

**THE EFFECTS OF GOAL INVOLVEMENT ON THE REGULATION OF
NEGATIVE EMOTIONS**

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Μεταπτυχιακή Διατριβή που υποβάλλεται
στο καθηγητικό σώμα για την μερική εκπλήρωση των υποχρεώσεων
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ΠΕΡΙΛΗΨΗ

Οικονόμου Ιωάννα: Η επίδραση της θεωρίας επίτευξης στόχων στη ρύθμιση αρνητικών συναισθημάτων

(Με την επίβλεψη του Δρ Χατζηγεωργιάδη Αντώνη)

Είναι κοινώς αποδεκτό ότι τα συναισθήματα υποκινούν τάσεις συμπεριφοράς, και στο πλαίσιο αυτό η ρύθμιση συναισθημάτων έχει αναγνωριστεί ως ένας σημαντικός παράγοντας για την ανθρώπινη λειτουργία γενικότερα, και την απόδοση ειδικότερα. Ωστόσο, το θέμα της ρύθμισης των συναισθημάτων έχει προσελκύσει περιορισμένο ερευνητικό ενδιαφέρον στην αθλητική ψυχολογία. Αντιθέτως, η θεωρία επίτευξης στόχων έχει υπάρξει πρωτεύων θέμα σε καταστάσεις επίτευξης και έχει ερευνηθεί εκτενέστατα στη μέχρι τώρα βιβλιογραφία της αθλητικής ψυχολογίας, προσφέροντας σημαντικά συμπεράσματα για τις γνωστικές και συναισθηματικές διαστάσεις της παρακίνησης και της απόδοσης. Προσπαθώντας να προσεγγίσουμε τη ρύθμιση των συναισθημάτων υπό το πρίσμα της θεωρίας των στόχων επίτευξης, σκοπός της παρούσας μελέτης ήταν να ερευνηθεί πειραματικά κατά πόσο βαθμό ο τύπος των στόχων που δημιουργούνται μέσα σε ένα περιβάλλον επίτευξης επηρεάζει τη ρύθμιση αρνητικών συναισθημάτων. Εξήντα φοιτητές φυσικής αγωγής τυχαία καταναμημένοι σε 3 ομάδες με συνθήκες μάθησης, προσέγγιση απόδοσης, και αποφυγή απόδοσης, εκτέλεσαν μια δραστηριότητα στη δοκό ισορροπίας με κλειστά μάτια. Αναλύσεις διακύμανσης έδειξαν ότι οι συμμετέχοντες στη συνθήκη αποφυγής απόδοσης είχαν υψηλότερα σκορ στην καταπίεση σε σύγκριση με τους συμμετέχοντες στις συνθήκες μάθησης και προσέγγισης απόδοσης, ενώ οι συμμετέχοντες στη συνθήκη μάθησης είχαν μεγαλύτερα σκορ στην αναθεώρηση των συναισθημάτων σε σύγκριση με αυτούς της συνθήκης αποφυγής απόδοσης. Είναι αξιοσημείωτο ότι ο τύπος ρύθμισης συναισθημάτων αντανακλά σε μεγάλο βαθμό και την απόδοση, καθώς οι συμμετέχοντες στις συνθήκες μάθησης και προσέγγισης απόδοσης παρουσίασαν καλύτερη απόδοση από αυτούς στη

συνθήκη αποφυγής απόδοσης, καθιστώντας την αναθεώρηση ουσιαστικά ως πιο αποτελεσματική τεχνική για τη ρύθμιση αρνητικών συναισθημάτων. Τα αποτελέσματα της παρούσας έρευνας ενισχύουν την κατανόηση της ρύθμισης συναισθημάτων μέσα σε πεδία επίτευξης, και παρέχουν ουσιώδη πτυχές της διαχείρισης συναισθημάτων για μελλοντικές πρακτικές εφαρμογές από αθλητικούς ψυχολόγους και προπονητές.

Λέξεις κλειδιά: *ρύθμιση συναισθημάτων, επίτευξη στόχων, καταπίεση, αναθεώρηση, αθλητισμός*

ABSTRACT

Oikonomou Ioanna: The effects of goal involvement on the regulation of negative emotions

(Under the supervision of Dr Antonis Hatzigeorgiadis)

It is widely acknowledged that emotions underlie action tendencies, and within this framework emotion regulation has been identified as an important aspect of human functioning in general, and for performance in particular. Nevertheless, emotion regulation has received scant research attention within the sport psychology literature. In contrast, achievement goals have been a pivotal topic in achievement settings and have been largely researched in sport psychology literature over the past three decades, providing valuable insights into cognitive and affective aspects of human motivation and performance. Attempting to approach emotion regulation from an achievement goals perspective, the purpose of the current study was to explore experimentally the degree to which the type of goals fostered within an achievement context influence emotion regulation responses when experiencing negative emotions. Sixty physical education students randomly assigned in 3 groups of mastery, performance approach, and performance avoidance conditions respectively, completed a task on the balance beam while blindfolded. Analysis of variance showed that individuals in the performance avoidance condition scored higher on suppression compared to the mastery and the performance approach conditions, whereas individuals in the mastery condition reported greater scores on reappraisal compared to individuals in the performance avoidance condition. It is noteworthy that differences in emotion regulation reflected to a large degree differences in performance that was also recorded, with participants in the mastery and performance approach conditions performing better than those in the performance avoidance condition; thus rendering reappraisal a relatively effective means to regulate negative emotions. The present findings enhance our understanding of

emotion regulation in achievement settings and thus, elucidate essential aspects of emotion management in further practical applications for coaches and sport psychologists.

Key words: *emotion regulation, achievement goals, reappraisal, suppression, sport*

ΠΡΟΛΟΓΟΣ

Καθώς τελειώνει το πρώτο εξάμηνο του μεταπτυχιακού προγράμματος κι ο κ. Χατζηγεωργιάδης μοίραζε θέματα για Χριστουγεννιάτικο δώρο ή αλλιώς εργασίες, βρέθηκα μπροστά σε ορολογίες και θέματα για τα οποία είτε είχα ακούσει κάποια λόγια στο εν λόγω εξάμηνο, είτε δεν γνώριζα εντελώς. Όσο απλή κι αν ακούγεται η λέξη “emotions”, μου φαινόταν τότε ένα ενδιαφέρον θέμα για το οποίο γράφοντας θα μπορούσα να μάθω και κάτι που δεν ήξερα. Οι συγκεκριμένες λέξεις του καθηγητή όταν του είπα το θέμα που επέλεξα ήταν «θα το μετανιώσεις...». Δύο χρόνια μετά, αυτή η απλή λέξη είναι το κύριο θέμα της εργασίας μου.

Θέλω να ευχαριστήσω τους συμφοιτητές μου για τις απίστευτες στιγμές που περάσαμε, και τις ιστορίες που έχουμε να θυμόμαστε αυτά τα δύο χρόνια που ήμασταν μαζί.

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Σας ευχαριστώ.

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INTRODUCTION & LITERATURE REVIEW

For the past three decades, achievement goals have been a pivotal topic in achievement settings and were largely researched in sport psychology literature (Roberts, Treasure, & Conroy, 2007). Concerning the construct of emotion regulation in sport psychology though, it has received considerable attention only in recent years, while it has been widely studied in many other subdisciplines of psychology (Bridges, Denham, & Ganiban, 2004; Uphill, McCarthy, & Jones, 2009). In this study we sought to identify possible links between those two theories, and, in particular, to explore the degree to which the type of goals fostered within an achievement context influence emotion regulation responses when experiencing negative emotions.

Emotions

More or less, people know when they feel bad or good, what is that they are feeling, and what is the reason for experiencing it. In spite of the several attempts of determining what precisely emotion is though, researchers (e.g., Frijda, 2008; Hanin, 2000a; 2007; Jones, 2003; Robazza, 2006; Vallerand & Blanchard, 2000) conclude that this term remains particularly elusive. This is due to the dynamic nature of emotion that restricts any theory to its descriptive level, without an adequate conceptualization of the actual process (Lazarus, 2000a; 2000b). Although there is a recent interest regarding emotions in sports (Hanin, 2007; Robazza, 2006), Lazarus attributes the lack of consensus for a theoretical framework to insufficient research database. Irrespective of the apparent convergence of comprehensibility the majority of the approaches present, a need for an exact definition that would guide further research and substantiate the multidimensionality of emotions is deemed requisite (Hanin, 2007; Lazarus, 2000a).

But, practically, what is an emotion? First and foremost, Frijda (2008) stresses that emotions are significant and indispensable concept of one's life. Instinctively, everybody is capable of recognizing when he or she experiences something pleasant or unpleasant towards something or somebody (Uphill, McCarthy & Jones, 2009). In addition, Frijda (2008) suggests that emotions indicate the impact various kinds of information have upon an individual. Some of these information may be environmental stimuli, some are unconsciously generated by an individual's bodily symptoms (e.g., increased heart rate, perspiring hands, muscle tension, rapid breathing), and some stem from the individual's recollection or interpretation of events. Moreover, emotions accommodate the cognitive process of understanding situational requirements, and they account for any decision taken (Gross, 1999). Each and every emotion is characterized by its own relational conception and appraisal pattern, while it involves its own particular action tendency (Lazarus, 2000a). Nevertheless, the action tendency is not always apparent or manifested, but remains inhibited.

Emotions and performance

Sport settings provide an ideal environment for studying emotions, which are considered indispensable part of one's performance (Frijda, 2008; Jones, 2012). While performance is thought to be an emotional consequence in sports that is not easily predictable (Vallerand & Blanchard, 2000), emotions can have both positive and negative outcomes (Hanin, 2000a; 2000b; 2007; Lazarus 2000a; 2000b). Furthermore, research has revealed that the emotions which influence performance are purely innate (e.g. Jones 2003; Hanin & Stambulova, 2002; Robazza & Bortoli, 2003). Jones, Taylor, Tanaka-Oulevey, and Daubert (2005) underscore that athletes usually describe experienced emotions as either positive or negative, and they often remember how these emotions made them feel, rather than the way emotions influenced their performance. Finally, researchers and theorists unanimously

conclude that in the emotions' spectrum a pleasant emotion cannot always entail helpful effects, and an unpleasant emotion cannot necessarily cause a harmful effect.

Emotion regulation

As stated previously, emotions are not always helpful. They do so when they occur at the wrong time, when they are of the wrong kind, or when they arise at the wrong intensity level. The way we try to facilitate the outcome of a situation as such by managing those emotions it usually refers to as emotion regulation. The concern with this topic is not new in the field of psychology, although it has received considerable attention only in recent years in sport psychology (Gross, 2008). Typically, emotion regulation is the way we try to influence which emotions we have, the effect they have on us, the time they arise, and the way we experience and express them (Gross, 1998a; 2008).

As complicated as it sounds, many processes take place when we try to increase, decrease, or maintain an emotion we experience at a particular time, due to the multifaceted nature of emotions as described previously. In order to understand how and when emotion regulation occurs, Gross and colleagues (Barrett, Ochsner, & Gross, 2007; Gross, 1998b) proposed the “Modal Model” of emotion, which targets when an emotion arises. According to this model, an *“emotion arises in the context of a person-situation transaction that compels attention, has a particular meaning to an individual, and gives rise to a coordinated yet malleable multisystem response to the ongoing person-situation transaction”* (Gross, 2008, p. 499). The model presents that transaction in the sequence of situation – attention – appraisal – response, which give rise to an individual's assessment of the situation at hand (Ellsworth & Scherer, 2003). Those assessments, which, in turn, trigger emotion regulation, may alter the experience, behavior, and physiological responses of an individual, and are therefore able to change the situation that gave rise to the initial response. With this in mind, each of the

processes of the aforementioned sequence is a potential point for emotion regulation. Typically, when emotion regulation occurs in the first three components of the sequence (situation, attention, and appraisal), it usually refers to the strategy of “reappraisal” and is antecedent-focused, as it is believed that it takes place before an actual emotional response is activated. On the other hand, when emotion regulation occurs in the latest part of the sequence (response) is response-focused and involves the generated emotional response, which is usually referred to as “suppression”. Both regulatory strategies tend to decrease the behavioral expression of an emotion, although only suppression fails to also decrease the experience of an emotion (Gross, 2001). This being said, when regulation occurs early in the emotion-generative sequence has quite different outcome than when it occurs later.

People differ considerably in their accounts of regulating positive or negative emotions. However, the call for regulating a negative emotion, such as fear and anger, is more effortful than regulating a positive one, as the individual struggles to change or adjust his or her current state in order to proceed throughout a situation. On the contrary, according to Pratto and John (1991), regulation of positive emotions usually prompts the individual to explore and broaden his or her experiences, and, consequently, store resources for similar future events. Additionally, not all emotions require immediate attention and thus, not every emotion-generative situation calls for regulation. It is believed that intense emotional states increase the relational meaning of a situation for an individual (Frijda, 1986). Regardless, failure to respond to a positive emotion may prove costly in the long-run, while failure to regulate a negative emotion is even more costly and may cause potential harm (Barrett, Gross, Christensen, & Benvenuto, 2001).

Determining when emotion regulation occurs

The concept of emotion regulation can be described as a two-step phenomenon, one involving emotion-generative processes, and the other involving emotion-regulatory processes that come after the elicited emotion and signal the management or mismanagement of it. One of the issues that emerged throughout the emotion regulation literature concerns to pinpoint when emotion regulation actually occurs, and when behaviors displayed in emotion-eliciting situations can be deemed as regulatory strategies (Bridges, Denham, & Ganiban, 2004). Several researchers suggest that in order for a regulatory strategy to be inferred in such situations, we should first have a change in the expressed emotion (Bridges, Denham, & Ganiban, 2004; Cole, Martin, & Dennis, 2004; Gross, 1998a). In other words, since this two-factor phenomenon is dynamic and based on two different sets of processes, an appropriate research approach must first generate an emotion or emotions, and then study the temporal sequencing of behaviors, emotions, and physiological changes that occur after the elicited emotional state.

Emotion regulation strategies and their outcome

As mentioned previously, individuals differ considerably in regulating emotions. In order to understand this variation, researchers have focused on examining whether some emotion regulation strategies are more effective than others. Evidently, this approach has proved to be a fruitful one, since there is mounting evidence suggesting that different strategies of emotion regulation yield different outcomes for affective, cognitive, and social functioning (Gross, 2001; 2007). Concerning the affective consequences of emotion regulation, studies have shown that reappraisal, which acts early in the emotion-regulation sequence, tends to prompt the individual to reconsider an emotional event in less emotional terms and thus, decreases the experiential, behavioral, and physiological response (Giuliani &

Gross, 2009; Gross, 1998b; 2001). On the contrary, suppression does not change the emotional experience and increases physiological activation, since the individual undergoes a continual effort to inhibit his or her impulses to express a response. Furthermore, suppression requires self-monitoring throughout an emotional event, rendering the cognitive processes to focus on correcting or inhibiting action tendencies rather than focusing on the event itself. By contrast, since reappraisal acts early on the emotion generative sequence, it does not demand such regulatory efforts (Richards & Gross, 2000). Davis, Woodman, and Callow (2010) suggest that when anger is suppressed on a peak force task, performance inevitably deteriorates. Finally, emotions impact social functioning and, consequently, emotion regulation strategies differ in their social consequences. Specifically, in situations that trigger negative emotions, reappraisal decreases negative expressive behavior, although it does not decrease positive behavior (Ochsner & Gross, 2008). Under the same circumstances, suppression decreases both positive and negative expressive behaviors, leading to social complications concerning interaction with others (Gross, 1999). This is particularly apparent in coaches, whose standards regarding their athletes greatly reflect on the way they express their expectations. In line with this, research has associated coaches' perfectionism with their emotion regulation, suggesting that adaptive perfectionism is likely to facilitate the expression of coaches' concerns when it is coupled with reappraisal (Hill & Davis, 2014). Overall, reappraisal has been at the focal point of research concerning emotion regulation and, particularly, regulation of negative emotions, and is widely used in interventions regarding mood and anxiety disorders, due to its effectiveness (McRae, Misra, Prasad, Pereira, & Gross, 2012).

Achievement goal theory

For the past three decades, achievement goals have been a pivotal topic in achievement settings and were largely researched in the sport psychology literature (Roberts,

Treasure, & Conroy, 2007). Nicholls (1984) heralded the advent of the achievement goal theory and a vast body of knowledge based on empirical and theoretical work that adopted this perspective emerged since then. In 1997, Elliot and Church proposed that the original achievement goal model be extended, adding the differentiation between approach and avoidance motivation. The original model consisted of mastery goals, which revolve around the development and improvement of competence in a task through mastery, and of performance goals, which center upon the demonstration of competence in relation to others. Since competence is essential in achievement settings, the expansion of the model divided competence, and subsequently performance goals, into two prospective dimensions according to how it was valenced: (a) performance approach, and (b) performance avoidance. In other words, competence can be valenced in a way that implies positive outcome and success (performance approach), and also in a way that implies negative outcome and failure (performance avoidance). This trichotomous achievement goal model has received strong empirical support (Elliot & Church, 1997).

The 2x2 model of achievement goals

The extension of Nicholl's original model of achievement goals was based on the notion that pleasant possibility of competence (approach goals) when pursuing a goal could lead to different outcomes compared to unpleasant possibility of demonstrating incompetence (avoidance goals) (Elliot & Church, 1997; Elliot, 2005). A meta-analysis of motivation by Rawsthorne and Elliot (1999) revealed that performance avoidance goals decreased both free-choice behavior and interest in a task, while performance approach goals did not have any significant effect on either intrinsic motivation factor. Thus, it was argued that when examining achievement goals not only should the definition of competence be considered (i.e., mastery/task and performance/ego), but also the valence of the striving (i.e., approaching competence and avoiding incompetence). The four goal approaches that emerge

from this model are (a) mastery approach, (b) performance approach, (c) performance avoidance, and (d) mastery avoidance.

Mastery approach goals center upon learning and improving, in which the individual focuses on both performing well in a task and on surpassing a previous performance. They are considered the optimal achievement goals because they involve the most desirable definitions of competence and valence. *Performance approach goals* revolve around outperforming others, but they are not deemed entirely dysfunctional due to high perceptions of competence. *Performance avoidance goals* focus on not appearing incompetent when compared to others' performance. They are considered the most dysfunctional approach to a goal because they involve the less desirable definitions of competence and valence. *Mastery avoidance goals* focus on avoiding mistakes or not doing worse than a previous performance. These are not that prevalent, though very common among perfectionists and the elderly (Elliot & McGregor, 2001; Elliot, 2005), and their consequences vary. For methodological purposes, the present study focused on the first three achievement goals, or, in other words, on the trichotomous model.

Achievement goals in performance settings

Throughout the course of sport psychology literature, it is postulated that mastery approach goals are the most desirable, performance avoidance goals have usually negative consequences, and performance approach goals may have either positive or negative outcomes (Papaioannou, Zourbanos, Krommidas, & Ampatzoglou, 2012). The key construct in performance settings though is motivation. Arguably, when goals pursued within a task-involved environment, in which mastery criteria in the given context prevail, motivation is optimized, satisfaction and interest increase, and, consequently, performance is enhanced. On the other hand, maladaptive achievement behavior is likely to occur when perception of

competence is low and worry of failure is high, leading to poor investment in a task since the individual is concerned with protecting his or her self-worth.

Current study

The purpose of the current study was to identify links between the achievement goal (Nicholls, 1984; Elliot & Church, 1997) and emotion regulation (Gross, 2008) theories, and, in particular, to explore the degree to which the type of goals fostered within an achievement context influence emotion regulation responses when experiencing negative emotions. It is widely acknowledged that emotions underlie action tendencies (Frijda, 2008), while emotion regulation has been identified as an important aspect of human functioning in general and performance in particular. Nevertheless, there has been an ambiguity surrounding the construct of emotion regulation and its link to other theoretical frameworks (Bridges, Denham, & Ganiban, 2004). This is mainly due to the nature of emotion regulation, which is dynamic and dependent on complex processes since it refers to change (Goldsmith, Davidson, 2004). In addition, research to date underscores that in order to determine and, consequently, measure emotion regulation, we must first pinpoint when this actually occurs. Specifically, it was suggested that if emotion regulation is to be inferred, there should be a change in the expressed emotion (Gross, 1998). In the present study, we tried to distinguish between emotion generation and emotion regulation, and look at the temporal sequencing of behaviors across a situation. Drawing on the literature to date, we hypothesized that when cognitive processes act in order to protect or enhance one's self-worth, this will impact the individual's expressive behavior in accordance to the relational meaning the individual assigns to the situation. If emotion regulation is to be inferred within an achievement context, there must be an association with the way success and failure is approached. In other words, the initial hypotheses were that (a) individuals in the performance avoidance condition would score high on suppression, and (b) individuals in the performance approach and mastery

conditions would score high on reappraisal. While no primary hypothesis regarding performance was formed, it was measured due to the structure and methodology of the experiment.

METHODOLOGY

Participants

A total of 60 participants (29 males and 31 females) with a mean age of 20.70 (\pm 2.17) years took part voluntarily in the experiment. They were physical education students of a Greek university. The prerequisite for participation was no previous experience with gymnastics. All participants completed the procedure once and individually, which lasted approximately 30 minutes. As an incentive for their involvement, they received course credit.

Procedure

All procedures took place in a Gymnastics Hall. It was conducted in a single individual session for each participant, which lasted approximately 30 minutes.

Introduction. Upon entering the hall, each participant was told that they had to do a task on the balance beam and complete some questionnaires anonymously. Before revealing the details of the task, they were asked if they knew anything about the procedure, and if yes what it was, assuring them that they would receive course credit whether they knew or not. Some participants knew that they would participate in a task involving a balance beam, but none of them knew further details. Following this they were told:

Our study has to do with assessments concerning general motor skills. You will be asked to perform a task on the balance beam and complete some questionnaires anonymously.

Regarding the balance beam, your goal is to try and cross it as fast as possible, or reach as close as possible to its end. Therefore, your try will be timed. Additionally, we will videotape your performance, in order to later analyze the way you moved on the beam. Before your try, we will take your heart rate with this Polar device. During

your try, there will be 2 assistants to your right and left who will help you in case you lose your balance and fall off the beam.

The questionnaires you are going to complete are completely anonymous and there is no right or wrong answer. I would like from you to answer honestly, according to the way you feel and think. You participate in this study voluntarily and you are free to withdraw from it at any point if you so wish. Tell me if you have any questions, because when we start I would like from you to just follow my instructions.

Participants had no relevant questions at this stage of the procedure. They then rested for 10 minutes and their resting heart rate was assessed. Consequently, participants completed a form including demographic information and a measure of dispositional goal orientations, which would be used for testing, and controlling if necessary, differences in goal orientations among participants of the different conditions. Following this, they had to watch a 2-minute video, which was a compilation of balance beam accidents, in an attempt to create an initial discomfort, before further manipulating negative emotions.

Manipulation of goal involvement. We had three different task inductions for each of our three experimental conditions, which were (a) performance approach, (b), performance avoidance, and (c) mastery. Participants were assigned randomly on a condition before entering the hall. The first part of the performance approach and avoidance conditions, was the same:

As I told you, this study assesses students' competence in some basic motor skills.

The one that was chosen for you is balance performance. The main aim of the study is to compare the performance of students of the same sex on the balance beam, and this will be measured by the time you will need to cross the beam.

The second part of the induction for performance approach was:

You will have one try on the balance beam and your goal should be to perform better than the rest of the students. During your try we will videotape you. At the end of the study, we will announce the results of the best times in the university and a presentation to students and professors will follow. In this presentation, we will show the best performances and will analyze them further. I repeat, your goal should be to perform better than the rest of the students.

The second part of the induction for performance avoidance was:

You will have one try on the balance beam and your goal should be not to be worse than the rest of the students. During your try we will videotape you. At the end of the study, we will announce the results of the worst times in the university and a presentation to students and professors will follow. In this presentation, we will show the worst performance and will analyze the mistakes students made. I repeat, your goal should be not to be worse than the rest of the students.

The whole induction for the mastery approach was quite different than the rest two experimental conditions:

As I told you, this study assesses students' competence in some basic motor skills.

The one that was chosen for you is balance performance. The principal aim of the study is to find ways to help the students with basic motor skills, and for that reason we have to time your performance.

You will have one try on the balance beam and your goal is to try as much as possible, in order to learn and improve through this procedure. During your try we will videotape you. By doing so, you will have the opportunity at the end of the study

to see the analysis of your movement, what you did right and what not, in order to learn and improve your motor skills.

Participants were then asked to climb to a 3-step stair placed just 5 centimeters away from the balance beam, where the final part of the manipulation took place.

Generation of negative emotions. As mentioned previously, we showed a video to the participants to stimulate discomfort. To further increase negative emotions, we were revealing to the participants the last and most crucial detail of the procedure just before they step on the balance beam. This information was the same for all three conditions:

There is one more thing concerning the task. You have to cross the balance beam blindfolded and for that reason you have to wear this mask.

Before wearing the mask, participants completed manipulation check instruments for goal involvement and emotions; their heart rate was also recorded at this point. Subsequently, participants were asked to wear the mask. The two assistants were helping participants to step on the beam. They were asked to wait there a moment because one of the researchers had to go and start the recording. All participants were left waiting for 30 seconds, during which we expected the emotion regulation process to occur; during this time, the two assistants kept holding the participants' hands. After this interval participants were informed that the assistants would then withdraw their hands, and that they could start walking whenever they felt ready to go. Time to initiate movement after participants' arm was released, time stayed on the beam after movement initiation, and distance covered were recorded. Upon completion, participants completed the adapted version of the emotion regulation measure. Participants were finally thanked for their participation and were asked not to reveal the procedure to other people.

Upon completion of the experiment participants were explained the purpose of the study, were informed that the video would not be presented in public, but they were welcome to watch their attempt if they so wished.

Measures

Goal orientations. The Achievement Goals Questionnaire (Papaioannou, Tsigilis, Kosmidou, & Milosis, 2007) was used to assess the participants' dispositional goal orientations at the contextual level. The questionnaire included 18 items assessing three dimensions of achievement goal orientations in the context of university practical classes; mastery orientation (e.g., *It's very important for me to learn new things*); performance approach (e.g., *I feel successful when I'm the only one that can do an activity*); and performance avoidance (e.g., *I refrain from doing activities in which I might seem incompetent*). Responses were given on a 5-point Likert-type scale ranging from 1 (totally disagree) to 5 (totally agree). Cronbach's alpha reliability coefficients were .84, .77, and .85 for mastery, performance approach, and performance avoidance orientations respectively.

Goal involvement: An adapted to the situation version of Goal Involvement at the Situational Level Questionnaire (Papaioannou, et al., 2007) including 9 items was used to assess participants' goal involvement; mastery involvement (e.g., *I will feel successful in this activity if I try as much as I can*); performance approach involvement (e.g., *I will feel successful in this activity if I'm better than the rest of the students*), and performance avoidance (e.g., *I will feel successful in this activity if I don't perform worse than the other students*). Participants had to indicate their responses on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha reliability coefficients were .71, .82, and .75 for mastery, performance approach, and performance avoidance involvement respectively.

Emotions. Five negative and five positive adjectives were selected to reflect negative (e.g., nervous, worried, anxious) and positive (e.g., calm, relaxed, composed) emotions for the situation. Cronbach's alpha reliability coefficients were .84 and .86 for negative and positive emotions respectively.

Emotion regulation: An adapted version of Gross's Emotion Regulation Questionnaire (1999) to fit the experimental settings was used to assess participants' emotion regulation. The questionnaire included 8 items assessing two dimensions of emotion regulation: reappraisal (e.g., *I tried to think something positive for the situation*) and suppression (e.g., *I suppressed my emotions*). Responses were given on a 5-point Likert-type scale ranging from 0 (not at all) to 4 (very much so). Cronbach's alpha reliability coefficients were .80 and .65. for reappraisal and suppression respectively.

RESULTS

The data analyses were arranged in four sections (a) control measures, (b) manipulation checks, (c) hypotheses testing, and (d) additional analyses.

Control measures. Three control measures were tested: the distribution of males and females in the three groups, differences in age and sport experience in the three groups, and differences in dispositional goal orientations in the three groups. Chi-square analysis was performed to test for differences in the distribution of males and females across the three goal involvement groups. The analysis showed no significant differences, $\chi^2(2) = .93, p = .62$. One-way MANOVA was performed to test for differences in age and sport experience between the three goal involvement groups. The analysis revealed a non-significant multivariate effect, $F(4, 114) = 0.83, p = .51$. One-way MANOVA was performed to test for differences in dispositional goal orientations between the three goal involvement groups. The analysis revealed a non-significant multivariate effect, $F(6, 112) = 1.15, p = .34$. Descriptive statistics for all control measures are presented in Table I.

Table I: Descriptive statistics for all control measures.

	Mastery	Performance approach	Performance avoidance
Males/females	8/12	10/10	11/9
Age	21.05 (\pm 2.66)	20.45 (\pm 0.94)	20.6 (\pm 2.52)
Sport experience	7.65 (\pm 5.48)	5.85 (\pm 4.69)	8 (\pm 4.84)
Goal Orientations			
Task orientation	4.26 (\pm 0.56)	4.01 (\pm 0.61)	4.28 (\pm 0.5)
Ego enhancement	2.85 (\pm 0.59)	2.66 (\pm 0.81)	3.01 (\pm 0.69)
Ego protection	2.31 (\pm 0.82)	2.57 (\pm 0.83)	2.21 (\pm 0.73)

Manipulation checks. Two manipulation checks were performed: differences in goal involvement by goal involvement condition, and differences in emotions by goal involvement condition. One-way MANOVA was performed to test for differences in goal involvement among the three goal involvement conditions. The analysis revealed a significant multivariate effect, $F(6, 112) = 7.72, p < .01$, partial $\eta^2 = .29$. Examination of the univariate statistics revealed significant differences for all goal involvement conditions; for mastery involvement, $F(1, 59) = 4.53, p < .05$, partial $\eta^2 = .14$; for performance approach, $F(1, 59) = 13.30, p < .01$, partial $\eta^2 = .32$; for performance avoidance $F(1, 59) = 8.67, p < .01$, partial $\eta^2 = .23$. Examination of the pairwise comparisons revealed that (a) for mastery involvement, the mastery involvement group scored higher than the performance approach and performance avoidance groups, which had no differences between them; (b) for performance approach involvement, the performance approach involvement group scored higher than the mastery involvement group, but not compared to the performance avoidance group, which also scored higher than the mastery group; (c) for performance avoidance involvement, the performance avoidance involvement group scored higher than the mastery and the performance approach groups, which had no difference between them.

One-way ANOVA with one repeated factor (emotions: positive, negative) and one independent factor (goal involvement group) was performed to test for differences between positive and negative emotions, but also in positive and negative emotions among the three groups. The analysis revealed a significant emotion effect, $F(1, 57) = 15.56, p < .01$, partial $\eta^2 = .21$, but a non-significant emotions by group effect, $F(2, 57) = 0.52, p = .60$, suggesting that there were no differences among the groups in positive and negative emotions, and that for the total sample participants scored higher on negative compared to positive emotions.

One-way ANOVA with one repeated factor (time: pre-manipulation/rest, post-manipulation/prior to task performance) and one independent factor (goal involvement group)

was performed to test for differences in heart rate changes as a function of the manipulation and the group. The analysis revealed a significant time effect, $F(1, 53) = 353.81, p < .01$, partial $\eta^2 = .87$, but a non-significant emotions by group effect, $F(2, 53) = 1.06, p = .36$, revealing a significant heart rate increase from prior to the manipulation (resting heart rate) to post-manipulation (just prior to task performance) for the total sample, but no differences in heart rate change among the three involvement groups.

Descriptive statistics for all manipulation checks are presented in Table II.

Table II: Descriptive statistics for all manipulation checks.

	Mastery	Performance approach	Performance avoidance
Goal involvement			
Mastery	4.58 (± 0.36)	4.05 (± 0.81)	4.08 (± 0.62)
Performance approach	2.73 (± 0.57)	3.7 (± 0.68)	3.63 (± 0.71)
Performance avoidance	3.05 (± 0.63)	3.1 (± 0.93)	3.89 (± 0.51)
Emotions			
Negative	3.02 (± 1.09)	2.96 (± 0.73)	3.18 (± 0.87)
Positive	2.12 (± 0.87)	2.49 (± 0.53)	2.32 (± 0.86)
Heart rate			
Pre-manipulation	75.44 (± 11.27)	75.66 (± 14.66)	76.8 (± 12.07)
Post-manipulation	118.83 (± 23.15)	119.88 (± 22.26)	128 (± 17.88)

Hypotheses testing. For the hypothesis testing, differences in emotion regulation by goal involvement condition were tested. One-way MANOVA was performed to test for differences in emotion regulation strategies among the three goal involvement groups. The

analysis revealed a significant multivariate effect, $F(4, 114) = 2.86, p < .05$, partial $\eta^2 = .09$. Examination of the univariate effects revealed a significant effect for suppression, $F(2, 59) = 3.30, p < .05$, partial $\eta^2 = .10$, and an effect that approached significance for reappraisal, $F(2, 59) = 2.44, p = .09$, partial $\eta^2 = .08$. Examination of the pairwise comparisons showed that (a) for suppression, the performance avoidance involvement group scored higher than the mastery and performance approach groups, which had no significant differences between them; (b) for re-appraisal, the mastery involvement group scored higher than the performance avoidance group; both were not significantly different from the performance approach group. Descriptive statistics for emotion regulation are presented in Table III.

Table III: Descriptive statistics for emotion regulation among the three conditions.

	Mastery	Performance approach	Performance avoidance
ER Strategy			
Reappraisal	2.17 (± 1.27)	1.88 (± 0.87)	1.46 (± 0.85)
Suppression	1.58 (± 0.87)	1.63 (± 0.61)	2.15 (± 0.8)

Additional analyses. Finally, analyses testing behavior/performance differences between the three conditions were conducted. One-way MANOVA was performed to test for differences in time to start (after the assistant released the participant), time to finish (either completing the walk, or falling off the beam) and distance travelled on the beam. The analysis revealed a significant multivariate effect, $F(6, 110) = 3.16, p < .01$, partial $\eta^2 = .15$. Examination of the univariate effects revealed significant effects for time to start, $F(2, 58) = 5.10, p < .01$, partial $\eta^2 = .15$, and distance travelled, $F(4, 114) = 4.80, p < .05$, partial $\eta^2 = .15$. Examination of the pairwise comparisons showed that (a) for time to finish participants in the mastery involvement group took more time than the ones in performance approach and

performance avoidance groups, and (b) for distance travelled, participants in the mastery and performance approach involvement groups travelled greater distance than those in the performance avoidance group. Descriptive statistics for performance/behavior variables are presented in Table IV.

Table IV: Descriptive statistics for performance.

	Mastery	Performance approach	Performance avoidance
Performance			
Time to start	8.98 (\pm 7.45)	5.06 (\pm 4.53)	10.12 (\pm 12.34)
Time to finish	24.35 (\pm 30.01)	7.29 (\pm 8.42)	7.7 (\pm 10.87)
Distance travelled	241.9 (\pm 137.22)	231.57 (\pm 136.98)	128.35 (\pm 107.34)

Finally, a chi-square test was performed to compare the number of participants completing the task in the three involvement groups. The analysis revealed a non-significant effect, $\chi^2 (2) = 4.38, p = .11$. However, it is interesting to report that the task was completed by five participants in the mastery involvement group, six participants in the performance approach group, and 1 participant in the performance avoidance group.

DISCUSSION

The purpose of the present study was to identify links between the achievement goals (Nicholls, 1984; Elliot & Church, 1997) and emotion regulation (Gross, 2008) theories, and, in particular, to explore the degree to which the type of goals fostered within an achievement context influence emotion regulation responses when experiencing negative emotions. Researchers have suggested that testing emotion regulation in relation to other theoretical constructs may help our understanding of the emotion regulation processes (Bridges, Denham, & Ganiban, 2004). In so doing, we adopted an experimental design to achieve the desirable circumstances for our study. To our knowledge, no previous study has tested experimentally this relationship. The present investigation was designed in such a way as to achieve a comprehensive sequence of events occurring within a setting, and the appropriate measurement of the variables tested in specific moments of that setting. Particularly, we tried to generate intense emotion within a setting, allow and seek for an immediate emotion regulation, and study the temporal sequencing of behaviors, emotions, and physiological changes that occurred after the elicited emotional state.

The experimental design included random assignment of the participants to mastery, performance approach, and performance avoidance conditions. Manipulation checks revealed that our three inductions corresponding to the three experimental conditions were successful. However, the performance approach involvement failed to significantly distinguish between performance approach and performance avoidance groups. A possible explanation for that is that participants in the performance avoidance condition adopted in addition performance approach goals to further complement their involvement in the task. Reasonable support from this postulation emerged from participants' scores in dispositional goal orientations, where it was revealed that scores for performance avoidance were lower than performance approach for all group thus, it is likely that participants in the avoidance condition kept reasonable level

of performance approach involvement. The manipulation checks concerning emotion generation and triggering emotion regulation were also successful. Specifically, the analyses showed that all the participants experienced more negative than positive emotions, and that their heart rate increased dramatically prior and post the emotion manipulation thus, confirming the success of the emotion manipulation. In fact, this strengthens the success of the experiment, since it is believed that intense emotional states increase the relational meaning of a situation for an individual (Frijda, 1986) therefore, making him or her more responsive to its demands. Overall, the manipulation checks provided adequate support for the internal validity of the experiment.

Current findings also showed significant difference of emotion regulation strategies used among the three groups. In particular, it was revealed that participants of the performance avoidance group reported higher use of suppression compared to the performance approach and mastery groups, with the latter also reporting greater scores on reappraisal than the performance avoidance group. According to our hypothesis, the performance approach group was expected to score higher than the performance avoidance group on reappraisal, which was not supported. Two potential explanations can be forwarded. First, this finding seem to coincide with the literature suggesting inconsistent patterns of cognitive, affective and behavioral outcomes related to performance approach motivational climate and goal involvement (Papaioannou et al., 2012). Second, this finding also coincides with the results from the manipulation check, where it was revealed that participants in the performance approach group and performance avoidance group did not differ in their performance approach goal involvement. Taken together those explanations highlight the need for effective goal involvement manipulations, and importantly the need for effective manipulation checks measures that could help explaining inconsistent patterns between performance approach and performance avoidance conditions.

Throughout the literature, researchers have continuously revealed that some emotion regulation strategies are more effective than others (Giuliani & Gross, 2009; Gross, 1998b; 2001; 2007; Richard & Gross, 2000). However, when it comes to sport settings emotions become indispensable part of one's performance (Frijda 2008; Jones, 2012) and, consequently, the management or mismanagement of those greatly impact the individual's outcome (Jones 2003; Hanin & Stambulova, 2002; Robazza & Bortoli, 2003). While predicting performance was not part of our hypotheses, its measurement was included to fit all three scenarios for their respective conditions. The results for the time needed to start the task, time needed to finish, and distance travelled on the beam revealed a significant effect. It is therefore noteworthy to report that participants in the performance avoidance condition travelled less distance than those in the mastery and performance approach conditions, who travelled greater distance. This finding creates a link between emotion regulation strategies and performance. In addition and as mentioned previously, the design of our study created intense emotional states, strengthening the relational meaning of the situation for the participants. Combining those two facts with the significant effect the results revealed for negative emotion generation across all three experimental groups, we could assume that in this study we had no case where an emotion was not calling for attention to be regulated. In other words, in all three conditions regulation for negative emotions occurred thus, giving us the opportunity to clearly examine reappraisal and suppression amongst the three groups. As for the time needed to finish, participants in the mastery condition took more time than those in the performance approach and performance avoidance conditions. While we had no significant effect for the number of participants who completed the task in the three involvement groups (crossing entire beam without falling), it is interesting to report that the task was completed by six participants in the performance approach condition, five

participants in the mastery condition, and only one participant in the performance avoidance condition.

The call for regulating a negative emotion, such as fear in this study, takes great effort since the individual struggles to change or adjust his or her current state in order to proceed throughout the situation. Nevertheless, failure to respond to a negative emotion has proved to be costly in the short- and long-run (Barrett, Gross, Christensen, & Benvenuto, 2001). The present findings suggest that when performance avoidance goals prevail, not only does the individual tend to suppress his or her feelings, but also has an evident impact on his or her performance. By contrast, when mastery criteria prevail within a situation, the individual tends to reconsider of the task at hand and its emotional demands by using reappraisal to cope with the situation, which renders the possibility of a desirable performance more feasible.

In summary, the current study supports previous findings which show that between suppression and reappraisal emotion regulation strategies, the latter seems more adaptive from an affective but also from a performance perspective. The design of the study not only allowed for a link between achievement goals and emotion regulation theories, but also surfaced performance related outcomes linked to goal involvement in relation to emotion regulation. The results revealed that individuals pursuing goals from a performance avoidance perspective are prone to regulate their emotions by suppressing them. On the contrary, individuals pursuing goals from a mastery perspective are likely to regulate their emotions using reappraisal. It is noteworthy that differences in emotion regulation reflected to a large degree differences in performance that was also recorded, with participants in the mastery and performance approach conditions performing better than those in the performance avoidance condition; therefore rendering reappraisal a relatively effective means to regulate negative emotions. The present findings enhance our understanding of emotion regulation in achievement settings and thus, elucidate essential aspects of emotion

management in further practical applications for coaches and sport psychologists. Based on the results reported herein, we invite sport psychologists and coaches to adopt a design and deliverance of their sessions in a way that could both foster mastery and performance approach goals, and, consequently, facilitate emotional management throughout the achievement striving by promoting the use of reappraisal.

Future directions

Further experimental studies are necessary to not only confirm the findings of this research, but also to explicate the multidimensionality of emotion regulation and its link to other theoretical frameworks. For the purposes of this study, mastery avoidance condition was excluded from the experimental conditions, since it has been shown to be common only among perfectionists and the elderly (Elliot & McGregor, 2001; Elliot 2005). It would be interesting to not only test emotion regulation and all the dimensions of achievement goal theory on a broader age group, but also examine its possible links to factors such as perfectionism and self-esteem. In line with this, a sample of competitive athletes may help considerably further findings, since sport settings provide an ideal environment for examining emotions, both positive and negative, and their outcomes. With respect to the long-term consequences of emotion regulation, a longitudinal study designed with caution and which fosters the adoption of reappraisal as a strategy to cope with a particular situation in a specific timespan may also shed light on the cognitive processes individuals undergo when faced with a significant goal. Ultimately, more work is needed to build on the current research and further enhance our understanding of the emotion regulation process, which seems a very fertile research area for sport psychology.

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