

## COACHES' BEHAVIOUR, SOCIAL SUPPORT, AND ATHLETES' SELF-TALK

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**Abstract:** The aim of the present study was to investigate the relationship between perceived coaching behaviour, coaches' esteem support, and athletes' positive and negative self-talk. Two hundred and eight athletes participated in the study. Participants completed questionnaires assessing two coaching behaviour dimensions (supportiveness and negative activation), coaches' esteem support, and athletes' positive and negative self-talk. Structural equation models with latent factors were tested to examine the hypothesized relationships. The results 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. Overall, the results of the study stress the importance of coaching behaviour and esteem support in shaping athletes' self-talk.

**Key words:** Coaches' behaviour, Self-talk, Social support.

### INTRODUCTION

Cognitive-behaviour theories have been based on the premise that a person's thinking can affect emotional and behavioural disorders (Ellis, 1976; Meichenbaum, 1977). Considering the importance of thoughts and their significant role on behaviour and emotions, it would be interesting to examine the extent to which behaviour of significant others affects individuals' thoughts. Towards this direction, the present study attempted to test the relationships between perceived coaching behaviour, social, and in particular esteem support, and athletes' positive and negative self-talk (ST).

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In sport psychology, Hardy, Hall, and Hardy (2005) defined ST as a «multidimensional phenomenon concerned with athletes' verbalizations that are addressed to themselves, which can serve both instructional and motivational functions» (p. 905). Research has primarily shown the beneficial effects of ST on performance (Gould, Tammen, Murphy, & May, 1989; Hardy, Jones, & Gould, 1996; Weinberg, Grove, & Jackson, 1992; Weinberg & Jackson, 1990). Furthermore, studies have examined the effectiveness of positive versus negative ST (Van Raalte, Brewer, Rivera, & Petitpas, 1994; Van Raalte, Cornelius, Brewer, & Hatten, 2000; Weinberg, Smith, Jackson, & Gould, 1984). Subsequently, research has supported the application of motivational and instructional ST cues for improving sport performance (Hatzigeorgiadis, Theodorakis, & Zourbanos, 2004; Mallett & Hanrahan, 1997; Theodorakis, Weinberg, Natsis, Douma, & Kazakas, 2000). Among the different methodological perspectives, such as field and experimental studies (Dagrou, Gauvin, & Halliwell, 1992; Harvey, Van Raalte, & Brewer, 2002), intervention programs have also been observed in sport literature showing the beneficial effects of ST (Perkos, Theodorakis, & Chroni, 2002; Thelwell & Maynard, 2003). Finally, contemporary research has begun to investigate mechanisms and functions of ST (Hardy, Gammage, & Hall, 2001; Hatzigeorgiadis et al., 2004). However, one aspect that remains largely unexplored in the sport psychology literature is the antecedents of ST. Conroy and Metzler (2004) suggested that determining the origins of ST should become a priority in sport psychology research.

Some interest regarding ST antecedents has been exhibited in educational psychology. Specifically, research has focused on the relationship between significant others' influences, children's positive and negative ST, and their impact on self-concept and self-esteem (Burnett, 1996a,b; 1999, Burnett & McCrindle, 1999). Burnett (1999) found that teachers' positive statements were directly related to students' positive ST and students' maths self-concept. Furthermore, students' positive ST was found to play a mediating role between teacher's positive statements and reading self-concept. In another study, children's ST was found to play a mediating role between significant others' statements and children's self-esteem (Burnett & McCrindle, 1999). The identified relationships between significant others' verbalisations and students' ST can be explained by social learning theory (Bandura, 1977, 1982), which suggests that significant others serve as models for individuals. Furthermore, Hogg and Vaughan (1998) pointed out that «informational influence comes into play when people are

uncertain, either because stimuli are intrinsically ambiguous or because there is social disagreement ... Effective informational influence causes true cognitive change» (pp. 218-219). Accordingly, the way teachers express themselves and verbalise their feedback may affect students' thought patterns.

In sport settings, these statements or feedback can be effectively applied to athletes through the 'sandwich principle'. Hardy and Crace (1991) recommended «feedback related to effort and task mastery should be delivered in a sincere and personalized manner using the sandwich principle ... in this approach, the technical instruction is sandwiched between affirming and encouraging statements» (p. 4). This conceptualisation of feedback and statements can be explained through social support theory. Despite the strong link between social support and psychological well-being (for review, see Cohen, 2003) and benefits on physiological processes, such as on the immune, cardiovascular and endocrine system (for review, see Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Uchino, Uno, & Holt-Lunstad, 1999) in the psychological literature, little research has been conducted in the sports domain.

In sport psychology a series of studies by 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; Rees, Ingledew, & Hardy, 1999). Furthermore, studies have documented that social support plays a key role in vulnerability, injury rehabilitation, and coping with stress (e.g., Crocker, 1992; Hardy, Richman, & Rosenfeld, 1991; Smith, Smoll, & Ptacek, 1990). Social support has been identified as a crucial component of coaching behaviour by Chelladurai and Saleh (1978, 1980). Although a social support subscale was included in a sport-related instrument, questions were not related to the sports environment, thus raising concern about its content validity (Horn, 2002). Rees and Hardy (2000), in order to construct a sport-specific social support measurement, interviewed ten high level athletes and identified four components of social support, namely emotional, esteem, informational, and tangible support. For the purposes of the present study we examined only the coaches' esteem support factor, which refers to providing positive feedback on athletes' skills, generating a rich sense of competence and self-esteem, and helping the athletes dealing with loss of confidence (Rees & Hardy, 2000).

Generally, athletes have a need to feel confident. In that respect, the role

of the coach is important. Constructive feedback may help athletes make sense of a problem and get information from their coach about coping strategies. When these behaviours are delivered effectively through information, athletes are more likely to think positively. Although most research has treated social support as a moderator variable, a mechanism often called as a "buffer effect" (Cohen, 2003), we have chosen to conceptualize social support as a mediating variable, which has not received much attention by researchers. Moreover, this is supported to some extent by theory, regarding inner speech and self-awareness, showing that one can engage in ST by internalising others' perspective (Mead, 1964) about his or her personality and behaviour. In simple words we predict that coaches' behaviour will affect athletes' ST indirectly, through the mediating effects of coaches' esteem support. Baron and Kenny (1986) describe a mediator variable as the following: «the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest ... (and) Mediation ... is best done in the case of a strong relation between the predictor and the criterion variable» (pp. 1173, 1178). In simple words a mediator is an intervening variable that explains a relationship between a predictor variable and a criterion variable» (for review, see Baron & Kenny, 1986; Holmbeck, 1997). Furthermore, because there is a common distinction in literature between perceived and received support, the present study focused on the latter support, which is the support provided within a given time of period. For the present study perceived support was conceptualised as support provided within a period of one week.

Although Fischman and Oxendine (1993) have stated that «effective coaches must be good teachers» (p. 11), highlighting the dual role of the coach, the lack of research limits the degree to which Burnett's (1999) findings regarding teachers' impact on students' self-concept can be generalized to the sport settings. While athletes spend the vast majority of their time with their coach, little attention has been given to the way coaches' behaviour and feedback affect athletes' ST. Considering the importance of a coach's behaviour, Kenow and Williams (1992, 1993) developed the Coaching Behaviour Questionnaire (CBQ). The instrument was based on Smoll and Smith's (1989) model, which examines athletes' perceptions of their coaches' behaviour in relation to situational factors, and coaches' and athletes' personal characteristics. Williams et al. (2003) examined the structure of CBQ through exploratory and confirmatory factor analysis. Their results provided support for a two-factor model: (a)

Supportiveness/Emotional Composure (e.g., "My coach shows support for me even when I make a mistake") and (b) Negative Activation (e.g., "My coach's behaviour during a game makes me worry about my performance").

Although research has examined athletes' state and trait anxiety in relation to athletes' perceptions of coaches' behaviour (Kenow & Williams, 1992, 1993, 1999; Smoll & Smith, 1989), there is no research examining the effects of coaches' behaviour on athletes' cognitions. Zourbanos and Theodorakis (2004) provided preliminary evidence regarding the relationship between coaches' behaviour and athletes' ST. In their study, athletes' positive and negative ST was approached by the use of their statements during training and competition. Using multiple regression analyses they revealed that coaches' supportiveness predicted athletes' positive statements and coaches' negative activation predicted athletes' negative statements.

Considering the importance of athletes' ST in relation to performance, the examination of factors that shape and influence athletes' ST becomes of great significance. The present study sought to test a possible model in which coaches' positive and negative behaviour has its effects on athletes' positive and negative ST based on a social-cognitive perspective. In line with Burnett's findings (1996a, b, 1999), we consider that Hardy and Crace's (1991) recommendations of effective feedback are appropriate to the sport context. Moreover, Zourbanos and Theodorakis (2004) showed a possible relationship between coaches' behaviour and athletes' ST. In turn, based on social learning theory (Bandura, 1977, 1982), it was assumed that the coach might serve as a model to the athletes, and therefore coaches' behaviour and his esteem support will predict athletes' ST. This leads us to the hypotheses, that coaches' supportiveness affects athletes' positive ST through the use of coaches' esteem support. That is, esteem support will mediate the relationship between coaches' behaviour, conceptualised as supportiveness, and athletes' positive ST. Finally, we hypothesized that coaches' negative activation will predict athletes' negative ST.

## METHOD

### *Participants - Procedure*

Two hundred and eight Greek athletes (75 females and 133 males)

participated in the study. Their age ranged from 14 to 36 years ( $M = 17.25$ ,  $SD = 5.29$ ). They were recruited from basketball ( $N = 49$ ), handball ( $N = 62$ ), volleyball ( $N = 28$ ), athletics ( $N = 53$ ), and rowing ( $N = 16$ ) and had an average competitive experience of 6.19 years ( $SD = 5.24$ ). After providing informed consent athletes completed measures of ST, and their perceptions of coaches' social support and behaviour, under the supervision of the authors, without the presence of the coach, before starting their training. The questionnaires were translated from the English to Greek language using the back translation method.

### *Measures*

***Test of Performance Strategies-2 (TOPS-2)***. The competition version of TOPS-2 (Thomas, Murphy, & Hardy, 1999), which assesses the use of psychological skills in competition, was used. For the purposes of the present study, only the self-talk and negative thinking subscales, which comprised 4 items each, were administered. Examples of items are: "Say specific cue words or phrases to help performance" for self-talk; "Thoughts of failure" for negative thinking. Ratings were made on a five-point scale (1 = never, 5 = always).

***Coaching Behaviour Questionnaire (CBQ)***. The CBQ developed by Williams et al. (2003) was administered to athletes in order to assess their perceptions of their coaches' behaviour during practice and competition. The CBQ assesses supportiveness/emotional composure (8 items, e.g., "When I need it, my coach's tone of voice is soothing and reassuring") and negative activation (7 items, e.g., "My coach's sideline behaviour distracts my attention during a game"). Participants responded on a 4-point scale (1 = strongly disagree, 4 = strongly agree). Concerning the psychometric properties of the scale in the Greek population using confirmatory factor analysis, Zourbanos, Theodorakis, and Hatzigeorgiadis (2004) revealed a two-factor model supporting Williams et al. (2003) findings.

***Social Support Questionnaire (SSQ)***. To assess social support a new scale was constructed using items from the Social Support Questionnaire (SSQ) derived from Rees and Hardy (2000) qualitative study (39 items) and Rees and Hardy (2004) (16 items). Following Wills and Shinar's (2000) suggestions about adjusting the social support scales to the population that is being assessed, 20 items were chosen from the Rees and Hardy (2000, 2004) instrument to capture the four identified dimension (5

items per factor). The questionnaire comprised four factors, namely emotional, esteem, informational, and tangible support, but for the purposes of the present study we examined only coaches' esteem support factor.

### *Data analysis*

First, the structure of the instruments was assessed through confirmatory factor analysis (CFA) using the EQS program (Bentler, 1995). Subsequently, the hypothesized structural relationships were tested through structural models with latent factors. Following the recommendations of Olmstead and Bentler (1992), three indicators were selected to represent each construct in the structural models, because the size of the sample was not adequate to test full latent models with all indicators. Items representing each construct were selected from fitting confirmatory factor models. The criterion for the selection was the best possible conceptual representation of the construct, so items varying in content were selected. Following the recommendations of Kelloway (1998), three structural models were examined to test the mediation hypothesis. First, a non-mediated model, in which it was hypothesized that (a) supportiveness will predict both coaches' esteem support and athletes' positive ST, and (b) negative activation will predict athletes' negative ST. Second, a partially mediated model was tested, in which a path from coaches' esteem support to athletes' ST was added. Thirdly, a fully mediated model was tested, in which the path from supportiveness to athletes' ST was dropped, that is, coaches' supportiveness (independent variable) predicted athletes' positive ST (dependent variable) through coaches' esteem support (mediator), and negative activation predicted directly athletes' negative ST.

In accordance to Hoyle and Panter's (1995) recommendations, absolute and incremental fit indices were used to evaluate the fit of the models. The absolute fit indices used in this study were the chi square ( $\chi^2$ ) test, the  $\chi^2/df$  ratio, the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean square Residual (SRMR). The incremental fit indices used in this study were the Comparative Fit Index (CFI), the Non-Normed Fit Index (NNFI), and the Incremental Fit Index (IFI). The CFI, NNFI and IFI values of .90 or above indicate a good model fit to the sample data (Bentler & Bonett, 1980). A RMSEA value

of 0.05 or below indicates an acceptable model fit (Bentler, 1990) whilst values greater than 0.1 would be inappropriate (Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001).

## RESULTS

### *Preliminary analyses*

Means and standard deviations, correlations and Cronbach's alpha for all variables are presented in Table 1. All scales showed adequate internal consistencies. Cronbach's alpha coefficient exceeded the .70 criterion (Nunnally, 1978), except from positive ST and coaches' supportiveness, which demonstrated internal consistencies of .62 and .61, respectively. Based on Aiken's (1996) suggestions that alpha coefficients of .60 are also acceptable the above scales were retained. Supportiveness and negative activation correlated negatively ( $r = -.46$ ). Athletes' positive ST was moderately related to coaches' supportiveness ( $r = .19$ ) and moderately related to coaches' esteem support ( $r = .20$ ). Furthermore, athletes' negative ST was moderately related to coaches' negative activation ( $r = .36$ ).

*Table 1. Descriptive statistics, alphas, and correlations of the examined variables*

Variable	<i>M</i>	<i>SD</i>	alpha	1	2	3	4	5
1. Supportiveness	2.86	.41	.61	--				
2. Negative activation	2.18	.57	.77	-.46**	--			
3. Athletes' positive self-talk	3.31	.82	.62	.19**	-.05	--		
4. Athletes' negative thinking	2.26	.78	.75	-.24**	.36**	-.20	--	
5. Coaches' esteem support	3.74	.89	.76	.45**	-.38**	.20**	-.16*	--

*Note:* \*\*  $p < .01$ , \*  $p < .05$ .

### *Questionnaire assessment*

The instruments were assessed through CFA. The fit indices for the three models are presented in Table 2. Examination of the residual matrix for the SSQ indicated that the error variance of two items was highly correlated with error variance of various other items. Therefore, the particular items "Who believes in you", and "Who helps in dealing with emotional issues" were dropped. The revised 18-item solution produced a good fit to the data. Cronbach's coefficients were as follows:  $\alpha = .83$  for emotional support,  $\alpha = .76$  for esteem support,  $\alpha = .72$  for informational support, and  $\alpha = .78$  for



**Table 2. Fit indices for the confirmatory factor models**

	CBQ	TOPS-2	SSQ
$\chi^2/df$	115.22/89	34.04/19	192.46/129
<i>p</i>	< .05	< .05	< .01
NNFI	.94	.93	.94
CFI	.95	.95	.95
IFI	.95	.95	.95
GFI	.93	.96	.90
SRMR	.06	.06	.05
RMSEA	.04	.06	.05

*Note:* CBQ = Coaching Behaviour Questionnaire; TOPS-2 = Test of Performance Strategies-2; SSQ = Social Support Questionnaire; NNFI = non-normed fit index; CFI = comparative fit index; IFI = incremental fit index; GFI = goodness of fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation.

**Table 3. Items representing each construct and their standardized factor loadings**

Items	Loadings
CBQ – Supportiveness/emotional composure	
Criticism from my coach is done in a constructive manner	.68
My coach shows support for me even when I make a mistake	.57
My coach's mannerisms and display of emotions help me relax and play better	.47
CBQ - Negative activation	
My coach's sideline behaviour distracts my attention during a game	.63
My coach's behaviour during a game makes me worry about my performance	.62
My coach makes me feel uptight	.71
Coaches' esteem support	
Who instils in you the confidence to deal with pressures	.66
Who lifts your morale when it's down	.86
Who encourages you	.68
Athletes' positive self-talk	
Talk positively to get the most out of competitions	.45
Say specific cue words or phrases to help performance	.39
Manage self-talk effectively	.96
Athletes' negative thinking	
Self-talk is negative	.69
Thoughts of failure	.58
Keep my thoughts negative	.69

**Table 4. Fit indices for the structural path models**

Fit indices	Model		
	Non-mediated	Partially-mediated	Fully-mediated
$\chi^2/df$	126.14/86 = 1.47	125.20/85 = 1.47	125.36/86 = 1.46
<i>p</i>	.003	.003	.004
NNFI	.93	.93	.93
CFI	.94	.94	.94
IFI	.94	.94	.94
SRMR	.06	.06	.06
RMSEA	.05	.05	.05

*Note.* NNFI = non-normed fit index; CFI = comparative fit index; IFI = incremental fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation.

tangible support. Moreover, for the purposes of the present study only the esteem support factor was used for the structural equation models.

### *Structural models*

Three latent factor models were tested to assess the mediation hypothesis. The indicators that were selected to represent each construct, along with their factor loadings are presented in Table 3. The fit indices for the non-mediated, the partially mediated, and the fully mediated models are presented in Table 4. All tested models presented adequate fit, in accordance to Hu and Bentler's (1999) contemporary criteria for fit indices. The non-mediated model (Figure 1) revealed that supportiveness predicted coaches' esteem support and athletes' positive ST, whereas negative activation predicted athletes' negative thinking. The model explained 5% of athletes' positive ST and 10% of athletes' negative thinking. The partially mediated model (Figure 2) revealed that when the path from coaches' esteem support to athletes' positive ST was added, the path from

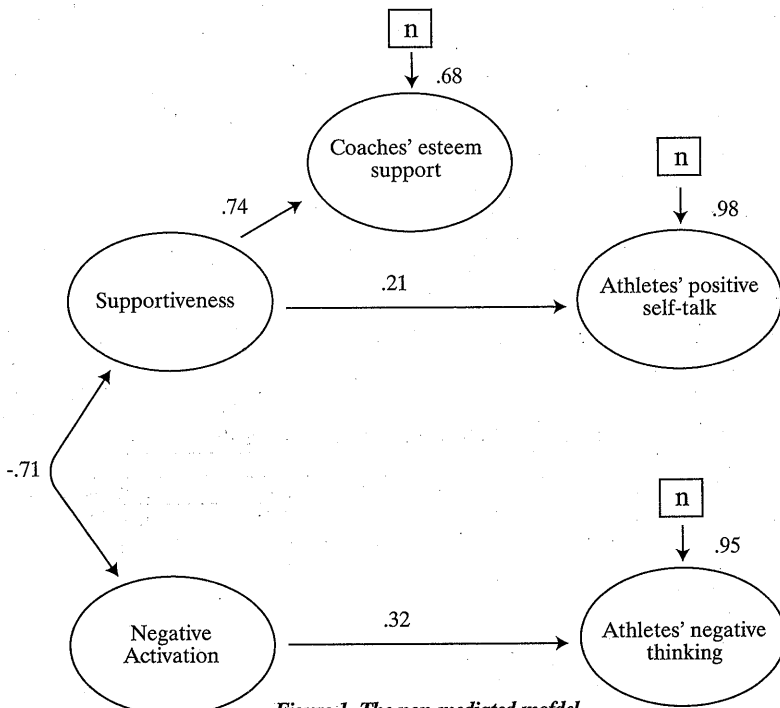


Figure 1. The non-mediated model.

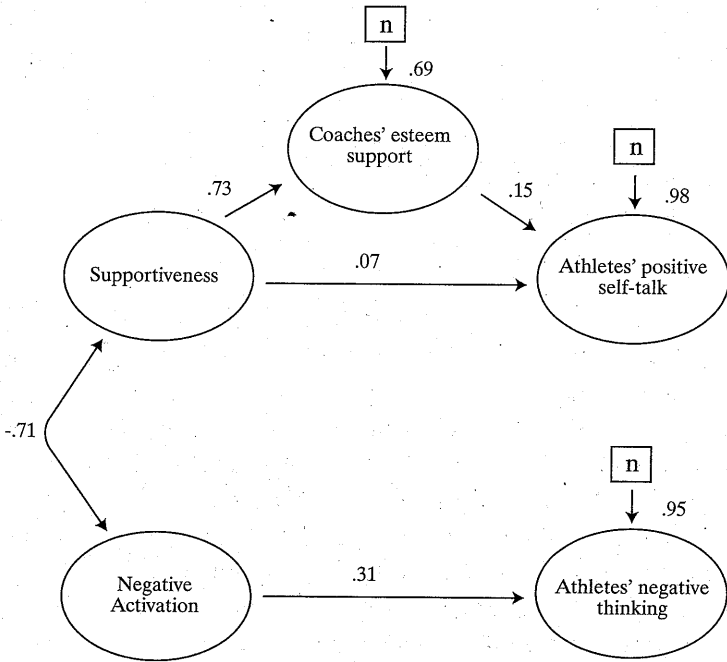


Figure 2. The partially-mediated model.

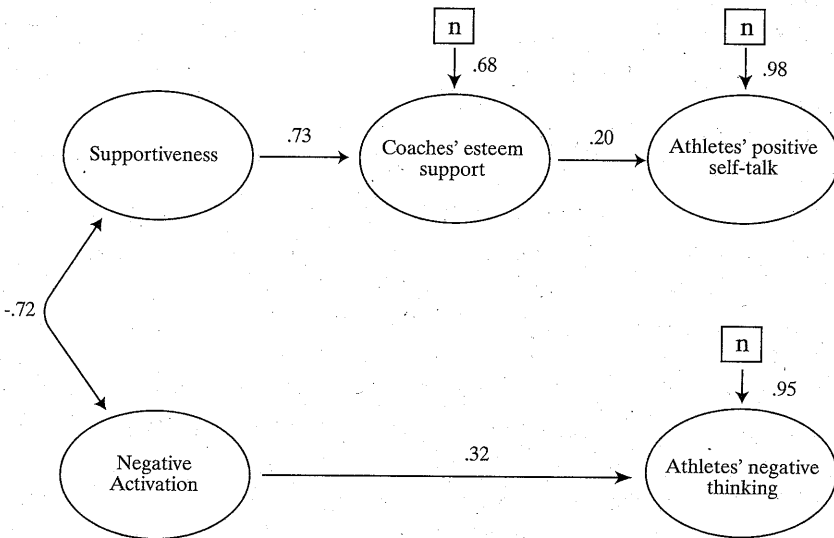


Figure 3. The fully-mediated model.

supportiveness to athletes' positive ST became nonsignificant. The model explained 9% (positive ST) and 10% (negative ST), respectively. Finally, the fully mediated model (Figure 3), where the nonsignificant path was removed, revealed that supportiveness predicted athletes' positive ST indirectly through esteem support, whereas negative activation predicted athletes' negative ST directly. Therefore, the mediation hypothesis was supported. The model explained 9% of athletes' positive ST variance and 10% of athletes' negative ST variance.

## DISCUSSION

The current study provided evidence that coaches' esteem support may play an important role in mediating the relationship between general supportive behaviour and athletes' positive ST. Furthermore, coaches' negative activation predicted athletes' negative ST. The hypothesised relationships were examined through structural models. In relation to the first hypothesis, coaches' supportiveness predicted coaches' esteem support, which in turn predicted athletes' positive ST, thus supporting the mediation hypothesis. The equation accounted for 9% of athletes' positive ST compared to the non-mediated model, which explained only the 5% of athletes' positive ST. According to the second hypothesis, coaches' negative activation predicted athletes' negative ST directly. The equation accounted for the 10% of athletes' negative ST variance. Overall, the present study underlines the importance of coaches' behaviour and verbal expressions in shaping athletes' ST.

Similar findings regarding the role of significant others have been reported in educational settings. Research has indicated that positive statements made by teachers were related to students' positive ST, and in turn negative statements by teachers were related to students' negative ST (Burnett, 1999). Further evidence regarding the importance of significant others' influences have been reported by Burnett and McCrindle (1999), who found that positive statements made by significant others were related to children's higher self-esteem, whereas negative statements were related to children's lower self-esteem. Comparable findings in sport setting have been reported by Weinberg, et al. (1992). They examined strategies used by Australian and American coaches to enhance athletes' self-efficacy. Their results indicated that one of the most frequently used strategies was

encouraging athletes to use positive ST by rewarding statements. The results of this study underline the importance of coaches' way of expression their feedback and behaviour for athletes' thoughts. Although ST has been associated with athletes' performance (Gould et al., 1989; Hardy et al., 1996; Weinberg et al., 1992; Weinberg & Jackson, 1990) and despite its apparent importance, the relationship between coaches' behaviour and athletes' ST has not been investigated within the sport literature.

From a practical perspective, this study was based on 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. As already stated, Hardy and Crace (1991) recommended that coaches should use supportive verbalizations in their instructions. The implementation of this study was partially based on Hardy and Crace's (1991) suggestions regarding effective coaching feedback, nevertheless the interest was in examining the way in which this behaviour can affect athletes' thinking. In accordance to the present findings, coaches are encouraged to provide their feedback in a supportive manner, with encouraging comments, verbal rewards and support which in turn develop positive thinking in order to have facilitative effects on performance (Van Raalte et al., 1994). Conversely, coaches' negative behaviour can generate negative thoughts in athletes' minds that could be detrimental for performance (Van Raalte et al., 1994).

Although the present study provides a useful insight regarding the coach's influence on athletes' ST, certain limitations of the study need to be addressed. One limitation was the self-report methodology that was employed, which might have hidden some other potential coaching behaviours, but also athletes' ST. Concerning athletes' ST, Van Raalte et al. (1994) developed the ST and Gestures Rating Scale, an observational instrument developed to assess athletes' ST during performance. The use of such an instrument in conjunction with a respective instrument for coaches' behaviour like the Coaching Behaviour Assessment System (Smith, Smoll, & Hunt, 1977) could have strengthened the confidence of ST and behaviour description. Furthermore, considering that males and females have been found to differ in their perceptions of coaches' behaviour (Horn, 2002) the fact that gender was not examined in this exploratory attempt, because of the limited number of females, is another shortcoming. Finally, because some athletes have negative feelings, they perceive their coaches negatively, and they think negatively. This possibility could have been assessed with a

measure of negative affect and this might reveal mediational effects for the negative activation path.

Moreover, an issue that has not received the required attention in the sport literature is the specific content of ST beyond the positive-negative distinction. To develop effective strategies for the development or the modification of existing ST patterns, a more comprehensive conceptualisation of the structure of athletes' internal dialogue is warranted. Future research might also take a different approach of assessing athletes' thoughts, by using more comprehensive and specific measure of thought assessment (for review, see Glass & Arnkoff, 1997). Furthermore, the examination of gender and ST in relation to their perceptions of coaches' behaviour should be examined in future research. Finally, we believe that a particularly fruitful area for future research should aim to develop intervention programs that would improve coaches' behaviours and manners and would help coaches develop techniques in order to produce effective interpersonal environments.

In conclusion, although the results of this study have shed some light on the nature of the relationship between coaches' behaviour and feedback and their impact on athletes' ST, they must be considered cautiously, as they are correlational and exploratory in nature. The major findings of the present study suggest that supportive coaching behaviour followed by supportive feedback directed towards the athletes could have beneficial effects upon athletes' thinking, whereas coaches' negative behaviour could generate negative thoughts in athletes' minds.

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