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LEGRAIN, Pascal, et al.

Abstract

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Influence of desirability for control on instructional interactions and intrinsic motivation in a sport peer tutoring setting

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The purpose of this study was to investigate whether Desirability for Control (DC) would influence young coaches’ discourse and same age athletes’ intrinsic motivation during peer tutoring interaction in a sport setting. Fifty-six participants were selected according to their high vs. low DC score. The following formula (mean ± 0.75* standard deviation) was used to match participants in similar or dissimilar DC same-sex dyads in which a coach was asked to teach a technical skill to a novice athlete. Coaches’ instructional style (support autonomy vs. control behaviors) was assessed through categorization of verbalizations and behaviors. Athletes’ intrinsic motivation and their perception of the coach’s intrinsic motivation were also assessed. Results of qualitative analyses showed that high DC coaches expressed higher scores on controlling style of instruction and demonstrations than low DC coaches. Controlling style of interactions was also higher for athletes who displayed a high DC. In addition high DC athletes were less exposed to coaches’ demonstrations and controlling verbalizations when they were paired with low DC coaches. Finally, high DC athlete - low DC coach dyads entailed the highest scores in the athletes’ intrinsic motivation and in their perceptions of the coach’s intrinsic motivation. The need to consider desire for control with regards to pairing young coaches and same-age athletes and supervising what they say and act is highlighted.

KEY WORDS: Autonomy support, Coaching, Desire for control, Motivation.

Today, lots of questions remain around the variables which affect the instructional interaction between coaches and athletes in a sport training setting. Especially, young coaches who are viewed by same-age athletes as peers
are concerned by an authority dilemma during training sessions. This coaching context involving instructional situations dedicated to acquisition of knowledge and skill through active help and supporting among matched companions (Thurston & Topping, 2007) can be compared to a Peer Tutoring (PT) procedure. On a theoretical standpoint, the peer-assisted learning strategies can take place through two main processes (Thurston & Topping, 2007; Thurston, Van de Keere, Topping, Kosak, Gatt, Marchal, Metstdagh, Schmeink, Sidor, & Donnert, 2007). According to the Vygotskian view of co-construction, peer tutoring can take place between peers who express a close level of development and share equally the control of the situation. Nevertheless, according to the Piagetian approach of cognitive constructivism, it can also take place when a more knowledgeable partner tutors a novice peer taking in charge the control of the situation. According to this theoretical distinction relative to the hierarchical authority, the place of young coaches seems specific with respect of motivation for control concern.

Thus, coach’s and athlete’s motivation to interact needs to place the control concern at the heart of this examination according to both intrapersonal and interpersonal processes (Reeve & Jang, 2006; Turner & Patrick, 2004). A personal perspective of motivation implies that a coach and an athlete would harbor personal beliefs that would affect their motivation to endorse a tutor and tutee role, respectively (Deci, 1980; Deci & Ryan, 1985). With respect to the low dissymmetrical position of participants, it can be expected that some young coaches would spontaneously manage the situation with directivity while some athletes would need to manage their training autonomously. From an interpersonal perspective, research concerning effective instruction has regularly revealed that motivation to act and interact was interpersonal (Eccles & Mígley, 1989; Furrer & Skinner, 2003). Furthermore, it could be argued that a coach’s and an athlete’s motivation would also depend on the quality of the relationship. Specifically, athletes who expect to be regulated autonomously would be reluctant to train under controlling conditions imposed by a young coach worried by his/her responsibility as a tutor. Such a pairing would be considered as a non-motivating context by athletes whose motivation would depend on how supportive and managerial a coach is.

The purpose of this study was to focus on the bi-directional basis of motivation to better identify through verbal and non-verbal indicators how personal and interpersonal needs for control would influence both young coaches’ instructional style, same-age athletes’ motivation for practice and perception of coach’s involvement in his/her tutor role in a sport setting.

From a personal point of view of motivation, since the striving for superiority concept (Adler, 1930), a large scope of literature in psychology has
been dedicated to the examination of the central place of control in the explanations of human behaviors. DeCharms (1968) identified a construct labeled “desire to be master of one’s fate” to describe the importance of causal agency when people display a motivation to exercise control over what happens to them. The self-determination theory (Deci, 1980; Deci & Ryan, 1985) also proposed an autonomy continuum describing the degree of people’s motivation to exert control in their activities. Similarly, Burger (1992) stressed that the motive to exercise control over many events of their lives was not present to the same extent in all people. Burger (1992) defined Desire for Control (DC) as a personality trait which could be placed along a continuum ranging from a high to a low position measured using the Desirability for Control Scale (DCS; Burger & Cooper, 1979). Although Burger (1992) recognized that a large amount of people felt somewhere in the middle of this continuum, he also noticed that social behaviors displayed by those who fall in the extreme would be interesting with regard to social interactions.

Several researchers in the educational and sport settings have suggested that personal dispositions would lead teachers or coaches to intuitively use a controlling or autonomy-supportive style of instruction to motivate students (Deci & Ryan, 1985; Hardre & Reeve, 2003; Reeve, 2006; Reeve & Jang, 2006; Ryan & Deci, 2000, 2002). Examining how people approached social interactions, authors have considered this variable under a more qualitative viewpoint. Dembrovski, McDougall, and Musante (1984) studied whether desire for control impacted participants’ interactional style during an interview. The authors rated whether participants engaged in five paralinguistic stylistics. The results indicated that high DC participants differed from their low DC counterparts as they exhibited: (a) loud and explosive speech, (b) rapid and accelerated speech, (c) quick response, and (d) verbal competitiveness. This control-enhancing speech behavior was particularly notable when participants asked questions, interrupted the interviewer or spoke at the same time as the interviewer in a situation where the interviewee’s position suggested following the interviewer’s lead. Dembrovski et al. (1984) concluded that because of the lack of control inherent in this interviewee role, the use of such paralinguistic stylistics helped the participants who expressed a high DC score to maintain a perception of control with regard to the flow and the topics of the conversation compared to low desire for control scorers.

From an interpersonal standpoint of motivation processes, various studies conducted in education have stressed that students with autonomy-supportive teachers perceived greater autonomy, more interest, conceptual understanding, persistence in tasks, and academic achievement (Benware & Deci, 1984; Black & Deci, 2000; Vallerand, Fortier, & Guay, 1997). Studies
indicated that situations that lead students to express justification, clarification and elaboration would be conducive to collaborative reasoning (Anderson, Chinn, Waggoner, & Nguyen, 1998; Chinn & Anderson, 1998) and operational transacts (Berkowitz & Gibbs, 1983; Kruger, 1992, 1993; Miell & MacDonald, 2000; Roy & Howe, 1990). Furthermore, some interesting theoretical approaches suggested that one of the most important variables would be the participants’ temperament (Howe & McWilliam, 2006). This factor referring to individual differences in reactivity and self-regulation was considered as one of the most important individual dispositions to avoid instructors’ involvement in unproductive disputational or cumulative talks (Barron, 2000; Howe & Mercer, 2007; Mercer, 2000). Thus, Howe and McWilliam (2006) indicated that people with high inhibitory control would mainly use justifications when they interacted with peers in comparison with others more concerned about control who would employ a more aggressive style of interaction.

Although PT literature in education emphasized that the quality of tu-trees’ interpersonal motivation would depend, in part, on the quality of the relationship provided by students when they demonstrated how supportive and involved in a tutor role they were, young coaches’ disposition and athletes’ need for control were never considered. Moreover, the content of such instructional exchanges was usually neglected. Taking in account participants’ DC score would be interesting to qualitatively explore whether coach’s autonomy-supportive / controlling styles of instruction would emerge and influence athlete’s motivation in a sport training setting (Black & Deci, 2000; Hardre & Reeve, 2003; Reeve, 2006; Soller & Lesgold, 2000). The purpose of this study was to examine whether young coaches with high or low desire for control score would endorse the tutor role differently. Furthermore, with regard to the existing literature on the qualitative examination of social interactions in the PT context, the present study explored same-age participants’ instructional and learning behaviors through the behavioral and verbal involvement they enacted and expressed. Under a personal viewpoint, with regard to Burger’s prescription, we expected that high DC coaches would express more controlling style of interactions through verbalizations and behaviors than low DC scorers. Furthermore, according to Dembrovski et al. (1984) prescriptions, we expected that high DC athletes would express more contradictions and put more questions interrupting the coach explanations than low DC scorers. Moreover, according to Burger’s (1990, 1992) framework we assessed athletes’ motivational outcomes (motivation for practice and perceived coach’s motivation) when they were paired with a complementary, rather than a similar DC coach. Finally, on an inter-
personal viewpoint (Hardre & Reeve, 2003; Reeve, 2006), it was expected that high DC athletes paired with low DC coaches would express a higher level of intrinsic motivation and higher perceptions of coach’s intrinsic motivation than in other pairing conditions.

Method

Participants

The participants were selected from a population of one hundred and sixty four undergraduate students (mean age = 19.5 years ± 1.4) who studied in various departments of a university. All the participants completed the French version of the Desire for Control Scale (Garant & Alain, 1995) which was chosen for its relevance and strong validity (Burger, 1984; Burger, Oakman, & Bullard, 1983). This questionnaire is considered as a measure of control motivation in general settings. It consists of 20 items which are completed using a 7-point Likert scale with the responses ranging from 1 “The statement doesn’t apply to me at all” to 7 “The statement always applies to me”. The level of internal consistency (Cronbach’s Alpha = .72) was consistent with data reported by Burger and Cooper (1979) and Garant and Alain (1995).

According to Burger’s (1990, 1992) prescriptions, fifty-six participants (32 males and 24 females), volunteered for the experiment, were selected from the top and the bottom 15% of the distribution. Then, they were divided into halves to be assigned to a coach or athlete condition. Using the following formula (mean ± 0.75* standard deviation), the upper (102) and lower (87) levels of desire for control were calculated to match students in seven same sex symmetrical vs. asymmetrical dyads. Half of participants who presented a Low and High DC were selected to be coaches. Then, they were paired with participants who presented a similar versus a different level of DC for 16 male dyads and 12 female dyads. Participants were predominantly white and most of them were from a middle-class socio-economic background. Students selected to be coaches were preparing for a career in the sport sciences department of this university. All participants were blind to the pairing type and none of them knew his or her partner before the experiment.

Procedure

At the beginning of the study, no participant had previous experience in the task and all were complete novices with regard to the technical skills required in kick-boxing (i.e., stability, distance and control). According to this unfamiliar sport, participants selected to be coaches were trained by the same expert in kick-boxing, during six 2-hour lessons dedicated to the mastery of main skills in this sport. During the last three lessons, participants had the opportunity to discover a spin-side kick that is directed backward requiring a spinning motion. During a total of 40 minutes of practice, participants were instructed to perform this movement that was chosen because of its technical difficulty. At the end of this introductory period of practice, participants were tested by two kick-boxing experts (one male and one female) in a situation comprising three spin-side kicks. Participants were asked to execute this technical skill respectively in a stable position, with forward displacement, and with backward dis-
placement in front of an expert that presented a medium target with gloves. Participants selected to be coaches obtained a performance form score ranging from 13 and 18 points on a 27-point scale.

Three weeks after the six 2-hour lessons dedicated to the initial physical practice, participants selected to be coaches were invited to come in pairs for the experiment. They were told that they will review the spin-side technique and will be trained by the expert during a 5 minute-session in order to remind them of the skill. After this period, they were informed of the purpose of the experiment that consisted in teaching this technical movement to a same sex student novice in kick-boxing. For this purpose, the expert reserved a 5-minute period to remind the participants of some of the teaching skills he or she used during the training session: (a) introducing and modeling the motor skill; (b) providing verbal instructions; (c) breaking down the spin-kick technique into separate sub-skills; (d) describing the different steps for accomplishment; (e) using descriptive task-cards to stress the most important cues for execution and (f) organizing the learning environment using equipment at his or her disposal (i.e., gloves, skipping rope, hoop). These instructional techniques used in previous studies (Legrain, d’Arripe-Longueville, & Gernigon, 2003) were presented as useful procedures to scaffold a novice student in sport. Participants were told that they each had the same material prepared in a fit-out room to teach this technique during a 7-minute period to a same sex fellow student novice in this sport.

During the same time, participants recruited to be tutees were welcomed in pairs for the experiment. They were instructed that they will be tutored by a same sex peer to learn a kickboxing technique. For that purpose, they were invited to meet their tutor in one of the two separate rooms identically laid-out with all the teaching equipment. The experiment introduced participants to each other through explaining to the athlete that the coach was asked to teach him/her a complex kick-boxing technique during a 7-minute period. The experimenter asked the participants to do their best during this period, leaving them with a research assistant who was presented as unable to respond to any technical or pedagogical questions. However, they were informed that the instructional episode will be videotaped and coaches were asked to use a lapel mike all throughout the interaction. Finally, they were instructed that they will be informed by the research assistant when there was two minutes remaining of the peer tutoring episode. At this time, the experimenter thanked the coach and asked the athlete to fill two questionnaires designed to assess his/her level of motivation for kick-boxing practice and his/her perception of the tutor’s motivation for teaching (see measures). Participants’ behaviors and verbalizations were transcribed verbatim and categorized. An adaptation to the peer tutoring context of Reeve and Jang’s (2006) instructional behaviors was used to distinguish autonomy-supportive from controlling instructional behaviors. Tutees’ verbalizations and behavioral responses were also assessed.

MEASURES

*Coach’s instructional behaviors.* Instructional behaviors displayed by coaches were examined through categorization used to distinguish an autonomy-supportive from a controlling style of instruction (Reeve & Jang, 2006). Derived from SDT, the Reeve and Jang’s (2006) grid was used in order to consider various non-verbal and verbal dimensions.

Non-verbal dimensions referred to the actions exhibited by the coach and the athlete. With respect to Soller and Lesgold’s (2000) conclusions about the relevance of modeling to successful-
ly convey new knowledge for instructors and to effectively assimilate this knowledge for learners, the number of coach’s demonstrations and athlete’s physical attempts were taken into account. Controlling style of instruction was measured through the number of partial and complete technical coach’s demonstrations divided by the total of motor actions exhibited by the dyad.

Verbal dimensions referred to controlling versus autonomy supportive verbalizations. The qualitative categorization was used to distinguish the following five indicators: (a) claiming observational statements (i.e., “you do not control your force”) versus suggesting hypotheses (i.e., “this can be due to your arms position”), (b) making should/ought to statements (i.e., “You have to keep your arms on”) versus asking what the student wants (i.e., “Which material do you prefer to use?”); (c) exhibiting solutions/answers (i.e., “Now, you are doing this movement”) versus providing rationales (i.e., “Perhaps, it would be easier to drive your attention to this part of the movement”); (d) criticizing the peer (i.e., “No, you should not do that”) versus praise as informational feedback (i.e., “Good job, You reach to keep your balance now”), and (e) controlling time (i.e., “Now, you need to learn to keep your balance on one foot”) versus communicating perspective-taking statements (i.e., “Take your time, I can understand the difficulty because I also experienced this movement”). Both five specific scores of instruction and a global controlling style of instruction score were calculated by dividing the number of controlling verbalizations by the total number of instructions.

Athlete’s verbalizations. With respect to the specificity of such an instructional interaction and according to Dembrovski, McDougall, and Musante (1984), verbalizations displayed by athletes were examined through one category. Controlling behaviors were measured through verbalizations expressing a contradiction (i.e., “No, for the moment, I prefer to begin from a static position”) or a question (i.e., “Is it possible to do it differently?”) versus expressing an agreement (i.e., “Ok, all right”). Consistent with previous measures, a controlling score for athlete was calculated dividing the number of controlling verbalizations by the total of the athlete’s verbalizations.

Coaches’ and athletes’ behaviors and verbalizations were rated by two judges unaware of the purpose of the study and blind to experimental conditions. Interrater reliability for these instructional behaviors were acceptable (all intra-class correlations were between .68 and .97).

Athlete’s perception of coach’s motivation for training. This was measured through an adapted version of Pelletier and Vallerand’s (1996) questionnaire which began with the following sentence: “The coach helped me to discover this kick-boxing technique…” and included two subscales. The first subscale comprised four items assessing intrinsic motives for training (e.g., “because he/she found this activity pleasant”). The second subscale comprised four items describing extrinsic motives for training (e.g., “because he/she wanted to satisfy the experimenter”). Participants evaluated each item on a 7-point Likert scale ranging from “totally disagree” (1) to “totally agree” (7). A factor analysis was carried out. Two factors corresponding to the presumed subscale were identified, each item loading with a factor weights > .70. Internal consistency was satisfactory for both intrinsic and extrinsic motives ($\alpha = .89$ and $\alpha = .84$, respectively). According to traditional measures on motivation (Pelletier & Vallerand, 1996), athlete’s perception of coach’s motivation was calculated by subtracting the intrinsic score by the external score of motivation.

Athlete’s intrinsic motivation. The intrinsic motivation for practice was measured through an 8-items scale from the interest/enjoyment subscale of the Intrinsic Motivation Inventory (Deci, Eghari, Patrick & Leone, 1994). With regard to the relevance of this subscale to assess intrinsic motivation (Ryan & Deci, 2000), athletes rated this questionnaire on a 7-point Likert scale ranging from “totally disagree” (1) to “totally agree” (7). The internal con-
sistency ($\alpha = .92$) was strong. Athlete’s intrinsic motivation for practice was scored through the mean of the 8 responses.

DATA ANALYSIS

Univariate analyses of variance (ANOVAs) were performed in order to examine the influence of DC on personal and interpersonal outcomes. Two way ANOVAS were also computed to examine the interaction effects of coach’s DC and athlete’s DC. LSD post hoc tests were used as planned comparisons. Multivariate analysis of variance was not deemed appropriate because all the dependent variables were not hypothesized to be theoretically related.

Results

PERSONAL POINT OF VIEW (SEE TABLE I)

Coach’s instructional behaviors: A one-way ANOVA performed on coach’s verbalizations and demonstration indicated that high DC coaches expressed more control verbalizations ($M = 0.63 \pm 0.08$) in comparison with low DC coaches ($M = 0.47 \pm 0.15$), $F(1, 26) = 9.80, p < .01$. Specifically, high DC coaches claimed more than they suggested ($M = 0.65 \pm 0.16$) in comparison with low DC coaches ($M = 0.45 \pm 0.19$), $F(1, 26) = 8.92, p < .01$. They also made should/ought to statements ($M = 0.82 \pm 0.17$) rather than asking what the student wanted in comparison with low DC coaches ($M = 0.67 \pm 0.16$), $F(1, 26) = 3.26, p = .08$. There was no difference for the three other categorizations exhibiting: solutions/answers versus providing rationales ($p = .12$), criticizing the peer versus praise as informational feedback ($p = .98$), and controlling time versus communicating perspective-taking statements ($p = .22$).

Consistent with these results, high DC coaches also expressed more modeling solutions ($0.39 \pm 0.08$) in comparison with low DC ($0.29 \pm 0.11$), $F(1, 26) = 7.16, p < .05$.

<table>
<thead>
<tr>
<th>Coach</th>
<th>High DC</th>
<th>Low DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling coach’s verbalizations</td>
<td>0.63 (0.08)</td>
<td>0.47 (0.15)</td>
</tr>
<tr>
<td>Claim/suggestion</td>
<td>0.65 (0.16)</td>
<td>0.45 (0.19)</td>
</tr>
<tr>
<td>Should to statements/Asking what student want</td>
<td>0.82 (0.17)</td>
<td>0.67 (0.16)</td>
</tr>
<tr>
<td>Exhibiting solution/providing rationales</td>
<td>0.44 (0.18)</td>
<td>0.31 (0.26)</td>
</tr>
<tr>
<td>Controlling time/communicating perspective</td>
<td>0.39 (0.21)</td>
<td>0.31 (0.16)</td>
</tr>
<tr>
<td>Ratio of coaches’ modeling athlete</td>
<td>0.39 (0.08)</td>
<td>0.29 (0.11)</td>
</tr>
<tr>
<td>Controlling athlete’s verbalizations</td>
<td>0.71 (0.36)</td>
<td>0.40 (0.32)</td>
</tr>
</tbody>
</table>
**Athlete’s verbalizations:** ANOVA performed on Athlete’s verbalizations indicated that High DC Athletes expressed more controlling verbalizations ($M = 0.71 \pm 0.36$) in comparison with low DC Athletes ($M = 0.40 \pm 0.32$), $F(1, 26) = 5.62, p < .05$.

**INTERPERSONAL POINT OF VIEW (SEE TABLE II)**

**Coach’s instructional behaviors:** A two-way ANOVA performed on the ratio of coach’s controlling verbalizations indicated a partly significant interaction effect (coach’s DC x athlete’s DC), $F(1, 24) = 3.89, p < .06$. LSD post hoc comparisons indicated that coaches expressed less controlling verbalizations in the Low DC coach-high DC athlete pairing condition ($M = 0.40$) than in other dissymmetric and high symmetric DC pairing conditions ($M = 0.59, p < .05; M = 0.64, p < .01$, respectively). Consistent with this result, ANOVA performed on the ratio of coaches’ modeling actions with regard to the total of motor actions exhibited by the dyad revealed a partly significant interaction effect (coach’s DC x athlete’s DC), $F(1, 24) = 3.89, p < .06$. LSD post hoc comparisons indicated that coaches modeled less actions in the Low DC coach–high DC athlete pairing condition ($M = 0.22$) than in other dissymmetric and high or low symmetric DC pairing conditions ($M = 0.39, p < .01; M = 0.39, p < .01; M = 0.35, p < .05$, respectively).

**Athlete’s perception of coach’s motivation for training:** A second two-way ANOVA performed on the score of Athlete’s perception of coach’s motivation for training indicated a significant interaction effect (coach’s DC x athlete’s DC), $F(1, 24) = 7.23, p < .05$. LSD post hoc comparisons indicated that coaches were perceived as more intrinsically motivated in the Low DC coach-high DC athlete pairing condition ($M = 8.57$) than in other dissymmetric and high or low symmetric DC pairing conditions ($M =-0.33, p <.05; M = -0.88, p < .05; M = -4.14, p < .01$, respectively).

**Athlete’s motivation for practice:** A third two-way ANOVA performed on the score of Athlete’s motivation for practice indicated a significant interac-

**TABLE II**

*Means (and Standard Deviations) for the variables integrated to an interpersonal point of view (N = 28)*

<table>
<thead>
<tr>
<th></th>
<th>High DC Coach x High DC Athlete</th>
<th>High DC Coach x Low DC Athlete</th>
<th>Low DC Coach x High DC Athlete</th>
<th>Low DC Coach x Low DC Athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 7)</td>
<td>(n = 7)</td>
<td>(n = 6)</td>
<td>(n = 8)</td>
</tr>
<tr>
<td>Controlling verbalizations</td>
<td>0.64 (0.08)</td>
<td>0.59 (0.07)</td>
<td>0.40 (0.19)</td>
<td>0.52 (0.12)</td>
</tr>
<tr>
<td>Ratio of coach’s modeling</td>
<td>0.39 (0.08)</td>
<td>0.39 (0.09)</td>
<td>0.22 (0.07)</td>
<td>0.35 (0.10)</td>
</tr>
<tr>
<td>Athlete’s perception of coach’s motivation for training</td>
<td>-4.14 (8.01)</td>
<td>-0.33 (7.84)</td>
<td>8.57 (7.88)</td>
<td>-0.87 (2.23)</td>
</tr>
<tr>
<td>Athlete’s intrinsic motivation</td>
<td>5.11 (0.36)</td>
<td>5.71 (0.36)</td>
<td>6.21 (0.39)</td>
<td>5.20 (0.34)</td>
</tr>
</tbody>
</table>
tion effect (coach’s DC x athlete’s DC), $F(1, 24) = 4.96, p < .05$. LSD post hoc comparisons revealed that athletes’ level of intrinsic motivation was higher in a Low DC coach–high DC athlete pairing condition ($M = 6.21$) than in the two symmetric DC pairing conditions ($M = 5.10, p < .05; M = 5.21, p = .08$, respectively). The difference with the High DC coach-Low DC athlete was not significant ($M = 5.71$).

Discussion

The purpose of the present study was to examine whether the DC score would influence young coaches’ instructional style and same-age athletes’ learning style during a 7 minute dyadic interaction. According to one-on-one peer tutoring procedures in the sport setting, this specific relation of instruction was examined both from a personal and an interpersonal perspective.

From a personal viewpoint, the results partially confirmed our hypotheses. Firstly, examining coaches’ verbalizations, we noticed that High DC scorers quantitatively used more controlling assertions claiming and ordering rather than suggesting asking what athletes wanted. The results in these two categories of verbalizations confirmed that High DC coaches were more interested in managing the dyadic discourse than giving the opportunity to the novice athlete to explore the situation; discovering his/her own solutions in comparison to Low DC coaches. Consistent with these results, High DC coaches most often modeled behavioral solutions instead of giving athletes the opportunity to explore individually the motor task. Nevertheless, the results were not significant for three categories of verbalization. With regard to these categories, one can argue that the coaches were probably not sufficiently experienced in kick-boxing to provide technical rationales both for instructions and feedback. Furthermore, the time allocated for teaching was rather restricting which may have lead to coaches not being worried about the goal they had to reach in seven minutes. Nevertheless, using this non-verbal style of instruction, high DC coaches swallowed up the interactional space. The most important goal for them was to physically and verbally conduct the instruction rather than displaying highly adaptive rules for teaching helping the learner to experiment for himself/herself the natural difficulties of this complex task. It could also be considered as a controlling way to request “right answers” rather than to create a fruitful exploratory environment for novice athletes confronted with motor difficulties of adaptation.

Secondly, examining athletes’ verbalizations, we noticed that the higher the DC the more the participant used controlling verbalizations in order to
interact with the coach. If we cannot assimilate such modes of verbalization as elements traducing an aggressive style of interaction (Howe & McWilliam, 2006), contradictions and questions can be assessed as potential tools used in order to satisfy a learner’s need for control (Dembrovski et al., 1984). These results are consistent with our hypothesis. With regard to the literature, firstly, these results stress that high DC learners would see achievement tasks as a means of demonstrating competence within challenging situations corresponding to their sense of control (Burger, 1992). Secondly, they confirm that high DC scorers would prefer to perceive themselves as being in control of what happens to them (Burger, 1990). Finally, they emphasize that people with a high Desire for Control (DC) react more strongly when they face social influences than do people with a low desire for control (Burger & Vartabedian, 1980).

On the one hand, the coach-athlete relationship might give coaches with high DC the opportunity to express their capability to endorse a tutor role and to engage in control-enhancing behaviors in order to regulate the athletes’ efforts and training. On the other hand, this relationship might also be viewed as an opportunity to acquire new skills especially for high DC athletes who usually seek increase in control. Nevertheless, it has been assumed that confrontation of personal dispositions for control would govern the relations between the coach and the athlete faced with their respective desire for control for learning and for teaching.

From an interpersonal viewpoint, according to the foundations of Vygotskian socio-cultural theory stating that language is both a cultural and a psychological tool, we hypothesized symmetric-dissymmetric DC dyads would generate distinctive behaviors in coaches and athletes, respectively. We expected less DC conflict would appear in symmetric DC dyads in comparison with dissymmetric dyads. Specifically, it was expected high DC athletes paired with low DC coaches would express a higher level of intrinsic motivation and higher perceptions of coach’s intrinsic motivation than in other pairing conditions. Results indicated that the verbal and non-verbal relationships did not depend only on young coaches’ personal dispositions but also on the implicit same-age athletes’ request for autonomy. Specifically, the more complementary relationship between coach and athlete emerged in a low DC coach-high DC athlete dyad. In this pairing we observed that the low DC coach’s verbalizations and physical involvement were the more compatible with the athlete’s high DC expectations for autonomy. In this pairing condition, the instructor preferred giving the athlete the opportunity to have his/her voice heard and to realize attempts instead of giving directives and modeling the movement. By this way, the coach helped the athlete to stay at
the heart of the training process and to develop and share knowledge. He also helped the athlete with high DC to structure the processes and content of individual thought according to his/her expectations.

These results indicate that desire for control may facilitate a better understanding of whether coaches and athletes not only interact but also interthink. It also suggests that the way for the meaning to have the opportunity to be steadily re-negotiated in order to help coaches and athletes to maintain the intersubjectivity depends on the DC complementarities within the dyad. On a more general standpoint, the significant interaction effects confirmed that inter-mental processes are grounded in the coordination of meaning through talk (Barron, 2000; Howe & Mercer, 2007) which need to settle the problem of sharing control.

With regard to the Peer Tutoring concern, autonomy would represent an inner endorsement of roles preserving a sense of choice over actions (Reeve, Nix, & Hamm, 2003). Nevertheless, athletes’ intentional behavior can be regulated by coach in a controlled way which can reduce athletes’ intrinsic motivation for improvement and generate athletes’ perception of instructor’s incompetence. In the present study, the high DC athletes paired with a low DC coach not only expressed a higher level of motivation for practice, but also perceived the coach as more intrinsically motivated by the instructional task compared to other pairing conditions. These results are consistent with the literature in the sport domain, stressing that the athlete’s benefits should mainly depend on the coach’s autonomy-supportive style of instruction (Deci & Ryan, 1985; Hardre & Reeve, 2003; Reeve, 2006; Reeve & Jang, 2006; Ryan & Deci, 2000, 2002). Especially, because they would have expressed stronger negative reactions and irritation than those less worried about seeing themselves in control, high DC athletes were those who appreciated the autonomy-support style of instruction the coach adopted. According to the theoretical framework on motivation, it should be advanced that these athletes perceived the coach’s directive and attitude gave them the opportunity to experience an ongoing decision-making flexibility preserving them from a rigid assignment (Reeve & Jang, 2006). On a more general standpoint, this suggests coaches to closely consider the athlete’s need for autonomy when they try to favor the involvement during training sequences.

There are some limitations to our study to be addressed, and future research avenues to consider. Firstly, the sample size suggests caution in drawing conclusions and prevents us from proposing a well designed model. Interesting relationships observed in the present study between coach’s low DC score and autonomy-support style of instruction, high DC athletes’ level of motivation for practice and perception of motivated coach need to be ex-
examined with a larger sample that would also give the opportunity to differentiate the results with respect to gender (Burger & Solano, 1994). Secondly, the training period for coaches invites the replication of the study with a longer preparation more appropriate to examined various types of verbalization based on technical knowledge. Thirdly, it would be of interest to examine desirability for control in peer-tutoring situations from a developmental perspective. Indeed, it could be hypothesized that children, adolescents, and young adults might display different characteristics. Finally the examination of the interaction of desirability for control with more situational variables such as the perceived motivational climate, or the friendship relationship between peers warrant future research.

The results of the present study have several implications for sport and physical education practitioners. First, our results may help coaches to better tackle conflicts that sometimes occur during training and to opportunely regulate athletes taking into account the control issue. Secondly, this study underlines that social and communicative processes through which young coaches and same-age athletes proceed in order to pursue complementary goals are currently a key component for the examination of athletes’ motivation. The success of coaching strategies seems dependant on the coach’s intervention style. Especially for athletes who present a high desire for control and who expect to be regulated autonomously, coaches who nurture, support, and increase athletes’ inner endorsement of their activity seem relevant. Particularly when the coach is young, asking high DC same-age athletes what they prefer, giving them time to work on the task in their own way, and providing rationale seem preferable. The present study suggests that young coach’s desirability for control might affect the productivity of training procedures in sport settings especially for same DC athletes. Through a peer tutoring perspective, training means empowering athletes through knowledge and skills to help them develop responsible behaviors and deliberate choices in different areas helping them to compete. According to motivational concern, the results of the present study invite coaches to better consider whether social interactions and achievement would depend on personal needs for control.

REFERENCES


