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The relationships between transformational leadership, behavioral regulation and self-talk in youth sport

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Abstract

The aim of the present study was to explore the relationships between transformational leadership, behavioral regulation and self-talk content in youth sport. Participants for this study consisted of 286 athletes (56 females, 230 males) from Romania with a mean age of 15.86 years (SD = 1.19; range = 14-19). They were recruited from a variety of individual and team sports, from three different Sport Specific High Schools in Bucharest. Athletes had a mean of 7.39 years (SD = 3.18) in the sport. On average, participants were involved in training for 14 hours per week (M = 14.37; SD = 6.77) and the mean period of time training with their coach was 13 hours per week (M = 13.60; SD = 6.91). Automatic Self-Talk Questionnaire for Sports- ASTQS, (Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaioannou, 2009), Team Coach Leadership Scale- TCLS, (Callow, Smith, Hardy, Arthur, & Hardy, 2009) and Behavioral Regulation in Sport Questionnaire BRSQ, (Lonsdale, Hodge, & Rose, 2009) were administered to test the underlined hypotheses. The results showed that intellectual stimulation and inspirational motivation from the TCLS, in step 1, predicted positively positive self-talk, and in step 2, intrinsic motivation from BRSQ, contributed further to the prediction of positive self-talk. Furthermore, acceptance of group goals and appropriate role model in step 1 predicted negatively negative self-talk, and in step 2, intrinsic motivation negatively, and amotivation positively contributed further to the prediction of negative self-talk. Considering all the findings, the present study puts light on the idea that because youth athletes are influenced by the coach, it is important to understand how their influence can affect youth athletes' self-talk and further more change performance.

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Introduction

A glance through applied sport psychology textbooks reveals that self-talk is one technique commonly included in mental-skills training programs and is proposed by sport psychologists to regulate cognitions, emotions, behaviour and performance (Zinnser, Bunker, & Williams, 2006).

This study examines the relationship between personal and social factors on athlete's thoughts. Self-talk refers to those automatic statements reflective of, and deliberate techniques (e.g. thought-stopping) athletes use to direct, sports-related thinking. Based on the aforementioned dimensions, it is suggested that self-talk is multidimensional in nature (e.g. frequency, valance), referring to verbalizations or statements that are addressed to the self, and not others (i.e. social speech), has interpretative elements associated with the content of the words employed and can serve at least two functions, including motivation and self-instruction (Hardy, 2006).

Hardy identified a number of overlapping dimensions which were representative of the nature of self-talk. These included a frequency dimension, which refers to how often athletes use self-talk as well as an overtness dimension, which considers if self-talk is said either overtly, and is potentially audible to others, or covertly, and is inaudible to others. The third dimension, valence, refers to the content of self-talk. Self-talk's content can range from being positive, and offering praise (e.g. "good stuff") to negative, and reflecting a form of criticism (e.g. "pathetic"; cf. Moran, 1996). The fourth dimension, motivational interpretation, overlaps with the content of self-talk but differs in that it refers to whether athletes view the content of their self-talk as either motivating or de-motivating. The final dimension refers to the reasons why athletes might use self-talk, with the two broad functions being self-instruction and motivation.

In a pioneer work, Van Raalte (2016), was the first to address the theory of dual-process and inner-discourse adapted to sport settings and self-talk. This can build on existing models of

self-talk and performance. In his Nobel Prize lecture, (Kahneman, 2003) noted that two discrete but interacting systems transform information from the outside world into cognitive content: (a) System 1, which is fast, effortless, and emotionally charged; and (b) System 2, which is slower, effortful, and consciously monitored. Content that originates in System 1 is often described as intuition, and comes to mind spontaneously as gut feelings or impressions. For example, being surprised by something but not really knowing what caused the feeling of surprise, or recognizing someone without quite knowing what caused you to recognize that person (Kahneman, 2011). Content that originates in System 2 includes explicit and intentional ideas, logic, conscious calculations, attributions, and interpretations (Kahneman, 2011).

Studies have been done supporting this idea of a relationship between social factors on athlete's self-talk. (Zourbanos, et al., 2011) has shown beneficial effects of support from coaches in athlete's positive self-talk. The impact of the social environment in general, and significant others in particular, on individuals' cognitions has a long history in psychology (Burnett, 1999). It is in human nature to have a sense of belonging (Baumeister & Leary, 1995) and to develop supportive relationships which appear to have a beneficial effect on mental health and positive well-being (Cohen, Gottlieb, & Underwood, 2000). In the sport literature various approaches have been used for the study of social support, such as features of support networks and appraisals of social support (Bianco & Eklund, 2001). Furthermore, the effects of social support are said to operate by two means (a) directly by positively influencing cognitive and behavioral outcomes, and (b) indirectly by moderating the effects of stress on outcomes (stress buffering impact). In the present study direct links between appraisals of social support and cognitive outcomes were investigated. Rees, Ingledew, and Hardy (1999), reported significant effects of social support on "performance components", characterized as cognitive appraisals of feeling flat, positive tension,

effective tactics and flow. Rees and Freeman (2007) revealed the beneficial impact of both received and perceived social support on athletes' self-confidence, both directly and by reducing the negative effect of stress. Finally, Freeman and Rees (2009) found that perceived support was linked to situational control and subsequently to golf performance, and also that esteem support was found to be directly negatively related to perceptions of threat and indirectly to perceptions of challenge through situational control. The above findings suggest that there is a likely link between social support and cognitions.

Almost forty years have passed since the first formulations of transformational leadership (Bass B. M., 1985). Despite the apparently favorable conditions related to studying transformational leadership in sports, major theoretical proposals regarding sports leadership do not considerate these indications. In his work, Chelladurai (2007) recognized the importance of transformational leadership in sports and incorporated the transformational effects of leader behavior in the multidimensional model of leadership. However, no other studies have confirmed this possibility of integrating the transformational leadership until now but, as Chelladurai recognizes, sports research should integrate the most recent advances in the study of transformational leadership.

The present study attempts build upon these studies by adding both elements, personal and social factors, determined by measuring behavioral regulation and coach related variables such as transformational leadership, an area of sport psychology as much as interesting and with many practical implications, not very popular between researchers. The significance of the relationship is that it may inform an understanding of how coach leadership influences athletes inner thoughts. Thus, the aim of this study was to expand upon previous investigations and provide new insights

into to the relationships between perceived coaches' transformational leadership, athletes' behavioral regulations, and athletes' self-talk.

1   Literature review

1.1   Theories of framework of self-talk in sport

Self-talk refers to all the things individuals say to themselves, to stimulate and reinforce, direct, and evaluate events and actions (Hatzigeorgiadis, Zourbanos, & Theodorakis, 2014). Based on its valence, self-talk is categorized as positive or negative. Hardy (2006) proposed that self-efficacy theory might provide a potential framework to underpin the effects of self-talk on performance outcomes. In his work he introduced a working definition of self-talk: "It is comparatively easier to 'knock down' previously employed definitions of self-talk than to 'build' an improved working definition. Researchers should, however, strive to expand upon respective knowledge bases in order to increase our understanding of particular areas—self-talk is one such example. Thus, it is suggested that researchers would do well to describe self-talk along the following guidelines. Self-talk should be defined as:

o   verbalizations or statements addressed to the self;

o   multidimensional in nature;

o   having interpretive elements association with the content of statements employed;

o   is somewhat dynamic;

o   serving at least two functions; instructional and motivational, for the athlete.

It should be noted, however, that as our knowledge of socially constructed variables, such as self-talk, changes over time, it is extremely likely that the above guidelines (concerned with how to define the variable) will also need modification" (Hardy J. , 2006).

Building a stable ground for the self-talk literature was continued with a second step, fundamental to forming a clear understanding of the potential applied implications of self-talk interventions, the understanding of self-talk nature (Hardy J. , 2006). To this end, two decades ago, Van Noorde (1984) noted that there are numerous dimensions' association with self-talk (in general), and more specifically in the sporting domain. It is perhaps because of self-talk's diversity that it has received little concerted attention from researchers (Van Raalte, Brewer, Rivera, & Petitpas, 1994).

In the paragraphs below, is a summarization of the main aspects of self-talk, divided into six areas, that have the purpose of clarifying what exactly self-talk is. Although they are presented separately, substantial overlap between aspects exists:

- *valence*, is concerned with the content of self-talk and is anchored with the bi-polar descriptors of positive and negative self-talk;

- o*vertness* has to some extent already been touched upon. This dimension of self-talk is concerned with how an athlete's self-statements are verbalized.

  - overt, private speech or external self-talk as it is also referred to, is said in a manner that allows another individual to hear what was said;

  - covert, inner speech or internal self-talk is situated at the other extreme of the continuum;

- *self-determined* dimension of self-talk can be conceptualized with 'assigned' and 'freely chosen' representing anchors of the continuum. The former signifies self-statements generated with absolutely no self-determined control over them, whereas the latter represents self-talk that is completely determined by the athlete, and as a result, occurs in a natural manner;

- *motivational interpretation* dimension has links with the directional interpretation aspect of anxiety. As such, it is concerned with the evaluation of whether individuals view their self-talk as de-motivating or motivating for themselves (Hardy, Hall, & & Alexander, 2001);

- the functions that self-talk might serve the athlete or, the reasons why an athlete might employ self-talk. The possible function of self-talk was one of the focuses of a qualitative study by Hardy, Gammage et al. (2001);

- *frequency* has overlap to each of the aforementioned aspects of self-talk. The frequency of self-talk is concerned with how often the individual employs self-talk, anchored by the terms 'never/not at all' and 'always/all the time';

Hardy and his colleagues continued their research, and released a new framework, based on his 2006 paper, for the study of self-talk and the application in sport (2009). Athletes may use self-talk for reasons other than performance enhancement, such as to build self-efficacy, learn new techniques, or with non-performance related issues (e.g. coping with media demands) (Hardy, Oliver, & Tod, 2009). The following paragraphs will highlight self-talk's antecedents and consequences, with an emphasis on how self-talk might be beneficial for athletic performance.

Personal antecedents:

- the first individual-level antecedent is drawn from Paivio's (1971) dual coding theory. Individuals' cognitive processing preferences for encoding information is an aspect of this theory that has relevance to athletes' use of self-talk. Paivio proposed that each person prefers encoding and processing information either verbally or non-verbally. This can be equated to favoring information in the form of text and verbal instructions or visual demonstrations and imagery;

- a second possible antecedent of self-talk, belief in self-talk. Studies of interventions in non-sporting contexts have suggested that a belief or expectancy about intervention effectiveness may be a precondition for it to be effective. From the limited literature focusing on belief in self-talk, it can be gleaned that athletes and participants in laboratory-based studies perceive that belief in self-talk is a relevant issue.

Situational antecedents:

- research that examines the effects of situational factors on the use and content of self-talk has focused specifically on issues such as task difficulty (Behrend, Rosengren, & Perlmutter, 1989), match circumstances (Van Raalte, Cornelius, Brewer, & Hatton, 2000) and the influence of significant others (Zourbanos, Theodorakis, & Hatzigeorgiadis, 2006). A consistent finding in mainstream psychological research is of a quadratic relationship between task difficulty and private speech (i.e. overt self-talk), in that the greatest use of private speech;

- an additional situational factor that may influence the use and content of self-talk is the presence and behaviour of those around the athlete, especially significant others. Within sport, coaches are frequently considered an influential "significant other", therefore it seems important to consider their effect on athletes' self-talk. Cross-cultural findings suggest that coaches promote the use of positive self-talk by their athletes and perceive it to be an effective confidence-enhancing intervention (Weinberg, Grove, & Jackson, 1992). It seems plausible that social learning may take place between team members, and if, for example, a respected

team captain is observed using self-talk, this may increase the likelihood of other athletes adopting this strategy (Hardy, Oliver, & Tod, 2009);

- o a final situational factor impacting on self-talk is the competitive setting. Athletes have reported using more self-talk in competition than during practice (Hardy, Hall, & Hardy, 2005b), and there is some emerging self-presentation-related evidence to suggest that this could be explained by the presence of an opponent. From the situational-based research discussed above, it is apparent that, regardless of whether the content of self-talk explicitly relates to the environment, situational factors can influence the frequency and nature of self-talk, and therefore potentially its effect on performance (Hardy, Oliver, & Tod, 2009).

Building on the work of Hardy (2006, 2009), Theodorakis (2012) published a paper underlining the main findings in self-talk and addressing it as a framework. He divided descriptive studies on self-talk into two basic categories: studies describing the content and frequency of self-talk, and studies describing the use of self-talk and relevant group differences based on personal characteristics. Research on the content of self-talk has primarily used the field-descriptive approach. Studies have investigated the nature of athletes' self-talk in competitive settings, and also the use and frequency of self-talk as a mental strategy. Two of this findings that raised attention were concerning the control and regulation of inherent self-talk, and concerning the use of self-talk strategies to enhance performance.

Studying the evidence regarding the effectiveness of self-talk and the use of different cues on task performance, Hatzigeorgiadis et al. (2007) noticed that "certain self-talk cues can be more effective for some tasks than for others; in addition, some self-talk cues can be more effective than other self-talk cues in certain tasks." Based on that observation, they suggested that different cues

may operate through different functions, and this may explain some of the variation in results in the literature. Now that robust evidence regarding the effectiveness of self-talk has been established, the issue of functions (i.e., the mechanisms through which self-talk facilitates performance) is currently receiving increasing research attention.

The two practical applications that result from studying the functions and mechanisms of self-talk are (Theodorakis, Hatzigeorgiadis, & Zourbanos, 2012):

The control and regulation of inherent self-talk, which involves preventing unwanted self-talk and fostering facilitative self-talk.

From the perspective of personal and situational factors, goal orientations/involvement and anxiety can help control inherent self-talk. The philosophy, but also the achievability, of the goals that are pursued seems an important issue. The findings suggest that task- and ego-oriented athletes are likely to experience similar levels of performance-related worries; nevertheless, the adoption of self-referenced goals will prevent impulses of disengagement due to the control athletes have over their goals. The progress of a game or a competition and the quality of performance in relation to the goal is probably the most decisive factor in shaping athletes' self-talk.

Anxiety is another personal factor that should be considered. Intensity and direction of competitive anxiety has been linked to experiencing negative self-talk. Even though such negative thoughts may not necessarily harm performance, it is preferred that they do not occur. With regard to the intensity of anxiety, regulation strategies can help reduce anxiety symptoms and subsequently reduce negative thoughts, whereas with regard to anxiety direction, athletes should be trained to accept anxiety symptoms as a normal reaction to competition and interpret it as a sign of readiness. Lowering the intensity and controlling the interpretation of anxiety can help regulate inherent self-talk.

Meaningful and important for athletes. Also, in relation to the characteristics of the task, fine motor tasks seem to benefit more from self-talk strategies. Research into self-talk functions has revealed that the key mechanism explaining the effectiveness of self-talk seems to be the enhancement of attention to the task. Considering that fi ne motor tasks may benefit more from increases in attention, compared to gross motor tasks, it makes sense that the use of self-talk can be more effective for such tasks.

From the perspective of social factors, the role of the coach seems of particular importance. The findings so far suggest that athletes' negative self-talk is more vulnerable to social influences. Supportive coaching behavior has been linked to reduced negative self-talk, whereas coaching behavior endorsing negative approaches is related to athletes' negative self-talk.

The use of self-talk strategies to enhance performance, which involves developing effective self-talk plans to address athletes' specific needs.

The findings emphatically support the effectiveness of self-talk on facilitating learning and enhancing task performance. Therefore, the development of self-talk strategies and plans should be strongly encouraged. With regard to the characteristics of the task, self-talk seems to be more effective for novel compared to learned tasks. This is a reasonable finding, because improving on novel tasks is generally easier than improving on learned tasks. Nevertheless, self-talk has also proven effective for learned tasks, for which even small improvements may be very meaningful and important for athletes. Also, in relation to the characteristics of the task, fine motor tasks seem to benefit more from self-talk strategies. Research into self-talk functions has revealed that the key mechanism explaining the effectiveness of self-talk seems to be the enhancement of attention to the task. Considering that fine motor tasks may benefit more from increases in attention, compared to gross motor tasks, it makes sense that the use of self-talk can be more effective for such tasks.

The decision regarding the choice of the particular cues, and the way these cues will be expressed, is recommended to be made collectively by athlete and coach or sport psychologist because athletes' preferences should be seriously taken into account. In addition, going through the process of trial and error may give even better results for finalizing the selection of cues and self-talk plans. Most importantly, athletes should encompass self-talk in their training routines. Practicing will maximize gains, especially in the case of more experienced and higher level athletes. At that level, improvement is hard to achieve and even small performance gains can make a big difference; therefore, training self-talk is imperative. As mentioned before, for younger and beginner athletes, self-talk can have more immediate effects. Observing such performance changes will foster the belief in self-talk and encourage its use in practice, which in turn should enhance the effectiveness of self-talk strategies. As for every performance, so for self-talk, practice will make perfect.

In addition to providing answers to important self-talk related questions, viewing self-talk through the lens of dual-process theory and inner-discourse can build on existing models of self-talk and performance.

The sport-specific model of self-talk, highlights the dynamic interrelationships among:

o personal factors;

o situational factors (referred to as contextual factors in this model);

o cognitive mechanisms (represented by System 2);

o affect, motivation, and anxiety related to both Systems 1 and 2;

o behaviour;

o self-talk. The model is designed to address shortcomings in existing models of self-talk in sport and to highlight areas where research is lacking.

The first study to address the theory of dual-process and inner-discourse adapted to sport settings and self-talk was conducted by Van Raalte et al. (2016). They build on the existing models of self-talk and performance and came with new perspective.

The interaction between System 2 and the effortless, unconscious processing that takes place through System 1 has important implications that provide additional insight into self-talk. In this section, System 1 and its features are described. Next, self-talk research is interpreted in light of System 1 concepts, although it should be noted that research specifically designed to test hypotheses related to System 1 (and System 2) has not been conducted. The section concludes with a discussion of the relationships between System 1 and System 2 self-talk and suggestions for future research.

Considering emotionally charged self-talk in terms of System 1 can provide a basis for understanding valence as it relates to self-talk. When self-talk is discouraging in tone and reflects negative emotions, such as frustration or anger, it is negative in valence. Negative self-talk in sport may often involve System 1, as such self-talk has been found to be emotionally charged and to occur spontaneously (Van Raalte, Cornelius, Brewer, & Hatton, 2000). System 1 negative self-talk does not respond quickly to logic or new information (Kahneman D. , 2003) and, therefore, System 1 negative self-talk may be difficult for athletes to moderate or control. Self-talk that is encouraging in tone or reflects feelings of happiness or excitement is considered positive. Some positive self-talk, such as that following the scoring of a key goal, may also be related to System 1 and may explain why positive self-talk used during "excessive celebrations" can be similarly difficult to modify even if cognitive and behavioral interventions are used.

We begin this section by defining System 2 and its major characteristics. Proactive and reactive System 2 self-talk are then described. Suggestions for future research related to System 2

self-talk are provided. System 2 refers to the processing of information that occurs in a slow, effortful, and consciously monitored fashion (Kahneman D. , 2003). Several key features of System 2 are related to self-talk in sport. First, System 2 processing requires mental effort (Stanovich & West, 2000). Second, System 2 is a rational system that is emotionally neutral. Rather than being influenced by biases and habits, System 2 processing is primarily governed by rules and logic, and is amenable to change via the introduction of new information or perspectives (Kahneman D. , 2003). Finally, System 2 functions as a monitor of thoughts and actions (Stanovich & West, 2000).

The effect that self-talk has on behaviour, and more specifically performance, has been the primary focus of self-talk literature in sport psychology. This section reviews the major findings related to self-talk and behaviour, and includes suggestions for future research. The demonstrated relationship between self-talk and performance in sport psychology research may help explain the position of self-talk as an integral component of the sport psychology canon (Andersen, 2009).

According to the sport-specific model of self-talk, contextual factors are directly related to System 1 and/or System 2 such that contexts may evoke formal, rational analysis (System 2) or prime emotional responses (System 1) that may then be related to self-talk and/or behaviour, which in turn may affect certain aspects of the context (Morf & Mischel, 2012). In this section, a definition of context is provided. Next, literature pertaining to context and self-talk is reviewed, starting with a discussion of self-talk in laboratory contexts and moving to a discussion of research in sporting contexts. This discussion is followed by a review of relevant literature on social context, including the impact of national and team cultures on self-talk. Research implications related to context and the sport-specific model of self-talk are also presented.

1.2   Social factors and self-talk

One direction, that raised from the construction of feedback and statements as a multi-layer or 'sandwich principle', is the social support theory. Rees and colleagues have suggested that social support can be related to performance-related variables and reduced stress during competition in tennis (Rees & Hardy, 2004). Furthermore, studies have documented that social support plays a key role in vulnerability, injury rehabilitation, and coping with stress (Crocker, 1992).

A series of studies by Zourbanos and colleagues investigating the social factors have brought new perspectives and opened doors to more detailed research. In one of his studies he examined the relationship between perceived coaching behaviour, coaches' esteem support, and athletes' positive and negative self-talk (Zourbanos, Theodorakis, & Hatzigeorgiadis, 2006). The purpose was to test a possible model in which coaches' positive and negative behaviour has its effects on athletes' positive and negative self-talk, based on a social-cognitive perspective. The study was in line with Burnett's findings (1999), showing that positive statements made by teachers were related to students' positive self-talk and opposite for negative statements by teachers were related to students' negative self-talk, and was considering the recommendations from Hardy and Crace's (1991), for coaches to use supportive verbalizations in their instructions of effective feedback that are appropriate to the sport context. Finally, based on social learning theory (Bandura, 1977), he assumed that the coach might serve as a model to the athletes, and therefore coaches' behaviour and his esteem support will predict athletes' self-talk. The results of the study showed that coaches' esteem support mediated the relationship between coaches' supportiveness and athletes' positive self-talk. Moreover, there were direct effects of coaches' negative activation on athletes' negative thinking. From a practical perspective, the idea that as athletes are influenced by their coach, it is important to understand how his or her influence can

affect athletes' way of thinking and the recommendation is that coaches should use supportive verbalizations in their instructions. Overall, the main focus is on the importance of coaching behaviour and esteem support in shaping athletes' self-talk. (Zourbanos, Theodorakis, & Hatzigeorgiadis, 2006).

Another study meant to explore the relationship between coaches' behaviour and statements, and athletes' self-talk was conducted by Zourbanos (2007). The research was built on previous work done in educational psychology, explaining how teachers' verbalizations has an influence on children's self-talk (Burnett, 1996), and also their perceptions of ability and self–esteem (Burnett & McCrindle, 1999). It also considered the identified relationships between significant others' verbalizations and students' self-talk, already explained by social cognitive theorists, suggesting that people engage in conversations with others and use other's behaviors and comments in order to develop a clearer vision of themselves (Cooley, 1902). The results showed that coaches' positive statements were found to mediate the relationship between coaches' supportiveness and athletes' positive self-talk. Similarly, negative statements made by the coach were found to mediate the relationship between coaches' negative activation and athletes' negative self-talk, simply stated, positive self-talk can be considered more appropriate to performers than negative self-talk. Statistically, about 30% of athletes' self-talk based on coaches' behaviour and verbalizations shows that there is a considerable amount of self-talk variance that can be manipulated from external sources. From an applied perspective, coaches should be encouraged to adopt a supportive stance towards their athletes, avoid negative verbalizations in the form of criticism and irrational comments and use encouragement, constructive comments and positive language when communicating with their athletes, realizing the importance of both behaviour

consequences and statements implication on their athletes. (Zourbanos, Hatzigeorgiadis, & Theodorakis, 2007).

In the process of studying athletes self-talk, one of the biggest concerns is the methodological approach for investigating one's self-talk, mainly because of the nature of human thoughts. In the cognitive assessment literature, various methodological approaches have been applied to identify the individuals' cognitive processes or structures (Amsel & Fichten, 1998). These techniques range from concurrent to retrospective evaluations and from unstructured to fully structured procedures like thinking-aloud, free association, recording of private speech, random sampling, self-monitoring, videotape thought reconstruction, self-statement inventories, clinical interview and thought listing, with several strengths and weaknesses (Blankstein & Segal, 2003). The development of an instrument assessing the content and the structure of self-talk may offer an opportunity to better understand the self-talk phenomenon and the role of self-talk in sport performance, and help practitioners identifying and modifying irrational or maladaptive self-talk. In this direction Zourbanos and colleagues (2009) conducted an investigation to test the validity of a questionnaire suitable for detecting and measuring the underlying structure of athletes' self-talk, the Automatic Self-Talk Questionnaire for Sport (ASTQS). In the process, thoughts were categorized as positive or negative based on their wording and not on the results or consequences that can generate. The type of thoughts that were identified has been previously encountered in the sport psychology literature in various studies pertaining to the use and functions of self-talk. Altogether, these findings seem to suggest that the ASTQS is a reliable and valid self-report instrument for assessing athletes' trait self-talk, that it will help enhancing the understanding regarding the role of thoughts athletes experience during sport competitions and advance self-talk research. (Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaioannou, 2009).

Taking into consideration the findings presented so far, an experimental design aiming to support the direction of causality in the relationship between coaching behavior and athletes self-talk was needed. In 2010 (Zourbanos, Hatzigeorgiadis, Tsiakaras, Chroni, & Theodorakis) conducted such a study. They hypothesized that instructor's positive behavior in the form of praise and encouragement would have a positive effect on participants' self-talk relevant to psych-up and confidence, and a negative effect on participants self-talk relevant to worry; that instructor's negative behavior in the form of negative evaluation and criticism would have a positive effect on participants' self-talk relevant to worry, and a negative effect on participants' self-talk relevant to psych-up and confidence and that instructor's behavior (either positive or negative) would not have an effect on participants self-talk relevant to anxiety control, disengagement, and somatic fatigue because the setting was not expected to raise anxiety levels, participants opted to participate to the experiment, and the physical requirements of the task were relatively low. The results showed only reverse effects for the impact of coaching behavior on self-talk, with positive coaching behavior negatively affecting negative self-talk and negative coaching behavior negatively affecting positive self-talk. The findings support with consistency that significant others' behavior is related to, and in fact can influence, the content of self-talk. Finally, the results revealed that positive and negative coaching behavior had different effects on the different self-talk dimensions, which further strengthens the multidimensional approach to the content and structure of self-talk. (Zourbanos, Hatzigeorgiadis, Tsiakaras, Chroni, & Theodorakis, 2010).

Another important factor in studying self-talk in relationship with social support, is the perception of outside influences. Therefore, Zourbanos and colleagues (2011) conducted a study with the purpose of testing the relationships between perceptions of received support provided by the coach and athletes' self-talk. According to the social cognition hypothesis relationships with

significant others can influence affective states and stimulate positive or negative thoughts (Lakey & Drew, 1997). Considering that the coach is among the most influential individuals with regard to individuals' sport involvement, the perceptions of support received from the coach may be an important determinant of athletes' self-talk. In their study the main hypotheses were that esteem support, as the most pertinent dimension of encouragement and positive reinforcement within the sport context, would positively predict the self-talk dimensions of psych up and confidence, and negatively predict the self-talk dimensions of worry, and somatic fatigue; emotional support, as the most relevant dimension to broader affective aspects, would positively predict the self-talk dimension of anxiety control and also confidence, and negatively predict the self-talk dimension of disengagement and informational support, as the dimension mostly related to guidance and instructions, would positively predict the self-talk dimension of instructions, and negatively predict the self-talk dimensions of worry and irrelevant thoughts The results showed that perceptions of support received by the coach were positively related with athletes' positive self-talk and negatively related with athletes' negative self-talk. The magnitude of the relationships between social support and negative self-talk was somewhat larger than that between social support and positive self-talk (Zourbanos, et al., 2011).

1.2.1 Transformational leadership

Transformational leadership is defined as a leadership approach that causes change in individuals and social systems. In its ideal form, it creates valuable and positive change in the followers with the end goal of developing followers into leaders. Enacted in its authentic form, transformational leadership enhances the motivation, morale and performance of followers through a variety of mechanisms. These include connecting the follower's sense of identity and self to the mission and the collective identity of the organization; being a role model for followers

that inspires them; challenging followers to take greater ownership for their work, and understanding the strengths and weaknesses of followers, so the leader can align followers with tasks that optimize their performance.

James MacGregor Burns (1978) first introduced the concept of transforming leadership in his descriptive research on political leaders, but this term is now used in organizational psychology as well. According to Burns, transforming leadership is a process in which "leaders and followers help each other to advance to a higher level of morale and motivation". Burns related to the difficulty in differentiation between management and leadership and claimed that the differences are in characteristics and behaviors. He established two concepts: "transforming leadership" and "transactional leadership". According to Burns, the transforming approach creates significant change in the life of people and organizations. It redesigns perceptions and values, and changes expectations and aspirations of employees. Unlike in the transactional approach, it is not based on a "give and take" relationship, but on the leader's personality, traits and ability to make a change through example, articulation of an energizing vision and challenging goals. Transforming leaders are idealized in the sense that they are a moral exemplar of working towards the benefit of the team, organization and/or community. Burns theorized that transforming and transactional leadership were mutually exclusive styles. Transactional leaders usually do not strive for cultural change in the organization but they work in the existing culture while transformational leaders can try to change organizational culture.

Another researcher, Bernard M. Bass (1985), extended the work of Burns (1978) by explaining the psychological mechanisms that underlie transforming and transactional leadership; Bass also used the term "transformational" instead of "transforming." Bass added to the initial concepts of Burns (1978) to help explain how transformational leadership could be measured, as

well as how it impacts follower motivation and performance. The extent to which a leader is transformational, is measured first, in terms of his influence on the followers. The followers of such a leader feel trust, admiration, loyalty and respect for the leader and because of the qualities of the transformational leader are willing to work harder than originally expected. These outcomes occur because the transformational leader offers followers something more than just working for self-gain; they provide followers with an inspiring mission and vision and give them an identity. The leader transforms and motivates followers through his or her idealized influence (earlier referred to as charisma), intellectual stimulation and individual consideration. In addition, this leader encourages followers to come up with new and unique ways to challenge the status quo and to alter the environment to support being successful. Finally, in contrast to Burns, Bass suggested that leadership can simultaneously display both transformational and transactional leadership. Now 30 years of research and a number of meta-analyses have shown that transformational and transactional leadership positively predicts a wide variety of performance outcomes including individual, group and organizational level variables (Bass, 2008). The full range of leadership introduces four elements of transformational leadership:

- o *individualized consideration* – the degree to which the leader attends to each follower's needs, acts as a mentor or coach to the follower and listens to the follower's concerns and needs. The leader gives empathy and support, keeps communication open and places challenges before the followers. This also encompasses the need for respect and celebrates the individual contribution that each follower can make to the team. The followers have a will and aspirations for self-development and have intrinsic motivation for their tasks.

o *intellectual stimulation* – the degree to which the leader challenges assumptions, takes risks and solicits followers' ideas. Leaders with this style stimulate and encourage creativity in their followers. They nurture and develop people who think independently. For such a leader, learning is a value and unexpected situations are seen as opportunities to learn. The followers ask questions, think deeply about things and figure out better ways to execute their tasks.

o *inspirational motivation* – the degree to which the leader articulates a vision that is appealing and inspiring to followers. Leaders with inspirational motivation challenge followers with high standards, communicate optimism about future goals, and provide meaning for the task at hand. Followers need to have a strong sense of purpose if they are to be motivated to act. Purpose and meaning provide the energy that drives a group forward. The visionary aspects of leadership are supported by communication skills that make the vision understandable, precise, powerful and engaging. The followers are willing to invest more effort in their tasks, they are encouraged and optimistic about the future and believe in their abilities.

o *idealized influence* – Provides a role model for high ethical behavior, instills pride, gains respect and trust.

Due to the impact of transformational leadership on different social and economic settings, it is pertinent to ask whether they are applicable to sports, or more specifically, to the study of the figure most associated with leadership responsibilities: the coach. Everything that is needed to study transformational leadership is present in sports: there are leaders (e.g., coaches, sport managers, team captains, and athletes without formal authority but who exert a strong influence on the team) and followers (e.g., other athletes), there is a goal or purpose (e.g., winning

competitions, achieving a better personal record, and improving athletic ability), and there is usually a competitive and stressful environment (e.g., competing for a championship at local, regional, national, or international levels). In addition, sports are probably a context in which social evaluations are more present than other social and economic contexts. For example, the media and fans evaluate the performance of athletes and teams on a daily basis. Besides, the need to achieve the best sports performance is associated with a turbulent environment where a tenuous line divides winning and losing or success and failure. These factors can increase the need for transformational leaders. Hawkins and Tolzin (2002) confirmed this supposition when they argued that American baseball teams are postmodern organizations that operate in a turbulent context and face uncertain conditions that necessitate new forms of leadership that surpass traditional models. These authors proposed that transformational leadership is a prerequisite for team success.

The interest in transformational leadership in sports is relatively new. The first studies conducted on this topic occurred in the 90's. This fact is surprising because so much research has been conducted regarding this subject in contexts in which leadership does not seem as important as in sports. Interestingly, the research that has been conducted in sports has taken a broad approach by considering different agents as the primary sources of transformational influence.

Examining the influence of coaches is especially important due their role in successful sporting performance (Gould, Greenleaf, Chung, & Guinan, 2002). In fact, coaches represent a predominant source of transformational influence on athletes. They should be effective at several domains in which transformational leaders are particularly successful, specifically (a) developing personal and positive relationships with athletes to improve their commitment and satisfaction; (b) preparing athletes and teams to improve their physical and mental skills that ultimately contribute to achieving high performance; (c) creating a strong team spirit and a cohesive team; and (d)

establishing challenging goals that motivate and involve the athletes. Considering the above examples, sports are an excellent context to study the potential transformational impact of coaches. Thus, it should be interesting to find whether this leadership approach explains coaching efficacy.

Similarly, Arthur, Woodman, Ong, Hardy, and Ntoumanis (2011) tested the possibility that athlete personality (e.g., narcissism) moderates the coach behavior–coach effectiveness relationship using Bass's (1985) transformational leadership model as a framework. In this study, they administrated the Differentiated Transformational Leadership Inventory (Callow, Smith, Hardy, Arthur, & Hardy, 2009) and indices of follower effort. Their results revealed that transformational leadership was positively associated with leader-inspired extra effort, and that athlete narcissism moderated the relationship between fostering acceptance of group goals and athlete effort as well as the relationship between high performance expectations and athlete effort. The authors concluded that transformational leadership behaviors based on providing athletes with opportunities for individual self-enhancement and glorification have less impact on athletes who are high in narcissism than on those who are relatively low in this construct.

Other studies have observed the transformational impact of teammates by analyzing peer leadership. Callow et al. (2009) used the Differentiated Transformational Leadership Inventory, which is an adapted instrument of transformational leadership in sports based on the MLQ-5X, to explore the relationship between team cohesion and performance level. In this case, athletes evaluated the leadership behaviors of their team captain and found that some transformational behaviors (e.g., fostering acceptance of group goals, promoting team work, holding high performance expectations, and using individual consideration) predicted task cohesion, whereas other transformational behaviors (e.g., fostering acceptance of group goals and promoting teamwork) predicted social cohesion.

Taken together, the results of applying the construct of transformational leadership to sports are encouraging. This effect is evident even when we consider that the transformational influence can be extended to several sources of leadership. Thus, the phenomenon of transformational leadership represents a broad and general concept.

1.3 Personal factors and self-talk

In addition to understanding the way the characteristics of an individual's surroundings are related to self-talk, it is also important to understand how characteristics of the individual influence self-talk. Starting with a definition of personal factors, this section includes a review of research related to the stable characteristics of individuals and how these characteristics interact with self-talk behaviour. Research from mainstream psychology is reviewed before moving to sport-specific findings related to personal factors and self-talk. Suggestions for future research are also provided. Consideration of personality may be useful in explaining individual differences in self-talk use and effectiveness. Personality differences may help explain why there are large individual differences in terms of how self-talk is used (Alderson-Day & Fernyhough, 2015), why some people engage in self-talk almost constantly and others engage in self-talk extremely rarely (Hurlburt, Heavey, & Kelsey, 2013), and why some people perform better but others perform worse after using positive self-talk (Van Raalte, Cornelius, Brewer, & Hatton, 2000).

Self-talk plays a key role in performance and self-regulation. One of the antecedents that may influence individual's self-talk are achievement goal orientations (Zourbanos, Papaioannou, Argyropoulou, & Hatzigeorgiadis, 2014). AGT is a central theoretical framework in the literature often used by researchers and sport psychologists to investigate why some individuals are more driven than others in sport and physical activity (Roberts, Treasure, & Conroy, 2007). Achievement goals were primarily examined with the use of a dichotomous model that distinguished between

two types of goals, namely task and ego (Nicholls, 1984) or learning and performance goals (Dweck & Leggett, 1988). Task-oriented individuals adopt self-referenced criteria to define success, focus on mastery, use effective cognitive strategies to master a task, are intrinsically motivated, give high value to effort and seek for personal improvement (Roberts, Treasure, & Conroy, 2007). On the other hand, ego-oriented individuals evaluate success through the comparison of their ability with that of other people, focus on outperforming others, value high the normative ability and pursue the exhibition of high normative ability. In their review of studies in physical activity, Biddle et al. (2003) concluded that task orientation was a significant predictor of enjoyment, satisfaction, intrinsic motivation, positive affect and perceived competence and that ego orientation significantly predicted cognitive anxiety, stress and cognitive interference.

In the following years, Elliot and his colleagues modified the dichotomous model by proposing a trichotomies model that also included mastery, performance approach, and performance avoidance goals (Elliot & Church, 1997) and then a 2x2 model that included mastery approach, mastery avoidance, performance approach and performance avoidance goals (Elliot & McGregor, 2001). In the sport literature, based on the 2x2 framework, Papaioannou et al. (2012) revealed in their review that mastery approach goals were connected to the most desirable motivational outcomes in sport and physical education, while performance approach goals were associated with fewer but still positive motivational outcomes. Correspondingly, avoidance goals presented the less adaptive patterns of motivation and behavior.

In general, two different research approaches are evident in the self-talk literature in sport. The first refers to self-talk as a cognitive strategy focusing on the beneficial effects of self-talk on performance enhancement (Mallett & Hanrahan, 1997). The second approach examines self-talk in the form of automatic thoughts exploring the factors that shape and influence athletes' self-talk

content (Zourbanos, et al. 2010, 2011). As stated above one of the personal antecedents that influences individual's self-talk are the achievement goal orientations. Regarding research on the relation between achievement goals and thoughts in sport, Hatzigeorgiadis and Biddle (1999) revealed that task orientation was negatively related to disengagement thoughts, irrespective of perceptions of competence. Furthermore, athletes with a lower perceived competence ego orientation were reported to be positively related to experiencing disengagement thoughts, whereas in athletes with a higher perceived competence no relationship between ego orientations and disengagement thoughts was shown.

In another study, Hatzigeorgiadis and Biddle (Hatzigeorgiadis & Biddle, 2002) found that athletes with a high ego and a low task orientation goal were more vulnerable to disengagement thoughts than athletes with different goal profiles. However, no consistent differences between the two goal profiles emerged concerning worrying thoughts. Finally, regarding the relationships between perceived competence and cognitive interference (negative thoughts), Hatzigeorgiadis and Biddle (Hatzigeorgiadis & Biddle, 2000) revealed low but significant relationships. Overall, the results of the above studies seem to suggest that task orientation has more positive outcomes on the individual's thought patterns, whereas ego orientation depends more on other personal factors such as perceived competence or situational factors, which can lead to failure (Nicholls, 1984).

According to SDT autonomous or self-determined motivation (as opposed to controlled motivation and amotivation) leads to more positive cognitive, affective and behavioral outcomes. A considerable amount of research in a variety of life domains (e.g., sport and exercise, education, workplace, healthcare, psychotherapy), has supported the -above theoretical postulate. More particularly, with regard to the sport context, autonomous or self-determined motivation has been

found to positively predict a plethora of positive consequences, such as greater effort and persistence in sport, better sport performance, the use of more adaptive coping strategies during a stressful competition, and higher levels of flow and concentration (e.g., Amiot, Gaudreau, & Blanchard, 2004; Pelletier, Fortier, Vallerand, & Brière, 2001; see Vallerand, 2007 for a review). In contrast, controlled motivation and amotivation has been positively associated with a variety of maladaptive consequences including the use of disengagement-oriented coping strategies, athlete burn-out, and drop out from sport (e.g., Amiot et al., 2004; Lonsdale et al., 2009; Pelletier, et al., 2001). In sport psychology, although a plethora of studies grounded in self-determination theory have studied the relationships between behavioral regulations with a variety of cognitive, affective, and behavioral variables, to date no one study has examined the relationships between behavioral regulations and athletes' self-talk.

1.3.1   Behavioral regulation and self-determined motivation

Motivation concerns energy, direction, persistence and equability—all aspects of activation and intention. Motivation has been a central and perennial issue in the field of psychology, for it is at the core of biological, cognitive, and social regulation. Perhaps more important, in the real world, motivation is highly valued because of its consequences: Motivation produces. It is therefore of preeminent concern to those in roles such as manager, teacher, religious leader, coach, health care provider, and parent that involve mobilizing others to act.

Self-determination theory (SDT) is an approach to human motivation and personality that uses traditional empirical methods while employing an organismic metatheory that highlights the importance of humans' evolved inner resources for personality development and behavioral self-regulation (Ryan, Kuhl, & Deci, Nature and autonomy: Organizational view of social and neurobiological aspects of self-regulation in behavior and development, 1997). Thus, its arena is

the investigation of people's inherent growth tendencies and innate psychological needs that are the basis for their self-motivation and personality integration, as well as for the conditions that foster those positive processes. Inductively, using the empirical process, we have identified three such needs—the needs for competence (Harter, 1978), relatedness (Baumeister & Leary, 1995), and autonomy (Deci, 1975)—that appear to be essential for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being.

Much of the research guided by SDT has also examined environmental factors that hinder or undermine self-motivation, social functioning, and personal well-being. Although many specific deleterious effects have been explored, the research suggests that these detriments can be most parsimoniously described in terms of thwarting the three basic psychological needs. Thus, SDT is concerned not only with the specific nature of positive developmental tendencies, but it also examines social environments that are antagonistic toward these tendencies.

Because of the functional and experiential differences between self-motivation and external regulation, a major focus of SDT has been to supply a more differentiated approach to motivation, by asking what kind of motivation is being exhibited at any given time. By considering the perceived forces that move a person to act, SDT has been able to identify several distinct types of motivation, each of which has specifiable consequences for learning, performance, personal experience, and well-being. Also, by articulating a set of principles concerning how each type of motivation is developed and sustained, or forestalled and undermined, SDT at once recognizes a positive thrust to human nature and provides an account of passivity, alienation, and psychopathology.

SDT has been developed and researched through a set of five mini theories, which together comprise the theory's formal framework. Each mini‑theory was initially introduced to explain phenomena that emerged from experimental and/or field research on factors affecting human motivation and optimal functioning. We briefly list and define each of these in order of their introduction into SDT.

- o *Cognitive Evaluation Theory (CET)* concerns how social contexts and interpersonal interaction either facilitate or undermine intrinsic motivation. Intrinsic motivation is defined as doing something for its own sake, and applies to activities such as play, sport, and leisure.

- o *Organismic Integration Theory (OIT)* addresses the process of internalization of various extrinsic motives. Here the focus is on the continuum of internalization, extending from external regulation, to introjection (for example, engaging in behaviors to avoid guilt or feel approval), to identification, to integration.

- o *Causality Orientations Theory (COT)* describes individual differences in how people orient to different aspects of the environment in regulating behaviour. When autonomy‑oriented, a person orients to what interests them and acts with congruence. When control‑oriented, a person primarily regulates behaviour by orienting to social controls and reward contingencies, and when impersonally oriented a person focuses on their lack of personal control or competence.

- o *Basic Psychological Needs Theory (BPNT)* elaborates on the concept of basic needs by connecting them directly with wellness. BPNT posits that each need exerts independent effects on wellness, and moreover that the impact of any behaviour or event on well‑being is largely a function of its relations with need satisfaction.

o *Goal Contents Theory (GCT).* Research has shown that materialism and other extrinsic goals such as fame or image do not tend to enhance need satisfaction, and thus do not foster well‑being, even when one is successful at attaining them.

Intrinsic Motivation

Perhaps no single phenomenon reflects the positive potential of human nature as much as intrinsic motivation, the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn. Develop mentalists acknowledge that from the time of birth, children, in their healthiest states, are active, inquisitive, curious, and playful, even in the absence of specific rewards (Harter, 1978). The construct of intrinsic motivation describes this natural inclination toward assimilation, mastery, spontaneous interest, and exploration that is so essential to cognitive and social development and that represents a principal source of enjoyment and vitality throughout life (Ryan, 1995).

Yet, despite the fact that humans are liberally endowed with intrinsic motivational tendencies, the evidence is now clear that the maintenance and enhancement of this inherent propensity requires supportive conditions, as it can be fairly readily disrupted by various no supportive conditions. Thus, our theory of intrinsic motivation does not concern what causes intrinsic motivation (Ryan, Kuhl, & Deci, 1997); rather, it examines the conditions that elicit and sustain, versus subdue and diminish, this innate propensity.

Within sport psychology, self-determination theory (Deci & Ryan, 2000) has been prominent in progressing conceptualization of types of sport motivation in terms of a qualitative continuum. That is, SDT emphasizes the degree to which motivation regulations for a targeted behaviour are self-determined (autonomous), controlled, or lack motivation altogether. Past work points to the positive implications of self-determined forms of motivation for young peoples'

cognitions, affect and behaviors in the sport domain (Álvarez, Balaguer, Castillo, & Duda, 2009). Indeed, there is evidence that young athletes' autonomous motivation is positively related to indicators of their psychological well-being (Blanchard, Amiot, Perreault, Vallerand, & Provencher, 2009) and negatively associated with their intentions to dropout and objective dropout behaviour (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002).

According to SDT autonomous or self-determined motivation (as opposed to controlled motivation and amotivation) leads to more positive cognitive, affective and behavioral outcomes. A considerable amount of research in a variety of life domains (e.g., sport and exercise, education, workplace, healthcare, psychotherapy), has supported the -above theoretical postulate. More particularly, with regard to the sport context, autonomous or self-determined motivation has been found to positively predict a plethora of positive consequences, such as greater effort and persistence in sport, better sport performance, the use of more adaptive coping strategies during a stressful competition, and higher levels of flow and concentration (Vallerand, 2007).

Recent advances in examining the concomitants of autonomous and controlled regulations as well as amotivation have been possible due to the development of the Behavioral Regulation in Sport Questionnaire (BRSQ) (Lonsdale, Hodge, & Rose, 2009). The BRSQ is a self-report measure of the three broad types of motivation advanced by SDT (Deci & Ryan, 2002). According to Deci and Ryan (2000), motivation regulations that underpin behavioral engagement in activities such as sport are considered to lie on a continuum. This continuum reflects variations in the degree to which the purpose of behavioral engagement is internalized. Intrinsic motivation describes the motivation regulation that lies at the most autonomous end of the continuum (Viladrich, et al., 2013). Intrinsically motivated behaviors are undertaken for reasons such as the inherent enjoyment, interest, and satisfaction derived from engagement in the behaviour, and other reasons that might

be considered authentic to the individual. In contrast, when the motivation to engage in sport is fully or partially derived from something or someone separable from task participation, the regulation is described as extrinsic (Viladrich, et al., 2013). However, the degree to which the behavior's value and purpose has been internalized may vary (Deci & Ryan, 2000). According to SDT, this variability in internalization can be categorized into four types of extrinsic motivation, which are labelled as integrated, identified, introjected, and extrinsic. Deci and Ryan (2000) conceptualize integrated regulation as the most self-determined of the extrinsic regulations, lying closest to intrinsic motivation on the continuum. Integrated regulation describes when the athlete's behavioral engagement is brought into congruence with personally endorsed needs, values, and goals. Next on the continuum is identified regulation. When an athlete fully accepts, identifies with, and personally endorses the reasons to perform the behaviour (e.g. the benefits which may be derived) albeit does not enjoy the activity for its own sake, engagement is described as identified (Deci & Ryan, 2000). In contrast to integrated and identified regulations which are considered autonomous forms of extrinsic motivation, introjected behaviors are regulated by psychological contingencies and thus represent a controlled form of extrinsic motivation. Introjected behaviors are undertaken in order to avoid undesirable psychological responses such as guilt or shame, or because experiencing desirable psychological responses (such as self-worth) are dependent on performing the behaviour. When sporting behaviors are motivated by introjected regulations one is likely to feel that one "should" compete or train. (Viladrich, et al., 2013).

In sport psychology, although a plethora of studies grounded in self-determination theory have studied the relationships between behavioral regulations with a variety of cognitive, affective, and behavioral variables, to date no one study has examined the relationships between behavioral regulations and athletes' self-talk.

2   Purpose of the study

The current analysis attempted to address the gap in research by examining the relationship between personal and social factors with athlete's thoughts. In particular, the current study investigated relations between behavioral regulation as personal factor, with six specific variables, and social or coach related factor, with other seven variables, on positive and negative self-talk. The significance of the relationship is that it may inform an understanding of how coach leadership influences athletes inner thoughts. The study used validated and reliable measures to assess the variables under investigation.

The specific research questions were:

- *Are personal factors responsible for the variance in positive and negative self-talk?*

- *Which of the six behavioral regulation variables have a significant contribution on the variance of positive and negative self-talk?*

- *Are social factors responsible for the variance in positive and negative self-talk?*

- *Which of the seven coach related variables have a significant contribution on the variance of positive and negative self-talk?*

3   Hypotheses

Based on assumptions and previous studies which investigated the relationship between transformational leadership, behavioral regulation and self-talk it was hypothesized that:

(a) transformational leadership (coach related factors) would be related to athletes' positive and negative self-talk dimensions;

(b) there will be a positive relationship found between intellectual stimulation and inspirational motivation and positive self-talk. Furthermore, based on studies examining the effects

of coaches' behaviour on athletes' self-talk (e.g. Zourbanos et al. 2010, 2011) we assumed that transformational leadership influences athletes self-talk.

(c) behavioral regulation (personal factors) will be related to positive self-talk and negative self-talk;

(d) there will be a positive relationship found between intrinsic motivation and positive self-talk, and a negative relationship with negative self-talk. Furthermore, we assumed that behavioral regulation influences athletes self-talk.

4 Method

4.1 Participants and procedure

Participants were 286 athletes (56 females, 230 males) from Romania with a mean age of 15.86 years ($SD = 1.19$; range = 14-19). They were recruited from a variety of individual and team sports, from three different Sport Specific High Schools in Bucharest. Athletes had a mean of 7.39 years ($SD = 3.18$) in the sport. On average, participants were involved in training for 14 hours per week (M = 14.37; SD = 6.77) and the mean period of time training with their coach was 13 hours per week (M = 13.60; $SD = 6.91$). Permission to conduct the study was obtained by the High School Directors and professors. All athletes were informed that participation was voluntary and that their answers would remain anonymous and confidential; informed consent was provided by athletes, coaches and their parents (in case of athletes under 16 years). Also, instructions aimed at minimizing socially desirable responses were emphasized. The questionnaires were completed under the supervision of the author, without the presence of coach, in the beginning or in the end of a regular practice session.

4.2 Instruments

Translation of the following questionnaires from English to Romanian (see appendix:)

- o AUTOMATIC SELF-TALK QUESTIONNAIRE FOR SPORTS (ASTQS)

- o TEAM COACH LEADERSHIP SCALE (TCLS)

- o BEHAVIORAL REGULATION IN SPORT QUESTIONNAIRE (BRSQ)

In line with procedures outlined by Vallerand (1989), the translation of the three questionnaires into Romanian involved the following three steps: preparation of two preliminary Romanian versions of the questionnaires, the evaluation of the preliminary versions, and preparation and pretesting of the final experimental version of the questionnaire.

Preparation of Preliminary Romanian Versions of ASTQS, TCLS, BRSQ. The procedure used in this study followed the parallel back-translation procedure. This procedure involves translating the scale from the original to the target language by a bilingual individual. The translated version is then translated back to the original language by another bilingual individual without the help of the original scale. Two independent translators initiated separate back translation sequences, and other two bilingual individuals (applied sport psychologists) conducted the parallel back-translation procedure. These individuals were all very familiar with the field of sport psychology, questionnaire development and translation.

Evaluation of Preliminary English Versions of ASTQS, TCLS and BRSQ. The second phase provides an initial assessment of the adequacy of the translated versions of the scale and a final experimental Romanian version of the questionnaires. A committee formed of the individuals who participated in the back-translation procedures scrutinized each item from both the original scale and the two versions retranslated into English to see if the original items had been retranslated appropriately in the original language. When an original item had been appropriately retranslated

back into English, the Romanian item was considered adequate. The committee then focused on the quality of the Romanian language of the item in question, with the meaning conveyed by the items being more important than the word-for-word translation. Following the assessment of each item, an experimental version of the ASTQS, TCLS and BRSQ was prepared. The same procedures were used to prepare the scale format and instructions because different format presentations of the same scale can lead to different results.

Pretest of Experimental Scale. The final step involved pretesting the experimental version of the ASTQS, TCLS and BRSQ to verify that the experimenters' perspective and language corresponded to that of the target population. Thirteen high school athletes were asked to read the Romanian version of the ASTQS, TCLS and BRSQ and to indicate any questions they had with respect to the instructions or the items. This step led to some minor modifications to the questionnaires. The Romanian version of the ASTQS, TCLS and BRSQ was then ready to be used in research.

4.3 Measure

Self-talk in sports. The Romanian Version of Automatic Self-Talk Questionnaire for Sports-ASTQS (see appendix 2) translated from original English version, from (Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaioannou, 2009) was administered. The instrument consists of 40 items assessing four positive (19 items) and four negative (21 items) self-talk dimensions. Positive self-talk consists of the dimensions of confidence (e.g., I believe in myself), anxiety control (e.g., Keep calm), psych up (e.g., Do your best), instruction (e.g., Concentrate on what you have to do right now). Negative self-talk consists of the dimensions of worry (e.g., I will lose), disengagement (e.g., I want to quit), somatic fatigue (e.g., I feel tired), and irrelevant thoughts (e.g., I am hungry). Participants were asked to indicate how frequently they experienced

the thoughts that were listed during their last month practice sessions or competitions on a 5-point scale ranging from 0 (*never*) to 4 (*very often*). In a series of studies, Zourbanos et al. (2009) has supported the psychometric integrity of the ASTQS.

Transformational leadership was measured using the Romanian Version of the Team Coach Leadership Scale (TCLS) (see appendix 1), a questionnaire adapted from the version of the Differentiated Transformational Leadership Inventory (DTLI) (Callow, Smith, Hardy, Arthur, & Hardy, 2009). The adapted DTLI contains 35 items that form 7 subscales; individual consideration, inspirational motivation, intellectual stimulation, fostering acceptance of group goals and promoting team work, high performance expectations, appropriate role model, and contingency reward. Each item is rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (all of the time). Definitions of each subscale and corresponding items are given in Table 5.

Behavioral Regulation in Sport. The Romanian version of the Behavioral Regulation in Sport Questionnaire-BRSQ (see appendix 3), translated from the original English version from (Lonsdale, Hodge, & Rose, 2009), was used to measure the six types of motivational regulation as specified in SDT. This 36-item instrument includes six 4-item subscales designed to measure amotivation, external regulation, integrated regulation, introjected regulation, identified regulation, and intrinsic motivation. Following the stem "I participate in my sport...". Participants were asked to respond to the items using a 7-point Likert scale ranging from 1 (*Absolutely disagree*) to 7 (*Absolutely agree*). Evidence supporting the reliability and construct validity of the BRSQ scores has been previously reported (Lonsdale, Hodge, & Rose, 2009). Definitions of each subscale and corresponding items are given in Table 6.

5   Results

Complete data were available for 286 participants. Basic descriptive statistics and values of Cronbach Alpha are shown in Table 1.

Table 1

Basic Descriptive Statistics and Cronbach Alpha (N=286)

	Variable	Items	M	SD	α
	Self-talk				
1.	Positive self-talk	19	3.32	.66	.93
2.	Negative self-talk	21	1.02	.69	.91
	Team Coach Leadership				
3.	Intellectual stimulation	4	3.64	.80	.68
4.	Individual consideration	8	3.75	.69	.75
5.	Inspirational motivation	8	4.01	.77	.86
6.	Contingent reward	4	3.98	.86	.80
7.	Fostering acceptance of group goals	3	4.03	.92	.61
8.	High performance expectations	4	4.19	.68	.61
9.	Appropriate role model	4	3.57	.90	.69
	Behavioral Regulation				
10.	Intrinsic motivation	4	6.05	1.21	.82
11.	Integrated regulation	4	5.98	1.29	.87
12.	Introjected regulation	4	3.77	1.74	.68
13.	Amotivation	4	2.75	1.72	.83
14.	External regulation	4	3.10	1.69	.79
15.	Identified regulation	4	5.94	1.07	.67

Prior to conducing a hierarchical multiple regression, the relevant assumptions of this statistical analysis were tested. Firstly, a sample size of 286 was deemed adequate given thirteen independent variables to be included in the analysis (Tabachnick & Fidell, 2001). The assumption of singularity was also met as the independent variables (team coach leadership related and behavioral regulation subscales) were not a combination of other independent variables. Inter correlations between the multiple regression variables were reported in Table 2

Table 2

Pearson's correlations for all subscales (N=286)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
3	.328***	-.036												
4	.248***	-.065	.709***											
5	.354***	-.117	.687***	.757***										
6	.220***	-.019	.558***	.589***	.694***									
7	.251***	-.181	.488***	.473***	.627***	.439***								
8	.258***	-.125	.392***	.416***	.503***	.344***	.503***							
9	.196***	.001	.621***	.623***	.630***	.511***	.610***	.459***						
10	.386***	-.312	.271***	.194***	.308***	.199***	.371***	.297***	.249***					
11	.367***	-.271	.349***	.267***	.373***	.184**	.362***	.317***	.281***	.752***				
12	.003	.031	.137**	.096	.135**	.088	.147**	.098*	.130*	.124*	.209***			
13	-.184**	.326	-.015	-.004	-.050	-.002	-.078	-.117*	.044	-.302***	-.283***	.399***		
14	-.050	.248	.042	.039	-.008	-.038	.004	-.052	.093	-.134*	-.090	.556***	.626***	
15	.212***	-.169	.247***	.197***	.281***	.190**	.294***	.258***	.266***	.637***	.549***	.157**	-.143**	.011

The described subscales correspond to the numbers allocated in table 1

* p<0.05; ** p<0.01; *** p<0.00

Two hierarchical multiple regression were conducted with Positive and Negative Self-Talk as the dependent variables. Team coach leadership related subscales (intellectual stimulation, individual consideration, inspirational motivation, contingent reward, fostering acceptance of group goals, high performance expectations, appropriate role model) were entered at stage one of the regression. The behavioral regulation (intrinsic motivation, integrated regulation, introjected regulation, amotivation, external regulation, identified regulation) were entered at stage two.

Table 3

Summary of Hierarchical Regression Analysis with positive self-talk as dependent variable

Variable	β	t	R	R^2	ΔR^2
Step 1			.403	.163	.163
Intellectual Stimulation	.200	2.809**			
Individual Consideration	-.105	-1.172			
Inspirational Motivation	.270	2.900**			
Contingent Reward	-.044	-.726			
Foster Acceptance of Gr. Goals	.026	.456			
High Performance Expectations	.109	1.669			
Appropriate Role Model	-.093	-1.525			
Step 2			.506	.256	.093
Intellectual Stimulation	.159	2.307*			
Individual Consideration	-.076	-.876			
Inspirational Motivation	.231	2.568**			
Contingent Reward	-.016	-.277			
Foster Acceptance of Gr. Goals	-.027	-.494			
High Performance Expectations	.072	1.147			
Appropriate Role Model	-.079	-1.330			
Intrinsic Motivation	.157	3.181**			
Integrated Regulation	.049	1.098			
Introjected Regulation	-.042	-1.621			
Amotivation	-.038	-1.349			
External Regulation	.052	1.727			
Identified Regulation	-.063	-1.468			

*Note N=286; * p<0.05; ** p<0.01; *** p<0.001*

The first hierarchical multiple regression (see Table 3) revealed that at stage one, from the seven variables describing coach leadership, intellectual stimulation and inspirational motivation

contributed significantly to the regression model, $F_{(7,278)} = 7.719$, $p< .001$ and accounted for 16.3% of the variation in positive self-talk. Introducing the six behavioral regulation variables explained an additional 9.3% of variation in positive self-talk and this change in R^2 was significant, $F_{(13,272)} = 7.194$, $p < .001$. When all thirteen independent variables were included in stage two of the regression model, both intellectual stimulation and inspirational motivation remained significant predictors of positive self-talk. More than that the most important predictor of positive self-talk was intrinsic motivation. Altogether, the independent variables were accounted for 25.6% of the variance in positive self-talk.

Table 4

Summary of Hierarchical Regression Analysis with negative self-talk as dependent variable

Variable	β	t	R	R^2	ΔR^2
Step 1			.403	.163	.163
Intellectual Stimulation	.037	.477			
Individual Consideration	-.043	-.434			
Inspirational Motivation	-.111	-1.094			
Contingent Reward	.071	1.079			
Foster Acceptance of Gr. Goals	-.177	-2.848**			
High Performance Expectations	-.071	-.996			
Appropriate Role Model	.161	2.407*			
Step 2			.506	.256	.093
Intellectual Stimulation	.072	.974			
Individual Consideration	-.091	-.982			
Inspirational Motivation	-.058	-.605			
Contingent Reward	.067	1.071			
Foster Acceptance of Gr. Goals	-.116	-1.953*			
High Performance Expectations	-.003	-.038			
Appropriate Role Model	.108	1.704			
Intrinsic Motivation	-.110	-2.083*			
Integrated Regulation	-.015	-.306			
Introjected Regulation	-.037	-1.339			
Amotivation	.076	2.512*			
External Regulation	.059	1.834			
Identified Regulation	.012	.251			

*Note N=286; * p<0.05; ** p<0.01; *** p<0.001*

The second hierarchical multiple regression (see Table 4) revealed that at stage one, from the seven variables describing coach leadership, fostering acceptance of group goals (negatively) and appropriate role model (positively) contributed significantly to the regression model, $F(7,278)$ = 2.776, $p< .01$ and accounted for 6.5% of the variation in negative self-talk. Introducing the six behavioral regulation variables explained an additional 13.1% of variation in negative self-talk and this change in R^2 was significant, $F(13,272) = 5.113$, $p < .001$. When all thirteen independent variables were included in stage two of the regression model, fostering acceptance of group goals remained (negatively) significant predictor of negative self-talk, but appropriate role model was not significant anymore. Two other significant predictors of negative self-talk emerged, intrinsic motivation (negatively) and amotivation (positively). Altogether, the independent variables accounted for 19.6% of the variance in negative self-talk.

6   Discussions

The purpose of the study was, firstly, to examine the relationship between personal and social factors with athlete's thoughts. A hierarchical multiple regression was conducted witch model showed variations on positive and negative self-talk, at the influence of both behavioral regulation and coach related variables. The results provided significant evidence for the variance in self-talk in both steps of the regression.

Secondly, we tried to identify witch of the variables from the behavioral regulation and coach leadership scales are having a significant contribution for the variance in positive and negative self-talk. Analyzing the coefficients after the multiple regression, underlined that intellectual stimulation, inspirational motivation and intrinsic motivation are mainly influencing positive self-talk. In the relation with negative self-talk, significant values were found in foster acceptance of group goals, appropriate role model, intrinsic motivation and amotivation.

The results of the present study are in line with previous findings regarding social support in the broader sport psychology literature. A positive relationship was found between perceptions of received support provided by the coach and athletes' positive self-talk. Rees and Freeman (Rees & Freeman, 2007) tested the relationships between social support and self-confidence. They reported that both perceived and received support were associated with athletes' self-confidence. Zourbanos et al. (2006) claimed that esteem support was found to mediate the relationship between athletes' perception of supportive coaching behaviour and their positive self-talk. Furthermore, Rees et al. (1999) found relationships between social support dimensions of appraisal and belonging and performance components, namely positive tension and flow respectively, which they considered as positive thought patterns.

Practical implications

Considering coach and social influence, looking from an applied perspective, the present study was guided by the idea that because youth athletes are influenced by the coach, it is important to understand how their influence can affect youth athletes' self-talk. Zinsser, Bunker, and Williams (2006) suggested that in order to promote athletes' self-talk, coaches should encourage their athletes to use positive self-talk, reinforce their efforts, and advise them to adopt positive behavior even when competition circumstances seem unfavorable, highlighting a task-involving climate. Coaches are encouraged to provide their feedback in an empowering manner, which in turn develops positive thinking in order to have facilitative effects on self-efficacy. Papaioannou, Zourbanos, Krommidas, and Ampatzoglou (2012) suggested that coaches and parents should foster task-involving climates because this approach benefits both the person and society.

The implications considering the personal factors, such as behavior regulations suggest that for the maximization of athletes' positive self-talk, the satisfaction of volition aspect of intrinsic

motivation seems to be of the highest importance. Sport environments are encouraged to support athletes' basic psychological needs in order to foster more self-determined motivation toward sport and maximize athletes' positive self-talk, while simultaneously minimizing the use of negative self-talk. Zinsser et al. (2006) based on findings linking positive or negative thoughts to performance reported that inappropriate thinking or misguided thinking usually leads to negative feelings and poor performance, just as appropriate or positive thinking leads to enabling feelings and good performance. In other words, positive self-talk can be considered more appropriate to performers than negative self-talk.

Limitations and future research

Given the exploratory nature of the present investigation, there is a number of limitations that further research should address. Firstly, our results demonstrated existing relationships between the three constructs, however no causal links can be inferred from the present findings. We could only speculate that transformational leadership and behavioral regulation may influence athletes' self-talk, based on the theoretical grounds of motivation and on models of self-talk antecedents. Nevertheless, it is possible that the identified links reflect bidirectional relationships. Experimental investigation in this regard would provide us a deeper understanding on the relationships between the constructs. Since the experimenter in the study also authored the paper, the experimenter might have biased students' responses during the task. Regardless, a blind administration of the experiment would have been desirable.

Psychometrically validated instruments to capture participants' views on self-talk and to categorize participants into motivational styles would further this line of research significantly. Interestingly, the most recent sport and exercise psychology measurement publication fails to discuss self-talk instruments. Additionally, the development of a psychometrically sound

instrument to assess motivational styles would permit group profiles to be formed in a more conceptually consistent way. Researchers need to continue conducting studies to ascertain the factors that contribute to variations in self-talk. First, researchers should identify the types of personal or social factors that are most frequent amongst athletes. Second, researchers should determine what specific types of factors influence athlete's thoughts.

This study highlights the influence of the social and personal factors on athlete's thoughts. The findings provide valuable information regarding the relationships between behavioral regulation, coach related factors and athletes' thoughts. Most importantly, the research, underlines the significant variance in positive self-talk caused by intellectual stimulation, inspirational motivation and intrinsic motivation factors, as well as the variance caused by foster acceptance of group goals, appropriate role model, intrinsic motivation and amotivation factors on negative self-talk. Our results further support the theoretical postulation made by Zourbanos et al. (2010, 2011) who stressed the role of significant others, and in particular the coach, and claimed that athletes' self-talk is malleable to stimuli received from the social environment. Finally, taking into consideration the correlations between self-talk and performance, the necessity for healthy thinking mechanisms for young athletes, developed by the specialists from the sport system (coaches, sport psychologists, managers), is essential for the future of performance and professional sports.

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Tables

Table 5

Definitions of Each Subscale and Corresponding Items of the TCLS

Subscale Definition	***Individual Consideration****: The extent to which the coach is able to understand and meet the individual needs for growth and development of each athlete.*
Item	2. Treats each team member as an individual
	4. Helps team members to develop their strengths
	12. Considers that I have different strengths and abilities from others
	16. Recognizes that different athletes have different needs
	Inspirational Motivation*: The extent to which the coach is able to motivate athletes by providing inspiration and an incentive to perform well.*
	3. Talks optimistically. . .
	5. Talks in a way that makes me believe that I can succeed
	7. Talks enthusiastically. . .
	19. Expresses confidence. . .
	Intellectual Stimulation*: The extent to which the coach can challenge athletes cognitively.*
	1. Tries to help us work out how to solve problems
	9. Gets me to rethink the way that I do things
	11. Shows performers how to look at difficulties from a new angle
	21. Challenges me to think about problems in new ways
	Fostering Acceptance of Group Goals and Teamwork*: The extent to which the coach can facilitate team cohesion.*
	13. Encourages athletes to be team players
	15. Develops a strong team attitude and spirit among team members
	23. Gets the team to work together for the same goal
	High Performance Expectations*: The extent to which the coach provides high expectations for athlete behavior and performance.*
	14. Expects a lot from us
	18. Expects us to achieve high standards
	22. Will not settle for second best
	27. Always expects us to do our best
	Appropriate Role Model*: The extent to which the coach provides a positive behavioral model for athletes to follow.*
	17. Leads by example
	20. Leads from the front whenever he/she can
	24. Leads by 'doing' rather than simply 'telling'
	25. Is a good role model for me to follow
	Contingent Reward*: The extent to which the coach uses positive verbal reinforcement to strengthen desired athlete behaviors.*
	6. Gives me special recognition when I do very good work
	8. Gives us praise when we do good work
	10. Praises athletes when they show improvement

Table 6

Definitions of Each Subscale and Corresponding Items of the BRSQ

Subscale Definition	*Intrinsic motivation:*
Item	1. because I enjoy it.
	14. because I like it.
	21. because it's fun
	25. because I find it pleasurable.
	Integrated regulation:
	3. because it's a part of who I am
	4. because it's an opportunity to just be who I am
	9. because what I do in sport is an expression of who I am.
	35. because it allows me to live in a way that is true to my values
	Introjected regulation:
	5. because I would feel ashamed if I quit.
	7. because I would feel like a failure if I quit
	16. because I feel obligated to continue
	24. because I would feel guilty if I quit
	Amotivation:
	6. but the reasons why are not clear to me anymore
	8. but I wonder what's the point
	17. but I question why I continue.
	30. but I question why I am putting myself through this
	External regulation:
	13. because if I don't other people will not be pleased with me
	18. because I feel pressure from other people to play
	20. because people push me to play
	33. in order to satisfy people who want me to play
	Identified regulation:
	10. because the benefits of sport are important to me
	22. because it teaches me self-discipline
	27. because I value the benefits of my sport
	25. because it is a good way to learn things which could be useful to me in my life

Appendix

Appendix 1

TEAM COACH LEADERSHIP SCALE (TCLS)

Please answer the following questions in relation to your team coach. Please answer all the questions indicating how often the coach does these things.   **1 = not at all, 2 = once in a while, 3 = sometimes, 4 = fairly often, 5 = all of the time**

Please judge how frequently each statement fits your coach's normal behaviour.					
1. Tries to help us to work out how to solve problems	1	2	3	4	5
2. Treats each team member as an individual	1	2	3	4	5
3. Talks optimistically about the future	1	2	3	4	5
4. Helps team members to develop their strengths	1	2	3	4	5
5. Talks in a way that makes me believe I can succeed	1	2	3	4	5
6. Gives me special recognition when I do very good work	1	2	3	4	5
7. Talks enthusiastically about what needs to be accomplished	1	2	3	4	5
8. Gives us praise when we do good work	1	2	3	4	5
9. Gets me to re-think the way I do things	1	2	3	4	5
10. Praises athletes when they show improvement	1	2	3	4	5
11. Shows performers how to look at difficulties from a new angle	1	2	3	4	5
12. Considers that I have different strengths and abilities from others	1	2	3	4	5
13. Encourages athletes to be team players	1	2	3	4	5
14. Expects a lot from us	1	2	3	4	5
15. Develops a strong team attitude and spirit among team members	1	2	3	4	5
16. Recognizes that different athletes have different needs	1	2	3	4	5
17. Leads by example	1	2	3	4	5
18. Expects us to achieve high standards	1	2	3	4	5
19. Expresses confidence that goals will be achieved	1	2	3	4	5
20. Provides training that helps me to improve my performance	1	2	3	4	5
21. Leads from the front whenever he/she can	1	2	3	4	5
22. Challenges me to think about problems in new ways	1	2	3	4	5
23. Will not settle for second best	1	2	3	4	5
24. Gets the team to work together for the same goa	1	2	3	4	5
25. Leads by "doing" rather than simply "telling"	1	2	3	4	5
26. Is a good role model for me to follow	1	2	3	4	5
27. Always recognizes our achievements	1	2	3	4	5
28. Coaches team members to help them improve their performance	1	2	3	4	5
29. Always expects us to do our best	1	2	3	4	5
30. Cares about my needs	1	2	3	4	5
31. Understands that I have different needs than others	1	2	3	4	5
32. Talks optimistically about the team's prospects	1	2	3	4	5
33. Express confidence in me	1	2	3	4	5
34. Inspires me to do the best I can	1	2	3	4	5
35. Expresses to me that I make a valuable contribution to the team	1	2	3	4	5

Appendix 2

Automatic Self-Talk Questionnaire for Sports (ASTQS)

On the following questionnaire, there are phrases describing athletes' thoughts. Please use the rating scale below to indicate, based on your latest competitions, thoughts you usually experience or intentionally use while performing. **0 =never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often**					
1.	I am going to lose	0	1	2	3	4
2.	I want to stop	0	1	2	3	4
3.	I am thirsty	0	1	2	3	4
4.	My body is not in a good condition	0	1	2	3	4
5.	I'm wrong again	0	1	2	3	4
6.	I want to get out of here	0	1	2	3	4
7.	What will I do later tonight	0	1	2	3	4
8.	I am tired	0	1	2	3	4
9.	I am not as good as the others	0	1	2	3	4
10.	I can't keep going	0	1	2	3	4
11.	I am hungry	0	1	2	3	4
12.	Today I 'suck'	0	1	2	3	4
13.	I am not going to reach my goal	0	1	2	3	4
14.	I am fed-up	0	1	2	3	4
15.	I want to take a shower	0	1	2	3	4
16.	My body doesn't help me today	0	1	2	3	4
17.	I cannot concentrate	0	1	2	3	4
18.	I think I'll stop trying	0	1	2	3	4
19.	My legs/arms are shaking from tiredness	0	1	2	3	4
20.	I am not going to make it	0	1	2	3	4
21.	What will others think of my poor performance	0	1	2	3	4
22	Let's go	0	1	2	3	4
23	Relax	0	1	2	3	4
24	I believe in me	0	1	2	3	4
25	Concentrate on your goal	0	1	2	3	4
26	Power	0	1	2	3	4
27	Don't get upset	0	1	2	3	4
28	I am very well prepared	0	1	2	3	4
29	Focus on what you need to do now	0	1	2	3	4
30	Give 100%	0	1	2	3	4
31	Calm down	0	1	2	3	4
32	I feel strong	0	1	2	3	4
33	Concentrate on your game	0	1	2	3	4
34	Do your best	0	1	2	3	4
35	No stress	0	1	2	3	4
36	I can make it	0	1	2	3	4
37	Focus on your technique	0	1	2	3	4
38	Strong	0	1	2	3	4
39	I believe in my abilities	0	1	2	3	4
40	Concentrate	0	1	2	3	4

Appendix 3

BEHAVIORAL REGULATION IN SPORT QUESTIONNAIRE (BRSQ)

Using the scale provided, please indicate how true each of the following statements is for you. When deciding if this is one of the reasons why you participate, please think about all the reasons why you participate. Some items may appear similar but please respond to all the statements by filling the appropriate circle completely
1 = Not at all true, 2 = Rarely true, 3 = once in a while true, 4 = Somewhat true, 5 = fairly often true, 6= usually true, 7 =Very True

I participate in my sport…

1.	because I enjoy it.	1	2	3	4	5	6	7
2.	because of the pleasure I experience when I feel completely absorbed in my sport.	1	2	3	4	5	6	7
3.	because it's a part of who I am.	1	2	3	4	5	6	7
4.	because it's an opportunity to just be who I am.	1	2	3	4	5	6	7
5.	because I would feel ashamed if I quit.	1	2	3	4	5	6	7
6.	but the reasons why are not clear to me anymore.	1	2	3	4	5	6	7
7.	because I would feel like a failure if I quit.	1	2	3	4	5	6	7
8.	but I wonder what's the point.	1	2	3	4	5	6	7
9.	because what I do in sport is an expression of who I am.	1	2	3	4	5	6	7
10.	because the benefits of sport are important to me.	1	2	3	4	5	6	7
11.	because I enjoy the feeling of achievement when trying to reach long-term goals.	1	2	3	4	5	6	7
12.	because I enjoy the feeling of success when I am working towards achieving something important.	1	2	3	4	5	6	7
13.	because if I don't other people will not be pleased with me.	1	2	3	4	5	6	7
14.	because I like it.	1	2	3	4	5	6	7
15.	I enjoy learning something new about my sport.	1	2	3	4	5	6	7
16.	because I feel obligated to continue.	1	2	3	4	5	6	7
17.	but I question why I continue.	1	2	3	4	5	6	7
18.	because I feel pressure from other people to play.	1	2	3	4	5	6	7
19.	because of the excitement I feel when I am really involved in the activity.	1	2	3	4	5	6	7
20.	because people push me to play.	1	2	3	4	5	6	7
21.	because it's fun.	1	2	3	4	5	6	7
22.	because it teaches me self-discipline.	1	2	3	4	5	6	7
23.	because I enjoy doing something to the best of my ability.	1	2	3	4	5	6	7
24.	because I would feel guilty if I quit.	1	2	3	4	5	6	7
25.	because I find it pleasurable.	1	2	3	4	5	6	7
26.	because I like learning how to apply new techniques.	1	2	3	4	5	6	7
27.	because I value the benefits of my sport.	1	2	3	4	5	6	7
28.	because I enjoy learning new techniques.	1	2	3	4	5	6	7
29.	because I love the extreme highs that I feel during sport.	1	2	3	4	5	6	7
30.	but I question why I am putting myself through this.	1	2	3	4	5	6	7
31.	because it is a good way to learn things which could be useful to me in my life.	1	2	3	4	5	6	7
32.	because of the positive feelings that I experience while playing my sport.	1	2	3	4	5	6	7
33.	in order to satisfy people who, want me to play.	1	2	3	4	5	6	7
34.	because I get a sense of accomplishment when I strive to achieve my goals.	1	2	3	4	5	6	7
35.	because it allows me to live in a way that is true to my values.	1	2	3	4	5	6	7
36.	for the pleasure it gives me to know more about my sport.	1	2	3	4	5	6	7