Goal-directed and spontaneous self-talk in anger- and anxiety-eliciting sport-situations

Alexander T. Latinjak
EUSES – School for Health and Sport Sciences, University of Girona

Antonis Hatzigeorgiadis & Nikos Zourbanos
University of Thessaly, Greece

The purpose of this study was to explore differences in the occurrence and in the content of spontaneous and goal-directed self-talk in anger- and anxiety eliciting situations. A total of 62 male and 25 female athletes (M_{age} = 19.66, SD = 2.07) agreed to participate. The results showed that in anger-eliciting situations, spontaneous self-talk was generally negative and retrospective, whereas in anxiety-eliciting situations, spontaneous self-talk was positive and negative as well as anticipatory. Goal-directed self-talk generally aimed at creating activated states, regulating behaviour and focusing on positive predictions, even though differences among both emotion-eliciting situations were also detected.

POST-PRINT VERSION

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

Goal-directed and spontaneous self-talk in anger- and anxiety-eliciting sport-situations

Self-talk plays a key role in performance and self-regulation (Tod, Thatcher, McGuigan, & Thatcher, 2009; Zourbanos, Papaioannou, Argyropoulou, & Hatzigeorgiadis, 2014). Hence, it is not surprising that in the last decade self-talk has been receiving increasing research attention in sport psychology, and is, therefore, present in almost all contemporary handbooks in this area (Brown, 2011; Hardy, Oliver, & Tod, 2009; Hatzigeorgiadis, Zourbanos, Latinjak, & Theodorakis, 2014; Theodorakis, Hatzigeorgiadis, & Zourbanos, 2012; Van Raalte, 2010). Beyond sport psychology, self-talk has also been considered an important aspect in other areas of psychology. For instance, self-talk has been linked to the treatment of emotional disorders, with special focus on anxiety (Kendall et al., 2016), communication apprehension and public speaking anxiety (Shi, Brinthaupt, & McCree, 2015), and academic performance (Sánchez, Carvajal, & Saggiomo, 2015).

Since publications related to self-talk have multiplied over the last few years, some researchers have shifted part of their efforts to identifying different paradigms in self-talk investigation (Hardy et al., 2009; Hatzigeorgiadis et al., 2014). Accordingly, one identified line of research has focused on the effects of strategic self-talk interventions on cognitive, affective and performance outcome measures (e.g., Cutton & Landin, 2007; Latinjak, Torregrosa, & Renom, 2011; Weinberg, Miller, & Horn, 2012). Generally, these studies have exemplified how to implement self-talk strategies and have evidenced their positive effects in sport (Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011). A second identified line of research has examined the content of automatic self-talk (e.g., Burton, Gillham, & Glenn, 2011; Tovares, 2010; Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaioannou, 2009) as well as its antecedents and consequences (e.g., Oliver, Markland, Hardy, & Petherick, 2008; St Claire Gibson & Foster, 2007; Zourbanos et al., 2011).

One main difference between the two research paradigms is the way distinct types of self-talk are classified. In regard to self-talk interventions, strategically designed cue words or phrases have usually been classified as either instructional or motivational, based on their expected effects (Hardy, Gammage, & Hall, 2001; Theodorakis, Weinberg, Natsis, Douma, & Kazakas, 2000). Nevertheless, other types such as anxiety-controlling

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

self-talk (Hatzigeorgiadis, Zourbanos, & Theodorakis, 2007) or self-feedback (Latinjak et al., 2011), have also been used. As for automatic self-talk, these emergent self-statements have recurrently been classified into positive (e.g., well done) or negative (e.g., you will lose), based on their content (Hardy, 2006). Furthermore, finer distinctions among different types of positive and negative self-talk have been established through the development of research instruments assessing athlete self-talk (Hatzigeorgiadis & Biddle, 2000; Zourbanos et al., 2009).

More specifically, Hatzigeorgiadis and Biddle (2000) developed the Thought Occurrence Questionnaire for Sport (TOQS), consisting of three subscales assessing worries related to performance, thoughts of escape, and task-irrelevant thoughts. More recently, Zourbanos et al. (2009) developed the Automatic Self-Talk Questionnaire for Sport (ASTQS), a more inclusive measure of athletes' self-talk describing four types of positive self-talk (psych-up statements, confidence building statements, instructional statements, and anxiety controlling statements), three types of negative self-talk (worries, statements about disengagement, and statements about somatic fatigue) and irrelevant self-talk. Whereas, Oliver et al. (2008), based on autonomy-supportive versus controlling environments using the 'think aloud' method of cognitive assessment, classified automatic thoughts as positive task focused speech, negative task focused speech, and non-task focused speech. Another classification of self-talk was based on the Structural Analysis of Social Behavior model (Benjamin, 1973) and its two underlying dimensions, affiliation and interdependence. Specifically, Conroy and Metzler (2004) described eight categories of self-talk: self-emancipate, self-affirm, active self-love, self-protect, self-control, self-blame, self-attack, and self-neglect (Benjamin, 1996). Nevertheless, despite its theoretically sound underpinnings, to the best of our knowledge, this alternative taxonomy has had little impact on the self-talk literature, with one notable exception (Conroy & Coatsworth, 2007).

Recently, previous classifications of automatic self-talk (Zourbanos et al., 2009) have been challenged by the distinction of thoughts between undirected and goal-directed used in general psychology (e.g., Christoff, 2012; Ickes & Cheng, 2011). Further, undirected thoughts can be categorized into mind-wandering, when the content is unrelated to the concurrent context and task; stimulus independent thoughts, when the content is related to the concurrent context but not the task; and spontaneous thoughts, when the content is related to the concurrent context and task.

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

In a recent study about automatic self-talk, Latinjak, Zourbanos, López-Ros and Hatzigeorgiadis (2014) used this previous taxonomy about thoughts to inquire into the content and structure of spontaneous and goal-directed self-talk. Based on previous definitions (Christoff, Gordon, & Smith, 2011; Klinger, 2009), spontaneous self-talk includes unintended, non-working, non-instrumental statements that come to mind unbidden and effortless, but, nevertheless, linked to the task or activity at hand and relevant contextual stimuli. In contrast, goal-directed self-talk consists of statements deliberately employed towards solving a problem or making progress on a task.

According to Latinjak, Zourbanos et al. (2014), there are several differences between both kinds of automatic self-talk. First, in their structure: spontaneous self-talk varies in terms of valence (from positive to negative; e.g., "I am the best/ I am the worst") and time perspective (from past-related to future-related; e.g., "What did I do? / I will win"), whereas goal-directed self-talk varies in terms of the time orientation (from past-oriented to future-oriented; e.g., "everyone makes mistakes/ it's easy, you can do it") and activation (from low to high; e.g., "relax/ give 100%"). Second, in their content: spontaneous self-talk mostly describes, evaluates and explains past outcomes, and makes predictions concerning upcoming events, whereas goal-directed self-talk involves changing appraisals and affective states and promoting positive affective states, task instructions and positive predictions. Lastly, in their wording: spontaneous self-talk is formulated almost always in first person and rarely in second person (e.g., "I can win"), whereas goal-directed self-talk frequently refers to the self in second person, and less in first (e.g., "you can win").

With regard to structure, the identification of the two time dimensions (one for spontaneous, and one for goal-directed self-talk) is relatively new in sport psychology literature, while valence and arousal have previously been used in research with self-talk (Hardy, Hall, & Alexander, 2001). Therefore, Latinjak, Zourbanos et al. (2014) have provided a more thorough description of these two time dimensions. Generally, the main difference between the two time dimensions lies in their foundation. Time perspective differentiates between statements based on their content; whereas time orientation reflects the purpose or the function of the direction provided by the goal-directed statement. Consequently, the categories placed on both time continuums are distinct. On the one hand, time perspective discriminates between anticipatory (e.g., "I will win") and retrospective statements (e.g., "That was incredibly well played"), based on whether they refer to something that happened in the past, or to something that is expected to happen

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

in the future. Moreover, those statements which refer to something that is happening at the time the statement is made, and which, consequently, are neither anticipatory nor retrospective, can be either present-related (e.g., "I am winning") or contextual (e.g., "I am a winner type"). On the other hand, time orientation, discriminates between past oriented statements which are directed towards cognitions about events that lie in the past (e.g., "Nothing happened"); past-present oriented statements which are directed towards affective states that emerged at some point in the past and endure until the present (e.g., "Don't be afraid"); present-future oriented statements which are directed towards affective states that appear at the moment and endure until some point in the future (e.g., "Give a 100%"); and future oriented statements which are directed towards expectations about the future (e.g., "You will succeed"). Altogether, the structure of spontaneous and goal-directed self-talk presented by Latinjak, Zourbanos et al. (2014) has the potential to accommodate all thoughts, and does not simply reflect some categories of self-talk.

Self-talk in emotion eliciting situations

The study of self-talk, in either research paradigm, has frequently been related to the study of emotions. Spontaneous self-talk, which refers mostly to fast, automatic, or unconscious processes (Evans, 2006), is an expressive of emotions (Van Raalte, Cornelius, Copeskey, & Brewer, 2014), whereas goal-directed and strategic self-talk, which refer to slow, effortful, and conscious processes (Evans, 2006), represent a reaction to an emotion-eliciting situation and the spontaneous self-talk in it (Latinjak, Zourbanos et al., 2014). The effects of strategic self-talk interventions, for instance, have been tested in anxiety-eliciting situations (Hatzigeorgiadis et al., 2007). Moreover, emotional control has been identified as one of the main self-talk functions (Theodorakis, Hatzigeorgiadis, & Chroni, 2008). Regarding automatic self-talk, Conroy and Metzler (2004) explored the relationship between different forms of cognitive anxiety and self-talk. They reported strong relationships between fear of failure and sport anxiety with negative self-talk while failing; yet while winning these relationships between anxiety and self-talk were week.

Moreover, Zourbanos et al. (2009) have described anxiety-controlling self-talk and worries as two categories in the Automatic Self-Talk Questionnaire for Sports (ASTQS). In a study employing the ASTQS, Latinjak, Viladrich, Alcaraz and Torregrosa (2015) revealed a positive relationship between negative self-talk and sport anxiety. Nonetheless, in sport there have been very few studies that have inquired into the patterns of automatic self-talk in emotion-eliciting situations (e.g., Son, Oregon, & Feltz, 2012). Notwithstanding, there is an extensive literature on the effects of some emotions, mostly

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

anxiety, on other automatic cognitive processes in sport psychology (e.g., Carson & Collins, 2015), and on self-talk and emotions in clinical psychology (Winsler, 2009). The former have evidenced the effects of emotion on perception, selection, motoric and action in performance behaviour, whereas the latter have shown diverse connections between self-talk and negative emotions and emotional disorders. For instance, studies framed within the Cognitive Content-specificity Hypothesis evaluated the relationship between automatic thoughts and subjectively perceived emotional states (Beck & Perkins, 2001). These studies indicated that self-talk associated with danger, harm and threat is related to experiences of anxiety; and that self-talk associated with loss and personal failure is related to depression (e.g., Ambrose & Rholes, 1993; Laurent & Stark, 1993; Schniering & Rapee, 2004). Similarly, within the framework, Ellis (1976) identified the links between rational / irrational beliefs and emotions. Research has evidenced relationships between irrational beliefs and emotional dysfunction, involving heightened anxiety, feelings of anger and shame, and psychopathological conditions including social and test anxiety and depression (for review see, Browne, Dowd, & Freeman, 2010). Subsequently treatments have been developed for the regulation of emotion through rational self-instructions.

The overall purpose of this study was to inquire into the content of automatic self-talk in emotion-eliciting sport situations. In addition, we expect differences in the patterns of self-talk between different emotions, based on two primary reasons: first, different emotions are characterized by differences on a cognitive level, for instance, in terms of appraisals (Lazarus, 2000); and different emotions require different emotion-regulation strategies (Lane, Beedie, Devonport, & Stanley, 2011). Since it is impossible for focus on all emotions, we focused on two that are mostly relevant for sport performance, anxiety and anger (Jones, Lane, Bray, Uphill, & Catlin, 2005).

An adequate starting point for the exploration of self-talk patterns in emotion-eliciting situations could be anxiety, because it is the emotion that has captured most research attention in sport psychology generally (Jones et al., 2005; Woodman et al., 2009), but also in the field of self-talk (e.g., Conroy & Metzler, 2004; Hatzigeorgiadis et al., 2007; Hatzigeorgiadis, Zourbanos, Mpoumpaki, & Theodorakis, 2009; Zourbanos et al., 2009). Moreover, at times anxiety has been studied alongside other emotions, among which anger has appeared most frequently (e.g., Campo, Mellalieu, Ferrand, Martinent, & Rosent, 2012; Robazza & Bortoli, 2007; Stemmler, Aue, & Wacker, 2007; Vast, Young, & Thomas, 2010). Overall, anger and anxiety seem an important set of emotions

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

within the sporting experience because both have been considered among the most relevant emotions in sport and exercise (Jones et al., 2005), both have a large impact on performance, their effect being positive or negative (Robazza & Bortoli, 2007) and both have an important cognitive component associated to their typical psycho-physiological characteristics (Lazarus, 2000). These characteristics include variables such as attention (Vast et al., 2010), cognitive appraisals (Martinent & Ferrand, 2015) or attributions of success and failure (Cantón & Checa, 2012).

Anxiety has been considered a key construct in sport-specific emotion research (Jones et al., 2005), and the most influential and important psychological variable when it comes to sport performance (Regalin & Hanin, 2000). From a differential emotion theory perspective (Izard, 1977), anxiety would be considered to reflect uncertainty regarding goal attainment and coping (Lazarus, 2000). Anxiety would further be typified by feelings of apprehension and tension along with activation or arousal of the autonomic nervous system (Spielberger, 1966). From a dimensional perspective (Russell, 2009), the term anxiety is used to describe states characterised by negative valence, high arousal, and an anticipatory perspective (Fontaine, Scherer, Roesch, & Ellsworth, 2007; Latinjak, 2012; Latinjak, López-Ros, & Font-Lladó, 2014).

Anger has been previously identified as an emotion that, similar to anxiety, can impact performance either positively or negatively, (Lane, Davis, & Stanley, 2014). For instance, both anger and anxiety are high-arousal emotions (Latinjak, López-Ros, & Font-Lladó, 2015), and therefore potentially beneficial in gross tasks requiring effort, power or endurance, and potentially disadvantageous in fine task requiring accuracy and precision (Jones et al., 2005). Moreover, anger is deemed to merit special attention in other cognitive research areas such as judgment or decision making (Lerner & Tiedens, 2006). From a differential emotion theory perspective, anger would be defined as an emotion comprising high arousal (Kaufman, 1970) that results from an event perceived to be a "demeaning offence against me and mine" (Lazarus, 2000, p. 234). From a dimensional perspective, the term anger is used to describe states characterised by negative valence, high arousal, and a retrospective perspective (Fontaine et al., 2007; Latinjak, 2012; Latinjak, Cook, & López-Ros, 2013). In contrast to anxiety, anger has not been studied in relation to self-talk in sport.

Overall, to extend the line of research based on the goal-directed / spontaneous distinction, the purpose of this study was to explore differences in the occurrence, but also in the underlying dimensions, of spontaneous and goal-directed self-talk in anger-

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

and anxiety-eliciting situations. Specifically, we wanted to explore differences in the frequency, the content of spontaneous, and the time-orientation of goal-directed self-talk in anger and anxiety eliciting situations.

Regarding the content of spontaneous self-talk, we expected spontaneous self-talk to be retrospective in anger-eliciting situations (e.g., "I messed up"), and more anticipatory in anxiety-eliciting ones (e.g., "I will fail"). Regarding the time-orientation of goal-directed self-talk, we expected to observe more past-oriented goal-directed self-talk in anger-eliciting situations (e.g., "Nothing happened"), more future-oriented goal-directed self-talk in anxiety-eliciting ones (e.g., "You will succeed"). The identification of such differences will eventually contribute to the better understanding of self-talk within the sport experience. Ultimately, taking into consideration that cognitive and emotional control is one of the main functions of self-talk interventions (Theodorakis et al., 2008), the findings will guide the development of effective interventions.

Method

Participants

A total of 62 male and 25 female Catalan and Spanish athletes (M_{age} = 19.66, SD = 2.07) agreed to participate in this study. At the time of the data collection they were actively involved in a wide variety of different sports, such as soccer (n = 35), basketball (n = 23), handball (n = 4) or tennis (n = 3; thirteen other sports with n < 3). Moreover, they were all competing at national level.

First year students of a local sport science faculty were approached to participate in this study (recruitment rate: 93%). First year students were targeted because of two reasons: first, the transition into university is recent, and, thus, the impact of university on their sport participation is recent and limited; second, they have not yet attended any sport psychology modules. Active sport participation on a competitive level was a requirement for participation. Ethical approval was granted from the first authors' university ethics board and all participants signed the informed consent form.

Procedures and Instruments

Stage 1: Recalling situations and thought listing. Participants were invited to take part in a study about emotions and thoughts in sport which included a one-hour seminar. Once all potential participants signed up for the seminars, five sessions were planned for a maximum of 25 participants. On arrival, participants signed the informed consent form and answered personal descriptive questions. Afterwards, they answered

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

the main questionnaire, involving the identification of anger and anxiety eliciting situations in sport and the recall of self-talk in these situations.

First, participants were asked to describe an anger-eliciting and an anxiety-eliciting situation in their sport which had occurred to them during the last two weeks. Once they had described both situations, they were asked to write down any thoughts that had occurred to them or things they had said to themselves. They were told that those thoughts or statements could have occurred either unintentionally, or intentionally to increase performance or regulate their emotions. Moreover, we made it clear that it could be possible for them not to think about anything or not to remember any thoughts. Henceforth, we asked them to write down only those thoughts or statements they actually remembered. This approach to assessing self-talk content has been effectively used by Latinjak, Zourbanos et al. (2014).

Stage 2: The self-talk seminar. Once the researchers collected the main questionnaire, a seminar was given to the participants on spontaneous and goal-directed self-talk and about their underlying dimensions, based on the conceptualization provided by Latinjak, Zourbanos et al. (2014). The seminar contained the following topics: a brief description of the conceptualization of thoughts and self-talk in general and sport psychology; definitions of goal-directed and spontaneous self-talk; the structure and content of goal-directed self-talk; and the structure and content of spontaneous self-talk. Language and expression were adapted to the language commonly used by the participants. First, the seminar was delivered in two regular sport psychology courses for undergraduate sport science students, similar to the participants in this study. After collecting feedback regarding the seminar, at random among students attending these classes, the seminar was further adjusted to facilitate comprehension and retention of its content.

Stage 3: Participant evaluation of self-talk. After a twenty-minute break and a short summary of the seminar, including an open turn of questions, participants received a copy of their completed main questionnaire and a second questionnaire where they were asked to evaluate their previous answers. Latinjak, Zourbanos et al. (2014) used experts to categorize the meaning units in their study. However, they recognized important difficulties when it came to classifying statements as either goal-directed or spontaneous. Similarly, Van Raalte et al. (2014) evidenced that self-talk ratings made by participants in their study could be distinguished from those made by researchers, and they concluded that researchers might want to consider methods for coding spontaneous self-talk that

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

involve participant self-categorization. Consequently, in the second questionnaire we asked the participants to analyze their own answers. In order to offer the participants support for the categorization task, this second questionnaire contained a brief description about the self-talk types and their underlying structure, and at least one researcher was present at any time to answer questions. Overall, there were few questions that were easily addressed and fully comprehended by participants, indicating that both the lesson and the brief description had worked well at instructing the participants in regard to the self-talk categorization process.

In regard to the categorization task, firstly, the participants were asked to copy each thought or statement they had written down in the main questionnaire in a designated space. In case of long answers, composed by a combination of different meaning units, we recommended our participants to split them up into smaller parts with one unique meaning. However, most participants had autonomously tended to write simple answers which could not further be divided.

There were several questions next to each designated space for an answer. Firstly, they were asked to categorize their answer into spontaneous and goal-directed self-talk. They were given the choice *either or neither* if they could not classify their previous answer. If participants categorized their answer as spontaneous, they were asked to further rate the statement on two separate single-item 7-point scales in terms of time perspective (1= absolutely anticipatory, 4 = neither anticipatory nor retrospective, 7 = absolutely retrospective) and valence (1 = absolutely positive, 4 = neither positive nor negative, 7 = absolutely negative). If participants categorized their answer as goal-directed, they were further asked to allocate the statement in one of the seven categories outlined by Latinjak, Zourbanos et al. (2014): (1) controlling cognitive reactions, (2) controlling activated states, (3) controlling deactivated states, (4) creating activated states, (5) creating deactivated states, (6) regulating cognition and behavior and (7) focusing on positive predictions. The participants could also choose a not sure/ none option.

In addition, once the data were collected, we contacted two sport science university lecturers, specialized in sport psychology, with expertise in qualitative data analyses. These judges analysed the participants' answers of the first questionnaire following the same guidelines as the participants received in questionnaire two. Both judges were not involved with the elaboration of the manuscript.

Results

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

No participant reported any problems recalling and describing the relevant emotion eliciting situations. Anger-eliciting situations usually included negative events with important negative consequences for the athletes, caused either by oneself or others, such as coaches, teammates, opponents or referees. (e.g., "I had a chance to score at that precise moment, when I ran into the open space, but my teammate did pass the ball to another player, even he saw me"). Anxiety-eliciting situations usually included important upcoming events, with significant others watching, and a high uncertainty regarding goal-attainment (e.g., "There were seconds left and I had that additional free through. Everyone was looking at me. If I would score, we would be even with the ball in our possession").

In relation to these situations, the participants recalled a total of 589 statements: 292 in the anger-eliciting situations and 294 in the anxiety-eliciting situations. Three participants classified one of their statements as neither spontaneous nor goal-directed and these statements were excluded from subsequent analyses. Chi-square analysis showed there was no significant differences in the total number of statement between the anger and anxiety eliciting situations ($\chi^2 = 0.02$, $p = .901$). Throughout the results and discussion section, the examples offered of different types of self-talk are representative of the answers most repeated by the participants. In the second questionnaire, we asked the participants to classify their statements as either spontaneous or goal-directed. Overall, 73.80% of the statements were classified as spontaneous ($n = 433$), and 26.20% as goal-directed ($n = 154$). Chi-square analysis showed that the difference between spontaneous and goal-directed self-talk in the two situations was statistically significant ($\chi^2 = 132.61$, $p < .001$).

Participant-rater agreement

In order to assess to what degree the participants' ratings resemble the ratings of the two experts, we calculated the intra-class correlations coefficient ($ICC_{2,1}$) with its 95% confidence interval (Shrout & Fleiss, 1979). We used the single-measure ICC and interpreted results as excellent (0.75 - 1), modest (0.4 - 0.74), or poor (0 - 0.39) (Fleiss, 1986). In addition, Pearsons correlations were calculated for valance and time perspective, and the percentage of coincidence between the participants and the two independent raters was calculated for the type of goal-directed self-talk.

Three independent ICC scores were calculated, for valance and time perspective in spontaneous self-talk ratings, and for the type of goal-directed self-talk. ICC scores were modest in all three cases (for valance, $ICC_{2,1} = .728$, 95% CI: (0.69 – 0.76); for time perspective, $ICC_{2,1} = .578$, 95% CI: (0.53 – 0.63); and for type of goal-directed self-talk,

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

$ICC_{2,1}$ = .611, 95% CI: (0.53 – 0.69). In regard to the correlations between the rating of the participant and the independent rates, values for valance were .726 and .722 (both p < .001), and values for time perspective were .499 and .466 (both p < .001). Overall percentage of agreement in the categorization of goal-directed self-talk was 75% between the participant and each independent judge.

Self-talk in Anger-eliciting Situations

With regard to the anger-eliciting situations, 80.50% of the statements were classified as spontaneous (n = 235), and 19.50% as goal-directed (n = 57). The difference was statistically significant (χ^2 = 108.51, p < .001). The participants rated their spontaneous self-talk generally as slightly retrospective ($M_{\text{time perspective}}$ = 4.96, SD = 1.79) and negative (M_{valence} = 5.38, SD = 1.72). An inspection of the distribution of the ratings on a two-dimensional grid (Figure 1a) indicates that most statements were rated as negative in terms of valence and more retrospective (e.g., "We lost because of my fault") than anticipatory (e.g., "I want to quit playing") in terms of time perspective. For goal-directed self-talk (Figure 2), participants classified most of their answers as either focusing on positive predictions (e.g., "I can fix this") or regulating behaviour (e.g., "I have to recover the ball").

Self-talk in Anxiety-eliciting Situations

In the anxiety-eliciting situations, 67.10% of the statements were classified as spontaneous (n = 197), and 32.90% as goal-directed (n = 97). The difference was statistically significant ($\chi2$ = 34.58, p < .001). The participants rated their spontaneous self-talk generally as anticipatory ($M_{\text{time perspective}}$ = 2.85, SD = 1.73) and close to the median point of the valence (positive-negative) scale (M_{valence} = 3.73, SD = 2.10). An inspection of the distribution of the ratings on a two-dimensional grid (Figure 1b) indicates that most statements were rated as anticipatory in terms of time perspective, and both positive (e.g., "I want to play well") and negative (e.g., "I am going to make a fool out of myself"), in terms of valence. For goal-directed self-talk (Figure 2), the participants classified most of their answers as focusing on positive predictions (e.g., "We can do it"), regulating behaviour (e.g., "I have to concentrate") and creating activated states (e.g., "Come on!").

Comparison between anger and anxiety-eliciting situations

A single 2 x 2 chi-square test indicated a significant association of the emotion-eliciting situation (anger/ anxiety) with the type of automatic self-talk (spontaneous/ goal-directed). When comparing the participants' ratings between the anger- and anxiety-

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

eliciting situations, post-hoc 2 x 1 chi-squared analyses showed: a non-significant difference in the number of spontaneous statements (χ^2 = 3.16, p = .075); and a significant difference in the number of goal-directed statements (χ^2 = 10.39, p = .001); goal-directed self-talk was reported more often in anxiety-eliciting situations than in anger-eliciting ones.

Repeated-measures ANOVA was calculated to test for differences in the dimension of spontaneous self-talk between the anger- and anxiety-eliciting situations. The analysis yielded a significant and large multivariate situation effect, $F_{(2, 423)}$ = 113.25, p < .001, partial η^2 = .349. The effect was significant and large for both valence, $F_{(1, 424)}$ = 79.60, p < .001, *partial* η^2 = .158; and time perspective, $F_{(1, 424)}$ = 152.05, p < .001, partial η^2 = .264. These results indicate that self-talk in anger-related situations was rated as more negative and retrospective (e.g., "Why couldn't he pass the ball to me") than compared to anxiety-related situations, where self-talk was rated as more positive and anticipatory (e.g., "What if I fail? What if I am not up for the challenge"). Based on the criteria outlined by Kirk (1996), partial η^2 values of .010, .059, and .138 were taken as corresponding to small, medium, and large effect sizes, respectively.

Cramer's V statistic was calculated to provide a quantitative measure of the strength of the association between the two emotion-eliciting situations and the type of goal-directed self-talk (Figure 2). The magnitude of association measured by Cramer's V was interpreted following guidelines in Rea and Parker (1992). The results showed a significant and moderate association between emotions-eliciting situations and the different types of goal-directed self-talk (Cramer's V = .384, p = .001). A comparison of the distribution of goal-directed self-talk in the two emotion-eliciting situations showed that in the anger-eliciting situation the percentages of statements classified as controlling cognitive reactions (e.g., "These things happen to anyone; 14.0% and 1.0%, for anger and anxiety, respectively), controlling deactivated states (e.g., "Don't give up"; 7.2% and 2.1%, for anger and anxiety, respectively), and regulating behaviour (e.g., "Shoot the ball"; 31.6% and 22.7%, for anger and anxiety, respectively), were larger compared to the anxiety-eliciting situations. On the contrary, in the anxiety-eliciting situations the percentages of statements categorized as creating activated states (e.g., "Give a 100%"; 25.8% and 15.8%, for anxiety and anger, respectively), controlling activated states (e.g., "Don't be afraid"; 8.3% and 1.8%, for anxiety and anger, respectively), and creating deactivated states (e.g., "Relax"; 8.3% and 0%, for anxiety and anger, respectively), were larger compared to the anger-eliciting situations. Lastly, the percentage of statements

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

classified as focusing on positive predictions (e.g., "You can win"; 32.0% and 29.8%, for anxiety and anger, respectively), was very similar in both emotion-eliciting situations.

Discussion

The purpose of this study was to use the classification of automatic self-talk outlined by Latinjak, Zourbanos et al., (2014), and its subordinate dimensions and categories, and to compare automatic self-talk in anger and anxiety-eliciting situations. Overall, the results showed that in both situations participants reported more spontaneous than goal-directed self-talk. Generally, psychologists have focused more on goal-directed thinking than on spontaneous thoughts, in areas such as decision making and problem solving (Markman & Gentner, 2001), in spite of the evidence that indicates that spontaneous thought is a ubiquitous phenomenon, occupying as much as a third of our waking life (Christoff et al., 2011; Kane et al., 2007). In addition, several theorists have hypothesized that spontaneous thoughts serve an adaptive function by helping the individual to mentally explore and prepare for upcoming situations (Klinger, 1977; Singer, 1966). The results of this study are in line with these findings and, partially, support these hypotheses, as the number of spontaneous self-talk was significantly larger compared to goal-directed self-talk, and as a larger number of anticipatory spontaneous self-talk was observed in anxiety-eliciting situations.

Regarding spontaneous self-talk, a comparison between the anger- and anxiety-eliciting situations, revealed differences in the valence dimension of self-talk. In particular, spontaneous statements were rated as more positive in the anxiety- compared to the anger-eliciting situations. This result is congruent with theoretical considerations (Russell & Feldman-Barrett, 1999) and empirical findings in the area of affect (Fontaine et al., 2007; Latinjak et al., 2013; Latinjak, López-Ros et al., 2014), suggesting that when comparing these two negative states, anxiety could be experienced as more positive compared to anger. The presence of both positive and negative statements in anxiety-eliciting situations might represent the uncertainty regarding goal attainment and coping that in the differential emotion theory has been identified as inherent to anxiety (Lazarus, 2000). In addition, the presence of positive and negative statements in the anxiety-eliciting situations seem to coincide with the directional approach to anxiety interpretation, that anxiety states can be perceived as either facilitative or debilitative depending on individual characteristics and situational states (Jones, 1995). Interestingly, Hatzigeorgiadis and Biddle (2008) reported that among middle-distance runners, those

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

interpreting their anxiety states as facilitating reported fewer negative interfering thoughts than those interpreting their anxiety states as debilitating.

Differences between the anger- and anxiety-eliciting situations were also identified for the time-perspective dimension of spontaneous self-talk. In particular, self-talk was more anticipatory in anxiety-eliciting situations and more retrospective in anger-eliciting situations. This difference is congruent with our hypothesis and partly consistent with the dimensional definitions of the two emotions. According to Latinjak (2012), anger is retrospective and anxiety anticipatory. Researchers in clinical psychology have similarly related anxiety to future-oriented cognitive processes such as decision-making (Hofmann, Alpers, & Pauli, 2009) or future thinking (Miloyan, Pachana, & Suddendorf, 2014).

With regard to goal-directed self-talk, statements were mostly categorized as focusing on positive predictions, creating activated states, and regulating behaviour. Moreover, self-confidence, in general (e.g., Woodman & Hardy, 2003), and confidence cue words, in particular (e.g., Hatzigeorgiadis et al., 2009), have been linked with performance and well-being. Regarding statements creating activated states (let's go!) and statements regulating behaviour (hit the ball), these statements are closely related to motivational and instructional self-talk respectively. These kinds of self-talk have been extensively studied in the strategic self-talk interventions research paradigm. Research has evidenced positive effects of both motivational and instructional cue-words on performance and performance-related outcome measures in several sports and tasks (e.g., Hatzigeorgiadis, Galanis, Zourbanos, & Theodorakis, 2014; Kolovelonis, Goudas, & Dermitzaki, 2011; Zourbanos, Hatzigeorgiadis, Bardas, & Theodorakis, 2013). In contrast to the plethora of studies examining the effects of strategic, intervention-based, instructional and motivational self-talk on performance, there is a lack of evidence regarding automatic motivational and instructional self-talk (i.e., statements classified as creating activated states and regulating behaviour, respectively). In addition, there is a dearth of knowledge about the links and interaction effects between automatic goal-directed self-talk and strategic self-talk interventions. These issues may provide useful grounds for future research.

Comparing anger- and anxiety-eliciting situations, the results indicated that more statements were classified as goal-directed in the anxiety-eliciting situations than in the anger-eliciting ones. One possible explanation would be that anxiety is often associated to appraisals of one's own weaknesses (Ruiz-Pérez et al., 2014), whereas anger is

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

associated with appraisals of others prejudicial and offending behaviour (Lazarus, 2000). Consequently, goal-directed self-talk can more easily target one's own weaknesses in anxiety-eliciting situations than others discriminatory behaviour in anger-eliciting situations. This finding also reflects the tendency of sport psychologists to focus on coping with anxiety more than coping with other high-arousal emotions, such as anger (Vast et al., 2010).

At this point, some methodological decisions require particular consideration as they reflect potential limitations. First, the thought-sampling procedure, as the recall protocol might have caused biased memory. The time elapsed since the actual situations took place might have changed the way in which the participants appraised the events and their thoughts at that time. As Nisbett and Wilson (1977) postulate, all thought-sampling procedures have limitations as they rely on conscious awareness and memory. However, such procedures provide access to cognitive activation and metacognitive knowledge that cannot be obtained through other methods (Guerrero, 2005). That the data concur in content with findings from previous studies regarding the content of self-talk (e.g., Latinjak, Zourbanos et al., 2014; Zourbanos et al., 2009), strengthen our confidence and provide indirect support for the integrity of the thought sampling procedure. Taking into considerations the limitations of all thought-sampling procedures, we believe that future studies should opt for different methodologies (e.g., think aloud, microphones, observation through video-recording, video-stimulated recall) which will enable the verification of the present findings.

Another potential limitation may lie in the participant-dependent data-analyzing procedure. The present study adopted a different strategy to that of Latinjak, Zourbanos et al (2014). In their study, the categorization of the self-talk statements was performed by the researchers. However, they admitted difficulties classifying some of the statements based solely on content. Recently, Van Raalte et al. (2014) evidenced that self-talk ratings made by participants in their study could be distinguished from those made by researchers, and they concluded that researchers might want to consider methods for coding spontaneous self-talk that involve participant self-categorization. Therefore, we decided to ask participants to rate their own answers after receiving induction regarding the conceptualization of the self-talk framework used in the study. The small number of questions asked by participants before and during the administration of the second questionnaire, and the small number of statements that participants were not able to classify into spontaneous and goal-directed self-talk, strengthen our confidence and

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

provide indirect support for the integrity of the data-analysis procedure. Nonetheless, the ICC scores indicated modest agreement between participants and the judges. Thus, the results correspond to the study of Van Raalte et al. (2014) as it indicates that there are differences between participant and researcher ratings. These results could be explained by the fact that there are interpretive elements associated with the content of self-talk (Hardy, 2006).

Compared to the study conducted by Latinjak, Zourbanos et al. (2014), in this study the participants successfully identified spontaneous and goal-directed self-talk when remembering an emotion-eliciting situation. In the former study, the authors were not able to identify goal-directed self-talk in their first attempt (Study 1), and the authors conducted a second study, adjusting the question asked to the participants, to inquire into goal-directed self-talk. This study succeeded to inquire into both spontaneous and goal-directed self-talk, partly because the participants coded their own answers, and partly because the question asked to the participants was a mixture between the two different questions asked in Latinjak, Zourbanos et al. When comparing the results of both studies, the categories of the former study were able to accommodate the statements listed in this study. Hence, there is evidence to suggest that the structure proposed by Latinjak, Zourbanos et al. is inclusive. Moreover, the former study failed to compare self-talk in different emotion-eliciting situations, whereas this study advanced our understanding in relation to the different thoughts that appear in different emotion-eliciting situations.

The present study attempted to investigate the links between self-talk and emotions that have received relatively scant attention in the sport psychology literature. As such, it is among the first studies exploring self-talk in relation to emotions in competitive situations. The results supported the distinction between goal-directed and spontaneous self-talk in athletes, and their underlying dimensions. Furthermore, the findings provided preliminary evidence regarding the content of self-talk in anxiety- and anger-eliciting situations, with references to the valence and the time-perspective dimensions of self-talk. Summarizing these findings, in anger-eliciting situations, spontaneous self-talk was generally negative and retrospective, whereas in anxiety-eliciting situations, spontaneous self-talk was positive and negative as well as anticipatory. Goal-directed self-talk generally aimed at creating activated states, regulating behaviour and focusing on positive predictions, even though differences among both emotion-eliciting situations were also detected. The present study provides valuable preliminary evidence for the links between two salient emotions in sport and

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

self-talk, and encourages research to further explore such relationships between different emotions and the self-talk of athletes.

Finally, from an applied perspective, the results suggest that practitioners should take into consideration the role of emotions when addressing issues related to the self-talk of their athletes. Moreover, coaches and applied sport psychologists would do well to acknowledge the difference between spontaneous and goal-directed self-talk, since both contain a different set of information relevant for coaching. Spontaneous self-talk informs about general concurrent affective and cognitive processes, whereas goal-directed self-talk contains the instructions directed towards the athlete from "the coach or psychologist within", embedded in his/her own mind. Importantly, these instructions can coincide with, complement or contradict the coach's and applied sport psychologist's feedback. Additionally, a goal-directed self-talk intervention has recently been developed to address debilitative automatic self-talk and regulate emotions (Latinjak, Font-Lladó, Zourbanos & Hatzigeorgiadis, *in press*). In this intervention, ineffective goal-directed self-talk in problematic sport situations was challenged and replaced by the athlete with alternative goal-directed statements.

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

References

Ambrose, B., & Rholes, W. S. (1993). Automatic cognitions and the symptoms of depression and anxiety in children and adolescents: An examination of the content specificity hypothesis. *Cognitive Therapy and Research*, *17*, 1–20. doi:10.1007/BF01172951

Beck, R., & Perkins, T. S. (2001). Cognitive content-specificity for anxiety and depression: a meta-analysis. *Cognitive Therapy and Research*, *25*, 651–663. doi:10.1023/A:1012911104891

Benjamin, L.S. (1973). A biological model for understanding the behavior of individuals. In J.C. Westman (Ed.), *Individual differences in children* (pp. 215-241). New York: Wiley.

Benjamin, L.S. (1996). Introduction to the special section on Structural Analysis of Social Behavior (SASB). *Journal of Consulting and Clinical Psychology*, *64*, 1203-1212.

Brown, J. L. (2011). Cognitive-behavioral strategies. In J. K. Luiselli and D. D. Reed (Eds.), *Behavioral Sport Psychology* (pp. 113-126). New York: Springer.

Browne, C. M., Dowd, E. T. & Freeman, A. (2010). Rational and irrational beliefs and psychopathology. In D. David, S. J. Lynn & A. Ellis (Eds.) *Rational and irrational beliefs in human functioning and disturbances*. New York: Oxford University Press.

Burton, D., Gillham, A., & Glenn, S. (2011). Motivational Styles: Examining the Impact of Personality on the Self-Talk Patterns of Adolescent Female Soccer Players. *Journal of Applied Sport Psychology*, *23*, 413-428.

Campo, M., Mellalieu, S., Ferrand, C., Martinent, G., & Rosent, E. (2012). Emotions in team contact sports: A systematic review. *The Sport Psychologist*, *26*, 62-97.

Cantón, E., & Checa, I. (2012). Los estados emocionales y su relación con las atribuciones y las expectativas de autoeficacia en el deporte [Emotional states and their relationship to attributions and expectations of self-efficacy in sport]. *Revista de Psicología del Deporte*, *21*(1), 171-176.

Carson, H. J., & Collins, D. (2015). The fourth dimension: A motoric perspective on the anxiety–performance relationship. *International Review of Sport and Exercise Psychology*, *9*, 1-21. doi:10.1080/1750984X.2015.1072231

Christoff, K. (2012). Undirected thoughts: Neural determinants and correlates. *Brain Research*, *1428*, 51-59.doi:10.1016/j.brainres.2011.09.060

Christoff, K., Gordon, A., & Smith, R. (2011). The role of spontaneous thought in human cognition. In O. Vartanian & R. Mandel (Eds.), *Neuroscience of Decision Making* (pp. 259-284). New York: Psychological Press.

Conroy, D.E., & Metzler, J.N. (2004). Patterns of self-talk associated with different forms of competitive anxiety. *Journal of Sport and Exercise Psychology*, *26*, 69-89.

Conroy, D. E., & Coatsworth, D. (2007). Coaching behaviors associated with changes in fear of failure: Changes in self-talk and need satisfaction as potential mechanisms. *Journal of Personality*, *75*(2), 383-419.

Cutton, D. M, & Landin, D. (2007). The Effects of Self-Talk and Augmented Feedback on Learning the Tennis Forehand. *Journal of Applied Sport Psychology*, *19*, 288-303.

Ellis, A. (1976). *Reason and emotion in psychotherapy*. New York: Lyle Stuart.

Evans, J. St. B. T. (2006). The heuristic-analytic theory of reasoning: extension and evaluation. *Psychonomic Bulletin & Review*, *13*, 378-395.

Fleiss, J. (1986). *The design and analysis of clinical experiments*. New York: John Wiley & Sons, Inc.

Fontaine, J. R. J., Scherer, K. R., Roesch, E. B., & Ellsworth, P. C. (2007). The world of emotion is not two-dimensional. *Psychological Science*, *18*, 1050-1057.

Guerrero, M.C.M. (2005). *Inner speech-L2: Thinking words in a second language*. NewYork: Springer.

Hardy, J. (2006). Speaking clearly: A critical review of the self-talk literature. *Psychology of Sport and Exercise*, *7*, 81-97. doi:10.1016/j.psychsport.2005.04.002.

Hardy, J., Gammage, K., & Hall, C. R. (2001). A description of athlete's self-talk. *The Sport Psychologist*, *15*, 306–318. doi:10.1016/S1469-0292(01)00011-5

Hardy, J., Hall, C. R., & Alexander, M. R. (2001). Exploring self-talk and affective states in sport. *Journal of Sport Sciences*, *19*, 469–475. doi:10.1080/026404101750238926

Hardy, J., Oliver, E., & Tod, D. (2009). A framework for the study and application of self-talk in sport. In S. D. Mellalieu & S. Hanton (Eds.), *Advances in applied sport psychology: A review* (pp. 37-74). London: Routledge.

Hatzigeorgiadis, A., & Biddle, S. J. H. (2000). Assessing cognitive interference in sports: The development of the Thought Occurrence Questionnaire for Sport (TOQS). *Anxiety, Stress, & Coping, 13,* 65–86. doi:10.1080/10615800008248334

Hatzigeorgiadis, A., & Biddle, S. J. H. (2008). Negative thoughts during sport performance:

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

Relationship with pre-competitive anxiety and goal-performance discrepancies. *Journal of Sport Behavior*, *31*, 237-253.

Hatzigeorgiadis, A., Galanis, V., Zourbanos, N., & Theodorakis, Y. (2014) A self-talk intervention for competitive sport performance. *Journal of Applied Sport Psychology, 26,* 82-95, DOI: 10.1080/10413200.2013.790095

Hatzigeorgiadis, A., Zourbanos, N., Galanis, E., & Theodorakis, Y. (2011). Self-talk and sport performance: A meta-analysis. *Perspectives on Psychological Science*, *6*, 348-356.doi:10.1177/1745691611413136

Hatzigeorgiadis, A., Zourbanos, N., Latinjak, A. T., & Theodorakis, Y (2014). Self-talk. In A. Papaioannou and D. Hackfort (Eds.), *Routledge Companion to Sport and Exercise Psychology* (pp. 372-386). New York: Routledge

Hatzigeorgiadis, A., Zourbanos, N., Mpoumpaki, S., & Theodorakis, Y. (2009). Mechanisms underlying the self-talk–performance relationship: The effects of motivational self-talk on self-confidence and anxiety. *Psychology of Sport and Exercise*, *10*, 186-192.

Hatzigeorgiadis, A., Zourbanos, N., & Theodorakis, Y. (2007). The Moderating Effect of Self-Talk Content on Self-Talk Functions. *Journal of Applied Sport Psychology, 19,* 240-251. doi:10.1080/10413200701230621

Hofmann, S. G., Alpers, G. W., & Pauli, P. (2009). Phenomenology of panic and phobic disorders. In M. M. Antony and M. B. Stein (Eds.), *Oxford Handbook of Anxiety and Related Disorders* (pp. 34-46). New York, NY: Oxford University Press. 34–46.

Ickes, W., & Cheng, W. (2011). How do thoughts differ from feelings? Putting the differences into words. *Language and Cognitive Processes*, *26*, 1-23. doi:10.1080/01690961003603046

Izard, C.E. (1977). *Human emotions*. New York: Plenum Press.

Jones, J. G. (1995). More than just a game: Research developments and issues in competitive anxiety in sports. *British Journal of Psychology, 88*, 449-478.

Jones, M. V., Lane, A. M., Bray, S. R., Uphill, M., & Catlin, J. (2005). Development and validation of the sport emotion questionnaire. *Journal of Sport and Exercise Psychology*, *27*, 407– 431.

Kane, M. J., Brown, L. H., McVay, J. C., Silvia, P. J., Myin-Germeys, I., & Kwapil, T. R. (2007). For whom the mind wanders, and when: an experience-sampling study of working memory and executive control in daily life. *Psychological Science*, *18*(7), 614-621.

Kaufman, H. (1970). *Aggression and altruism*. New York: Holt, Reinhart & Winston.

Kendall, P. C., Cummings, C. M., Villabø, M. A., Narayanan, M. K., Treadwell, K., Birmaher, B., Compton, S., Piacentini, J., Sherrill, J., Walkup, J., Gosch, E., Keeton, C., Ginsburg, G., Suveg, C., & Albano, A. M. (2016). Mediators of change in the child/adolescent anxiety multimodal treatment study. *Journal of Consulting and Clinical Psychology*, *84*¸1-14. doi: 10.1037/a0039773

Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement, 56*, 746-759.

Klinger, E. (1977). *Meaning & Void: Inner Experience and the Incentives in People's Lives*. Minneapolis, MN: University of Minnesota Press.

Klinger, E. (2009). Daydreaming and fantasizing: thought flow and motivation. In K. D. Markman, W. M. P. Klein and J. A. Suhr (Eds.), *Handbook of Imagination and Mental Simulation* (pp. 225–239). New York, NY: Psychology Press.

Kolovelonis, A., Goudas, M., & Dermitzaki, I. (2011).The effects of instructional and motivational self-talk on students' performance in physical education. *Psychology of Sport and Exercise*, *12*, 153–158. doi:10.1016/j.psychsport.2010.09.002

Lane, A. M., Beedie C. J., Devonport, T. J., & Stanley, D. M. (2011). Instrumental emotion regulation in sport: relationships between beliefs about emotion and emotion regulation strategies used by athletes. *Scandinavian Journal of Medicine and Science in Sports*, *21*, 445-451. doi: 10.1111/j.1600-0838.2011.01364.x

Lane, A. M., Davis, P. A., & Stanley, D. M. (2014). Do emotion regulation intentions and strategies differ between situations? *Current Advances in Psychology Research*, *1*, 26-32.

Latinjak, A. T. (2012). The underlying structure of emotions: A tri-dimensional model of core affect and emotion concepts for sports. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, *7*, 71-87.

Latinjak, A. T., Cook, K., & López-Ros, V. (2013). What does the Sport Emotion Questionnaire measure in terms of core affect? *Journal of Health Science*, *1*, 21-27.

Latinjak, A. T., Font-Lladó, R., Zourbanos, N., & Hatzigeorgiadis, A. (2016). Goal-Directed Self-Talk Interventions: A Single-Case Study with an Elite Athlete. *The Sport Psychologist*, *30*, 189-194.

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

Latinjak, A. T., López-Ros, V., & Font-Lladó, R. (2014). Las emociones en el deporte: Una representación tridimensional [Sport Emotions: The concepts used in a tri-dimensional model]. *Revista de Psicología del Deporte*, *23*(2), 267-274.

Latinjak, A. T., López-Ros, V., & Font-Lladó, R. (2015). A descriptive study of emotion concepts using dimensional models of core affect / Un estudio descriptivo de los conceptos emocionales desde los modelos dimensionales de los estados afectivos. *Estudios de Psicología*, *36*, 413-450.

Latinjak, A. T., Torregrosa, M., & Renom, J. (2011). Combining self talk and performance feedback: their effectiveness with adult tennis players. *The Sport Psychologist*, *25*(1), 18–31.

Latinjak, A. T., Viladrich, C., Alcaraz, S, &. Torregrosa, M (2015). Spanish adaptation and validation of the automatic self-talk questionnaire for sports. *International Journal of Sport and Exercise Psychology*, 1-12. doi:10.1080/1612197X.2015.1055287

Latinjak, A. T., Zourbanos, N., López-Ros, V., & Hatzigeorgiadis, A. (2014). The structure and content of undirected and goal-directed thoughts in sport. *Psychology of Sport and Exercise*, *15*, 548-558.

Laurent, J., & Stark, K. D. (1993). Testing the cognitive content-specificity hypothesis with anxious and depressed youngsters. *Journal of Abnormal Psychology*, *102*, 226–237. doi: 10.1037//0021-843X.102.2.226

Lazarus, R. S. (2000). How emotions influence performance in competitive sports. *The Sport Psychologist*, *14*, 229-252.

Lerner, J. S., & Tiedens, L. Z. (2006). Portrait of the angry decision maker: How appraisal tendencies shape anger's influence on cognition. *Journal of Behavioral Decision Making*, *19*, 115-137. doi:10.1002/bdm.515

Markman, A. B., & Gentner, D. (2001). Thinking. *Annual Review of Psychology*, *52*, 223-247.

Martinent, G., & Ferrand, C. (2015). A field study of discrete emotions: Athletes′ cognitive appraisals during competition. *Research Quarterly for Exercise and Sport*, *86*, 51‒62. http://dx.doi.org/10.1080/02701367.2014.975176

Miloyan, B., Pachana, N. A., & Suddendorf, T. (2014). The future is here: A review of foresight systems in anxiety and depression. *Cognition and Emotion*, *28*, 795-810. doi: 10.1080/02699931.2013.863179

Nisbett, R., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental.

processes. Psychological Review, 84, 231–259.

Oliver, E. J., Markland, D., Hardy, J., & Petherick, C. M. (2008). The effects of autonomy-supportive versus controlling environments on self-talk. *Motivation and Emotion*, *32*, 200-212. doi: 10.1007/s11031-008-9097-x

Rea, L. M., & Parker, R. A. (1992). *Designing & conducting survey research: A comprehensive guide*. San Francisco: Jossey-Bass, a Wiley Imprint.

Raglin, J. S., & Hanin, Y. L. (2000). Competitive anxiety. In Y.L. Hanin (Ed.), *Emotions in sport* (pp. 39-63). Champaign, IL: Human Kinetics.

Robazza, C., & Bortoli, L. (2007). Perceived impact of anger and anxiety on sporting performance in rugby players. *Psychology of Sport and Exercise*, *8*, 875-896

Ruiz-Pérez, L. M., Palomo-Nieto, M., García-Coll, V., Navia-Manzano, J. A., Miñano-Espín, J., & Psotta, R. (2014). Self-perceptions of decision making competence in Spanish football players. *Acta Gymnica*, *44*, 77–83. doi: 10.5507/ag.2014.008

Russell, J. A. (2009). Emotion, core affect, and psychological construction. *Cognition and Emotion*, *23*, 1259-1283.

Russell, J. A., & Feldman-Barrett, L. (1999). Core affect, prototypical emotional episodes, and other things called emotion: Dissecting the elephant. *Journal of Personality and Social Psychology*, *76*, 805–819.

Sánchez, F., Carvajal, F., & Saggiomo, C. (2016). Self-talk and academic performance in undergraduate students. *Anales de Psicología*, *32*¸ 139-147.

Schniering, C. A., & Rapee, R. M. (2004). The relationship between automatic thoughts and negative emotions in children and adolescents: A test of the cognitive content-specificity hypothesis. *Journal of Abnormal Psychology*, *113*, 464–470. http://dx.doi.org/10.1037/0021-843X.113.3.464

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: uses in assessing rater reliability. *Psychological Bulletin*, *86*, 420-428.

Son, V., Oregon, E. M., & Feltz, D. L. (2012). "I" versus "We": Effects of different references of self-talk on performance anxiety. *Journal of Sport and Exercise Psychology*, *34*, 283-284.

Singer, J. L., 1966. *Daydreaming: An Introduction to the Experimental Study of Inner Experience*. RandomHouse, New York.

Spielberger, C.D. (1966). Theory and research on anxiety. In C.D. Spielberger (Ed.): *Anxiety*

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

and behaviour (pp. 3-20). New York: Academic Press.

Shi, X., Brinthaupt, T. M., & McCree, M. (2015). The relationship of self-talk frequency to communication apprehension and public speaking anxiety. *Personality and Individual Differences*, 75, 125–129.

St Clair Gibson, A., & Foster, C. (2007). The role of self-talk in the awareness of physiological state and physical performance. *Sports Medicine*, 37, 1029-1044.

Stemmler, G., Aue, T., Wacker, J. (2007). Anger and fear: Separable effects of emotion and motivational direction on somatovisceral responses. *International Journal of Psychophysiology*, 66(2), 141-153. DOI: 10.1016/j.ijpsycho.2007.03.019

Theodorakis, Y., Hatzigeorgiadis, A., & Chroni, S. (2008). Self talk: It works, but how? Development and preliminary validation of the functions of Self talk Questionnaire. *Measurement in Physical Education and Exercise Science*, 12, 10-30.

Theodorakis, Y., Hatzigeorgiadis, A., & Zourbanos, N. (2012). Cognitions: Self-talk and performance. In S. Murphy (Ed.), *The Oxford Handbook of Sport and Performance Psychology*. New York: Oxford University Press. doi:10.1093/oxfordhb/9780199731763.013.0010

Theodorakis, Y., Weinberg, R., Natsis, P., Douma, E., & Kazakas, P. (2000).The effects of motivational versus instructional self talk on improving motor performance. *The Sport Psychologist, 14*, 253-272.

Tod, D. A., Thatcher, R., McGuigan, M., & Thatcher, J. (2009). Effects of instructional and motivational self-talk on the vertical jump. *The Journal of Strength and Conditioning Research*, 23, 196-202.

Tovares, A. V. (2010). Managing the Voices: Athlete Self-Talk as a Dialogic Process. *Journal of Language and Social Psychology*, 29, 261-277. doi: 10.1177/0261927X10368829

Van Raalte, J. (2010). Self-talk. In S. J. Hanrahan, and M. B. Andersen, (Eds.) *Routledge Handbook of Applied Sport Psychology* (pp. 510-517). New York: Routledge.

Van Raalte, J. L., Cornelius, A. E., Copeskey, M., & Brewer, B. W. (2014). Say what? An analysis of spontaneous self-talk categorization. *The Sport Psychologist*, 28, 390-393. Doi: 10.1123/tsp.2014-0017

Vast, R. L., Young, R. L., & Thomas, P. R. (2010). Emotions in sport: Perceived effects on attention, concentration, and performance. *Australian Psychologist*, 45(2), 132-140.

Weinberg, R., Miller, A., & Horn, T. (2012). The influence of a self-talk intervention on collegiate cross-country runners. *International Journal of Sport and Exercise Psychology*, 10, 123-134. doi:10.1080/1612197X.2012.645135

Winsler, A. (2009). Still Talking to Ourselves after All These Years: A Review of Current Research on Private Speech. In A. Winsler, C. Fernyhough and I. Montero (Eds.), *Private Speech, Executive Functioning, and the Development of Verbal Self-regulation* (pp. 3–41). Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511581533.003

Woodman, T., Davis, P. A., Hardy, L., Callow, N., Glasscock, I., & Yuill-Proctor, J. (2009). Emotions and sport performance: An exploration of happiness, hope, and anger. *Journal of Sport & Exercise Psychology*, 31, 169-188.

Woodman, T., & Hardy, L. (2003). The relative impact of cognitive anxiety and self-confidence upon sport performance: a meta-analysis. *Journal of Sport Sciences*, 21, 443-457.

Zourbanos, N., Hatzigeorgiadis, A., Bardas, D., & Theodorakis, Y. (2013). The effects of self-talk on dominant and non-dominant arm performance on a handball task in primary physical education students. *The Sport Psychologist, 27,* 171-176.

Zourbanos, N., Hatzigeorgiadis, A., Chroni, S., Theodorakis, Y., & Papaiannou, A (2009). Automatic self-talk questionnaire for sports (ASTQS): Development and preliminary validation of a measure identifying the structure of athletes' self-talk. *The Sport Psychologist*, 23, 233-251.

Zourbanos, N., Hatzigeorgiadis, A., Goudas, M., Papaiannou, A., Chroni, S., & Theodorakis, Y. (2011). The social side of self-talk: relationships between perceptions of support received from the coach and athletes' self talk. *Psychology of Sport and Exercise*, 12, 407-414.

Zourbanos, N., Papaiannou, A., Argyropoulou, E, & Hatzigeorgiadis, A. (2014). Achievement goals and self-talk in physical education: The moderating role of perceived competence. *Motivation and Emotion*, 38, 235-251. doi:10.1007/s11031-013-9378-x

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965

1

Alexander T. Latinjak, School for Science, Technology and Engineering, University of Suffolk. James Hehir Building, University Avenue, IP3 0FS Ipswich, UK. E-mail: a.latinjak@uos.ac.uk. Phone: 0044 7979343965