



Research article

Decision-making by extreme athletes: the influence of their social circle

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ABSTRACT

We explored the influence of the social circle on decision-making in regard to risk by 13 extreme athletes from different sports (Free solo climbing, Base-jumping, Longboarding, Solo seafaring, Alpinism, Extreme skiing, Extreme kayaking), all considered extreme due to the high risk of injury or death during practice. In-depth qualitative interviews were conducted with each participant individually in order to determine the influence of members of their social circle (parents, children, partner, friends, etc) on their behaviour. Our results show that their influence is insufficient to substantially modify the practice of extreme sport or the exposure to extreme risk or to lead them to give up their sport. Friends linked to extreme sports are the only ones capable of understanding and promoting these practices. The influence of the rest of the agents will go in the direction of reducing risk taking. The passion for thrill-seeking activities is what imbues the lives of extreme athletes with meaning and this passion is broadly immune to influences from their immediate social circle.

1. Introduction

Recent years have seen an exponential increase in the practice of sports involving extreme risk (Brymer and Schweitzer, 2013; Florenthal and Shoham, 2001; Mata, 2002). Experiencing new sensations, breaking with routine, enhancing self-control capacities and pushing one's limits (Kern et al., 2014) are becoming highly attractive to many people who, as a consequence of practising extreme sports, are exposed to greater risk (Allman et al., 2009).

In the 1990s, the German sociologist Ulrich Beck affirmed that our lives unfold in a "risk society" (Beck, 1998). The fact of facing and overcoming the various dangers we naturally live with allows us as individuals and our society to advance. In extreme sports, however, individuals deliberately seek out extreme situations and challenges and, in the drive to achieve a goal or a reward, seek to live new experiences (Allman et al., 2009).

The current trend in the relentless search for thrills is to renounce safety elements (harnesses, ropes, etc) and so explore the limit of one's abilities at the risk of making a mistake that could prove fatal (Huertas, 2013). The extreme athlete, on the basis of practice, acquires experience and confidence, which, in turn, gradually reduces the perception of risk. This subjective assessment of risk results in an underestimation of objective risk (Demirhan, 2005).

A number of studies have explored the psychological profiles of extreme sportspeople in depth in order to establish classifications and categorizations. Monasterio et al. (2016), for instance, studied the relationship between personality types, traits and stress levels in extreme sportspeople. Zuckerman (2007), from another perspective, linked the desire to experience danger and to push one's limits to socialization processes and sometimes to a need for rewards.

Today's society admires and values people who leave their comfort zone (Laurendeau, 2006), considering them heroes with extraordinary capacities and abilities (Pereira, 2009). Risk behaviours are positively reinforced by the social admiration and are inspired by extreme practices. "Thus, multimedia objects assume a key role due to the fact that they are an effective medium, permitting users to easily interact among them" (Amato et al., 2017, p.844). Social networks positively reinforce and provide feedback on risky behaviours (Huertas, 2013). To determine possible influences on individuals exposure to the risk posed by extreme activities, numerous studies have analysed the sociological profiles of extreme athletes in an endeavour to identify what motivates them to face enormous risks and to determine whether the motivations arise in the individual or have a social origin (Zuckerman, 1979); this endeavour has included analysing social factors such as partners, immediate family, friends and communication and social media (Bronfenbrenner, 2005).

While there has been a proliferation of psychological profiling studies of extreme athletes in recent years, lacking is a scientific analysis of their

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socio-personal profiles. With the aim of understanding relationships between extreme athletes and the people closest to them, we explore the socio-personal settings of thrill-seekers who practise sports or other activities in conditions of great difficulty and/or in non-existent, reduced or highly debatable safety conditions.

This empirical study was inspired by various questions raised in previous analyses (Hunt, 1996; Martin and Leary, 2001; Nicholson, Soane, Fenton-O’Creedy and Willman, 2005), as follows: How is it possible that the people closest to an extreme athlete do not manage to make them desist from the risky activity? Do extreme athletes have an inappropriate perception of fear or an excessive love of pleasure? Does having children change the behaviour of extreme athletes in relation to the assumed risk? Could empathy with significant others who show fear and pain at the possibility of an accident be a factor in making people rethink their extreme risk activities?

It seems indisputable that, in relation to the personal decision to assume risk (Huertas, 2013), people close to the athlete might exert some influence on their decisions regarding extreme risk activities. This study tries to respond to the above questions by analysing the perceptions of extreme athletes themselves. Thus, the objective of the study was to determine how the immediate social circle of the extreme athlete influences their behaviour and their decisions regarding extreme risk activities.

2. Theoretical perspective

2.1. Extreme sports

High-risk or extreme sports are defined as sports that require extraordinary skills and courage and a capacity to act in situations implying a great risk for health and even of death. (Guszkowska and Boldak, 2010), i.e., dangerous activities that involve exposure to physical danger (Klinar et al., 2017). In categorizing the degree of risk associated with certain sports, Gomà-i-Freixanet et al. (2012) state that high-risk sports are those considered to imply a high probability of serious injury or death when practised. They include activities such as climbing, paragliding, caving, white-water rafting, alpine mountaineering, extreme kayaking, diving, ski jumping, parachuting, downhill skiing, mountain biking, and snowboarding (Kajtana, 2013).

People who seek risk in any area of life are driven by the need to constantly experience new, complex and varied sensations (Leary and Hoyle, 2009). Extreme athletes, as seekers of thrills, feel a greater than normal need for stimuli. This need may be a strategy to redirect attention away from their low self-esteem (Woodman et al., 2010), to divert attention from the psychological root causes of negative emotions (Cas-tanier et al., 2010), or to self-regulate emotions (Klinar et al., 2017).

Although the emotional preferences of extreme athletes share common features, not all athletes can be analysed in the same way, since each extreme sports discipline has its own differentiating characteristics (Barlow et al., 2013). For instance, parachutists enjoy the sensation of free falling, while high-altitude alpine mountaineers, in contrast, enjoy being in control when dealing with uncertainty, whether it is over their feelings, actions or decisions (Monasterio et al., 2014).

2.2. Thrill-seeking through extreme sports

Marvin Zuckerman is the psychologist who has probably had most influence on studies of risk taking, as his Sensation Seeking Scale (SSS-V) and his theory of sensation seeking (Zuckerman, 1994) have inspired many research papers. Brymer and Schweitzer (2012) have compiled analytical frameworks from studies of the motivations of extreme athletes from the perspectives of sensations (Zuckerman and Kuhlman, 2000) psychoanalysis (Hunt, 1996) and neo-tribes and subcultures (Maffesoli, 1996).

Leaving aside the conditioning factors of the environment and the psychosocial profile of each individual, another issue is how extreme

athletes face fear. Brymer and Schweitzer (2012) pointed out that “extreme sports participants perceive the experience of fear as an essential element to their survival” (p.481), with each participant determining their limits according to their own subjective perceptions of the risk to which they are exposed (Laurendeau, 2008).

2.3. Extreme sports: from seeking thrills to dicing with death

Previous studies from perspectives as diverse as philosophy defy social perceptions of extreme athletes as “crazy”. Existential philosophers conceive of risk sports as “part of the modern art of living” (Müller, 2012, p.80) and of extreme athletes as artists capable of producing works of art. Psychologists try to understand the personal motivations that lead to the assumption of risk (Jack and Ronan, 1998), while sociologists like Beck (1998) try to understand the great influence exerted by the social environment on human behaviour.

Gomà-i-Freixanet et al. (2012), in an exhaustive review of 27 articles based on empirical data collected on athletes exposed to great physical risk, reported that these individuals enjoy extreme environments and stimulation of the mind and senses through extremes, whether of heights, depths, speeds, light, dark, or weather. Also documented was the fact that these individuals seek new experiences, are intolerant of repetitive experiences, and invariably have low anxiety levels. Those qualities do not interfere with the demanding requirements for concentration and control required for extreme sports. The study concluded by defining the social profile of this type of athlete as unconventional, even as they respect social rules and are well socialized, because, after all, many high-risk sports (e.g., alpinism, climbing, speleology, parachuting) are practised in small groups. One’s behaviour may therefore impinge on others in the group and one’s life might even depend on the companionship and loyalty of the group members (Gomà-i-Freixanet et al., 2012).

2.4. Psychosocial determinants influencing decision-making

The psychosocial profile of a person is drawn on the basis of the numerous interactions that occur in their daily life, according to Bronfenbrenner’s social ecological model (1979). Human development is the ongoing accommodation of an active human being to their immediate and changing surroundings (Torricco et al., 2002) Bronfenbrenner’s model reflects a set of systems that interrelate and interact with each other (Figure 1):

- *Microsystem*. This encompasses the participant’s most immediate circle, including family, friends, school and work colleagues, etc.
- *Exosystem*. This refers to two or more interrelated and interacting environments in which the participant is immersed.
- *Macrosystem*. This overarching system includes cultural, historical and religious factors associated with the society in which the participant belongs.

Bronfenbrenner’s model suggests that what is essential is how the person perceives the environment more than how they exist in objective reality (Fuster and Elizalde, 1995) The psychosocial profile of an extreme athlete is drawn from their daily interactions with the agents in their environment, but, above all, from the perceptions and interpretations of those interactions by the selfsame individual. In the case of more extreme athletes, influences from the macrosystem and exosystem, reflecting public opinion from the general social environment, may be less direct; as one example, Lupton and Tulloch (2002) conclude that Australian society’s perceptions of risk associated with BASE-jumping is positive, because this activity involves values such as overcoming difficulties, commitment, and emotional control. Such perceptions could suppose positive reinforcement for the extreme athlete that would affect their development and their decisions.

It is the social agents in the microsystem, however, who will have the greatest influence on decisions made by extreme athletes. Those referred

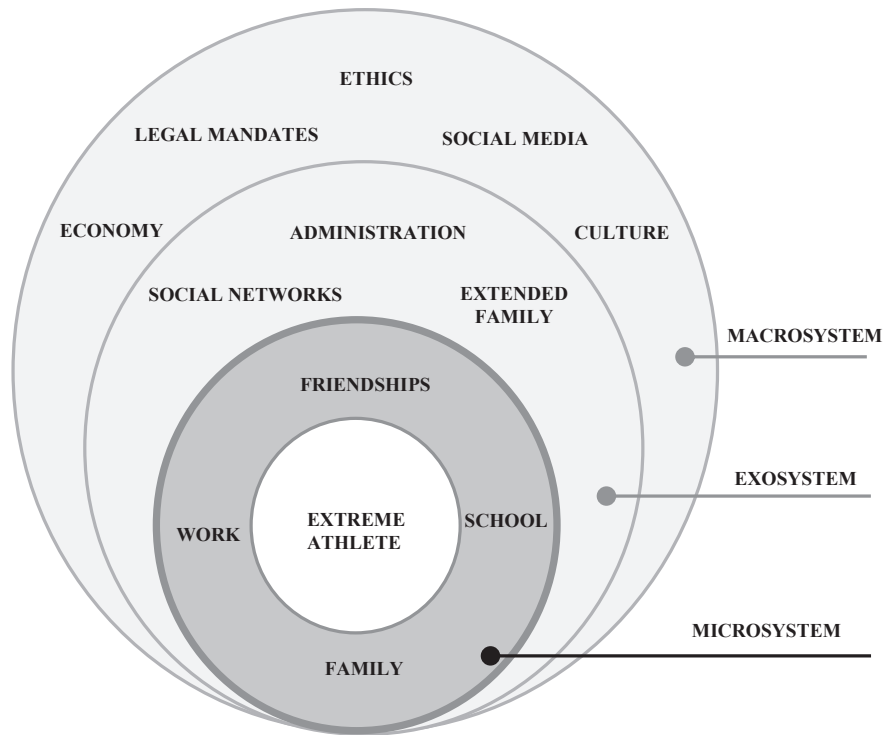


Figure 1. Adaptation of social ecological model of Bronfenbrenner for extreme athletes. Agents from the microsystem, exosystem and macrosystem.

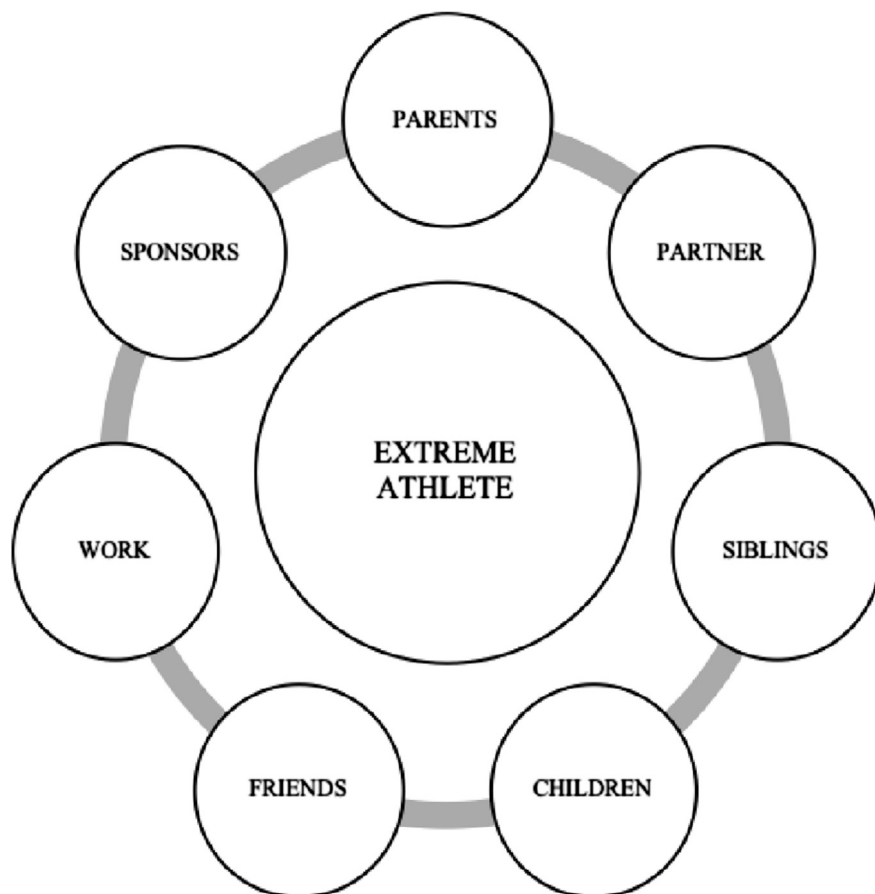


Figure 2. Microsystem. Significant others of social circle of extreme athletes.

Table 1. Identification and classification of the participants. Sociodemographics and extreme sport practiced.

Interviewed subjects						
Code	Age	Sex	Children	Marital status	Profession	Activity
S1	42	Man	No	Single	Teacher	Free solo climbing
S2	26	Woman	No	Single	Student	BASE-jumping
S3	25	Man	No	Single	Doctor	Longboarding
S4	45	Man	Si	Single	Mountain guide	Solo seafaring
S5	65	Man	Si	Single	Mountain guide	Alpinism
S6	47	Man	Si	Single	Industrial	Alpinism
S7	56	Man	Si	Married	Computer scientist	Alpinism/free solo climbing
S8	35	Man	No	Single	Fireman	BASE-jumping/free solo climbing
S9	43	Man	Si	Single	Nurse	Free solo climbing
S10	27	Woman	No	Single	Mountain guide	Extreme skiing
S11	50	Man	Si	Couple	Teacher	Alpinism/extreme skiing/free solo climbing
S12	50	Woman	Si	Single	Elite athlete	Alpinism
S13	29	Man	No	Single	Teacher	Extreme kayaking

to as significant others (Ntoumanis et al., 2007) are the persons closest to the participant and making up their social circle, i.e., family, friends, school and work colleagues, coaches, sports colleagues, sponsors, etc. (Figure 2) The agents in this circle are frequently or continuously interacting with each other as they typically share spaces and experiences that further shape the behaviour and development of the extreme athlete and that configure their psychosocial profile over time.

Each significant other will play a different role and will affect to different degrees the construction of the psychosocial profile of the extreme athlete and, consequently, their decisions in general, and risk-taking decisions in particular. As demonstrated elsewhere (Sánchez et al., 2012) “the immediate social circle containing parents, coaches, teachers, colleagues ... of the young athlete play a key role in the acquisition of healthy habits and adaptive behaviours” (p.17).

3. Method

3.1. Ontology and epistemology

This study, based on a qualitative analysis, adopts an interpretivist ontological stance, since the social perceptions of extreme athletes draw on different subjective realities (Vasilachis, 2009) Also adopted is a subjectivist and constructivist epistemological approach, since we understand that values both from researcher and interviewees can influence and shape what is understood and interpreted (Sparkes and Smith, 2014).

3.2. Participants

The study sample was composed of 13 professional and amateur athletes (10 men and 3 women), aged 25–65 years (mean 42 years, standard deviation 12.49 years), all regular practitioners of extreme sports. Inclusion criteria were as follows: (1) to actively practice extreme sports; (2) to have more experience than the average casual athletes (3) to perform activities considered to place them at extreme risk (Gomà-i-Freixanet et al., 2012). Participants can be considered of medium socioeconomic status, born and living in the Western lifestyle, and practice extreme sports as a hobby. The extreme sports represented (Table 1) were BASE-jumping (n = 2), extreme skiing (n = 2), extreme kayaking (n = 1), free solo climbing (without ropes) (n = 5), alpinism (extreme mountaineering) (n = 5), Longboarding (n = 1) and solo seafaring (n = 1). In some cases, the athletes practised more than one of those extreme sports.

3.3. Instrument and procedure

This descriptive study with a cross-sectional design (Montero & León, 2007) was methodologically based on the qualitative non-standardized face-to-face interview. Unlike the traditional methodology, which uses standardized interviews for data collection, limiting the range of responses, a qualitative methodology has been used. Unstructured interviews allow us to delve into more personal aspects of the subjects, giving freedom and fluidity to their stories. (Hernández et al., 2014). A schematic in-depth interview guide was designed with the aim of encouraging the participants to express themselves by addressing the issues in question (Figures 1 and 2).

This approach ensured a high degree of flexibility and freedom in responses and allowed the interviewee to play a leading role in the conversation (Heinemann, 2003).

By agreement with each participant, interviews were recorded. Each interview consisted of an initial icebreaker in the form of the following question: “When was the last time you found yourself in a situation that you considered to imply risk?” After this initial prompt, the interview continued along the lines laid down by a graphic interview guide (Inglès and Puig, 2015), aimed at uncovering the influence of persons in the immediate social circle on extreme athletes and the risk activities they participate in.

Interviews were recorded, using a conventional recording system, transcribed and encoded using QSR NVivo 12 assisted qualitative data analysis software (Hutchisona et al., 2010) for subsequent content analysis. The data were categorized according to the classification proposed in Bronfenbrenner's social ecological model (1979).

Participants were contacted individually by email and the purpose of the research was explained along with ethical and logistical aspects. The median (M) duration of the interviews was 43 min with a standard deviation (SD) of 14. Interviews took place in different venues according to the preferences and possibilities of the participants. Before beginning the interviews, participants were reminded of the purpose of the study and were guaranteed the confidentiality of the data and its treatment. Participants then read and signed informed consent documents. After the interviews, the recordings were transcribed verbatim.

3.4. Data analysis

Data analysis, which was both deductive and inductive, took place in stages as follows:

1. Familiarization with the data through reading of the interview transcripts.
2. Design of an initial coding proposal based on [Bronfenbrenner's social ecological model \(1979\)](#) using QSR NVivo software.
3. Deductive organization of the data in six predefined categories: parents, partner siblings, children, friends, job.
4. Re-reading of the resulting initial structured data and code modification using inductive analysis ([Dávila, 2006](#)). The category "professional" was divided into two different subcategories: *work* and *sponsors*.
5. Data review and grouping into the seven resulting thematic areas: parents, partner siblings, children, friends, work and sponsors.
6. Research report.

3.5. Criteria for excellent qualitative research

This work has followed the eight criteria proposed by [Tracy \(2010\)](#) for excellence in qualitative research: a) *Worthy topic*: the subject of this study is considered relevant since extreme sports have recently suffered a significant increase ([Brymer and Schweitzer, 2013](#)) and there is little research in the psychosocial field; b) *Rich rigor*: this study has been based on theories with recognized foundation and rigor, such as Bronfenbrenner's Ecological Theory or Zuckerman's sensation seeking, among others used in different fields of research; c) *Sincerity*: the research is marked by honesty and transparency in the collection and treatment of data exclusively extracted from the interviewees, without any manipulation or influence on the interpretation by the interviewer; d) *Credibility*: the methods used to obtain and treat the results allow the reliability of the study. Results are also shown extensively and with textual citations to highlight the credibility of this research; e) *Resonance*: simple language is used in the writing of the study so that it is understandable for any reader unfamiliar with extreme sports, generating empathy and interest in its content; f) *Significant contribution*: the research contributes to new knowledge in the psychosocial field of extreme sports and generates new incentives for future studies; g) *Ethics*: The ethical principle has prevailed throughout the entire investigation process, being endorsed by the Ethical Investigation Committee of the Sports Administration of Catalonia (28/CEICGC/2020); h) *Meaningful coherence*: the principle of coherence is based on rigorous work with the use of resources and techniques, in this case non-standardized interviews, adapted to the purpose of this research with the aim of delving into the psychosocial aspect of athletes extremes.

3.6. Ethics statement

The studies involving human participants were reviewed and approved by the Comit  de  tica d'Investigacions Cl niques de l'Administraci  de Catalunya (28/CEICGC/2020). The participants provided their written informed consent to participate in this study.

4. Results

The results underline different levels of influence by the significant others in the extreme athlete's microsystem, providing evidence of the variability between them. Based on extreme athletes' self-perception, the capacity of influence of the significant others of their own social circle is analysed. Results are shown by the use of captions from the unstructured in-depth interviews with each of the participants. Thus, light is shed to our initial questions by the use of qualitative data empirically found, as follows.

4.1. Parents

All the interviewees agreed that their parents' influence over them was not enough to modify any of their decisions regarding the practice of extreme sports.

For eight of the athletes the father or mother or both were sports-people themselves who introduced their offspring to outdoor sea or mountain activities: "At home, mountains were always very present and when I was little I was taken trekking and skiing" (S8); "I started mountaineering because of my father and school" (S6). For the remaining five interviewees, the parents did not practice sports and so did not exert any direct influence in this regard. S13 explained that "at the family level, there was no history of practising sport" and, along the same lines, S7 stated that "in my closest family circle, no one had ever done this activity." None of the interviewees had a parent who had practised the same extreme activity.

The general opinion, shared by most of the participants, was that mothers more than fathers were more concerned and afraid of the extreme risk practices of their offspring. In some reflections regarding their childhood and youth, the interviewees reported having deceived their parents in that they chose not to explain anything in much detail or only after it was done: "My mother doesn't know a thing, because she would worry a lot; when it's done, then she finds out" (S4). S5 explained: "It was my mother who first took me to the mountains. But I always told her that I was just going on an excursion, no matter whether it was Everest, K2 or a trek near home, it was always an excursion and that was that." In many cases, while parents would prefer that their offspring did not assume risks, they accepted the decision: "For sure no family would like for their child to do this activity, but it is respected" (S2). Two of the interviewees, S12 and S7, have experienced the deaths of family members in alpine mountaineering and climbing activities. Even so, the fact that they have carried on suggests that this did not lead them to cut back or give up on their own activity. In referring to critical moments in lived extreme situations implying a risk to life, none of the interviewees said they thought of their parents, affirming that they focused solely on resolving the risk situation.

4.2. Partner

The eight interviewees who had a partner at the time of the study affirmed that they were not influenced by this significant other in reference to their extreme activity. For all the interviewees, the fact of having a partner does not lead them to consider reducing risk to any degree, never mind giving up altogether. The partnered interviewees recognized that their partner accepted and respected both their activity and their attitude, emphasizing that they felt very free to do as they considered best in their sports career.

Even so, in some cases, there was accommodation, i.e., an adaptation of some kind or a reduction in time spent on an activity to be able to spend more time with the partner: "My partner is my partner... I try to balance my sport with that" (S1). In cases where pressure from a partner was perceived as excessive, it was conceded that the relationship was affected: "Yes, it conditioned me; in order to spend more time together, I had to cut back on my activity. And now I am no longer with that person" (S10); "A partner must allow me to do what I have to do, I cannot commit to a person who places limits on me" (S3).

In three cases (S2, S5, S8), the partner practised the same extreme sport. This was a very important boost for the relationship, but it also implied greater concern or fear for the other. At times, it translated into greater protectiveness that was not always well received: "When he showed me, he suffered more for me as his partner than if we had not been together, but now we share projects and this reinforces our relationship and we are healthily competitive with each other" (S2).

Four of the five unpartnered athletes at the time of the study underlined that in previous relationships they had moderated their behaviours, but once the relationship ended they returned to their extreme sport with even more conviction and with a greater sense of freedom and emotional tranquillity. "Maybe now, when I don't have a partner, is when I allow myself to do a bit more than I did in my life as a couple, when I can go more my own way" (S6).

4.3. Siblings

Despite the close bond that typically exists between brothers and sisters, their influence on a sibling's practice of extreme sports is generally non-existent. Of the interviewees, nine had siblings, whose influence in childhood and adolescence, when older than the interviewee, was evident. Several interviewees mentioned a sibling as responsible for having launched them in activities in nature: *"At the age of 15 years, it was with my brother that I first put on climbing shoes, but no harness or anything"*. None, however, indicated that they were directly introduced to extreme activities by a sibling.

Remarkable for its direct influence on one interviewee (S7) was the death of a brother at a very young age, not for sports-related reasons; according to S7: *"The death led me to reflect deeply on life and death, and that gives meaning to and explains my practice of risk activities"*.

4.4. Children

A more protective attitude was detected for children than for the remaining significant others analysed. While their influence was perceived as greater by some of the interviewees, this was not translated into substantial behavioural changes in the athletes. Modification was generally limited only to a reduction in time spent on the extreme activity due to the need to care for children: *"At the beginning, that absorbs many hours and it seems that you will have to give up on projects, but the truth is that your goal eventually comes to mind again and you do it"* (S9).

In no case did children condition the level of exposure to extreme risk. One interviewee (S12), recalling a conversation with her son – *"Don't go! What if you have an accident?"* – reported that *"the answer I gave was a reasoned explanation so that the child could understand and accept my decision, but in no case did that plea influence my decision."*

Children were acknowledged to somehow always be present. S5 related, for example, that *"as a tribute, I dedicated successful summits to each of my three children, because they also suffer, and I recognize that."* Even so, all the interviewees affirmed that their children never substantially modified their extreme risk practices.

Switching the perspective, it was interesting to analyse interviewee thoughts about the possibility that their own children might take up an extreme sport. Several confessed that they would prefer their children to avoid high-risk activities. S7 comments: *"Selfishly, I have never insisted. They do ski, they do some climbing... but for me that's enough. I've experienced the high-risk situations, and I prefer it that way."* S11 explains: *"While I have absolutely forbidden my son to climb without a rope, sometimes it's inevitable that he does so somewhere"*. In view of their children's desire to follow in their parents' footsteps, two interviewees encourage them, sharing their experience and offering advice, especially on how to act as safely as possible: *"Of my two children, who both like the mountain a lot, there is one son who, without knowing it, is already a mountaineer. We see it in his relationship with the mountain, how he views it... I will try to teach him what I can from my own experience"* (S11).

The five interviewees without children all agreed that if they had children, they would teach them everything they could about their sport and leave the choice to them. Regarding the influence parenthood might have on their sport, everyone felt that while it might limit the time spent on their sport, it would never lead them to consider abandoning it altogether: *"If I had children, I would not stop, but I would not continue at the same level, for obvious reasons... Children would have to go to school from Monday to Friday... and this would require more stability than what I currently have in my life"* (S2); *"I would reduce frequency, not for fear of leaving my children fatherless, but for the time required"* (S13). One of the interviewees did concede that they would be extra careful: *"It is very possible that, if I had a child, I would reduce both the difficulty and the frequency somewhat"* (S10).

4.5. Friends

All the interviewees classified their friends in two groups in terms of their influence. As pointed out by S7, a climber: *"The mountaineering friends are mountaineering friends, and the rest are the rest"* (S7). The first group, composed of other extreme athletes practising the same activity, was attributed with a great reciprocal influence, in terms of motivation and positive reinforcement, as a consequence of the shared experiences: *"Friendship is everything, it is feedback, it is motivation, it is the people who are with you all the way, it also adds a healthy competitive component"* (S1). As for the second group, composed of other friends, conversations about the extreme sport were usually avoided because, in most cases, those friends did not understand and maybe were even critical: *"At the level of friends there are all sorts – some damn you, blame you for risking your life, while others understand it"* (S9); *"Most of the friends who don't do the sport see you as a weirdo; they constantly remind you that you could get hurt"* (S10).

Seven of the interviewees started their activity with friends with whom they have shared many experiences, while the remaining six started out in different ways. However, all of them, once they started in their sport, considered the attachment to friends who regularly practise their sport to be very important: *"My friend and the only expedition companion saved my life putting his own life at risk. He saw the stone, the fall... I have eight plates and 19 screws in my face, just to give you an idea... He was hanging there too... but fate made him come down to see if I was still alive... He kept me from death and bore with me two days ... There are only two people in the world capable of doing that"* (S11). The interviewees likewise recognized the great ability of these friends to influence risk-taking, whether by reducing or reinforcing it. Some affirmed that they sometimes assumed greater risk than they would have if on their own: *"If he was clear about it, it was because he saw it clearly. That led me to put on the skis too. If I hadn't been with him, I swear I wouldn't have worn them!"* (S11).

Most interviewees have experienced the loss of someone – a family member, close friend or acquaintance – doing their sport. All agreed that the emotional impact was great, but they saw it as temporary; in no case did misfortunes lead to the abandonment or modification of an extreme activity programme: *"We have had several deaths of friends and it is true that it affects you, but, at least in our group, it does not affect us enough to stop practising"* (S2); *"Close friends have died climbing... it is traumatic, you have it in your head, it is as if you were seeing their photo. But at no time have I ever considered giving up"* (S7).

4.6. Work

Work exerts a great influence and inevitably modifies certain decisions regarding extreme risk activities undertaken by both professional and amateur athletes. While this influence is not reflected in any change in attitude towards the sport, it does condition practice by reducing the time available or because of the issue of funding for projects.

For amateurs, work is perceived as a limiting factor, because it restricts availability. In some cases, the interviewees changed careers or jobs to mitigate this negative influence: *"I left my job and hometown to dedicate myself to my sport. I looked for a new job that would allow me to earn the money I needed and to work flexible hours. I have shaped my whole life around my passion"* (S2).

In other cases, the interviewees had turned their sport into a job: *"Thanks to my experience in risk activities, I now have a job with a mountain rescue group"* (S9). Others had become mountain guides: *"I was a mountain instructor at the age of 22, and with more experience I became a guide, so I have dedicated my whole life to that"* (S5). Some compete at a professional level in their respective disciplines, or work on sponsored projects that, in addition to being a motivation, often generate additional

income: "At 18 I was already competing internationally, and this has allowed me to make a living from my sport" (S13).

4.7. Sponsors

Although sponsors could initially be considered to be outside the microsystem of athletes, the interviewees' responses suggested that we should include them as a significant other given their remarkable influence: twelve of the thirteen people interviewed acknowledged having a direct and very early relationship with sponsors.

All the interviewees agreed that brands and companies that provided financial resources inevitably asked for something in return: "That conditions your projects, sometimes it forces you to modify your initial idea to adapt to a commercial strategy and, well, if you want the money, you must adapt" (S8). In most cases, the demand is for images that reflect the values of the sponsor, although some sponsors ask for good results in competitions to continue providing funds. According to S10, "the demand for results adds a lot of pressure."

Only one of the interviewees (S7) indicated that they had carried out activities using their own resources and had never sought sponsorship. Each of the remaining interviewees had experiences with sponsors, but affirmed never agreeing to carry out activities with risk additional to what they themselves were willing to assume: "However much they offer you or boost your ego, it's never worth your life" (S8); "If a brand demands too much of you in a risky situation, forget it! To risk your life for money, that's to completely prostitute your philosophy regarding whatever sport you practice" (S11).

4.8. Summary

The analyses of each class of significant other revealed that, despite differences in their personal histories, the responses of the athletes were very similar. In the case of parents, the influence ceased to be relevant once the person came of age, when the athletes decided for themselves according to their own interests. As for partners, there were differences depending on whether or not the activity was shared by the couple, although the actual impact in terms of modifying risk behaviours was practically nil. The same applied to the siblings, whose influence was likewise nil. Friends who shared the same passion had the greatest influence on the athletes, reinforcing complicities and underpinning motivations to seek new challenges; other friends were not at all influential in decisions related to the assumption of risks. As for sponsors who sought to profit from the use of spectacular images depicting risk for publicity purposes, if their demands exceeded the athlete's own perceived capacity for assuming a risk, then the latter would not assume the additional risk in exchange for money. Our findings, in summary, are that nobody in the close social circle of extreme athletes is capable of exerting sufficient influence on them to lead them to modify goals set on the basis of their own convictions.

5. Discussion

Our research has explored the influence exerted by people in the immediate social circle of athletes who practise extreme sports and the impact of affective social relationships on the athletes. Our results, pointing to the complexity of human behaviour, corroborate results reported in studies by Smith et al. (2007) and Weiss et al. (2009) which confirm that their microsystem and interpersonal relationships influence the psychosocial and motivational development of young athletes, who are susceptible to the influence of third parties, especially coaches, colleagues, and parents. In contrast, for extreme athletes there is little evidence of modified behaviours in relation to risky activities. The fact that many of their parents were sportspeople themselves seems to facilitate their comprehension on their desire of risk-taking. In the case of partners, results show that *love life* seems to be difficult with someone out from the extreme sports way of living and thinking.

The great influence of the family on decisions has been confirmed for medical scenarios in which people face death directly, due to cancer (Torricco et al., 2002). For extreme athletes, in contrast, our results show that the influence of family (parents, partner or children) is much less important than that exercised by friends, colleagues, and sponsors.

This finding corroborates the study by Hurtado et al. (2004), which concludes that the practice of risk sports enables young people to identify with others with similar interests. Our research also documents that extreme athletes, each in their modality, tend to be part of small related groups that could be considered neo-tribes (Maffesoli, 1996), with our results confirming this bond between sports colleagues. In some cases, colleagues will have experienced situations on the edge in which their lives depended on each other; as concluded by the study by Gomà-i-Freixanet et al. (2012), sometimes one's life relies on the companionship and loyalty of the group (p.228).

However, discrepancies were evident between our results and those of Hurtado et al. (2004), who affirmed that the media play an important role in extreme sports: athletes configure their identity around their sport and the consumption of the associated cultural goods. Although it is true that sponsors can give extreme athletes visibility and publicity, 90% of our interviewees did not feel influenced by them; rather, they try to make their decisions independently of sponsors and undertake their challenges thinking and away from the pressures of third parties. Any public repercussion is considered a consequence of their activity, rather than a cause.

Our results have showed and underlined different levels of influence by the significant others in the extreme athlete's microsystem and have provided evidence of the existing variability between them based on their own perception of the capacity of influence. Thus, our results have enabled us to collect a great amount of subjective information from extreme athletes, at the expense of more numerical and objective data. The possibility of using technological measurement tools, such as biofeedback, was assessed, due to the high potential of this research tool (Kos and Umek, 2018). Even so, this technology was not definitely used due to the difficulty of monitoring sensations, memories, interpersonal relationships and external influences. The possibility of applying technological systems such as computational intelligence (Fister et al., 2015) is open to future research to deepen the decision-making of extreme athletes.

6. Conclusions

We sought to respond to the questions initially raised in relation to the influence of the social circle of the extreme athlete on their behaviour and decision-making regarding maximum risk practices. Our results show how none of the significant others closest to extreme sports practitioners has enough influence to substantially modify extreme sport practices nor to condition decisions regarding the assumption of, and exposure to, extreme risk to health or life. While each significant other conditions a participant in different ways, to different degrees, and according to individual characteristics, we have been able to detect threads common to practitioners of extreme sports. They are aware of and accept that their social circle has influenced them at some point in their career, but not to the point of making them abandon their sport, reduce their exposure to risk, or modify their plans.

Extreme athletes are people who pursue, above all else, a fusion with the environment, reducing artifice as much as possible while seeking sensations of freedom, tranquillity, and mental relaxation. Their bodies and minds behave and respond in a balanced and harmonious way to achieving goals that for most may seem unattainable. Even in activities where a great deal of adrenaline is generated, extreme athletes have enormous self-control in ensuring extreme concentration and focus of all their senses on overcoming a challenge and surviving. They combine mental preparation with exhaustive physical preparation and meticulous preparatory work in such a way that it becomes difficult to label them crazy or irresponsible. Our results would suggest that extreme

sportspeople are very consistent in terms of their life philosophy, to the point that almost nothing or nobody will make them give up their convictions and intentions.

In this research, a limitation was collecting data exclusively from extreme athletes and not from significant others, as the two kinds of data would have offered a global vision of the phenomenon. Another issue was the complexity implied by delimiting the very concept of extreme risk, since it is not clear how to draw distinctions between, for instance, those who make a single annual expedition to the Himalayas versus those who regularly climb without ropes. Nonetheless, the sociological approach underlying this research suggests that the frequency of risk exposure should not affect interpretation of the results. Another limitation of our study has been the reduced size of the sample, which restricts the generalisation of the results. Even so, this qualitative study has provided a great amount of in-depth information.

Finally, because we had difficulties in recruiting women who practise extreme sports, we had insufficient empirical data to add a gender perspective to our results, so data had to be treated in an undifferentiated way.

Those limitations suggest future studies of extreme athletes that delve further into microsystem influences to include the experiences and opinions of significant others themselves and samples that, not only extends the number of participants, but also include more women who practice extreme sports.

The literature review has included psychological and biological studies on extreme athletes (Zuckerman and Kuhlman, 2000), based on qualitative tests that measure sensations and analyse psychological aspects and physiological reactions. The most interesting issue is the consensus that exists in all spheres regarding the importance of relating social and environmental factors with psychological and biological profiles. Opening up future interdisciplinary lines of research would undoubtedly lead to a better understanding of extreme athletes.

This study can be considered as an initial step to as a broader line of research, not only by extending the number of participants, but also directly interviewing the agents of their social circle. This may help to overcome the limitation of the present study, that is only based on the self-perception of the participants.

Climbing mountains of more than 8000 m, crossing the Atlantic alone in a 6-metre boat, rafting in rivers with 15-metre high waterfalls, skateboarding down steep roads at 120 kmph, climbing huge iced-over waterfalls, free solo climbing, wingsuit flying, mogul or halfpipe skiing, etc., are activities that inspire passion. In this study investigating athletes attracted to extreme sports and willing to risk their lives for their passion, we show that none of their significant others influence them to the point of separating them from their life project.

Declarations

Author contribution statement

E. Inglés Yuba: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

E. V. Vliet: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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