to elicit their nature-based extreme sports experiences. However, each participant's ability to express themselves and their use of language, provides the researcher with an insight into their unique "reality."

Another possible limitation to the IPA method, can be grounded in the fact that the researcher is a relative novice researcher, especially conducting IPA researcher. The researcher's own ability to analyse, reflect on and interpret data influences its richness (Brocki & Wearden, 2006). However, comprehensive guidelines regarding the interpretative phenomenological analytic process provides a clear step-by-step approach to data analysis (Smith, 2004). This research study comprised of the nature-based extreme sports experiences of eight Caucasian South African participants and two Black participants. It is possible that participants from other cultural backgrounds and race may have very different experiences of nature-based extreme sports and eco-sensitivity. It could therefore be useful to explore and can be recommended for future research.

6.5 Recommendations for future practice

As far as the researcher is aware, the current study is one of first to explore the facilitative role of nature-based extreme sport participation in an eco-sensitivity from a South African context. It realises the intrinsic value of strengthening the human-nature relationship, through a practical approach to outdoor environmental education. Although South African nature-based extreme sports participants form a small fraction of the whole South African society, valuable life lessons and eco-management principles can be discovered through their lived experiences. This study's findings offer opportunity for environmental-, educational-, social and behavioural researchers to create sustainable education models or design environmental educational programmes to be implemented, with the purpose to facilitate environmental responsible behaviour in South African citizens. The value, this study has for sports and recreation management, is that sport organizations can contribute to a healthy ecosystem and serve as ecologically just models for organizations in other industries to imitate.

It can assist in initiating management models that serve as a catalyst for environmental change. Studies conducted on the topic of “extreme sports” is relatively new to the research community. Nature-based extreme sports participation and its association with transcendental value provides a niche for investigators far beyond than just the “sports-world” and leisure studies. There is great potential for researchers in sociology and psychology, to continue exploration of various facets such as bodily-being-towards-death, mindfulness, flow and superfluidity, socio-ecological environmental contexts, Maslow’s hierarchical needs theory, pro-environmental behaviour et cetera, which this study links to high-risk nature-based extreme sports. The following observations made by the researcher, may present avenues for future investigations:

- It was a quite hard to find South African female nature-based extreme sports participants for this study, and their availability was much more limited than the male participants. Further investigations can address this aspect more in-depth, as gender also plays a role the tendency to conform to environmental degrading behaviour.
- South Africa has a wide variety of cultural groups. Not all of these cultural groups were included in this study. Researchers can identify whether culture and ethnicity play a role in the formation of an eco-sensitivity and association with nature-based extreme sports.
- A limited scope of nature-based extreme sports activities was included in the study sample. Specific attention to other types of nature-based activities and whether they facilitate an eco-sensitivity in the same way, can be deliberated.

6.6 Researcher’s last reflection

I have realised that conducting a master’s study, does not imply that you master your study topic, but rather that you master an inquisition of your own existence, through your study topic. As a being-in-this-world, I believe that there is always something new to discover: just like your attention is redirected through your senses to another aspect, when re-reading a book or watching a film for the second time. The research process facilitated my life-perspectives to live with a purpose and to take responsibility for my actions. I truly feel that I have gained mindful approaches, although, at times during the process I felt that my mind was just full. I have realised that having the ability to see, hear, smell, taste and touch is a great privilege, to understanding and exploring our world and reality. I have made a point of it, to take a moment to listen to the birds chirping, feel the sun kiss my cheek and appreciate my sight.

The film “A Thousand Words” has resonated with me during the research process and how it applies to my study topic:

The film describes a selfish literary agent, who closes book deals through his “fast-taking ways”, similarly to how mindless-automatic-beings would go about doing and living. The agent wishes to close his next book-deal with a new age guru, without even reading the guru’s prospective book. This guru, recognises the agent’s mindless-behaviour. Upon meeting the guru in his sanctuary, the agent cuts his finger with the bark of a Bodhi fig tree. This same tree, magically appears in the agent’s backyard. According to the guru, the inner being of the agent intertwined with the tree. An association with “depasseren” is evident, although, in this case, the agent was not aware of it. His lack of awareness and sensitivity, essentially contributed to his inauthenticity. Every time the agent said a word or gesture towards a word, a leaf would fall from that same tree. When the agent tries to cut down the tree, the inflicted “wound” would appear on him as well. When animals climb on the tree, he would feel their “footprints” on his body. Extreme heat, the tree is exposed to, leads to the agent sweating. Whatever was felt by the tree, was felt by the agent. It was prophesied that once all of the leaves have fallen, the agent would die. This relates to the notion that humanity’s survival is dependent on a healthy natural ecosystem.

Having just a thousand words left to “live”, before facing mortality, the agent had to readjust his mindless-ways of daily-living. In essence, to understand the “self” and his interpersonal relationships, the agent needed to become sensitive towards nature. The healing nature of the natural world nurtures, a true authentic being-in-this-world. Over time this agent was able to adjust his life to authentically co-exist in the physical world, where he could make peace with his relationships with other people. The “integrate self” was able to self-regulate his actions towards a happier and truer version of himself. Nature-based extreme sports participation permits an intimate bond with nature, where the integrate self can bloom. Self-liberation introduces an experience of transcendence, becoming free of the materialistic world. The instilled sensory sensitivity remains within the participants and they become catalysts for environmental responsible change, in a world where environmental degrading behaviour of humans are the order of the day.

The enchantment of nature created through my shared experiences with the research participants, is portrayed by the words of Lao Tzu that was written around 2500 years ago. I believe that each participant will intensely identify with Tzu’s words (Walker, 1992, p. 43):

A superior person cares for the well-being of all things. She does this by accepting responsibility for the energy she manifests, both actively and in subtle realm. Looking at a tree, she sees not an isolated event but root, leaves, trunk, water, soil and sun: each event related to the others, and “tree” arising out of their relatedness. Looking at herself or another, she sees the same thing.

Trees and animals, humans and insects, flowers and birds: These are active images of the subtle energies that flow from the stars throughout the universe. Meeting and combining with each other and the elements of the earth, they give rise to all living things.

The superior person understands this, and understands that her own energies play a part in it. Understanding these things, she respects the earth as her mother, the heavens as her father, and all living things as her brother and sisters.

Caring for them, she knows that she cares for herself. Giving to them, she knows she gives to herself. At piece with them, she is at peace with herself.

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APPENDICES

APPENDIX A: APA 6TH EDITION REFERENCING STYLE

A beginner's guide to the APA 6th ed. referencing style

The guide has been prepared by staff from the UCOL Student Experience Team (SET)
Library and Learning Services
December 2011

UCOL

1.1. Three, four or five authors

If a work has three (3), four (4) or five (5) authors, cite all authors the first time and from then on include only the last name of the first author followed by the words et al. ('et al.' is Latin for 'and others')

Example:

Research can be defined as a systematic method of creating new knowledge or a way to verify existing knowledge (Watson, McKenna, Cowman & Keady, 2008).

Deciding on a research method demands the researcher consider carefully the problem or area of investigation being researched (Watson et al., 2008).

Reference list entry:

Watson, R., McKenna, H., Cowman, S., & Keady, K. (Eds.). (2008). *Nursing reseach: Designs and methods.* Edinburgh, Scotland: Churchill Livingstone Elsevier.

Note: The people were identified as the editors, hence '(Eds.)' is a shortened version of Editors.

1.2. Six or seven authors

If a work has six (6) or more authors, cite only the last name of the first author followed by et al. each time you refer to this work.

Example:

(Mikosch et al., 2010)

Reference list entry:

When a source has **up to seven (7)** authors, include all names in the reference list.

Mikosch, P., Hadrawa, T., Laubreiter, K., Brandl, J., Pilz, J., Stettner, H., & Grimm, G. (2010). Effectiveness of respiratory-sinus-arrhythmia biofeedback on state-anxiety in patients undergoing coronary angiography. *Journal of Advanced Nursing, 66*(5), 1101-1110.

1.3. Eight or more authors

When there are eight (8) or more authors, cite only the last name of the first author followed by 'et al.' each time you refer to this work.

Example:
(Vissing et al., 2004)

Note in the reference list: When there are eight (8) or more authors, include the first six (6) authors names and then use ellipsis points (...) before concluding with the last author's name.

Retrieved from: http://jkuat.ac.ke/departments/library/wp-content/uploads/2016/09/APA-Referencing-Guide_6th-Edition_20121.pdf

3.12. Serial / journal – more than one author (online– DOI)

The 6th ed. of the APA manual emphasises the use of **DOI (Digital Object Identifiers).** Many publishers, databases and online journals use DOIs. They are alpha-numeric codes that usually appear on the first page of the article. Copy the DOI exactly as it appears.

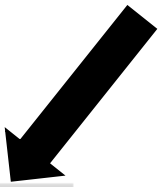
Gabbett, T., Jenkins, D., & Abernethy, B. (2010). Physical collisions and injury during professional rugby league skills training. *Journal of Science and Medicine in Sport, 13*(6), 578-583. doi:10.1016/j.jsams.2010.03.007

If the article has **no DOI**:
Consider providing the home page URL of the journal. If you are accessing the article from a database, you may need to do a quick web search to locate this URL.

It is **not necessary** to include the name of the **database.**

No retrieval date is necessary for content that is not likely to be changed or updated.

These are DOI resolver / locator sites: http://dx.doi.org/ and http://www.crossref.org/



3.13. Serial / Journal article – 8 or more authors (online – no DOI)

Reference list:

Crooks, C., Ameratunga, R., Brewerton, M., Torok, M., Buetow, S., Brothers, S., ... Jorgensen, P. (2010). Adverse reactions to food in New Zealand children aged 0-5 years. *New Zealand Medical Journal, 123*(1327). Retrieved from http://www.nzma.org.nz/journal/123-1327/4469/

In-text citation:

(Crooks et al., 2010).

Retrieved from: http://jkuat.ac.ke/departments/library/wp-content/uploads/2016/09/APA-Referencing-Guide_6th-Edition_20121.pdf

APPENDIX B: FORMAL ETHICAL CLEARANCE LETTER

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Research Ethics Committee

25 February 2019

Dear Ms Human

Project:	**Extreme sports participation and eco-sensitivity: A South African context**
Researcher:	**N Human**
Supervisor:	**Prof BJM Steyn**
Department:	**Sports and Leisure Studies**
Reference number:	**04515049 (HUM20190116)**

Thank you for your response to the Committee's correspondence.

I have pleasure in informing you that the Research Ethics Committee formally **approved** the above study at an *ad hoc* meeting held on 25 February 2019. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should your actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely

Prof Maxi Schoeman
Deputy Dean: Postgraduate and Research Ethics
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: PGHumanities@up.ac.za

cc: Prof BJM Steyn (Supervisor) Prof T Guse (HoD)

Fakulteit Geesteswetenskappe
Lefapha la Bomotho

Research Ethics Committee Members: **Prof MME Schoeman (Deputy Dean);** Prof KL Harris; Mr A Bizos; Dr L Blokland; Dr K Booyens; Dr A-M de Beer; Ms A dos Santos; Dr R Fasselt; Ms KT Govinder Andrew; Dr E Johnson; Dr W Kelleher; Mr A Mohamed; Dr

APPENDIX C: SEMI-STRUCTURED INTERVIEW SCHEDULE

Semi-structured interview schedule

Prospective interview dates: April 2019 – July 2019

Interview length: A 60-to-90-minute interview. A sixty-minute interview is an optimal time period that will ensure that the interviewer and the interviewee stay focused (Laforest, 2009).

Interview time and location: The interviewer will conduct the interview at a convenient time and place suggested by the interviewee (Jones, 2015).

Introduction of interviewer:

The interviewer confidently introduces herself to the interviewee and explains the interview process (Laforest, 2009). With this explanation, any questions regarding the process will be clarified and the interviewee will have a clear understanding of the interviewer's expectations. The various topics that will be discussed are highlighted and will provide the interviewee with an idea of what the study comprises. Furthermore, the interviewee will be assured of their anonymity, the significance of their contribution and that they are free to withdraw from the study at any time.

The nature-based extreme sports experience of the participant and how the experience is perceived by the participant guides the interview questions. The type of nature-based extreme sports activity such as, white-water kayaking, high level mountaineering, rock climbing, adventure running etc., must be identified during the interview. This will provide the interviewer with the knowledge as to what main natural element is present during their activity. For example, white-water kayaking involves white-water; high level mountaineering involves mountains and thinning of air, rock climbing involves rock.

The following **must-have personal information box** regarding the participants demographics and type of nature-based activity, needs to be completed by the researcher during the interviews:

Type of Interview	Face-to-Face	x	Telephone	
Interview code:	*Example - INT001M*		**Name code:**	*Example - ESP001*
Interviewee:	*Name of participant only available to researcher to ensure anonymity*		**Date:**	*Example – 29 April 2019*
Nature-based xtreme sports activity:	*Example – white-water kayaking*		**Place of Interview: Lives (Residence):**	*Example – Parys (in person)* *Example – Parys/JHB*
Current Age/ Date of birth:	*Example: 36 years (1983- 05- 20)*		**Age started activity:**	*Example – (In 2013) 30 years of age*

Interaction with main earthly element:	WATER	x	EARTH		ROCK		AIR		Other	
Description:	(what type of water) For example: rivers involving white-water									

The researcher proceeds to asking the following interview questions. Answers should be based on the participant's lived experiences in their specific nature-based extreme sports activity and daily living:

Interview topics and their relevant questions:

Interview topic	Relevant questions
Get to know participant	- Could you tell me a bit more about who you are, some interesting facts, hobbies and interests? - What are three personality traits that best describe you? - Do you have a motto you live by? And what is its significance to you? - Where did your sense of adventure start?
Nature-based extreme sports activity	- How would you describe your adventurous activity? - What do you think makes your activity extreme? - How would you define being an expert in your specific extreme sports activity? - In ONE word how does your activity make you feel? - Would you say you approach your activity with a lack of control? Why or why not? - How does one prepare for this activity? What does your equipment entail? - Would you say that a) your Gear or b) YOU (yourself) define the effectiveness of the expedition/activity? Why? - Can you elaborate on the dangers or challenges you face during such activities? - What are the benefits of participating in your nature-based extreme sports activity?

Motives for participation	- Compared to conventional sports, what made you choose to invest more time into adventurous/nature-based extreme sports specifically? - What is your goal when you participate in your activity (What would you like to accomplish with your participation?) - How does your goal differ from when you first started to today? - What makes you continue or motivates you during your activity, especially at point when you want to give up?
Embodiment	- Do you think that you merge with your gear during your activity? - Do you experience a merge with your body during your activity? - What body part during your activity do you think works harder and why? - What does awareness and bodily awareness mean to you? How would you describe this during your extreme sports activity? - What would you say: I have a body or I am my body? And why? - Do you think there is a co-existence with your body, apparatus and the natural world? Do you experience a merge with these three elements during your participation? - Focussing on your senses: what senses do you use during your activity and what are their significance? Please elaborate by providing an example - How beneficial/ necessary are your senses during a challenge?
Eco-sensitivity	- Do you feel the need to CONQUER nature? - How would you describe your relationship with nature? - Do you think you merge with nature during your activity? How come? - How important do you think the natural world is to humanity's survival? - Do you believe climate change and global warming is real? - Have you seen its effects during your activity? Can you provide some examples? - What does a healthy eco-system mean to you (everyday life) and your activity? - How do you contribute to a healthy eco-system? - Do you think that you have developed an increased sensitivity/ sensation towards earthly elements because of your participation in your nature-based extreme sports activity? - Would you say your perspective towards nature changed from your first participation in an extreme sports activity to now? In what way? Please elaborate…
Risk perception	- How would say that you enhance your skill level and understanding of your activity that you will undergo? - Is it desirable for you to be uncertain during your activity? - Do you wish to proceed with an activity when circumstances such as weather conditions are too challenging/dangerous?

Misconceptions	- What is your opinion of some people classifying extreme sports participants as reckless thrill seekers?
Transformation	- Can you tell me a bit more about your favourite adventure/expedition/activity? - What is your BEST versus your WORST moment of your activity? - If you are at a point of giving up what drives you to keep moving forward? - In who, what or where do you place your TRUST during your activity? - Have you experienced 'being-in-the-zone'? When and how would you describe it? - Is experiencing a sense of flow (being in the zone) one of your goals? - What are some of the decisions you need to make during your expedition? Does knowing what decisions to make come naturally? - *(based on your extreme sports experience)* Finish the sentence: Your survival is determined by… - What does the term AWERENESS means to you? And bodily awareness? - Do you and how do you apply this during your activity? - What do you understand by the term, being MINDFUL? Would you say that you are mindful? - How mentally tough do you need to be? - Do you think you are bodily aware outside our activity (in your daily living)? - What physical and psychological changes have you undergone during your participation? List a few.
Principles	- What principles do you apply during your daily living gathered through your activity/adventures/expeditions?
Interpersonal relationships	- How did your experiences affect your interpersonal relationship with other people?

Concluding questions

Based on your nature-based extreme sports experiences… Would you say there exists a strong association or correlation between the self (your body), the natural world and interpersonal relationships with others? Did your transformation/s lead you to an **increased sensitivity** and sensation towards the three elements mentioned above?

Concluding the Interview:

Since semi-structured interviews are composed of open questions, it may be difficult to formally conclude each question (Laforest, 2009). Therefore, the interviewer needs to be particularly familiar with all the prospective topics so that she is competent to identify when an interviewee's answer includes more than one topic. When the interviewer is certain that all relevant topics have been addressed and the allocated interview time has passed, the interviewer may ask the interviewee if he/she has anything to add.

The interviewer must thank the interviewee for his/her time and knowledge shared. The contribution of their participation in the study can also be emphasized. Furthermore, the interviewee will be provided with the results upon request once the study has been concluded.

Interview guidelines:

- The interviewer should adapt questions accordingly
- The interviewer can provide examples to the interviewee, but must not suggest an answer
- To get a more in-depth answer or follow-up on points of interest, the interviewer can make use of probes. However, the interviewer must use probes carefully and appropriately.

The following probes can be used to gain additional information from the respondent through using specific techniques:

1) *Clarification probes* (help clarify understandings and misunderstandings)
    - "What did that mean to you?"
    - "Can you provide me with an example of that?"
2) *Elaboration probes* (help to elicit a more in-depth response pertaining to certain interview questions)
    - "Why do you think that is?"
    - "Could you please expand on that?"
    - "Could you tell me more about that?"
    - "What happened next?"

    This method allows you to gather rich detail from relatively few questions (Jones, 2015)

    - Occasionally, silence may be the best probe. Being silent once the interviewee pauses can encourage them to continue and elaborate. This might answer the question you prepared next and will allow for the interview to flow.

APPENDIX D: INFORMED CONSENT LETTER

March 2019

Dear Sir/Madam,

NATURE-BASED EXTREME SPORTS PARTICIPATION AND ECO-SENSITIVITY: A SOUTH AFRICAN CONTEXT

My name is Nicolette Human and I am a master's student in the field of Human Movement Sciences with the option, sport and recreation management, at the University of Pretoria.

I, **herby invite you to participate in my research study**, which explores the relationship between nature-based extreme sports participation and eco-sensitivity from a South African context.

As an expert in your nature-based extreme sports activity you are in an ideal position to give me valuable first-hand information from your own perspective. The **purpose of my study** is to increase my understanding of the facilitative role of nature-based extreme sports participation in eco-sensitivity from a South African context. I aim to answer the following question: *How does South African 'expert' extreme sports participants facilitate an eco-sensitivity?*

As part of my research, I will carry out a one-on-one interview with you, in which you will be sharing your extreme sports participation experiences and knowledge with me. **The objectives of my research** are to determine whether and what kind of transformations occur as a result of your extreme sports participation. Transformations can be in the form of changes in the awareness and sensitivity towards the self (your body); the natural world; your fellow men and your equipment used during your participation. Furthermore, I would like to explore whether there is a triadic relationship (interrelationship) between the self (your body), the natural world and other people.

If you are willing to participate in my research study, please take a few minutes to read through the attached **informed consent letter**, which consists of two parts:

1. **Participant information sheet** (to provide necessary information pertaining to my study)
2. **Informed consent form** (applicable if you choose to take part in my study)

Sincerely,

Ms. Nicolette Human **(Principle researcher)**

The Department of Sport & Leisure Studies
Faculty of Humanities
Tel Number +27 12 420 6040

Humanities Building 12- 7

University of Pretoria
Privaatsak / Private Bag X20
Hatfield 0028 South Africa
Fax Number +27 12 420 6099
www.up.ac.za

INFORMED CONSENT LETTER

Part 1: Participant information sheet

The following information will provide you with an understanding of why you have been selected for my study and what your involvement in the study will entail.

Why have you been selected for my study?

You have been selected based on the following criteria:

a) You are a South African citizen.
b) You are above 18 years of age.
c) You have reached a stage at which you have intensely and comprehensively experienced your extreme sports activity in its totality. You have at least two-years' experience in participating in an extreme sports activity which you practice at least three to four times a year which may include your preparation/training and an expedition/tour/race.
d) Your extreme sports activity takes place in nature where you **interact with specific natural elements and landscapes**. These natural elements include **air, water and rock/earth**. This excludes extreme sports in artificial settings.
e) Your nature-based extreme sports activity is an independent leisure activity that takes place outdoors in natural spaces where the likelihood of a mismanaged action is an injury or fatality.

Do you have to participate?

Your participation in this study is **completely voluntary** and you **are free to withdraw** from the study at any time.

What will you have to do if you choose to participate?

1. **Complete, sign and submit an informed consent form**

If you choose to participate in my study, you will have to complete, sign and submit the attached informed consent form. You can submit the completed and signed informed consent form to me electronically via email.

Email address to be used: nicolettehuman@hotmail.co.za

2. **Participate in a one-on-one interview** (via face-to-face or telephonic interaction)

You will be requested to participate in a **face-to-face interview** with me. Alternatively, a telephonic interview can be arranged at your convenience. The interview will be conducted at a convenient time and location selected by you. The interview will be **audio-and/or-video recorded**.

What about confidentiality and privacy of my information?

Your responses during our interview will be kept confidential by:

- **Restricting access** to the data collected to only me and my supervisor, Prof. B.J.M Steyn.
- **Assigning a letter-and-number code** to our interview and your real name. Example: (Interview 1) = INT001; (Extreme Sports Participant 1 male) = ESP001M. Thus, **your real name will not be disclosed**.
- **With your permission**, our face-to-face interview (Alternatively, a telephonic interview can be arranged) **will be recorded** (audio and/or video recording) and **typed up as a written document** or transcript. During the interview only you, *the participant*, and I, *the researcher*, will be present.
- The transcripts will **not contain your real name**, but rather the assigned letter-and-number code.
- Some of your comments **may be included in a journal article** or **conference paper/presentation**, however your identity will be kept anonymous (via use of my letter-and-number code).

What will happen to the results of the research study?

As a policy of the University of Pretoria, the research results including the audio-and/or-video interview recordings and any written statements will be stored at the Department of Sport and Leisure Studies for a period of 15 years. Any electronic data collected pertaining to my study will be password protected by me. After completion of my study, a summary of the research results will be made available to you and the other participants, upon request. The overall findings of the study may be published in a scientific journal or presented at conferences in the future, however your identity will remain anonymous. Your real name will not be disclosed in any publications or presentations.

Will you receive any compensation for your time and information provided?

You will **not** receive any compensation for participating in my study.

How can you obtain further information?

If you have any questions or concerns regarding my study, feel free to contact me. I will gladly discuss them with you.

Principle researcher: Ms. Nicolette Human

Contact information: nicolettehuman@hotmail.co.za/ 072 337 5385

Thank you for taking the time to read this information sheet.

Please indicate whether you agree to participate in my research study by completing and signing the attached informed consent form.

Part 2: Informed consent form

Please indicate your consent by completing and signing the following form*. After completion, please scan and email this form to Ms. Nicolette Human (principle researcher).*

I, _____[*full names and surname*], ID number _____herby **voluntarily agree** to participate in Ms. Nicolette Human's research study, titled ***Nature-based extreme sports participation and eco-sensitivity: A South African context.***

- I, herby also confirm that I have **read** and **understand** the participant information sheet provided by Ms. Human's research study. Any questions or concerns that I have, regarding her study have been adequately addressed.
- Thus:

1.	I understand that my participation in her research is **completely voluntary**. I am **free to withdraw** from her study at any time.
2.	I understand **the purpose** and nature of her study AND why I have been **selected to participate**.
3.	I agree to a **one-a-one interview** with her, via a face-to-face interview at a convenient time and place selected by me (alternatively, a skype or telephonic interview can be arranged).
4.	I **give permission** to her that the interviews between her and myself may be recorded through **audio and/or video-recordings** and **typed up as a written document** or transcript. During the interview only you, *the participant*, and I, the researcher, will be present.
5.	I understand that she **will not identify me by my real name** in her study by **using a letter-and-number code**. Thus, my responses to her interview questions will stay **anonymous**.
6.	I agree that she may use data collected during our interview for any future scientific journal articles, conference papers or presentations. However, I understand that **my real name will not be disclosed** in these publications or presentations by using a letter-and-number code.
7.	I understand that there is **no compensation** for my participation in her study.
8.	I **know whom to contact** about any concerns regarding her research study.

Please indicate if you would like to receive a summary of Ms. Human's research results, once completed.

YES		**NO**	

By signing this informed consent form, I understand and agree to all the above-mentioned statements.

Signed at _____ on this ____ day of_____ 20 _____.

_____ _____

Research participant's signature Researcher's signature (Ms. Nicolette Human)

APPENDIX E: DECLARATION OF EDITING AND TECHINCAL REFINEMENT

NEELTJE STEYN

BA (Ed) LO
Cell phone: 082 954 3689
neeltje.steyn16@gmail.com

DECLARATION OF EDITING AND TECHNICAL REFINEMENT

20 November 2019

To whom it may concern

This is to confirm that I, the undersigned, have technical edited the completed dissertation of NICOLETTE HUMAN for the *Magister Artium* in Human Movement Science, Option: Sport and Recreation Management entitled: Nature-based extreme sports participation and eco-sensitivity: A South African context.

I accept no responsibility if all the recommended changes are not corrected by the researcher.

Yours truly

Neeltje Steyn