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Watching High-risk Sports on Television: The Reversal Theory's Concept of Protective Frame

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1 Watching High-risk Sports on Television: The Reversal Theory's Concept of
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5 2 Protective Frame

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For Peer Review Only

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Abstract

The study explored the psychological links that may exist between the feeling of being threatened and the perceived risk of sports situations, the interest for television sports programs and the interest for conversations about these television sports reports. One hundred and ninety nine participants were presented with a series of questionnaires to assess: a) the degree of threat, the perceived risk as well as the amount of personal experience associated with certain sports situations, b) the degree of interest and the viewing habits associated with the same sports situations, c) the degree of interest shown for participating in conversations about these sports programs. The more the sports were considered threatening and perceived as risky, the more the participants were interested in watching these sports on television and to talk about these television programs. The concept of protective frame explained this finding.

Keywords: media interest; sport; risk perception; protective frame; reversal theory

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3 1 Watching High-risk Sports on Television: The Reversal Theory's Concept of
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5 2 Protective Frame

6
7 3 Sport and media are two distinct entities that interact. Sport exists through media and
8
9 4 media need sport (Coakley, 2008). In media, one of the real consumers in sport is the
10
11 5 spectator, not the one who goes to a sports venue to support their favourite team but the one
12
13 6 who watches sport on the television screen (Potgieter, 2003). For actors in sports broadcasting
14
15 7 industry, it is important to understand the reasons for the entertainment or the interest shown
16
17 8 for televised sports because demand becomes more and more important and they must
18
19 9 propose programs that are more and more specialized (Coetzee, Van Wyk, & Steyn, 2006).
20
21
22 10 Therefore, one part of research on the audience watching sport on television has furthered
23
24 11 investigations into this issue (e.g., Kang, Lee, & Lee, 2010): Why do spectators watch sport
25
26 12 on television?

27
28
29 13 To answer this question, researchers in psychology work on the level of arousal of
30
31 14 individuals. In this way, some studies implemented the Zukerman's (1994) sensation seeking
32
33 15 theory. For example, Coetzee et al. (2006) studied the relationship between sensation seeking
34
35 16 and preference in viewing televised sport. In considering three types of sport (violent fighting
36
37 17 sport, aggressive combative sport, and stylistic sport), they showed there was a positive
38
39 18 relationship between high sensation seeking and viewing violent combative sport. They
40
41 19 indicated that low sensation seeking viewers are interested by more stylistic sport on
42
43 20 television.

44
45
46 21 Two potential limitations of Zukerman's (1994) theory can be identified. Firstly, sport
47
48 22 could be considered as a homogenous form of television program that create interest
49
50 23 principally by the components of violence and aggression (e.g., McDaniel, 2003). Yet, other
51
52 24 practices may influence the arousal of viewers such as high-risk sports (e.g., skydiving,
53
54 25 climbing, jumping, rally driving...) where arousal seeking is associated with risk taking

1 during these activities. McDaniel (2003) underlined the necessity to include a large variety of
2 sports programming content with potential arousal to understand why people watch sport on
3 television. Secondly, this approach studies sensation seeking as a common stable trait. An
4 opposed perspective is to consider the changeability and inconsistency of behaviour and
5 experience in relation to sensation seeking. In order to follow this last perspective, the
6 reversal theory (Apter, 2001) can be applied.

7 **Reversal theory and Protective Frame**

8 Reversal theory is a theory based on motivation, personality, and emotion (Apter,
9 2001, 2007). It is a theoretical framework that uses a structural phenomenological approach of
10 everyday experience. The subjective experience of individuals and how this experience is
11 structured provide information in which individuals' motives are organised. So, one type of
12 question ensuing from the reversal theory is: what are the motives for engaging in a specific
13 type of activity? According to this theory, human motives are conceived from
14 metamotivational states that involve different ways of interpreting motivational variables.
15 Metamotivational states are mental states that concern how people experience their motives
16 (Kerr, 2005). They govern the way an individual interprets their motives at a certain time. The
17 dynamic approach refers to individuals who shift between these metamotivational states in the
18 course of everyday life and under a variety of conditions: contingency, frustration, and
19 satiation.

20 The reversal theory postulates that there are eight metamotivational states (Apter,
21 2001). They represent values that are grouped in four pairs of opposite states, and may rapidly
22 change over time. The first two pairs of metamotivational states form the somatic states: the
23 telic and paratelic states, and the conformist and negativistic states. They refer to the way in
24 which individuals experience their own bodily arousal. The two other pairs of
25 metamotivational states form the transactional states: the mastery and sympathy states, and

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1 the autic and alloic states. They refer to interactions with other individuals or objects.

2 Although all eight metamotivational states are important, the telic and paratelic states
3 are essential for explaining the participants' experience and motivation in high-risk sports
4 (Kerr, 1991). The telic state is characterized by the following values: arousal-avoiding, goal-
5 orientated, serious-minded, future-orientated, planning ahead, preferring important activities,
6 attempting to complete activity. The paratelic state is characterized by the following values:
7 arousal-seeking, sensation-orientated, playful, present-orientated, spontaneous, preferring
8 unimportant activities, attempting to prolong an activity. This pair of metamotivational states
9 is directly related to the concept of the protective frame (e.g., Kerr, 2005).

10 The protective frame is subjectively determined, cognitively based and concerns the
11 different ways in which the contents of experience are interpreted by an individual at a
12 particular time. It provides a feeling of protection from risk or danger and forms a kind of
13 "psychological bubble" around an activity (Apter, 2007). The activation of a protective frame
14 leads the individual into a paratelic state and the individual becomes excited by the
15 heightened arousal and challenges associated with risk. The lack of a protective frame leads
16 people into a telic state and they will experience risk and danger with anxiety, a feeling of
17 threat or fear. Because of the protective frame, threatening situations can be experienced as
18 unpleasant in the telic state or as pleasant in the paratelic state. The protective frame is
19 affected by the individual's experience of risky and dangerous situations. One's own personal
20 perception of risk or fear depends on the individual's subjective experience and can show how
21 the protective frame operates (Kerr, 1997).

22 Apter (2001) describes three protective frames: (1) the safety zone frame brings a
23 feeling of safety through the perception that in fact there is no source of threat or risk; (2)
24 The confidence frame releases a feeling of safety through confidence in one's own skills and
25 those of others and the dependability of equipment; (3) the detachment frame that provides a

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1 feeling of safety through the fact that the individual is merely an observer of the threat or
2 risky situation and is not directly involved as in the case of watching television programs
3 (Apter, 1992). The protective frame was studied in sport (e.g., Kerr, 1991, 2007) and in media
4 (e.g., Portell & Mullet, 2014).

5 In sport, qualitative research methods have been used to verify the existence of the
6 protective frame in high-risk sports (e.g., Kerr, 2007; Mackenzie & Kerr, 2012, 2014). They
7 illustrated this concept by studying how a female skydiver's experience suddenly changed her
8 feelings (excitement to anxiety) or metamotivational states (paratelic to telic) following the
9 death of her friend in a skydiving accident. By applying an autoethnographical approach in
10 hiking adventure tourism, Mackenzie and Kerr (2012) underlined the necessity for creating a
11 protective frame to make the experience enjoyable by identifying factors that influenced this
12 frame (e.g., environmental conditions). Mackenzie and Kerr (2014) studied the experience of
13 motivation in an expert male skydiver. They concluded that his protective frame was based on
14 telic-mastery state combination. The main limitation in these qualitative studies is that their
15 investigations are based on a very small sample of athletes which severely restricts the
16 generalization of their findings. To overcome this limitation, it would be necessary to confirm
17 the existence of the protective frame in high-risk sports by using a quantitative method.

18 In the media, a quantitative method was used to explore the effect of multiple
19 protective frames in relation to motivation to watch television programs so as to understand
20 why individuals enjoy watching natural disasters and human violence on television (Portell &
21 Mullet, 2014). In this study, the distance created by the media allows people to enjoy arousing
22 material within one or two protective frames, even if the subject matter is unpleasant
23 programs (Hill, 2000). Portell and Mullet (2014) investigated the psychological links between
24 individuals' choice of television programs, conversation topics centered on the content of
25 these programs, and level of the feeling of threat perceived by the individual in relation to

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1 these programs. One hundred and fifty five participants answered a set of 6 questionnaires,
2 each composed of a list of 15 situations that looked at: the threat (no protective frame), the
3 interest shown from watching programs on television (one protective frame), the interest
4 shown from talking about programs on television (two protective frames), personal
5 experiences, television habits, and risk perception. They found that the threatening character
6 of actual situations was positively correlated with the interesting character of watching the
7 same situations on television and talking about the corresponding television programs.
8 Furthermore, it correlated more with watching rather than talking about the TV programs. The
9 participants watched more frequently television programs presenting threatening situations
10 than television programs presenting non-threatening situations. For a majority of individuals,
11 watching exciting television programs and talking about risky situations are more interesting
12 because a protective frame is operating (negative consequences have been taken away). On
13 the other hand, a minority of individuals were less interested in watching exciting television
14 programs and in discussing topics centered on risky situations because they were stressful or
15 possibly psychologically harmful.

16 However, in the questionnaires of Portell and Mullet's (2014) study, only three of
17 fifteen situations referred to sport programs: skating, biking, and skiing. Therefore it is
18 necessary to extend investigations into other high-risk sports to confirm these results.

Present study

19
20 The present study aimed at replicating Portell & Mullet's research (2014) in sports
21 media and at exploring the psychological links that may exist between the feeling of being
22 threatened and the risk perception in sports situations, the interest for television sports
23 programs and for conversations about the television sports reports.

24 The stronger the protective frame, the likelier the individual would be able to cope
25 with fear where that fear is being paradoxically turned into pleasure. Television would

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1 therefore allow individuals to feel excitement even if dangerous and terrible situations are
2 shown. It would also be possible to increase the robustness of the protective frame by
3 considering conversations. Some of the threats or risks perceived through the television sports
4 programs would be exciting due to the presence of a protective frame and people will enjoy
5 discussing dangerous television situations without feeling stressed. The more protective the
6 frame is, the more likely the individuals would convert their fear into pleasure, especially if
7 they are not involved in the situation. Television would create a protective frame. And the
8 conversation would be a double protective frame. Speaking about high-risk sports television
9 reports would limit and trivialize the danger so that the individuals could enjoy this
10 conversation.

Hypothesis

12 The below set of hypotheses was based on the framework of reversal theory and on the
13 concept of the protective frame (e.g., Apter, 1992; Kerr, 1997) and was based on Portell and
14 Mullet's (2014) findings: The first hypothesis (Hypothesis 1) was that both the interest for
15 television sports programs (one protective frame) and, the interest for conversations (two
16 protective frames) would correlate with the degree of threat and risk.

17 The second hypothesis (Hypothesis 2) was that the threatening character of real sports
18 situations would be more associated with the interest for conversation topics about the sports
19 television program than with the interesting nature of the television program itself.

20 The third hypothesis (Hypothesis 3) was that the perception of risk would be more
21 associated with the threatening character of the real sports situations (no protective frame)
22 than with the interest for watching (one protective frame) and for hearing conversations (two
23 protective frames) about TV sports programs.

24 The fourth hypothesis (Hypothesis 4) was that the threatening character of real sports
25 situations correlates with the attractiveness of watching and talking about the corresponding

1 sports program for a majority of participants. For a minority of people, it would be the
2 opposite.

3 The fifth hypothesis (Hypothesis 5) was that the participants would more frequently
4 watch sports television programs presenting threatening situations than programs showing
5 non-threatening situations.

6 Method

7 Participants

8 The participants were 199 adult students ($M_{age} = 24.39$; $SD = 1.28$). They were unpaid
9 volunteers living in France. There were 99 male participants ($M_{age} = 24.28$; $SD = 1.00$) and
10 100 female participants ($M_{age} = 24.49$; $SD = 1.60$). Once an agreement was reached with the
11 president of the University, the study was presented to all adult students. For those who
12 accepted to participate, an appointment was arranged.

13 Material

14 As in Portell and Mullet (2014), there were 6 questionnaires, each of them presenting
15 sports situations where the risk involved varied. The choice of sports followed the distinction
16 between “safe” and “high-risk” sports so that one could study the motives of practices from
17 the reversal theory (e.g., Kerr & Svebak, 1989).

18 1. The *No Protective Frame* questionnaire. It presents sports situations in which the
19 participants are placed. It is composed of a list of 15 more or less dangerous situations. These
20 situations ranged from rambling to skydiving. They are listed in Appendix 1. Participants had
21 to rate them, where “15” is the most threatening situation and “1” is the least threatening
22 situation.

23 2. The *One Protective Frame* questionnaire. It is composed of 15 more or less
24 dangerous television programs similar to the dangerous situations of the first questionnaire.
25 They ranged from rambling to skydiving. They are listed in Appendix 2. Here, the sports

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1 situations do not involve the participants in a direct way. There is a protective barrier. The
2 participants consider sports television programs about which they have to indicate their
3 degree of interest. They have to order them from the most interesting situation (= 15) to the
4 least interesting situation (= 1). These programs are similar to the situations of the first
5 questionnaire, so that a comparison can be made between the degree of threat posed by real
6 situations with the degree of interest for television sports programs.

7 3. The *Two Protective Frame questionnaire*. It presents 15 conversations about the
8 same television programs as the second questionnaire. There is here a double barrier of
9 protection because the television programs are discussed (see Appendix 2). The situation
10 takes place in a train, and an individual hears a conversation about a television program.
11 Participants have to rate them from the most interesting situation (= 15) to the least interesting
12 situation (= 1). In fact, the conversations are similar to the situations in real sports situations
13 (questionnaire 1) and in the television sports programs (questionnaire 2) so that a comparison
14 between the degree of threat posed by real situations and the degree of interest to participate
15 in the conversation can be made.

16 4. The *Personal Experience* questionnaire. It presents the personal experience of the
17 real life sports situations. It is composed of the 15 more or less dangerous situations of the
18 first questionnaire, plus 6 additional situations used as distractors. An 11-point response scale
19 followed each situation from “*Never been in this kind of situation*” to “*Often been in this kind*
20 *of situation*”.

21 5. The *Television Habits* questionnaire. It estimates how frequent the sports program is
22 watched. It is composed of the 21 situations of the fourth questionnaire with an 11-point scale
23 from “*I have never watched programs about this kind of situation*” to “*I have frequently*
24 *watched programs about this kind of situation*”.

25 6. The *Risk Perception* questionnaire. It estimates the degree of risk in sports

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11

1 situations. It is composed of the same 21 situations with an 11-point scale ranging from “*No*
2 *risk*” to “*Extremely risky*”.

3 Procedure

4 All procedures performed in this study involving human participants were in
5 accordance with the ethical standards of the institutional committee. Having made sure the
6 participants understood the instructions and that they had sufficient knowledge about the
7 different sports included in the questionnaires, they were each given a questionnaire to fill in
8 on their own. The procedure was anonymous. The administration of the questionnaires was
9 counterbalanced. Two groups of 66 subjects and one of 67 participants were constituted
10 randomly. The first group filled in questionnaires 1, 2, 3, 4, 5 and 6 in this order. The second
11 group filled them in the following order: questionnaire 2, then 3, then 1, then 5, then 6 and
12 then 4. Questionnaires 3, 1, 2, 6, 4 and 5 were proposed in this order to the third group. In the
13 No Protective Frame questionnaire concerning the real sports situations, the participants have
14 to order 15 situations from 15 to 1 by attributing the rank of 15 to the sports situation
15 considered the most threatening then by attributing the rank of 14 to the situation considered
16 the most threatening among the 14 remaining and so on until there was only one situation
17 remaining that was ranked 1. The One Protective Frame questionnaire proposed 15 television
18 sports programs which corresponded to 15 sports real situations of the previous questionnaire.
19 The subjects have to order these programs from 15 to 1 by attributing the rank of 15 to the
20 program considered the most interesting. In the same way, the rank of 14 will be attributed to
21 the program considered the most interesting among the 14 remaining situations and so on
22 until there was only one situation remaining that was the rank 1. The Two Protective Frames
23 questionnaire with double protective barrier invited the participants to imagine that they are
24 traveling by train and that a conversation about a television sports report ensued between two
25 travellers in the same compartment. They were presented with the same 15 mentioned sports

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1 situations of the previous questionnaire. They have to rank them from 15 to 1 in terms of the
2 willingness to participate in conversations. So, for the first three questionnaires, every
3 participant produced a personal ranking of the 15 proposed items. The Personal Experience
4 questionnaire concerned the experience of the described situations. The participants were
5 asked to indicate on a scale to what extent they had personally previously been exposed to
6 each of 21 described sports situations (15 + 6). The questionnaire 5 concerned the Television
7 Habits. The participants were asked to indicate the extent to which they have watched these
8 types of television sports reports over the previous 24 months. In the Risk Perception
9 questionnaire, each participant has to indicate on a response scale, the degree of risk
10 associated with each of 21 described sports situations. So, for these three last questionnaires,
11 every participant used response scales.

Results

12
13 Results from the three groups of participants were pooled together, after it was found
14 that the average score of each group was not significantly different. The average scores and
15 standard deviations found overall for all items are presented in Table 1.

16 For threatening situations, the highest mean ranked items (the most threatening) were
17 skijumping, skydiving, and bungee jumping. Conversely, the lowest mean ranked items (the
18 least threatening) were rambling, swimming, and cycling. Standard deviations ranged from
19 2.41 to 3.22, with a median at 2.87. There was a reasonable inter-subjects agreement about
20 what constitutes a threatening situation.

21 For the interesting character of the television sports programs (representing a single
22 protective frame), the highest mean ranked items (the most interesting) were the programs on
23 surfing, rafting, and bobsleigh. Conversely, the lowest mean ranked items (the least
24 interesting) were the programs on rambling, running, and cycling. Standard deviations ranged
25 from 3.08 to 4.98, with a median at 3.40. There was more inter-subjects disagreement about

1 what constitutes an interesting program than about what constitutes a threatening situation.

2 For the interesting character of conversation topics, the highest mean ranked items (the
3 most interesting) were the programs on surfing, rafting, and bungee jumping. Conversely, the
4 lowest mean ranked items (the least interesting) were the programs on rambling, running, and
5 cycling. Standard deviations ranged from 3.16 to 5.29, with a median at 3.74. There was more
6 inter-subjects disagreement about what constitutes an interesting conversation topic than
7 about what constitutes an interesting program or about what constitutes a threatening
8 situation.

9 Three Wilcoxon tests were conducted on the three series of SD from each condition
10 (Threatening, One Protective Frame, and Two Protective Frames). The difference between
11 Threatening condition and One Protective Frame condition was significant, $z = -3.41$, $p < .001$.
12 The difference between Threatening condition and Two Protective Frames condition was
13 significant, $z = -3.41$, $p < .001$. The difference between One Protective Frame condition and
14 Two Protective Frames condition was significant, $z = -2.76$, $p = .006$.

15 In the personal experience questionnaire, the sports that had the highest mean ratings
16 were swimming, rambling, and cycling. The lowest mean ranked sports were skydiving,
17 paragliding, and boxing. As for television habits questionnaire, the sports that had the highest
18 mean ratings were football, skijumping, and surfing. The lowest mean ranked sports were
19 skydiving, paragliding, and boxing. As for the perceived risk questionnaire, the sports that
20 had the highest mean ratings were skijumping, rafting, and paragliding. The least mean
21 ranked sports were rambling, swimming, and cycling.

22 Table 1 shows the 15 situations ordered according to the participants' mean response
23 in each condition. Spearman correlation coefficients, computed on the group level, that is,
24 from the values in each column of Table 1, are shown in Table 2. The correlation was $.64$, $p <$
25 $.01$, between mean ranks in the Threat condition (i.e., Zero Protective Frame condition) and

1 mean ranks in the One Protective Frame condition. The more a situation was estimated
2 threatening when there was no protection from its actual consequences, the more it tended to
3 be adjudged to be interesting when one was only indirectly exposed to it. The correlation was
4 .65, $p < .01$, between mean ranks in Threat condition (i.e., Zero Protective Frame condition)
5 and mean ranks in Two Protective Frames condition. The more a situation was considered to
6 be threatening when there is no protection, the more it tended to be considered to be an
7 inviting conversation topic.

8 As regards the Personal Experience condition, it was correlated with the threatening
9 condition, the One Protective Frame condition, the Two Protective Frames Condition, and the
10 Perceived Risk condition. There was relationship between judged personal experience and
11 these measurements. With regard to the television habits condition, it was correlated with the
12 interesting character of the programs and the inviting character of conversation topic. As
13 regards the Risk Experience condition, it was correlated with the Threatening condition, the
14 One Protective Frame, the two Protective Frames condition, and the Personal Experience
15 condition.

16 Spearman correlation coefficients were computed on an individual level. Figure 1
17 presented the distribution of the individual correlations between ranks in the Zero Protective
18 Frame condition and ranks in the One Protective Frame condition. The histogram showed the
19 asymmetry of the distribution (Skewness = -67, Kurtosis = -18) with a majority of participants
20 (48%) with positive correlations, peaking at more than .40, and a minority of participants
21 (8%) with negative correlations, peaking at less than -.40. The effect of gender was not
22 significant.

23 Figure 2 showed the distribution of the individual correlations between ranks in the
24 Zero Protective Frame condition and ranks in the two Protective Frames condition. The
25 histogram showed the asymmetry of the distribution (Skewness = -38, Kurtosis = -84) with a

1 majority of participants (42%) with positive correlations, peaking at more than .40, and a
2 minority of participants (11%) with negative correlations, peaking at less than -.40. The effect
3 of gender was not significant. The difference between these two distributions was significant,
4 $z = -2.80$, $p = .005$. The correlation between both series of values was also significant: $.81$, p
5 $= .01$

6 **Discussion**

7 This study examined the relationship between the feeling of being threatened in actual
8 sports, the interest for television sports programs and for conversation topics centered on
9 these programs, the personal experience, the sports television habits and the perceived risk of
10 certain situations. Within the framework of reversal theory (Apter, 2001), it aimed to replicate
11 Portell and Mullet's (2014) study regarding sports media in order to explain why people enjoy
12 watching high risk sport on television.

13 The first hypothesis was that both the interest for television programs (one protective
14 frame) and, the interest for conversation (two protective frames) would correlate with the
15 degree of threat and risk. This was observed. The more the sports were considered threatening
16 and perceived as risky, the more the participants were interested in watching these sports on
17 television and talking about them. They judged these sports situations to be the most
18 interesting once the negative consequences for them had been removed. This result confirmed
19 Portell and Mullet's (2014) findings showing that people are more interested in watching
20 frightening television programs and in choosing conversation topics about high risk situations.

21 The second hypothesis was that the threatening character of real sports situations
22 would be more associated with the interest for conversation topics about the sports television
23 program than with the interesting nature of the television program itself. This was observed.
24 Although the difference between both correlations was not very important (0.64 for watching
25 vs 0.65 for conversation), this result was consistent with Portell and Mullet's (2014) findings.

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3 1 The third hypothesis was that the perception of risk would be more associated with the
4
5 2 threatening character of the real sports situations (no protective frame) than with the interest
6
7 3 for watching (one protective frame) and for hearing conversations (two protective frames)
8
9 4 about TV sports programs. This expectation was confirmed. The more the frame was
10
11 5 protective, the less risky the sports situations were perceived. This result was consistent with
12
13 6 the conclusions of certain qualitative studies on the protective frame (e.g., Mackenzie & Kerr,
14
15 7 2012, 2014). Using one or several protective frames enables one to adopt the environmental
16
17 8 conditions, so as to transform a real high risk sports situation into less risky one.

19
20 9 The fourth hypothesis was that the threatening character of real sports situations
21
22 10 correlates with the attractiveness of watching and talking about the corresponding sports
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24 11 program for a majority of participants. For a minority of people, it would be the opposite.
25
26 12 This hypothesis supported and confirmed Portell and Mullet's (2014) results. For a majority
27
28 13 of participants, the more actual sports situations were considered to be threatening (situations
29
30 14 without protective frame and with direct exposure to them), the more watching these sports on
31
32 15 television and conversing about these sports programs (situations with one or two protective
33
34 16 frames and with indirect exposure to them) were judged to be interesting. On the other hand, a
35
36 17 minority of participants reported that the more sports situations were threatening, the less
37
38 18 these sports were watched on television and the less talking about these sports programs were
39
40 19 interesting. All the participants did not use the protective frame in the same manner. Although
41
42 20 watching high-risk sports situations is a pleasant moment for a majority of participants, it
43
44 21 remains displeasing for a minority of participants.

47
48 22 The fifth hypothesis was that the participants would more frequently watch sports
49
50 23 television programs presenting threatening situations than programs showing non-threatening
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52 24 situations. This hypothesis was not observed. There was no correlation between the
53
54 25 threatening nature of sports situations and individual's' viewing habits. Although they had an

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1 interest for watching sports of a threatening or high-risk nature (see hypothesis 1's findings),
2 they did not consider that they watched these sports frequently on television. This finding
3 may be explained by the very extensive broadcasting of some sports, like football matches on
4 French channels. It is as if football is being promoted as a form of entertainment on TV.
5 Therefore, it is very popular. Other sports like skijumping, bobsleigh and skydiving are much
6 less visible on TV because these sports are not played all the year round because of the
7 weather conditions reasons or quite simply through the choices made by the broadcasters.

8 The set of findings confirmed that the protective frame explains the enjoyment of
9 individuals to watch and talk about high-risk sports situations. This investigation
10 demonstrated that the concept of the protective frame is useful for understanding the
11 importance of risk perception when using the media. More generally, the concept of the
12 protective frame (Apter, 1992) is useful for understanding people's preferences in "actual
13 daily life" sports situations, in "reported" ones on television (one protective frame) or in
14 "evoked" ones in conversations (two protective frames). Because of a protective frame like
15 television, real threatening sports situations may be considered the most "enjoyed" when
16 reported in media. People like to watch high-risk sports situations on the television screen
17 probably because their negative consequences have been removed.

18 However, we can identify limitations in our study. Firstly, our study was based on
19 only one kind of protective frame, the detachment frame. The study's findings showed the
20 effect of personal experience on the perceptions of risk and threat. This personal experience is
21 considered as an antecedent of the confidence frame (Males, Kerr, & Hudson, 2015) but this
22 confidence frame was not directly explored in our investigation. It would be interesting to
23 make further studies to link personal experiences, detachment, confidence and safety zone
24 frames (Apter, 2001). Secondly, it would be judicious to measure the level of emotions in
25 each condition (no protective frame, one protective frame, and two protective frames). This

1 approach might give information on parathic emotion characterised by a high arousal (that
2 is usually an unpleasant experience) in the telic state but can be a pleasant experience (Apter,
3 2001). Thirdly, in this study, we used ranked data. In replacing this level of measurement by
4 interval level data, we could use multivariate analyses to test the contribution of one and two
5 protective frames on interest. Fourthly, we could have been more interested in the adolescent
6 population. The amount of TV adolescents watch is likely to bias their views of high-risk
7 behaviour (Russel & Buhrau, 2015). Further investigations should be carried out on
8 adolescents so as to understand why they prefer to watch certain high-risk sports programs.

9 **Implications**

10 Our study may present implications for sports actors or media actors: broadcasters,
11 advertisers and sports educators. In promoting consumption of televised sports, broadcasters
12 may use research from the reversal theory and the concept of the protective frame in media to
13 identify individuals' preferences in sports events. On the one hand, this may allow better
14 targeting of their sports programs in order to make a majority of spectators watch their
15 television channel. Here, it might be useful to program as prime time events of a high-risk or
16 threatening nature, because the protective frame produces an interest for these sports
17 programs. On the other hand, broadcasters may take into consideration the minority of people
18 who are not interested in high-risk sports, because the sports do not create a protective frame.

19 Advertisers may find a benefit in programming these high-risk sports during adverts to
20 incite spectators not to channel-hop and so, facilitate the promotion of a chocolate bar or other
21 foodstuffs. Since they were interested by the high-risk sport, they would stay on the same
22 channel and could be stimulated to buy this product.

23 Sports educators may use television in education to target high-risk sports. In
24 situations of a high-risk nature, people may be frightened by the real situation and may refuse
25 to do this sport. For example, an individual may give up skydiving because he is afraid. A

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1 preliminary phase in which the instructor shows him a series of jumps on television could
2 help individuals to increase their knowledge of this sport and to become accustomed to
3 skydiving.

4 As regards “scary” sports programs on television, people tend to enjoy them but it
5 appears that programs glorifying risk can potentially have grave consequences. Fischer,
6 Greitemeyer, Kastenmüller, Vogrincic and Sauer (2011) pointed out the negative impact of
7 programs of a threatening nature on people in a broad variety of risk-taking domains.
8 Watching high-risk sports activities may neglect a part of reality and the possible
9 consequences of actual high-risk practices could lead to injuries or death (Kerr, 2007).

10

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13

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22 **Appendix**

23 Appendix 1. The 15 situations in the real life condition (Questionnaire 1)

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3 1 *Skydiving*. During your vacation near a flying club, you have registered for a skydiving
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5 2 course. You are at 1000 m. The door of the plane is open: the height of the fall is revealed to
6
7 3 you. It's up to you to jump.
8
9 4 *Skijumping*. You are skiing and you are getting ready to jump from the top of a springboard of
10
11 5 10 meters high.
12
13 6 *Cycling*. You are deciding to go cycling with the cycling club of your region.
14
15 7 *Bobsleigh*. You are on winter holidays in the mountains. It is proposed to you to go for a ride
16
17 8 in a bobsleigh.
18
19 9 *Rally driving*. You are taking part in a car rally in Auvergne. You are to accompany the pilot.
20
21 10 *Climbing*. You are attached by rope to other climbers on a rock face. You are in third position.
22
23 11 *Football*. You are playing a football match against a famous team.
24
25 12 *Swimming*. You are on holidays and you decide to improve your swimming techniques in
26
27 13 swimming pool.
28
29 14 *Bungee jumping*. You are jumping from the top of a bridge over a fast-flowing river.
30
31 15 *Boxing*. You are taking part in a boxing match. You have never met your opponent. You get
32
33 16 into the ring.
34
35 17 *Running*. You are participating in a race. Hundreds of athletes around you are impatient and
36
37 18 excited as they wait for the departure to be given.
38
39 19 *Paragliding*. You must do paragliding alone without being in the company of the instructor.
40
41 20 *Surfing*. You are surfing in Hawaii.
42
43 21 *Rambling*. You are going with a club for a hike of several kilometers.
44
45 22 *Rafting*. You are rafting on a mountain river, which is extremely fast-flowing, and on which
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47 23 dangerous looking rocks can be seen on the surface.
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51 25 Appendix 2. The 15 situations used in the TV program condition (Questionnaire 2; You are
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- 1 watching...) and also the talking about the TV condition (Questionnaire 3; In a train, you hear
- 2 a conversation about...).
- 3 *Skydiving*. A television report on a first skydiving jump at an altitude of 1000 meters in
- 4 skydiving.
- 5 *Skijumping*. A television report where skiers perform springboard jumps.
- 6 *Cycling*. A television report on the cycling tours of a cycling club.
- 7 *Bobsleigh*. A television report on bobsleigh racing.
- 8 *Rally driving*. A television report on a car rally in Auvergne.
- 9 *Climbing*. A television report on the progress of a mountain climbers people on a rock face.
- 10 *Football*. A television report on a football game when one of the two teams is very famous.
- 11 *Swimming*. A television report on swimming techniques in a swimming pool.
- 12 *Bungee jumping*. A television report on acrobatic figures executed by people bungee jumping
- 13 off the top of a bridge above a fast-flowing river.
- 14 *Boxing*. A television report on a boxing match between boxers who have never met before...
- 15 *Running*. A television report on the start of a marathon.
- 16 *Paragliding*. A television report on the practice of paragliding when participants no longer
- 17 need the help of the instructor.
- 18 *Surfing*. A television report on surfing in Hawaii.
- 19 *Rambling*. A television report on a hiking trip of several kilometers.
- 20 *Rafting*. A television report on rafting down an extremely fast-flowing mountain river, on
- 21 which dangerous looking rocks can be seen on the surface.

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Table 1

The 15 Situations Ordered by the Mean of the Participants' Responses for the Six Viewpoints

	Threat		Interest						Personal Experience			TV Habits			Perceived Risk			
	Q#1	OPF	Watch TV		Talk about TV		Q#4			Q#4			Q#5					
	Situations	M	SD	Situations	M	SD	Situations	M	SD	Situations	M	SD	Situations	M	SD	Situations	M	SD
1	Skijumping	11.30	2.50	Surfing	9.84	3.45	Surfing	9.33	3.74	Swimming	4.70	3.13	Football	7.50	3.39	Skijumping	8.64	2.24
2	Skydiving	10.95	3.02	Rafting	9.69	3.31	Rafting	9.19	3.16	Rambling	4.13	3.00	Skijumping	5.79	3.21	Rafting	8.10	2.38
3	Bungee Jumping	10.94	3.08	Bobsleigh	9.18	3.35	Bungee Jumping	8.96	4.13	Cycling	3.78	3.02	Surfing	4.99	3.11	Paragliding	7.92	2.79
4	Paragliding	10.39	2.88	Skijumping	9.10	3.13	Skydiving	8.61	3.52	Football	3.05	3.24	Bobsleigh	4.61	2.63	Skydiving	7.57	2.85
5	Rafting	8.95	2.94	Skydiving	8.82	3.40	Bobsleigh	8.56	3.44	Running	2.98	2.68	Rally Driving	4.42	3.34	Climbing	7.47	2.76
6	Climbing	8.43	3.22	Bungee Jumping	8.75	4.10	Rally Driving	8.34	3.95	Rafting	2.48	2.41	Skydiving	4.18	2.73	Boxing	7.26	2.62
7	Bobsleigh	8.02	2.99	Rally Driving	8.14	3.96	Skijumping	7.80	3.38	Climbing	2.00	1.90	Rafting	4.14	2.60	Surfing	7.15	2.93
8	Boxing	7.79	2.87	Paragliding	7.26	3.21	Paragliding	7.22	3.29	Rally Driving	1.77	2.03	Running	3.98	2.85	Bungee Jumping	6.97	3.12
9	Surfing	7.69	3.14	Football	6.94	4.98	Climbing	7.13	3.23	Bungee Jumping	1.69	1.79	Boxing	3.78	2.84	Bobsleigh	6.52	2.61
10	Rally Driving	8.49	2.84	Climbing	6.65	3.32	Football	7.08	5.29	Bobsleigh	1.66	1.74	Bungee Jumping	3.54	2.56	Rally Driving	6.24	2.69
11	Running	6.51	2.85	Swimming	5.61	3.91	Swimming	6.04	4.19	Skijumping	1.54	1.58	Swimming	3.33	2.63	Running	3.00	2.28
12	Football	3.55	2.51	Boxing	5.59	4.02	Boxing	5.85	4.16	Surfing	1.50	1.77	Climbing	3.18	2.29	Football	2.87	2.16
13	Cycling	3.06	2.41	Cycling	4.09	3.59	Cycling	4.49	4.04	Boxing	1.50	1.67	Paragliding	3.02	2.47	Cycling	2.04	1.45
14	Swimming	2.63	2.45	Running	3.67	3.09	Running	4.18	3.92	Paragliding	1.27	1.14	Cycling	2.69	2.57	Swimming	2.02	1.86
15	Rambling	1.33	2.68	Rambling	1.69	3.08	Rambling	2.34	3.57	Skydiving	1.17	0.80	Rambling	2.33	2.03	Rambling	1.75	1.45

Q# = Questionnaire number

PF = Protective Frame

The higher means correspond to the higher levels of threat (Q#1), to the higher levels of interest in watching TV (Q#2), to the higher levels of interest in talking about TV (Q#3), to the higher levels of personal experience (Q#4), to the higher levels of TV habits (Q#5), and to the higher levels of perceived risk (Q#6).

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Table 2

Correlations between the Assessments Performed under the Six Viewpoints

	Threat Q#1 0PF	Interest		Personal Experience Q#4	TV Habits Q#5	Perceived Risk Q#6
		Watch TV Q#2 1PF	Talk about TV Q#3 2PFs			
Threat	1.00	.64**	.65**	.76**	.28	.90**
Watch TV		1.00	.95**	.57*	.65**	.63*
Talk about TV			1.00	.57*	.52*	.59*
Personal Experience				1.00	-.33	-.75**
TV Habits					1.00	.29
Perceived Risk						1.00

Q# = Questionnaire number
 PF = Protective Frame
 ** = p < .01 is significant
 * = p < .05 is significant

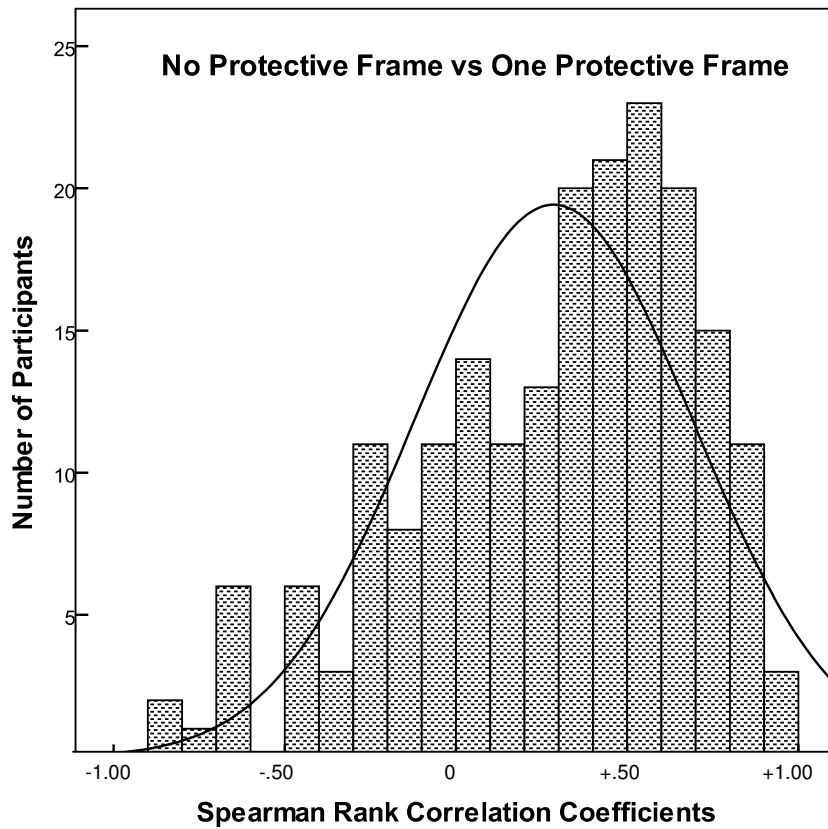


Figure 1. Distribution of the Spearman rank correlation coefficients computed on an individual basis between the zero-frame condition and the one-frame condition.

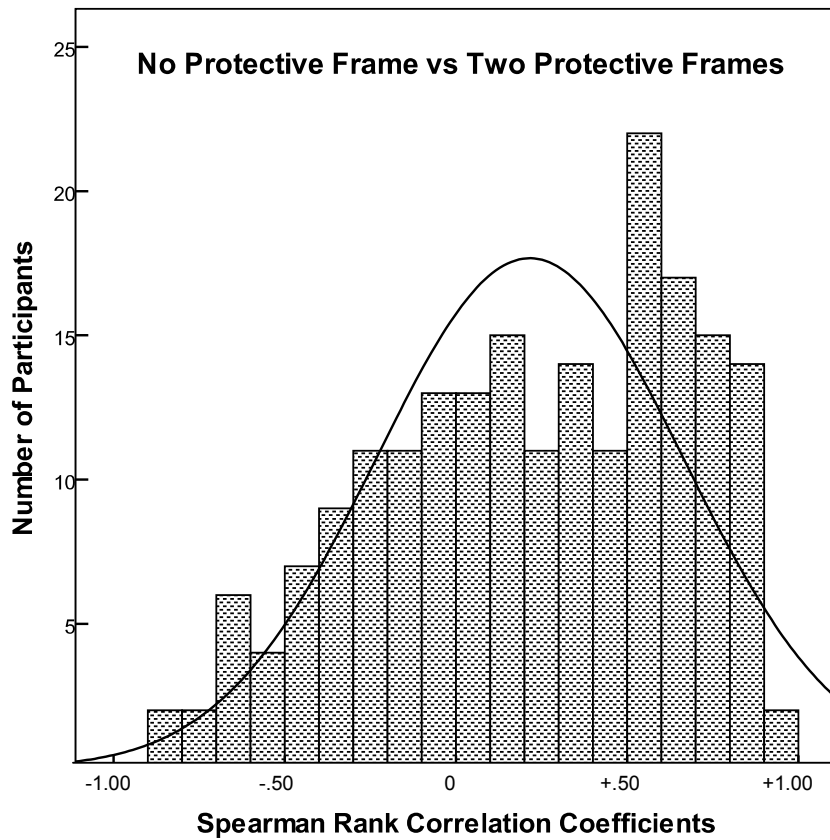


Figure 2. Distribution of the Spearman rank correlation coefficients computed on an individual basis between the zero-frame condition and the two-frame condition.