MOTIVATIONAL DIFFERENCES IN ATHLETES TRAINED BY COACHES OF DIFFERENT MOTIVATIONAL AND LEADERSHIP PROFILES

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Abstract:

Coaches of different profiles influence athletes' sports motivation differently. The aim of this paper was to investigate the coaches' contribution to the motivational structure of athletes from team sports. Using the coaches' self-evaluations of goal orientation and intrinsic motivation and the athletes' evaluations of their coaches' leadership styles, the two types of coaches were identified. Discriminant analysis showed the differences in motivational structure between athletes trained by the coaches from either one or the other group. The athletes who were trained by the more athlete-directed, low ego-oriented coaches showed a preferable motivational pattern; they perceived the mastery motivational climate in their teams, were higher on intrinsic motivation, their task goal orientation was high and ego goal orientation was elevated. The athletes trained by the less athlete-directed and high ego-oriented coaches perceived fewer signs of the mastery motivational climate in their teams, were less intrinsically motivated, and their task orientation and ego goal orientation were lower. The motivational structure profiles of the athletes from the second group and their coaches seem incongruent and this incompatibility might induce athletes' lower motivation.

Key words: motivation, leadership, athletes, coaches, differences

Introduction

The main energizing force within every achievement context, including sport, is the need of the participants to demonstrate their competence. According to the Achievement Goal Theory (Nicholls, 1989, 1992) the need for competence can be realized within the sport context and each athlete's motivation is shaped by different goals and behaviours which are considered, by the athlete, to be the best way to achieve sport success. Success in sport depends on many different factors, related to an athlete who strives toward achievement, but also to some environmental factors, which shape conditions and the necessary prerequisites for success. Athletes' motivation is one of the most important factors, which belongs to the first group, and the coach's influence and leadership behaviour are leading factors from the second group.

Athletes' motivation

Each individual has certain dispositional goal orientations and perceives a situational goal structure, i.e. environmental climate, individually, in a specific manner. These two perspectives (the athlete's and environmental) could be either congruent or not, but they represent two dimensions of athletes' motivation that interact in affecting his/her behaviour (Roberts, 2001). The situational goal structure mainly depends on the coach and his/her leadership behaviour. According to the *Integrated Model of Antecedents and Consequences of Coach Leadership* (Duda & Balaguer, 1999), the variations in individual or team motivational patterns are the function of the interaction between the variables of athletes' individual differences (personality, goal orientations, self-perceived ability) and his/her perception of the motivational climate operating in his/her team. In previous studies, based on the Self Determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2000) it was assumed that the coach is one of the key factors that influence motivational climate development (Biddle, 2001; Chelladurai & Reimer, 1998; Duda & Balaguer, 1999; Jowett, 2003; Mageau & Vallerand, 2003). It is undisputed that coaches have an important role in the development of athletes in general. As coaches differ in their personality, competencies, qualifications, communication skills,

motivational structure, leadership behaviours, etc., they may also influence the athlete's motivation differently. Coaches' behaviour is predicted to be influenced by their persistent orientations, predominant motivation, situations in which they work, and by their perceptions of their athletes' motivation (Vallerand, Deci, & Ryan, 1987). In the context of sports, different types of coaches may exist with regard to their personality traits, coaching experience, age, educational level, leadership style, etc. It is also possible to presume that there are different types of coaches with regard to their motivational structure. Motivational differences may be related to the differences in coaches' interpersonal styles, and it is an important factor of athletes' intrinsic motivation and self-esteem (Vallerand & Pelletier, 1985). A coach's motivational pattern could influence athletes' motivation indirectly. In other words, coach's motivation could have a high impact on his/her leadership behaviour which in turn can cause differences in the prevalence of particular types of motivation in athletes, regarding their goal choices, the domination of a particular motivational pattern in the team and, in general, it can influence athletes' experience of their coach (Vallerand & Perreault, 1999). Further, all the previously mentioned will influence the functioning of a team, the quality of its sport performance and achievements, influencing also the persistence of athletes within their sport.

Leadership behaviour

According to previous studies and contemporary literature on leadership in sport, it may be concluded that coaches of different profiles communicate differently with their athletes, manifest different behaviours, and altogether, might influence athletes' motivation for sport in different ways. Leadership in sport is a process that involves the interaction of a coach, an athlete and situational factors (Chelladurai, 1993). A coach's leadership style depends on the way he/she interacts with his/her athletes and on his/her decision-making processes. A coach's leadership style influences the development of motivational climate, i.e. the coach-created motivational climate correlates highly with the perception of the coach's communication style (Torregosa, Suosa, Vildrach, Villamarin, & Cruz, 2008).

Coach's social interactions consist of several different processes like his/her instructiveness, supportiveness, and rewarding behaviour (Chelladurai, 1990). A coach's instructiveness regarding his/her coaching behaviour is aimed at improving athletes' performance by emphasizing and facilitating hard and strenuous training, instructing them in the skills, techniques, and tactics of a particular sport, clarifying athletes' roles and their mutual relationships, and structuring and coordinating athletes' activities. A coach's supportiveness regards

his/her readiness to give social support to athletes. A coach considers welfare of an individual athlete; therefore he/she persists in creating a positive group atmosphere and establishes warm interpersonal relationships with athletes (Jowett & Chaundy, 2004). Rewarding behaviours illustrate coaching behaviours which reinforces an athlete by recognizing, praising and rewarding his/her exertion, improvement and good performance. The process of decision-making consists of two different processes: cognitive and social. The cognitive process is concerned with the rationality of decisions, i.e. with identifying the problem, defining the problem and its relevant constraints clearly, generating and evaluating different actions needed for problem solving, selecting the best alternative to achieve the desired end (Chelladurai & Queck, 1995). The social process of decision-making refers to the extent to which the coach allows athletes to participate in the cognitive processes of making a decision. These processes may influence athletes' motivation differently due to the athletes' perceptions and understanding of coach's direct and indirect messages deriving from his/her communication style and leadership behaviour.

Generally, we may distinguish leaders as more or less task-oriented or people-oriented (Hillel, 2006). In sport we usually distinguish between two types of coaches - autocratic and democratic. The *democratic coach* is more athlete- than task-oriented. The coaches of this type are more supportive, more instructive and more ready to reinforce, encourage and give positive feedback information to their athletes than other coaches, thus increasing their athletes' sense of competence, independence, satisfaction and self-esteem (Chelladurai, 1993; Reimer & Toon, 2001). They employ a less controlling leadership style, allow their athletes to participate in the decision-making processes, and encourage them to solve some problems by themselves that may appear during practice or competition. Sometimes, they consult with athletes and then make decisions by themselves. The democratic coaches approach their athletes more individually, and their personal care of athletes is more obvious. They care about conflicts in the team, and try to help athletes to solve them. The democratic coach is more oriented towards athletes as people and interested in good interpersonal relationships, whereas he/she is less oriented towards outcomes, results, or winning. In the case of a failure the democratic coach will first talk to athletes trying to analyse their performance and trying even to comfort them. For the democratic coach all athletes are precious and all contribute to the team's success. Consequently, athletes perceive such a coach as a parent, a teacher or even a friend, and tend to have a close interpersonal relationship with him/her. *Autocratic coaches,*

on the other hand, are more oriented towards task accomplishment and outcome than towards people; they are highly oriented towards results and winning. They are less supportive, less instructive and less rewarding (Reimer & Toon, 2001). They are more directive and use a more controlling leadership style, not allowing athletes' participation in decision-making. These coaches usually do not explain their actions, they solve problems and make decisions alone. In comparison to the democratic coaches, the autocratic coaches are less flexible, less innovative, and less ready to try new training or teaching methods. Also, autocratic coaches are not open to criticism and are highly self-confident. They influence athletes through their authoritative leadership, severe approach, and their position of power, demanding respect and obedience from their athletes. They often punish a bad performance, failure or insufficient effort investment, but at the same time they might be very tolerant towards the high ability athletes who are treated like stars. Many autocratic coaches are ready to help or to give support to their athletes only in the case of severe problems (e.g. injuries, or illness). They are less ready to invest their capacities, time, etc. in less competent athletes who are considered as less important for the team.

According to some previous investigations, there are some desirable characteristics of, so called, 'credible coaches' – they have a broader definition of success than winning or losing (Duda & Balaguer, 2007), they are charismatic and they behave in a way their athletes respect and trust them, using this style for higher goals, improvement, proving themselves and even winning. They encourage their athletes to be more self-determined rather than compliant and controlled by their coaches, they develop such an environment where athletes can recover quickly from a loss, considering it as a challenge rather than a failure. Such coaches, "because they coach with both, heart and head, contribute to the development of athletes who are intrinsically motivated, committed and confident" (Duda & Balaguer, 2007, p. 118). Also, people who are recognized as good leaders seem to be dominant, highly intelligent and masculine (Kajtna, 2006); a good coach is a realist, ready to take responsibility; he/she is also an inventive, reliable, and trustworthy person (Tušak & Tušak, 2001). It may be said that some of the mentioned characteristics are more expected for democratic coaches. The democratic coaching style is probably more appropriate for the development of the desirable motivational patterns in athletes, which may probably result in more adaptive behaviours, and consequently, in a stronger commitment, a higher level of sportspersonship and higher achievement (Reimer & Toon, 2001; Stornes

& Bru, 2002). Unfortunately, this is not a prevalent leadership style in the traditional Western sport culture; therefore, the authors hope that the empirical evidences about its benefits, presented in this article, could contribute to some changes in coaching behaviour in the future so as to change it to a more desirable direction as regards athletes' motivational consequences.

This study examines the coach's contribution to the athletes' motivational structure. We established two research problems. First, we aimed at investigating if there were different profiles of coaches, and if so, to determine them by using two sources of information: the coaches' self-evaluation of their own motivational tendencies (goal orientation and intrinsic motivation level) and their athletes' evaluations of their coaches' leadership behaviours. The second goal was related to the investigation of the differences in motivational tendencies among the athletes pertaining to the teams trained by the coaches of the so determined different profiles.

We hypothesized there were at least two types of coaches within the observed team sports. The first ones were expected to be more autocratic (or less democratic) coaches whose motivational structure was predominantly defined by a high ego goal orientation and intrinsic-extrinsic motivation (high interest/enjoyment in coaching, high perception of competence, high feeling of pressure, moderate effort investment) (Amorose & Horn, 2000; Smoll & Smith, 1989; Vallerand, et al., 1987). The others were expected to be democratic coaches who were more autonomy supportive and used an athlete-centred approach (Mageau & Vallerand, 2003). Their motivational structure was defined by task goal orientation and high intrinsic motivation (high interest/enjoyment in coaching, high competence and effort investment, low pressure/tension).

Also, we expected a difference in motivational structures of athletes coached by coaches of different profiles. In other words, we hypothesized that the athletes whose coaches were democratic and favoured the athlete-centred approach were more intrinsically motivated and perceived themselves as more competent (Mageau & Vallerand, 2003; Pelletier & Vallerand, 1996, Price & Weiss, 2000). Also, those athletes are task-oriented (Meyer, 1996) and perceive the motivational climate in their teams more as mastery-oriented (Douglas, 1998; Williams, 1996). We presumed that the athletes whose coaches were less democratic, less supportive, less instructive and less ready to give positive feedback were probably more extrinsically motivated (Amorose & Horn, 2000) and felt less competent (Horn, 1985); they were also mainly ego-oriented and perceived the motivational climate in their teams mostly as performance-oriented (Douglas, 1998; Williams, 1996).

Methods

Participants

The sample consisted of 577 young male Croatian athletes (M=15.6 yrs, SD=1.2 yrs), and their 51 coaches (M=39.2 yrs, SD=10.0 yrs). All the coaches were male. The athletes were basketball, football and handball players from 51 clubs, from 9 Croatian counties, 17 clubs from each sport ($n_{basketball}$=192, $n_{football}$=205, $n_{handball}$=180).

Due to the subject matter of the study, which was to investigate the relationship between coaches' motivation, goal orientation and leadership, and athletes' motivation, goal orientation and perception of their coaches, the *inclusion criterion* for the selection of the participants was their training experience within the same team under the leadership of the same coach. Each coach had been leading his team for at least six months, and each player included in this investigation had been trained in his team for at least six months. We considered that it is a minimum time period to become acquainted with both the coach and team. Some of the athletes had been training together and by the same coach for even up to four years.

Materials

Goal orientation. The Croatian version of Task and Ego Goal Orientation in Sport Questionnaire (CTEOSQ; Barić & Horga, 2007) assessed the dispositional goal orientations. Thirteen items measure the degree to which an individual has adopted, or developed, the task or ego goal orientation. The participants were asked to think, to try to remember when they felt they were most successful in their sport and to respond to a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The participants completed all the following measures, but the items were adapted to their sport roles (either an athlete or a coach). The original version of the instrument (Duda, Chi, Newton, Walling, & Cately, 1995) as well as the Croatian version fitted the data well (validity and reliability) with the young and adolescent participants (Barić, Cecić Erpič, & Babić, 2002; Kim, Williams, & Gill, 2003). The Cronbach's alpha reliability coefficients obtained for the task and ego orientation subscales in this study were .76 and .83 for the coaches, and .80 and .84 for the athletes, respectively.

Intrinsic motivation. We assessed the participants' intrinsic motivation using the Croatian version of the Intrinsic Motivation Inventory (IM; Barić, et al., 2002; McAuley, Duncan, & Tammen, 1989). It contains 18 items followed by the 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's alpha coefficients obtained for the four components of intrinsic motivation were: interest-enjoyment (.27 and .57), perceived competence (.58 and .65); effort-importance (.46 and .64) and pressure-tension (.58 and .63) for the coaches and the athletes, respectively. The lower values obtained for the coaches seem to be due to a smaller number of respondents.

Motivational climate. To assess the perceived motivational climate participants completed the Croatian version of the Perceived Motivational Climate in Sport Questionnaire (PMSCQ; Barić, 2004; Seifriz, Duda, & Chi, 1992). The 21-item scale consists of two dimensions - mastery and performance motivational climate. The participants responded to the statements beginning with the stem "In this club..." concerning their perception of motivational climate on the 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's alpha reliability coefficients of mastery and performance scale were .30 and .75 for the coaches and .75 and .82 for the athletes, respectively.

Coaching behaviour. To evaluate the coaches' leadership behaviour we administered the 21-item British version of the Leadership Scale for Sport (LSS; Lee, Williams, Cox, & Terry, 1993), translated and adapted to the Croatian language (Barić, 2004). We wanted to obtain the athletes' and coaches' evaluations of the coaches' leadership styles, so both the athletes and the coaches responded to the same questionnaire. The items were rated on the 5-point Likert-type scale, ranging from 1 (*never*), to 5 (*always*). The Cronbach's alpha coefficients obtained for the four dimensions of coaches' leadership styles were: explanation and instructions (.70 and .74), democratic style (.68 and .82), positive feedback (.62 and .69) and social support (.62 and .78) for the coaches and the athletes, respectively. In this version of LSS the autocratic scale was omitted due to its low reliability and questionable validity (Lee, et al., 1993).

Procedure

The measurement was conducted over a one-year period, from September 2002 to November 2003. Before measuring an informed consent was obtained from the clubs' management. The measurement plan was announced to the athletes and their parents, who agreed to their underage children's participation in the study. The principal researcher and two trained assistants administered the questionnaires in a group setting mainly prior to a training session. In the beginning, the purpose of the study and instructions for completing the questionnaires were presented. Anonymity and confidentiality were guaranteed, and each participant could withdraw from the poll at any moment. After the introduction, the coach was asked to leave the room and to complete his questionnaire separately. The measurements were carried out in a club meeting room, in a locker room or in a gymnasium and lasted about 25 minutes.

Results

The evaluations in each questionnaire were condensed to particular dimensions, i.e. separate composite scores were calculated for each subscale by adding the subjects' responses to the items of the respective subscales and by dividing them by the number of items. Preliminary analyses to ascertain the descriptive statistics and calculate the internal consistency estimates for all the variables were conducted. Hierarchical cluster analysis (using Squared Euclidian distance as the proximity measure and the Ward algorithm for clustering – Aldenderfer & Blashfield, 1986; Bucik, 1990) was used to classify the coaches with regard to their leadership style, goals and type of motivation. The whole sample of athletes was divided into two different groups according to the criterion based on the different coaches' profiles obtained by cluster analysis. Further, the differences between the athletes' motivational tendencies with regard to different coaches' profiles were calculated by discriminant analysis (Klecka, 1980).

Preliminary analyses. Means, standard deviations and ranges for all the variables assessed are presented in Table 1. The examination of the means reveals that these young, team sport athletes rated themselves relatively high on task orientation and intrinsic motivation dimensions, while reporting moderate ratings on ego orientation and motivational climate dimensions.

The motivational climate pattern in these teams seems to be combined, i.e. both types of motivational climate are moderately present according to the athletes' evaluations. These athletes evaluated their coaches mostly with average grades; they perceived them as instructive, relatively ready to give positive feedback, but less supportive and low democratic.

Table 1. Descriptive statistics for the subsamples of coaches and athletes

Variables	Coaches (N=51)		Athletes (N=577)	
	M	SD	M	SD
Task	4.57	.43	4.19	.66
Ego	2.71	.96	2.98	.90
Interest/enjoyment	4.75	.26	4.64	.39
Competence	4.51	.39	4.10	.54
Effort investment	4.81	.29	4.50	.54
Pressure/tension	1.63	.56	2.00	.71
Mastery	4.42	.34	3.96	.55
Performance	3.01	.60	3.07	.69
Instruction	4.60	.37	3.93	.61
Positive feedback	4.48	.53	3.95	.72
Social support	4.11	.49	3.36	.88
Democratic style	2.54	.69	2.66	.93

The coaches presented themselves as highly task-oriented and moderately ego-oriented. Mean values show that they are highly intrinsically motivated for their coaching job; they enjoy it, feel competent, invest much effort and feel low pressure from coaching. The coaches evaluated the motivational climate in their teams as predominantly mastery-oriented, with a lower presence of imperative for results and competition between team-mates. They evaluated themselves as highly instructive, supportive and ready to give positive feedback to their athletes, but low democratic and the latter is congruent to their athletes' average evaluations. Almost all the scores on the motivational scales, except for pressure and/or tension, were slightly skewed to the right, revealing that the participants scored high on those dimensions.

Reliability analyses showed that internal consistency for most of the dimensions was acceptable, especially in the subsample of athletes. The exceptions were intrinsic motivation dimensions, which showed a low reliability especially in the coaches which was probably caused by the small number of coaches within that subsample. However, this questionnaire showed a lower reliability also in the athletes, that might be a consequence of misunderstanding the two negatively formulated items and this is congruent with the results of some previous investigations which used a translated version of IMI which also showed lower Cronbach's alpha coefficients in comparison to the original English version (Kim & Gill, 1997; Kim, et al., 2003).

Cluster analysis. We used cluster analysis to classify the coaches on the basis of their leadership styles (evaluated by their athletes), self-reported goal orientation and intrinsic motivation subscales scores. The results indicated that in this set of data two different clusters existed that corresponded to the two different coaches' profiles. The decision to accept a two-cluster solution was guided by the initial hypothesis and it was proved by the dendrogram and the different statistical indicators such as fusion coefficients. The first cluster contained 33, and the second 18 coaches. We checked if this division was sport-specific, but in both clusters the coaches from all three sports were distributed equally. Afterwards, the descriptive parameters for the coaches from both clusters were calculated to obtain their specific features (Table 2).

We also analysed the differences in motivational and leadership behaviour variables between the coaches of different profiles to identify the difference between them. The results showed that the statistically significant differences between those two groups of coaches describe their different leadership behaviour (i.e. the differences in some aspects of interactions to their athletes), their different goal orientations and different levels of pressure and/or tension caused by their coaching job. The coach-

Table 2. Descriptive parameters and differences (ANOVA) between the coaches of different profiles

	Mean		SD		F	p
	Cluster 1	Cluster 2	Cluster 1	Cluster 2		
Interest/enjoyment	4.76	4.74	.28	.24	.03	.87
Competence	4.56	4.40	.38	.40	2.07	.16
Effort invested	4.80	4.83	.27	.34	.19	.67
Pressure/tension	1.48	1.89	.40	.72	6.65	.01*
Task	4.62	4.45	.46	.39	1.20	.28
Ego	2.13	3.51	.71	.69	44.89	.00**
Instruction	4.05	3.72	.30	.26	14.77	.00**
Feedback	4.05	3.72	.35	.35	1.68	.00**
Support	3.46	3.15	.46	.43	5.56	.02*
Democratic style	2.67	2.70	.51	.37	.04	.84

**p<.01, *p<.05

es differed, according to the athletes' perceptions, in their instructiveness, readiness to give feedback information and support to their athletes, but they also differed in their ego orientation. No other variable discriminated between those two groups significantly, i.e. most determinants of their intrinsic motivation, their task goal orientation and their decision-making style can be considered as equal or very similar.

According to these results it can be said that the coaches pertaining to the *first cluster* can be described as less ego-oriented, more supportive, more instructive and more ready to give positive feedback than the coaches from the second cluster. Also, they feel less pressured by their coaching job. The coaches from the *second cluster* can be described as more ego-oriented, less instructive, less supportive and less ready to give positive feedback to their athletes and they also feel a higher pressure while coaching. Both coach types had a similar decision-making style, i.e. they were low-democratic. Other aspects of their leadership behaviour showed tendencies towards more (the coaches from cluster 1) or less 'athlete-caring' behaviour (the coaches from cluster 2). Both types of coaches shared some common characteristics. Their intrinsic motivation, according to the first three dimensions (interest/enjoyment, perceived competence and effort invested in their coaching job) was quite high. Also, both types of coaches were highly task-oriented and low in manifesting democratic behaviour. According to the results, the first cluster coaches can be described as more athlete-directed and low ego-oriented, while the other cluster coach profile can be described as less athlete-directed and highly ego-oriented coaches.

Literature on research methodology recommends the validation of the cluster analysis solution. One of the best ways of validating the results obtained by cluster analysis is to perform significance tests on the external variables (Aldenderfer &

Blashfield, 1986). For this purpose we chose three additional variables. Those were the coaches' age, coaching experience (number of years working as a coach in a particular sport) and the athletes' perception of the mastery motivational climate. The signs of mastery motivational climate, as perceived by the athletes in teams, were used because in one of the previous studies (Barić, 2004), it was obtained that this pattern of motivational climate was explained by the trainees' perception of their coach's leadership behaviour. In that study the results of the hierarchical regression analysis showed that some coaches' leadership variables, as, for example, instruction and social support (those were significantly discriminative for coaches from different clusters – Table 2) explained from about 43 % to 51 % of the variance of the mastery motivational climate as the criterion variable. So, it can be presumed that different types of coaches differently influence the creation of the mastery motivational climate in their teams, i.e. that they have different influences on their athletes' experience and their perception of the motivational climate pattern. The athletes' perception of the mastery motivational climate was calculated as the teams' perception, i.e. as an average estimation of all the individual athletes' perceptions of the mastery motivational climate within a particular team. The results showed that the single significant difference was obtained for the mastery motivation climate variable (F=17.52, p<.00). The coaches from both clusters were, on average, of similar age and experience. Also, no statistically significant difference was obtained for any of those three variables among different sports.

According to the results obtained the more athlete-directed and low ego-oriented coaches created the teams' atmosphere more like the mastery motivational climate than the coaches from the second cluster. This finding, that reflects a practical implication of the results obtained, can be considered as a confirmation for the chosen two-cluster solution.

Discriminant analysis. The sample of athletes was divided into two groups according to the criterion of the two types of coaches. All the athletes trained by the coaches from the first cluster (type 1) entered the first group (n=369), and the rest of the athletes, who were coached by the coach type 2 formed the second group (n=208). The athletes' motivational structure was represented by 8 variables (Table 3) whose tolerance coefficients ranged from .63 to .80 showing their appropriateness for the discriminant analysis.

standardized coefficients. According to these values, the discriminant function represents a conglomerate of mastery motivational climate signs and intrinsic motivation determinants as are effort and interest/enjoyment followed by strong task orientation and moderate ego orientation. Group centroids (G_1= .22; G_2=-.39) show that the athletes from the first group (G1; trained by the more athlete-directed, low ego-oriented coaches) scored higher in all those variables, i.e. they perceived the motivational climate in their teams as more mastery type, they invested

Table 3. Discriminant coefficients and structure matrix

	Interest	Competence	Effort	Pressure	Task	Ego	Mastery	Performance
Discriminant coefficients	.03	-.15	.35	-.05	-.05	.45	.83	.04
Correlation with discriminant function	.37	.20	.50	-.12	.47	.38	.83	.08

The results obtained indicate a small, but statistically significant difference between those two groups of athletes (λ=.09; Can. R=.28, Λ=.92, χ2=46.93, p<.00). The biggest contribution to the results on a particular discriminant function was obtained for the athletes' perception of the mastery motivational climate, the athletes' level of ego goal orientation and effort invested in their sport. Correlation coefficients of the discriminant variables and the discriminant function show that the groups are best differentiated by the perception of the mastery motivational climate and then by the effort invested, followed by the task and ego goal orientation and by the athletes' interest in/enjoyment of their sport. Some of these variables (i.e. task and interest) did not contribute to the discrimination between the groups. It could be a consequence of the correlation between those two and the rest of the five discriminant variables. The task goal orientation is significantly correlated with effort (r=.47, p<.01) and mastery (r=.44, p<.01), while interest is correlated to effort (r=.51, p<.01) and mastery (r=.31, p<.01). If the two variables share nearly the same discriminating information, they also share their contribution to the score, and, consequently, their standardized coefficients may be smaller. In other words, one variable contributes to the discriminant function significantly, whereas the other does not, because the standardized coefficients take into consideration the simultaneous contributions of all the other variables (Klecka, 1980). On the other hand, structure coefficients are not affected by the relationship with the other variables, and they are considered as a better guide to the meaning of the discriminant function than the

more effort, enjoyed their sports more, their task goal orientation was higher, but they also had an elevated ego goal orientation, which was probably accentuated within the competition context. The athletes from the second group (G2; trained by the less athlete-directed and high ego-oriented coaches) perceived fewer signs of the mastery motivational climate in their teams, they enjoyed their sport less, invested less effort and their task as well as ego goal orientation was lower.

Discussion and conclusions

In this study two types of coaches were established. The coaches who pertained to the first cluster were less ego-oriented, more supportive, more instructive and more ready to give positive feedback to their athletes in comparison to the coaches from the second cluster who could be described as more ego-oriented, less instructive, less supportive and less ready to give positive feedback to their athletes. Until now there has been no investigation which examines the relationship between a coach's motivational structure and his/her leadership behaviour, or his/her athletes' perceptions of their coach's leadership behaviour. Sarrazin, Guillet, and Curry (2001) showed that athletes' intrinsic motivation was positively predicted by the task-involving climate, which was created by the coaches who were more supportive, instructive, and more learning-oriented than outcome-oriented. In line with the *matching hypothesis* (Ntoumanis & Biddle, 1999), it might be presumed that the task-involving environment would be created by a task-oriented coach, and vice versa – the ego-involving environment would be created by a less task-

oriented and more ego-oriented coach. It seemed logical that coaches' personal goals and criteria for evaluating success would be reflected in his/her leadership, i.e. in those behaviours, demands, expectations and statements congruent to his/her inherent goals which determined his/her motivation. Our results partly confirm this presumption and our initial hypotheses. The evaluation of the obtained cluster solution showed that the athletes who were trained by the more athlete-directed low ego-oriented coaches perceived the motivational climate in their teams as more mastery- and cooperation-oriented, that is, congruent with the Achievement Goal Theory and also with the previous findings (Duda, 2001; Roberts, 2001).

The main differences between the obtained two types of coaches were related to their leadership styles, their ego orientation levels and self-perceived pressure/tension provoked by their coaching job. The more athlete-directed, low ego-oriented coaches were evaluated as more supportive, more instructive, and more feedback giving by their athletes in comparison to the less athlete-directed, high ego-oriented coaches. Both types of coaches were evaluated as low-democratic. It most likely reflects the traditional coaching style that prevails among the Croatian coaches, despite the fact that some previous investigations demonstrated a positive correlation between the coaches' athlete-directed interpersonal style and the coaches' democratic behaviour (Price & Weiss, 2000). Also, the first type of coaches felt significantly less pressure caused by their coaching job in comparison to those who belonged to the second type. A higher level of stress experienced from coaching is probably related to the coaches' elevated ego goal orientation. The imperative of results and demands for excellence in performance demonstration typical for ego goal orientation cause continuous pressure on those coaches, especially if they meet some obstacles when trying to accomplish the set goals.

The two types of coaches also have some common characteristics. Besides their low democratic orientation, all the coaches enjoyed their coaching job, perceived themselves as highly competent and invested much effort in coaching. All the coaches were highly task-oriented, but they differed in their ego orientation level. The first type of coaches showed the clear goal orientation profile (high task - low ego), while the second type of coaches showed the combined goal orientation profile characterized by a high task - moderate ego goal orientation.

Our results demonstrated that neither coach type was typical for any particular sport. The finding may be attributed to the very similar structural characteristics of the investigated team sports and to their relatively similar cognitive load. More coaches of the investigated sample belong to the first cluster, and their characteristics can be described as pref-

erable and more adaptive for successful coaching, i.e. for creating a more desirable environment from the athletes' motivational and adaptive behavioural responses point of view. The motivational climate created by the coach promotes self-determined motivation via the psychological need satisfaction (Alvarez, Balaguer, Castillo & Duda, 2009).

Many previous investigations showed that athletes preferred coaches who were more democratic, who emphasized training and instruction, as well as giving positive feedback (e.g. Terry, 1984; Westre & Weiss, 1991). The athletes who were trained by such a type of coaches were more satisfied (Chelladurai, 1993; Dweyer & Fischer, 1990). When coaches create a climate in which control is minimized and they try to understand their players' viewpoint, take into account their feelings and explain to them why certain behaviours are necessary, it contributes to the players' enjoyment and prevents them from being bored with sport practice (Alvarez, et al., 2009). Besides, several investigations showed that the strongest predictor of team effectiveness (estimated by the winning/losing percentage) was the athletes' perception of their coach's supportiveness (Weiss & Friedrichs, 1986). The more athlete-oriented coaches are more concerned about their athletes, so they have better prerequisites to establish better coach-athlete relationships. It means that they already have a better 'starting position' for achieving success with their athletes in different areas. One of the most prominent characteristics of these coaches is their readiness to be supportive. The first type of coaches encouraged cooperation within their teams in comparison to the other coaches, who promoted competitiveness between team-mates, which is usually reflected in the athletes' perceptions of the team motivational climate. The promotion of competitiveness within the team narrows the opportunities for interaction between athletes on an individual basis. On the contrary, the promotion of cooperation between athletes assures more relaxed, high-quality relationships that can be reflected positively on the athletes' motivation.

Weiss and Friedrichs (1986) and Scanlan and Lewthwaite (1986) demonstrated that different leadership styles influenced athletes' satisfaction and enjoyment. Vallerand and Pelletier (1985) showed that athletes' perceptions of their coaches' interpersonal style were related to their own intrinsic motivation. Previous investigations indicated that the athletes whose coaches were democratic and more athlete-oriented were more intrinsically motivated and perceived themselves as more competent in their sport (Mageau & Vallerand, 2003; Price & Weiss, 2000). These athletes were also task-oriented (Meyer, 1996), and perceived the motivational climate in their teams as the mastery motivational climate (Douglas, 1998). On the contrary, the athletes who were trained by the less democratic, less

supportive and less instructive coaches were more extrinsically motivated (Amorose & Horn, 2000), and felt less competent in their sport (Horn, 1985). These athletes were mainly ego-oriented and perceived the motivational climate in their teams mainly as performance-oriented (Douglas, 1998).

The results of the discriminant analysis in the present study displayed the difference in the motivational structure between the groups of athletes who were trained by the two types of coaches. The athletes who were trained by the more athlete-directed, less ego-oriented coaches perceived the team motivational climate as the mastery motivational climate; they invested more effort in their sport and enjoyed their sport better. They were predominately task-oriented, but also moderately ego-oriented. This finding indicates a certain compatibility between the athletes' and their coaches' motivational structures. The coaches' leadership behaviour, characterized as more athlete-directed, emanates the environmental signs that athletes interpret as the mastery motivational climate. By definition, the mastery motivational climate refers to the social environment in which learning, improvement, hard work and cooperation are in focus (Seifriz et al., 1995). These are the main goals that must be achieved, and they are supported by the coaches' tendency to be instructive, supportive and ready to give positive feedback to his/her athletes. Also, the motivational climate encompasses the evaluation and reward process (Newton & Duda, 1999), as well as the way in which athletes are requested to relate to each other. Coaches who are more athlete-directed and low ego-oriented probably evaluate sport success according to their own criteria typical for such a goal orientation. It means that they praise hard work, effort, improvement as a consequence of learning and practising through cooperation, that is, congruent to their leadership style (defined by supportiveness, instructiveness, feedback giving). Such behaviour promotes the coaches' attitudes and values, fostering at the same time task-involvement in their athletes. The athletes are primarily focused on performing and mastering tasks, during which they are not concerned with how they or their performance looks like, or if they are in good relations with the others (Duda, 2001), that in turn fosters their task orientation. It leads to a higher intrinsic motivation, which was, in our study, indicated through a higher enjoyment and a higher effort investment. According to the Achievement Goal Theory (Nicholls, 1989; Roberts, 2001), the task goal orientation, which was the predominant goal orientation of the athletes who were trained by the coaches of type 1, was positively related to the perception that sport was interesting and enjoyable (Duda, 2001). And that has been confirmed by many previous findings (e.g. Barić, et al., 2002; Kim & Gill, 1997; Kim, et

al., 2003). The specificity of our sample is that the predominant goal orientation profile is high task-orientation – moderate ego goal orientation. It may be a consequence of the athletes' high competitive orientation related to their competitive season, which was in progress during the measurement procedure, but it also may be related to their gender. Some previous investigations evidenced the elevated ego goal orientation in young male athletes (Duda, et al., 1995; White & Duda, 1994), who usually used the 'winning criterion' to prove their sport competence. Also, this finding may be attributed to different competitive levels, the factor which we could not control completely in this study. The athletes who compete at a lower competition level are predominately task-oriented, while the athletes who compete at a higher, elite level become more ego-oriented (Burton, Naylor, & Holliday, 2001). Harwood and colleagues (Harwood, Hardy, & Swain, 2000) argued about the new type of goal orientation, called *self-referenced ego involvement* that is congruent to the athletes' (trained by the coaches of type 1) goal orientation profile. This would be typical for the athletes who are highly task-oriented, but also moderately ego-oriented in the circumstances of a competition season in progress. Fox, Goudas, Biddle, Duda, and Amstrong (1994) studied the combined effects of task and ego goal orientations. They concluded that task orientation appears to provide the vital elements for athletes' motivation and sport involvement, whereas ego goal orientation is not necessarily motivationally detrimental, especially not if accompanied by a high task goal orientation. They suggested that ego goal orientation might actually add a positive motivational element to athletes' motivational structure when supported by a strong task goal orientation (Fox, et al., 1994). Coaches, despite their prevailing athlete-oriented approach and low ego orientation, cannot escape from the real sport environment where everything is oriented towards winning, medals and prizes. Even if coaches do not accentuate those values as the most important, it seems that athletes adopt this orientation from the global environment of contemporary sport, and it probably becomes more prominent as they progress in their sporting careers and results.

The motivational profile of athletes from the first group might be considered as a satisfactory and even the desirable one. We might presume that the congruence between the athletes' motivational structure and their coaches' motivation and leadership style, indicating the interpersonal compatibility between athletes and their coaches, contributed to the effectiveness of this relationship (Jowett, 2003; Serpa, 2001) and enabled coaches to influence athletes in a positive way. The presumed congruence between the athletes' and their coaches' motivational structures may also indicate the com-

plementarities between athletes and their coaches. It refers to the behavioural interactions related to athletes' and coaches' motivation and appropriate resources for the development of a successful relationship (Jowett, 2003). In this case, a coach creates the climate that is congruent to the athletes' dispositions and tries to assure the environmental and psychological conditions for athletes necessary to satisfy their needs.

The athletes who were trained by the less athlete-directed, high ego-oriented coaches perceived fewer signs of the mastery motivational climate in their teams, they enjoyed their training and competitions less, they invested less effort in their tasks and their ego, but also their task goal orientation was lower. Such a coaching style may be described as more controlling. Amorose and Horn (2000) found that a controlling teaching style diminished students' motivation through undermining their perceptions of self-determination, which resulted in lower intrinsic motivation. The controlling coaching style does not provide enough environmental signs which may be interpreted as the mastery team motivational climate. When the mastery motivational climate is less prominent in a sport team, athletes' intrinsic motivation is lower (Duda, 2001; Kim, et al., 2003). Researchers also agree that task-oriented athletes are more likely to excel in sport because they are more capable of focusing on the training process, on completing the task and on the performance of specific skills without any distraction derived from the fear of evaluation, or from the need for comparison. The latter is typical for the ego involved athletes who are predominantly outcome-oriented, focused primarily on beating their opponents. This motivational pattern is typical for the athletes whose coaches belong to the second type. Meyer (1996) demonstrated that the most effective coaching behaviour, which enhanced task orientation, was to behave in a democratic manner, which was confirmed in our study, too. He also showed that for a coach the best way of enhancing ego orientation was to behave autocratically, i.e. to demonstrate a low level of democratic behaviour. However, in our case, it seems that this leadership behaviour pattern is followed at the same time with the coaches' high ego orientation that did not altogether confirm Meyer's finding. Namely, the athletes participating in our study, who were trained by the second type of coaches, were of a relatively low ego- but also of a moderate task-orientation. This indicates that these athletes' goal orientation develops and maintains itself under some other influences, different from the coaches' motivation as reflected in his leadership behaviour. At the same time, the diminished level of athletes' interest and enjoyment of their sport and a lower effort investment may be related to the coach's leadership style and his overall motivation. Previous investigations

showed that athletes are less intrinsically motivated when coaches are less supportive, less instructive, when they provide less positive feedback and do not involve athletes in the decision-making process (Amorose & Horn, 2000). This finding illustrates a certain incompatibility between the athletes' and their coaches' motivational structures. It may contribute to the shaping of less desirable motivational patterns in athletes, i.e. to the decrement in their motivation.

The expected differences in motivational structures in the athletes trained by coaches of different profiles were confirmed. The findings are congruent with the presumptions of the interactionistic approach of the contemporary motivational and leadership theories (Duda & Balaguer, 1999), and might be interpreted in terms of a coach-athletes relationship. The results showed that athletes who were trained by the more athlete-directed and less ego-oriented coaches showed a more desirable motivational pattern. They were more intrinsically motivated for their sports, i.e. they enjoyed their sports better and invested more effort in training and competing than the rest of the athletes who were trained by the less athlete-directed, high ego-oriented coaches. Also, the athletes from the first group perceived the team motivational climate as the mastery motivational climate, they were highly task-oriented and moderately ego-oriented, and their motivational structure was mainly congruent with the motivational structure of their coaches. The athletes whose coaches were less democratic, less supportive, less instructive and less ready to give positive feedback showed a less desirable motivational pattern. They perceived fewer mastery motivational climate signs in their environment, they were less intrinsically motivated for their sport, i. e. they were less interested, enjoyed it less and invested less effort in it than the athletes from the first group. Also, they were moderately task- and low ego-oriented, and their motivational structure seemed not to be congruent to the motivational structure of their coaches. This incompatibility might be the reason that induced the obtained motivational structure which reflected, in general, the lower motivation in athletes. It seems that some other factors, probably the athletes' dispositions, influenced these athletes' motivational structure more than their coaches' leadership style and their coaches' motivation which is reflected through their leadership behaviour.

According to our results it seems that coaches who are more athlete-directed and highly task-oriented lead athletes whose motivational structure is more congruent with the coaches' motivational structure, which is one of the main prerequisites of satisfaction in sport, according to the matching hypothesis (Newton & Duda, 1999). If coaches wish their athletes to perceive a more desirable pattern of motivational climate (i.e. mastery motivational

climate) in their teams, if they want to lead athletes who are highly interested and who enjoy their sport very much, who are ready to invest effort in it, who feel competent and who do not feel much pressure while playing or competing, they should be instructive, ready to give social support and positive feedback; they should promote learning and improvement more than winning and results. In this case, their athletes' motivation would be higher.

Future research might investigate further the assumption that compatibility between coaches' and their trainees' motivation profile may influence the athletes' responses in sport situations, especially in the context of a competition (e.g. anxiety and self-confidence). It would also be interesting to compare such findings with some indicators of athletes' success (objective indicators, or athletes' or coaches' ratings).

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RAZLIKE U MOTIVACIJI SPORTAŠA KOJE TRENIRAJU TRENERI RAZLIČITIH MOTIVACIJSKIH I RUKOVODEĆIH PROFILA

Treneri različitih profila različito utječu na motivaciju sportaša. Cilj ovog rada bio je istražiti doprinos trenerova djelovanja oblikovanju motivacijske strukture sportaša timskih sportova. Na temelju samoprocijenjene ciljne orijentacije i intrinzične motivacije trenera te na temelju procjena trenerova rukovođenja koje su dali sportaši, identificirana su dva tipa trenera. Diskriminacijska analiza pokazala je razlike u motivacijskoj strukturi njihovih sportaša. Sportaši koje treniraju treneri usmjereniji prema sportašima kao osobama, uz nisku orijentaciju na ishod, pokazuju poželjniji motivacijski profil – oni motivacijsku klimu u svojim ekipama doživljavaju više usmjerenom na suradnju i učenje, više su intrinzično motivirani, usmjereni su dominantno prema usavršavanju vještina, manje prema imperativu rezultata, iako je i taj tip ciljne orijentacije zastupljen. Sportaši trenera koji su manje usmjereni prema njima kao osobama i čija je orijentacija prema imperativnom postizanju rezultata viša, percipiraju manje znakova kooperativne motivacijske klime u svojim ekipama, slabije su intrinzično motivirani, a njihova ciljna orijentacija vezana uz sport je općenito niža. U tom drugom slučaju može se uočiti nekompatibilnost motivacijskog profila sportaša i njihovih trenera, što može negativno djelovati na motivaciju sportaša.

Ključne riječi: motivacija, rukovođenje, sportaši, treneri, razlike