

# Effect of motor cooperation on positive emotional experiences: a gender perspective

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**Abstract:** From a gender perspective, we investigated emotional experience resulting from the practice of cooperative motor situations. The study included 309 students from four Spanish universities. It used the validated games and emotions scale (GES). After each task, students wrote down the intensity experienced in the thirteen emotions considered and briefly commented on the causes of the most intense emotion. Mixed methods were used to complement quantitative data analysis with the study of qualitative comments. It confirmed the contribution made by motor situations in traditional games, expression and introjection to promote positive emotional experiences in women and men.

**Key words:** Physical Education. Emotional Intelligence. Gender Identity. Relations.

## 1 INTRODUCTION

Physical Education (PE) is a pedagogical discipline that uses motor situations to achieve educational objectives and competencies for students. Given the extraordinary variety of

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situations to choose from, one of PE's main challenges is to examine the relationship between motor experiences and their effects on students (LAGARDERA; LAVEGA, 2003; MCCAUGHTRY, 2004; PARLEBAS, 2001). From this point of view, today's (physical) education can play an important role in cultivating students' social and emotional wellbeing (BISQUERRA, 2003; ENGESER; RHEINBERG, 2008; FREDRICKSON, 1998; KELLER; BLESS, 2008; LAGARDERA, 2007; PEKRUN *et al.*, 2009). The educational challenge is met if one wants to reveal the effects of any motor situation for providing wellbeing experiences. In this regard, it is necessary to consider two interconnected realities: a) the properties of any motor situation as a social system that pre-guides participants' relationships and emotions. This article refers exclusively to the motor tasks of cooperation; and b) actors (students), with their assessment and emotional significance about every motor situation based on their personal attributes (this article discusses the subjective variables of gender – male and female –, and types of emotions – thirteen are considered –, that subjects feel when cooperating) and whether or not they have a sports background.

### **1.1 COOPERATION, A SOCIAL SYSTEM BASED ON SOCIALIZATION**

In cooperation, social relations are oriented towards mutual help with others, as clearly shown by motor praxeology (PARLEBAS, 2001), a scientific discipline that studies the structural properties (internal logic) of any motor practice. As a social system, any cooperative motor situation has a structural order or internal logic (MARIN, *et al.*, 2012, ETXEBESTE, 2012, MATEU, 2010), understood here as all its relevant features that distinguish it from other motor practices (PARLEBAS, 2001) pre-guiding subjects to relate with other participants, to use the space, to employ objects and to adjust to time constraints. Jumping rope as a team, presenting a collective symbolic dance or helping partners to explore active listening of their breath are three examples of cooperative motor practices that activate mutual help

relationships among participants. That is the sphere of cooperative motor action (ETXEBESTE, 2012; LAGARDERA; LAVEGA, 2003; PARLEBAS, 2001).

This study looks into three types of cooperative motor situations without competition – traditional games, motor expression and motor introjection (sensory awareness) – usually not common in PE programs (LAGARDERA; LAVEGA, 2003).

## 1.2 EDUCATING BASED ON SOCIAL AND EMOTIONAL WELL-BEING

A motor experience is oriented towards wellness if it is able to trigger relationships and positive emotions among participants, i.e. pleasant experiences in subjects (FREDRICKSON 1998; RYAN; DECI, 2001) that allow them to flow and live optimal experiences (CSIKSZENTMIHALYI; MASSIMINI, 1985). Any educator should know that a good use of motor tasks can be a great source of learning associated with flowing through the experience of positive emotions (ENGESER; REINBERG, 2008; RYAN; DECI, 2001). Emotions are a multidimensional process that affects different levels of the organism (physiological, cognitive, motivational, social). In the context of PE, they emerge in response to expectations generated by motor tasks (PEKRUN *et al.*, 2009). When students cover those expectations, positive emotions are triggered, such as joy, humor, love and happiness. When the proposed motor task causes discomfort it is because negative emotions were activated, such as anger, anxiety, fear, sadness, rejection and shame. It is also possible to observe ambiguous emotions such as surprise, hope and compassion, which may take a positive or a negative direction depending on the circumstances (BISQUERRA, 2003; LAZARUS, 1991).

## 1.3 GENDER AND COOPERATION

In order to take the gender perspective into account, it is necessary to consider subjects' social and cultural traits – for

example, when we talk about leadership, aggression or machismo as being characteristic of men or sensitivity and tenderness as women's traits. Instead, sex refers to biological traits that differentiate men from women (CHALABAEV, *et al.*, 2013).

Studies on traditional children's games in Spain (ETXEBESTE, 2012) or on adult sports in Europe (LAVEGA, 2009) show that cooperation is one of women's preferred social interactions; men, in turn, almost ignore cooperation, since they prefer games structured as duels between individuals or teams. The cultural meaning and adherence to cultural stereotypes dictate that boys respond enthusiastically to competitive situations while girls show doubts about them (CONTI; COLLINS; PICARIELLO, 2001; JOHNSON; ENGELHARD, 1992; KNIGHT; CHAO, 1989).

In the PE field, sports have historically been a laboratory for masculinity (MCKAY; MESSNER; SABO, 2000). Other types of motor practices much more connected to the cultural meaning of the female gender, such as motor expression, cooperative games, soft gymnastics or motor introjection (for example, posture adjustment, stretching of posterior muscles or conscious breathing) still have a marginal role. Hence the need to move towards alternative proposals for a modern and plural PE that poses challenges that are currently necessary, such as educating social-emotional wellbeing.

Based on such theoretical framework, this research has two main goals: a) to analyze, from a gender perspective, the intensity of the emotions experienced in the practice of cooperative motor situations based on traditional games, expression and motor introjection; b) to review, from a gender perspective, the content of the arguments concerning the most intense emotional experiences raised by its practice.

#### 1.4 SPORTS BACKGROUND

Sports background refers to some people's previous experiences with sports, continuous in time (CASTEJÓN, 2003).

According to the existence or not of such sports background, people may differ in their intelligent use of emotions and their moods (ANDRADE; ARCE; ARMENTAL; DE FRANCISCO, 2011) and have different attitudes towards sports competition.

## **2 METHOD**

### **2.1 PARTICIPANTS**

A total of 309 students of four Spanish universities were studied (71 girls and 338 boys aged 19-22; Mean age = 19.6 years, SD = 2.32): Barcelona (80 students: 21 girls and 59 boys), Girona (86 students: 17 girls and 69 boys); Lleida (94 students: 19 girls and 75 boys); Zaragoza, Huesca (52 students: 14 girls and 38 boys) and Zaragoza (14 girls) facilities. Participants were first-year students of sciences of physical activity and sports, or PE teacher degree. They were all volunteer participants. This study was approved by the ethics committee of the University of Lleida.

### **2.2 INSTRUMENTS AND PROCEDURES**

Two 1.5-hour sessions of cooperative motor situations were conducted including traditional games, motor expression and motor introjection or body exploration tasks – both internal and exteroceptive. In all cases, teachers involved in the experience simply described the motor situation and immediately asked students to proceed with their practice. They intervened only when there was any doubt about the task.

Identification of the intensity in the experience of emotions and subjective explanation of emotional intensity. The GES (Games and Emotion Scale) was used. It was validated by Lavega, March and Filella (2013) to identify the emotional intensity experienced in each motor task. The main psychometric properties of the scale were: acceptability: asymmetry (< 2.0) and kurtosis (< 7.0) values

met the criteria of normality. Reliability: Cronbach's alpha ( $n = 851$ ,  $\alpha = 0.92$ ). Similar values were obtained for each type of emotion: positive ( $\alpha = 0.92$ ), negative ( $\alpha = 0.88$ ) and ambiguous ( $\alpha = 0.93$ ). Confirmatory factor analysis adequately reproduced the structure of the scale and showed acceptable rates (CMIN/g.l. = 7.014; NFI = 0.813; IFI = 0.836; CFI = 0.833; RMSEA = 0.08; LO90 = 0.072 – HI90 = 0.09).

After each activity, students noted on their personal questionnaires the intensity level (0-10) they had experienced for thirteen basic emotions (BISQUERRA, 2003). Zero meant they had not felt that emotion and ten meant they had experienced it with maximum intensity. Then students wrote a brief comment to explain the most intense emotion they experienced (in case of a tie between emotions, they could comment on a maximum of three emotions).

### 2.3 DATA ANALYSIS

A combination of methods (BERICAT, 1998) was used in order to strengthen the validity of the findings based on statistical analysis of quantitative data through content analysis of comments made on the most intense emotional experiences.

Analysis of quantitative data (intensity of emotions experienced). The Kolmogorov-Smirnov test showed that data were non-parametric, since they followed a very asymmetric distribution of intensities. For this reason, a model based on generalized estimating equations (GEE) was used to consider the correlation between scores of the same subject. Gaussian family distributions were used, with exchangeable correlation structure. Post-hoc multiple comparisons were applied to all factors of more than two categories. SPSS v.19.0 statistical software was used. The model considered type of emotion (positive, negative and ambiguous) as within-subjects factor. Between-subjects factors were: 1) Type of practice (games, expression and introjection); 2) Gender (male, female); and 3) Physical-Sports background (with background, no background).

Analysis of qualitative data (subjective explanations for emotional intensity). The section corresponds to comments made by students on the emotions that had reached the most intense values in each game.

Encoding process. A team of six people who teach fundamentals of Motor Praxeology at undergraduate or university master's courses (two in motor expression, two in sports games, and two in motor introjection) developed a manual that included criteria and rules to be followed to ensure exclusiveness, clarification and delimitation of the ten categories. Content analysis was applied to the explanations for the most intense emotions depending on whether comments were related to structural features of motor practices (internal logic) or corresponded to the context of those practices (external logic). Five categories were coded regarding internal logic: a) internal relationship (type of motor relation produced between participants) "I was very pleased to cooperate with my partners"; "It gave me pleasure to intervene with my partner's help"; b) internal space (game field use) "It cost me a lot to move from one place to another without losing balance"; "I liked to move from one place to another while jumping"; c) internal time of action, especially facts or events occurring in the course of practice (aspects related to moments of the game) "I was able to enjoying every moment"; "Game time was very short"; d) inner material, related to the use of the material to participate (ways to use objects) "I had trouble controlling the ball", "The ball bounced too much"; e) rules (referring to general aspects related to conditions or characteristics of the motor practice) "The task was not difficult", "This game has been fun".

The five categories belonging to the external logic of the game were: a) external time (time characteristics, e.g. schedule and meteorology), "It was very cold in the room", "It was the last hour of the week and it showed"; b) external space (maintenance conditions of the game field), "The floor was dirty", "The pavement was very slippery"; c) external material (basic components of the game material), "The balls were made of newspaper", "The

newspaper broke easily”; d) External relationship (referred to players’ permanent attributes), “The boys were less flexible and their backs hurt when they stretched”; “The strongest ones were in my team”; and e) transient states (relative to mentions to people’s transitory features and circumstances), “I have not stopped laughing”, “I was very sleepy today.”

These texts were classified according to the presence (1) or absence (0) of terms associated with features of the internal or external logic. The coding unit chosen was the entire text of each comment. So, some messages could be coded with more than one category associated to the internal logic and to the external logic of the motor practices undertaken. Some examples that identify more than one variable are presented below.

Comments related solely to internal logic: “The support of my partners (internal relationship) was phenomenal for us to go from one place to another (internal space); “Early in the game (internal time) we struggled to move the parachute (internal material)”.

Comments relating solely to external logic: “I intervened with my best friend (external relation) and we did not stop laughing (transient states)”;

“I had a great time (transient states), since it reminded me of a game from my childhood (external time)”.

Comments relating to both the internal logic and external logics: “When we finished the game (internal time), we couldn’t stop laughing (transient states)”;

“The guys (external relations) used the ball very originally (inner material)”.

Calculation of intercoder reliability. Researchers were distributed in pairs to analyze comments on each type of motor practice (games, expression and introjection) and proceeded to code each of the three groups of texts independently. Each pair of coders participated independently in a training process of about 40 hours on the comments about the type of motor task to be analyzed. In the process, it was established that intercoder agreement would take place where both coincided in identifying the presence



of all variables on the same comment. During this process, 80 comments were analyzed during 10 sessions, and matches and possible disagreements were identified. Doubts from three groups of couples were discussed and resolved among the six researchers. Subsequently, to calculate intercoder reliability, 100 comments were randomly selected (on each type of motor practice), which were analyzed individually. Interobserver agreement for each motor practice was calculated by Cohen's kappa coefficient (COHEN, 1960), and the following values were obtained: 0.86 for traditional games, 0.84 for motor expression, and 0.79 for motor introjection.

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Analysis of qualitative data using CHAID classification tree. CHAID tree-growing method was used (Chi-squared automatic interaction detector based on Answer-Tree© SPSS Classification Trees™ 13.0 model.). A system of cross-validation was used, with a minimum of 50 subjects in the terminal nodes and 3 maximum tree levels.

A CHAID classification tree was generated based on the criterion of presence or absence of explanations for each variable of internal logic and external logic. Furthermore, a general tree was developed differentiating comments directed to the internal logic, to the external logic or to both variables. Four predictor variables were considered: 1) type of emotion (positive, negative and ambiguous); 2) gender (female and male); 3) type of practice (game, expression, introjection); and 4) sports background (presence and absence of sports background).

### 3 RESULTS

#### 3.1 EMOTIONAL INTENSITY: RESULTS FROM QUANTITATIVE DATA

Statistical analysis of quantitative data (N = 52741) through GEE reflected significant differences between the three types of

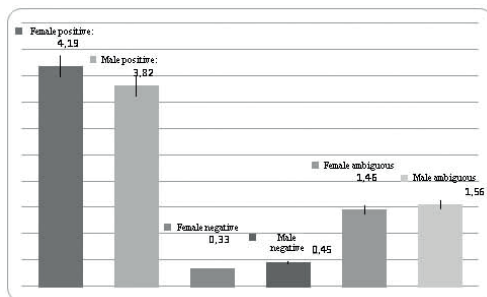
emotions ( $p < 0.001$ ). Positive emotions had the highest values ( $M = 4.00$ ); negative emotions activated significantly lower values ( $M = 0.39$ ,  $p < 0.001$ ) and ambiguous emotions marked significantly lower values than positive emotions ( $M = 1.51$ ,  $p < 0.001$ ).

No significant differences were observed between genders ( $p = 0.683$ ). However, the significant interaction between gender and type of emotion ( $p = 0.018$ ) showed that men experienced negative emotions more intensely ( $M = 0.45$ ) than women ( $F = 0.33$ ,  $p = 0.040$ ), and women experienced positive emotions more intensely ( $M = 4.19$ ) than men ( $M = 3.82$ ,  $p < 0.001$ ).

**Table 1.** Effects of the model of generalized estimating equations

	Wald Chi-square	df	Sig.
Emotion type (Emo_3)	765.322	2	<.001
Gender	0.166	1	.683
Type of practice	127.466	2	< 0.001
Sports background	0.363	1	.547
Emo_3 * Gender	8.059	2	.018
Emo_3 * Type of practice	154.213	4	<.001
Emo_3 * Sports History	1,786	2	.409
Gender * Type of practice	8.971	2	.011
Gender * Sports background	1.269	1	.260
Practice * Sports background	9.140	2	.010

**Figure 1.** Behavior of gender interaction and type of emotion



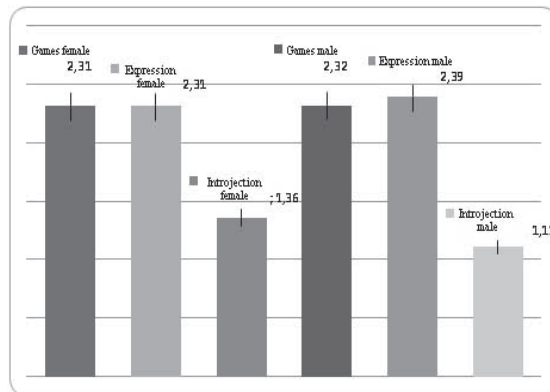
**Source:** Data provided by the authors

Significant differences were found in emotional intensities recorded for three types of practice ( $p < 0.001$ ). Motor introjection resulted in lower scores for emotional intensity than games and expression ( $p < 0.001$ ). No significant differences were observed between games ( $M = 2.32$ ) and expression ( $F = 2.35$ ,  $p = 0.696$ ).

Interaction between type of practice and type of emotion was significant ( $p < 0.001$ ). Expression resulted in more intense negative emotions ( $M = 0.6$ ) than games ( $M = 0.39$ ,  $p = 0.008$ ).

Interaction between gender and type of practice was significant ( $p = 0.011$ ). The difference in intensity between the high values of games or expression and lower values of introjection was significantly higher in men ( $p < 0.001$ ).

**Figure 2.** Behavior of gender interaction and type of motor practice



Source: Authors

No significant differences were found for the sports background factor ( $p = 0.547$ ). Interaction between type of emotion and background was not significant ( $p = 0.409$ ). There were also no significant differences in the interaction between gender and sports background ( $p = 0.260$ ).

Significant differences were found in the interaction between type of motor practice and sports background ( $p = 0.010$ ). Introjection motor practices activated significantly higher scores in people with no sports background ( $M = 1.36$ ) than in participants with a background ( $M = 1.11$ ,  $p = .49$ ). In contrast, no significant differences were found in games or in expression between both types of participants.

### 3.2 EXPLANATIONS OF INTENSE EMOTIONS. RESULTS FROM QUALITATIVE DATA

The 943 comments collected resulted in 11 trees with nodes hierarchically arranged into homogeneous categories of relations between the four independent variables (type of emotion, gender, type of practice, and sports background) and the dependent variable – existence or not of comments for each criterion of the internal logic (rules, internal time, internal space, internal relation, internal object) and the external logic (transient states, external time, external space, external relations and external object).

The hierarchical segmentation technique found that emotion was the main predictive variable for interpretations in six trees (five of them as a variable of the first level of the trees). Gender was the second predictive variable in five trees (two as a first-level variable and three as a second-level variable). Background was the third predictive variable in five trees (three as a first-level variable, two as a second-level variable and one as a third-level variable).

**Table 2.** Distribution of comments, nodes and predictors in different classification trees

Name of tree	% sentences	No. of nodes	1 <sup>st</sup> -level predictive variables	2 <sup>nd</sup> -level predictive variables	3 <sup>rd</sup> -level predictive variables
Internal L. – External L.	100%	4	<b>Gender (2 nodes)</b>	<b>Background (2 nodes)</b>	-
Rules	58.0%	3	Emotion (3 nodes)	-	-
Internal Time	22.1%	6	Background (2 nodes)	<b>Emotion (2 nodes)</b> Gender (2 nodes)	-
Internal Space	35.6%	6	Emotion (3 nodes)	<b>Gender (2 nodes)</b>	-

Internal Relations/hip	35.9%	2	<b>Gender (2 nodes)</b>	-	-
Internal Object	8.8%	2	Emotion (2 nodes)	-	-
Transient States	32.1%	8	Emotion (2 nodes)	<b>Emotion (2 nodes)</b>	Background (4 nodes)
External Time	4.5%	0	-	-	-
External Space	0.6%	0	-	-	-
External Relations	4.1%	0	-	-	-
External Object	1.4%	2	Emotion (2 nodes)	-	-

The first Internal-External Logic tree consisting of all comments allowed us to identify the general trend in subjects' explanations. Most of those accounts (60.9%) mentioned aspects of the internal logic of tasks. A lower percentage (4.2%) corresponded to comments regarding the external logic of activities performed. Sentences simultaneously directed to aspects of tasks' internal logic and external logic were located at the intermediate level (34.9%). Gender was the first predictive variable in the Internal-External Logic tree. Significant differences were found between genders ( $p = 0.004$ , Chi-square = 11.252,  $df = 2$ ) were observed. The gender variable resulted in two branches (nodes 1 and 2). At a second level, sports background was the independent variable that the tree associated with women's comments, whereas no predictive variable was found to be associated with the explanations of men. Significant differences were found between participants with a sports background and those without it ( $p = 0.001$ , Chi-square = 14.998,  $df = 2$ ).

The global analysis of the tree found two patterns of extreme results. The highest percentages were assigned to the internal logic and the male gender. Lower values corresponded to the external logic and the female gender with sports background.

**Figure 3.** Classification Tree Logic variables referred to the Internal and External Logic

INTERNAL-EXTERNAL LOGIC					
NODE 0					
CATEGORY		%	n		
Internal logic		60.9%	574		
External logic		4.2	40		
Internal L.-External L		34.9	329		
Total 100 943					
GENDER					
Corrected P value = 004					
Chi-square = 11.252, df = 2					
FEMALE			MALE		
First level					
Node 1			Node 2		
Category		%	Category		n
Internal logic		54.5%	Internal logic		62.7
External logic		1.9	External logic		4.9
Internal L.-External L		43.6	Internal L.-External L		32.4
Total		22.4	Total		77.6
211			732		
Second level					
With background					
Corrected P value = 0.001					
Chi-square = 14.998 df = 2					
Yes			No		
Node 3			Node 3		
Category		%	Category		n
Internal logic		44.7	Internal logic		68.2
External logic		0.8	External logic		3.4
Internal L.-External L		54.5	Internal L.-External L		28.4
Total		13.0	Total		9.3
12.3			88		

**Source:** Authors

Only five factors had a presence higher than 20% in comments. Four factors corresponded to variables of the motor practices' internal logic: Rules (58%), Internal Relation (35.9%), Internal Space (35.6%), and Internal Time (22.1%). The only external variable with a representative presence in comments was Transient

States (32.1%). In all those trees, except for the Rules tree, gender intervened as a predictive variable for comments.

Gender and comments regarding Internal Relations. Gender was the only predictive variable. Significant differences were found between genders ( $p = .009$ , Chi-square = 6.914,  $df = 1$ ). Women generated a higher percentage (43.6%) of comments regarding the type of motor relation resulting from cooperative tasks than men (33.7%).

Gender and comments on Internal Space. Type of emotion was the first predictive variable. We found no more independent variables for comments associated with negative and ambiguous emotions. However, gender intervened as an independent variable associated with positive emotions. In those emotions, significant differences were found between genders ( $p = .045$ , Chi-square = 4.02,  $df = 1$ ). Women generated higher percentage (34.1%) of comments on positive emotions than men (26%).

Gender and comments on Internal Time. Sports background was the first predictive variable. In participants with no background, gender intervened as an explanatory variable at the second level of the tree. Significant differences were found between genders with had no sports background ( $p = 0.002$ , Chi-square = 9.939,  $df = 1$ ). Women originated higher presence of comments (25%) than men (8.4%).

Gender and comments regarding Transient States (External Logic). This was the only external logic variables tree to include gender as a predictive variable, along with the emotion and sports background variables. This tree resulted in four nodes. Significant differences were found between positive and negative emotions (node 1) and ambiguous emotions (node 2), ( $p < .001$ , Chi-square = 18.836,  $df = 1$ ).

The tree branched to the positive-negative emotions node from gender as the next predictive variable. There were significant differences between genders ( $p = 0.001$ , Chi-square = 10.359,  $df =$

1). Women originated higher percentage of comments (44.7%) than men (32.2%). The next predictive variable for both genders was sports background. Women with a background generated higher percentage of accounts (54.1%) than those with no athletic background (29.4%). This superiority reversed in favor of men with no sports background (44.3%) compared to those with sports backgrounds (30.2%).

## 4 DISCUSSION

From a gender perspective, this paper investigated the relationship between different cooperative motor tasks and the type of emotional experience, as well as sports background, thus complementing quantitative analysis with qualitative analysis. Analysis of quantitative (emotional intensity) and qualitative (stories explaining emotional intensity) data confirm the important role played by cooperation in promoting social and emotional wellbeing. In addition, three key factors are observed: a) emotion (positive, negative and ambiguous) experienced by participants when they cooperate; b) gender (female and male), and c) presence or absence of a sports background. Interaction between factors attributable to the praxeological system (type of motor practice) and the action's subject or actor (emotion, gender and sports background) is key to understand the wellbeing associated with those emotional experiences.

### 4.1 THE STRENGTH OF THE COOPERATIVE INTERNAL LOGIC TO AROUSE INTENSE POSITIVE EMOTIONS

The cooperative motor action domain results in intense values for positive emotions, low-intensity negative emotions and ambiguous emotions with moderate values. These findings are consistent with other studies on motor practices and emotions (LAVEGA, *et al.*, 2011; LAVEGA *et al.*, 2013; TORRENTS *et al.*, 2011).

Analysis of emotional intensity allows us to organize cooperative



motor practices in two major affective subdomains. The first subdomain includes traditional game and motor expression. In both cases, motor actions' attention is directed towards the external world, either through instrumental communication in cooperative games or through referential communication oriented to an external and poetic reference (actions themselves are the message) in cooperative motor expression (MATEU, 2010; PARLEBAS, 2001). The strongest positive and mixed emotions are activated in this subdomain. The other subdomain includes motor introjection, whose internal logic pre-guides participants into active listening and internal exploration of their motor behaviors. Cooperative motor interaction encourages and promotes such self-exploration.

However, this type of experience activates emotions that are less intense than in the other cases. Actually, there are two distinct types of cooperative interaction. In the case of traditional games and motor expression there is a common goal, so that all participants help each other for the good of the collectivity. Meanwhile, cooperation in motor introjection plays a much more generous role – arguably based on solidarity, as participants cooperate with others to help the latter feel better, to encourage their self-perception and to facilitate their process of self-discovery (LAGARDERA, 2007; ROVIRA, 2010).

As a result of the analysis of qualitative data, practices' internal logic variables account for the intense experience with positive emotions, since they prevail in their justifications. Most explanations correspond to the trees obtained from the internal variables of the praxeological system: rules, relation, time and space. However, students hardly made comments exclusively about external reasons (external logic) of motor practices (4% of the comments). Data have shown that the main reasons for emotional experiences derived from the characteristics of practices themselves, rather than other issues external to motor situations. Every motor situation introduces students to the challenge of having to solve problems of motor relations with other participants, with game space, with material and with time (ETXEBESTE, 2012; LAGARDERA; LAVEGA, 2003; PARLEBAS, 2001).

That set of internal relations triggers intense emotional experiences as seen in other studies that also found that the internal logic of sports games (LAVEGA *et al.*, 2013; LAVEGA *et al.*, 2011), motor expression (TORRENTS *et al.*, 2011) and motor introjection (LAGARDERA, 2007; ROVIRA, 2010) takes on a leading role in the education of students' emotions. That is a finding of extraordinary pedagogical consequences in itself: it would be desirable that Physical Education teachers identified, using Motor Praxeology, the internal logic of any motor practice they wish to use with their students in order to design intervention programs based on strict criteria (MCCAUGHTRY, 2004) that are consistent with their educational objectives.

#### 4.2 GENDER AND INTENSE EXPERIENCE OF POSITIVE EMOTIONS

Quantitative data show significant differences between genders in the experience of emotional intensity. Cooperation raises more intense positive emotions in women than in men as well as less intense negative and ambiguous emotions. These results are consistent with other studies where girls would choose cooperation over other practices (JOHNSON; ENGELHARD, 1992; KNIGHT; CHAO, 1989; MCKAY *et al.*, 2000). Moreover, women experience more intense emotions in motor introjection practices. These tasks test their ability to become aware of their feelings, to pay attention to themselves and to tell the condition of any part or organ in their bodies. The internal logic of those practices triggers a conscious "motricity" directed toward self-knowledge, body control and psychosomatic balance (LAGARDERA, 2007; LAGARDERA; LAVEGA, 2003; ROVIRA, 2010). Results suggest that women show higher sensitivity than men towards such practices of interoceptive attention (CONTI *et al.*, 2001; MCKAY *et al.*, 2000; ROVIRA, 2010).

In parallel, qualitative analysis reveals that gender establishes two trends. Boys mostly direct their comments towards variables of the games' internal logic while females share these arguments with other aspects external to motor situations proposed. Girls attribute

the experience of positive emotions to pleasure caused by mutual help with others when exchanging an object in a game, performing a cooperative dance or moving slowly. However, unlike boys, they also highlight other aspects associated to context (external logic) such as having acted or laughed with a friend or having fond memories of a childhood situation. These results help to better understand socialization of gender roles from the psychosocial values and meanings associated with motor tasks (BASSI; DELLE FAVE, 2012; CSIKSZENTMIHALYI; MASSIMINI, 1985; KNIGHT; CHAO, 1989). Women's historical prosocial trend is also confirmed in the field of motor practices.

More comments regarding issues external to the game appear when protagonists have a sports background. The footprint left by usual competitive practice, far removed from situations of cooperation without competition, seems to be at the root of this behavior (CSIKSZENTMIHALYI; MASSIMINI, 1985; CONTI *et al.*, 2001). Expression, introjection or games without competition introduced students into a scenario of motor challenges where there is no comparison or distinction between winners or losers. This could explain that, for students with a sports background, it is more difficult to dedicate fully and flow through the intrinsic motivation of this type of motor practices (ENGESER; RHEINBERG; 2008; KELLER; BLESS, 2008) and therefore the emotional experience is associated to aspects external to the game: e.g., participating with a friend (external relations), remembering childhood experiences (external time), or being surprised by a new, unknown material such as a parachute (external material).

Women's accounts mentioned the features of the internal logic of cooperation much more often (motor interaction, time and use of space) than men's texts. The female gender, culturally closer to participating in cooperative motor relations, finds more social-emotional wellbeing in sharing generosity and empathy with others, as other studies point out (CONTI *et al.*, 2001; JOHNSON; ENGELHARD, 1992; KNIGHT; CHAO, 1989).

## 5 CONCLUSIONS

This work helps to understand the relevance of cooperative motor practices in promoting social-emotional wellbeing of practicing students. Its findings establish a significant trend in the relation between cooperative practices and experiencing positive emotions. These results confirm the complex and multidimensional nature of emotions (BISQUERRA, 2003; LAZARUS, 1991).

The study of motor practices and the emotional experiences they trigger demands attention to two different levels: on the one hand, the need to first identify the relevant features of selected motor situations (internal logic); on the other hand, emotional experience also depends on the meaning of the situation experienced according to subjects' expectations (ELIAS, 1987). The interpretation of the emotional experience is achieved from considering and examining those two interconnected levels (PARLEBAS, 2001).

The results provide arguments for recognizing the value of cooperation and motor practices still less common in PE, such as traditional games, motor expression, and motor introjection, to educate social and emotional wellbeing (LAGARDERA, 2007; LAVEGA *et al.*, 2011; TORRENTS *et al.*, 2011). Besides, the need to consider the gender variable is confirmed – since socioemotional effects are distinct for men and women (JOHNSON, ENGELHARD, 1992) – as well as sports background (CHALABAEV, *et al.*, 2013).

PE teachers who want to use motor cooperation to create wellbeing experiences have an extraordinary range of motor possibilities to enrich their students' socioemotional experiences (LAGARDERA, 2007; LAVEGA, *et al.*, 2011; LAVEGA *et al.*, 2013). On the one hand, cooperative situations of traditional games and motor expression can encourage intense experiences of subjective and social wellbeing by inviting students to solve shared problems, either through instrumental cooperation (in traditional games) or through cooperative interaction and referential relation (in motor expression). Moreover, PE teachers can promote positive

experiences aimed at self-exploration through introjective motor practices, which enable a conscious exciting journey inside their motor behaviors.

In short, the results provide compelling reasons to say that motor cooperation through traditional games and motor expression through motor practices of introjection is a family of motor experiences necessary in any PE intervention program seeking to promote students' social and emotional wellbeing.

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