

*Chapter***ASSESSING LEADERSHIP STYLES OF
COACHES AND TESTING THE
AUGMENTATION EFFECT IN SPORT***A. Rui Gomes^{1*} and Rui Resende²*¹University of Minho, School of Psychology. Portugal²Maia Institute of Higher Education. Portugal**ABSTRACT**

This chapter proposes an instrument to evaluate leadership styles in three domains (e.g., transformational, transactional, and decision-making leadership) and test the augmentation effect of these domains on the explanation of satisfaction with leadership and coach-athlete compatibility. In total, 348 male athletes who play futsal and soccer were recruited. We evaluated leadership styles, satisfaction with leadership, and coach-athlete compatibility. The confirmatory factor analysis demonstrated acceptable fit levels for the organization of the leadership scales with second-order factors of transformational leadership and two correlated factors for transactional and decision-making leadership. Confirmatory factor analysis also point out acceptable fit levels for the measures of satisfaction with leadership and coach-athlete compatibility. The hierarchical regression analysis indicated the predictive value of the

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leadership domains for explaining satisfaction with leadership (61% of variance explained) and coach-athlete compatibility (50% of variance explained). We found partial support for the validity of the leadership scale and confirmed the augmentation effect.

Keywords: sports leadership; satisfaction with leadership; coach-athlete compatibility.

INTRODUCTION

Analysing the role of coaches in athletes' performance and the psychological experiences of team members (e.g., motivation, satisfaction, cohesion) is a fascinating endeavour. It is thus not surprising that several authors have dedicated considerable effort to identifying and studying coaches' mental representations and actions being proposed important conceptual models (Chelladurai, 1993, 2007; Côté, Salmela, Trudel, Baria, & Russell, 1995; Horn, 2008; Jowett, 2007; Smith & Smoll, 1996).

Despite the unequivocal significance of these proposals, insufficient attention has been given to the recent developments in leadership research, which is focused on observing individuals with an extraordinary ability to convince others of their capacity to achieve high levels of performance and to adopt new work principles (Bass, 1985; Conger & Kanungo, 1987). These ideas were integrated into a "new" movement of leadership based on charismatic and transformational theories (Shamir, 1999) grounded in distinct models, namely, the charismatic leadership theory (House, 1977), the theory of transforming leadership (Burns, 1978), the charismatic theory (Conger & Kanungo, 1998), the full range of leadership model (Bass, 1985, 1998; Bass & Riggio, 2006), and the visionary leadership theories (Bennis & Nanus, 1985; Kouzes & Posner, 1987; Sashkin, 2004).

Sports leadership research has been gradually devoting attention to these proposals, particularly to the application of transformational leadership in sports contexts. However, not many studies exist about the transformational influence of coaches (see Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011; Charbonneau, Barling, & Kelloway, 2001; Rowold, 2006). Despite their value, the way transformational leadership in sports was evaluated in these studies is limited. For example, Rowold used the Multifactor Leadership Questionnaire-MLQ (Bass & Avolio, 1997), which was not developed for sports contexts

and, therefore, excludes important dimensions of coaches' actions (e.g., technical competence, training and instruction). In the Arthur et al. study significant advances were made toward measuring transformational in sport but the instrument was developed for the military setting, excluding the referred dimensions of coaches' actions. Also, one of the most utilised measures of sports leadership (the Leadership Scale for Sports, LSS, Chelladurai, 1993) needs to be revised in order to represent transformational leadership most effectively (Chelladurai & Riemer, 1998; Riemer, 2007).

With these issues in mind, the first goal of this chapter was to refine a measure to evaluate coaches' leadership styles that integrates some of the dimensions already assessed in sports contexts (ex: training and instruction, positive feedback, and democratic behavior) and other dimensions that reflect the transformational impact of coaches (ex: vision, inspiration).

The Development of the Multidimensional Scale of Leadership in Sports (MSLS)

The construction of the MSLS began with an analysis of important contributions in the study of leadership in sports and organizational contexts, resulting in a version that evaluated six leadership dimensions (Gomes, 2005). Three years later, the domains of leadership evaluation increased to nine, due to significant augmentation of the number of items from 28 to 55 (Gomes, 2008). However, two main issues related to the instrument's adaptation arose: (a) testing a shorter version of the scale that could represent a more useful instrument for future research because long versions that require 10 or more minutes to complete decrease the motivation of athletes to participate in the data collection, and (b) more importantly, the structure of the nine dimensions needed to be analysed with new data. These nine dimensions were developed according to a theoretically driven approach that evaluated three main domains of coaches' actions: transformational, transactional, and decision-making leadership.

Transformational leadership concerns leaders' ability to maintain unique relationships with their followers that result in extraordinary individual and group performance (Yammarino, Dubinsky, Comer, & Jolson, 1997). In this regard, the MSLS measures the following five transformational domains: (a) the coaches' ability to present an enthusiastic and optimistic vision of athletes' future (vision); (b) the coaches' positive expectations and behaviors directed

toward promoting the success and continuous efforts of athletes (inspiration); (c) the coaches' actions focused on the teaching of technical sports skills (technical instruction); (d) the coaches' tendency to treat athletes as persons (personal respect), and (e) the personal concern of coaches with athletes' well-being (personal support). The similarity of these dimensions with those found in the literature is relatively clear.

The first one, *vision* refers to the coaches' tendency to establish a positive and challenging future for the athletes. The concept of vision is a key element of the concept of charisma (House, 1977) that includes the behaviors of leaders in order to articulate an appealing ideology that enhances goal clarity, task focus, and value congruence. In the case of MSLS, the coaches' vision includes the establishment of a positive and interesting future for the athletes being this vision presented with optimism and confidence in order to involve athletes.

The second domain is *inspiration* that refers to the coaches' encouragement of the athletes' will to work hard in order to achieve the formulated goals (or vision) and being succeed. Some related transformational concepts of inspiration have been proposed in this domain, as for example the "inspirational motivation" of the MLQ instrument (Bass & Avolio, 1997) or even the "inspirational communication" suggested by Rafferty and Griffin (2004), but the concept of inspiration in the MSLS follows the more broad definition of inspiration defined by Yukl (1981, p. 121), namely "the extent to which a leader stimulates enthusiasm among subordinates for the work of the group and says things to build subordinate confidence in their ability to perform assignments successfully and attain group objectives." Some items of the MSLS exemplify this concept, suggesting the coaches' tendency to set challenging goals for the athletes and then encouraging their will of achievement and work harder in order to realize the goals.

The *technical instruction* is the third dimension of transformational leadership being associated with the teaching methods and technical feedback used by coaches in order to improve the athletes' skills. This dimension is related with the "training and instruction" proposed by Chelladurai (1993) in the LSS, representing one of the fundamental aspects of coaches' actions. Some authors consider this area the aspect of coaching that most helps the athletes to reach their best performance (Bloom, 2002; Woodman, 1993). In the case of MSLS, the use of technical instruction pretends to emphasize the coaches' capacity to change the athletes' abilities from one point to a better one (Haaes, 1992) improving their skills and task abilities.

In what concerns the personal relationships between coaches and athletes, the MSLS proposes two complementary dimensions. The *personal respect* (fourth dimension) concerns the coaches' tendency to treat athletes as persons, considering their feelings and individual needs in their decisions. The concept of "individualized consideration" proposed by Bass (1985) has some similarities with personal respect, namely the tendency of transformational leaders to pay attention to the individual needs of each group member, recognizing their differences in terms of needs and desires (Bass, 1998). The *personal support* (fifth dimension) evaluates the tendency of coaches to develop informal and supportive relationships with athletes, assuming the will of helping athletes when they have personal problems. In the sport domain, the LSS evaluates a similar construct named "social support" that assesses whether the coach creates a friendly and positive group climate (Chelladurai, 2012).

The second main domain of MSLS is transactional leadership that has been referred to an exchange relationship between the leaders, who define what should be done, and the followers, who agree to perform the tasks in exchange for a material or psychological reward (e.g., prize or recognition) (Avolio, 1999). The MSLS proposes two dimensions in this domain: positive feedback, which evaluates the coaches' reinforcement and recognition of the good performance and effort of the athletes, and negative feedback, which evaluates punishment behaviors of coaches intended to manage athletes' inadequate performance.

The *positive feedback* dimension resembles the "positive feedback" in the LSS instrument (Chelladurai, 1993) as well as the "contingent reward" dimension in the MLQ questionnaire (Bass & Avolio, 1997). Both dimensions involve recognizing and rewarding athletes/followers for attaining specified performance levels. In the same way, the positive feedback of MSLS implicates the use of rewards and assuming satisfaction by the coaches when athletes do a good job and achieve the pretended performance.

It is interesting to note that the transactional component does not include the opposite domain of negative feedback in the MLQ questionnaire (Bass & Avolio, 1997). However, there is no reason to believe that leaders can respond to the performance and behaviors of followers in a negative way in an effort to prevent performance problems or erratic behaviors in the future. Besides, there is evidence that negative feedback is neither an exception nor an irrelevant phenomenon in the context of sports (Schmidt, 1991; Smith & Smoll, 1996). This was recognized by Avolio and Bass (1995) being assumed that punishment represents a transactional behavior because the follower can be

corrected, threatened, or disciplined by the leader for failing to meet a specific standard of performance. In this way, the MSLS instrument includes the *negative feedback* that refers to the use of punishments and dissatisfaction by the coaches when athletes commit errors and do not achieve the pretended performance.

The third and last domain is related to the coach's style of decision-making and analyses the way leaders manage their authority and make decisions. The MSLS proposes two different types of coaches' power management: *active management*, which is characterised by coaches' promotion of athletes' involvement in important aspects of training and competition, and *passive management*, which is distinguished by coaches' avoidance or delay in bearing responsibility for decision-making when it is necessary to solve important problems. The MSLS evaluation rests on the assumption that participative and directive leadership lie on a continuum, and thus considers the scores in the active management scale to evaluate these two dimensions (i.e., lower scores are related to a tendency of coaches to engage in more directive behaviors and higher scores are indicative of coaches' tendencies to engage in more participative behaviors). In this way, the MSLS can anticipate three styles of decision-making: (a) the "truly" participative (high scores in active management and low scores in passive management); (b) the "truly" directive (low scores in active management and low scores in passive management); and (c) the "truly" passive (higher scores in passive management). This classification is a significant change relative to the way these dimensions are evaluated both in the LSS instrument (where the dimensions of "democratic" and "autocratic" behaviors are proposed) and in the MLQ instrument (where "management-by-exception passive" is proposed, which is similar to the MSLS passive management dimension).

One conceptual aspect should be considered in analysing the relationship between these domains. As Bass (1985) suggested, transactional and transformational leadership are two different constructs, meaning that leaders can exhibit different levels of each one. The main difference is that transformational leaders not only engage in transactional behaviors but also assume a transformational relationship with their followers. Additionally, the MSLS propose that these domains can be complemented with the decision-making leadership dimension, which analyses the way leaders manage their power. For example, we may admit that a leader can give positive feedback (transactional leadership) to a follower due to the follower's achievement of a task that was negotiated or imposed by the leader (decision-making leadership).

Testing the Augmentation Effect

Taking into consideration these coaches' actions domains, the second goal of this chapter was to test the augmentation effect of transformational leadership (Bass, 1985). Bass established a relationship between transformational and transactional leadership, assuming that transformational leadership could augment transactional leadership in predicting the effects on follower satisfaction and performance. In statistical terms, "transformational leadership should account for unique variance in ratings of performance (or other outcomes) over and above that accounted for by active transactional leadership" (Bass, 1998, p. 10). Empirical support has since confirmed this effect in organizational settings (see Avolio & Howell, 1992; Bycio, Hackett, & Allen, 1995; Waldman, Bass, & Yammarino, 1990), but less evidence exists in sports contexts. Rowald (2006) found support for this effect in the sports domain, but, as previously noted, coaches' leadership was evaluated without consideration of dimensions that better describe the transformational impact of coaches. In this chapter, we tested how well the three domains of leadership (e.g., transformational, transactional, and decision-making leadership) predicted the athletes' satisfaction with leadership and coach-athlete compatibility. These predictive variables were chosen because they related to the way athletes respond to coaches' leadership (Kenow & Williams, 1999) and are indicators of the positive or negative experiences they have had with their teams and coaches (Chelladurai & Riemer, 1997, Riemer & Chelladurai, 1998).

In sum, we proposed a new measure of leadership that evaluates more broadly the leadership actions of coaches and hypothesised that transformational leadership produced an augmentation effect relative to decision-making and transactional leadership.

METHOD

Participants

This chapter involved 348 male athletes between 18 and 37 years of age who play futsal ($n = 177$; 50.9%) and soccer ($n = 171$; 49.1%). These sports are similar in terms of goals and rules (e.g., the winning team is the one that scores more goals, the game has one ball that is played by foot and cannot be played by hand, except by the goalkeepers). Both sports have one goalkeeper

as well as field players (eleven in soccer and five in futsal). About half of the sample was working with their current coach for the first year ($n = 164$; 47.7%), and 76 athletes (21.8%) had achieved sport records with their actual coaches both at the national level (i.e., national champions) and international level (i.e., European and world champions).

Instruments

Demographic questionnaire

This questionnaire assesses personal and sports variables (e.g., age, competitive level, years of sport participation, years of work and sports records achieved with the current coach).

Multidimensional Scale of Leadership in Sports (MSLS)

This instrument was proposed by Gomes (2008). It evaluates the coaches' leadership behaviors and includes nine subscales and 55 items: (a) vision; (b) inspiration; (c) technical instruction; (d) personal respect; (e) personal support; (f) positive feedback; (g) negative feedback; (h) active management; and (i) passive management. The items were answered on a Likert scale with five response options (1=*Never*; 5=*Always*). The highest values in each dimension indicate higher frequency of behavior engaged in by the coaches.

Athlete Satisfaction Questionnaire (ASQ)

This instrument was proposed by Riemer and Chelladurai (1998; portuguese adaptation by Gomes & Paiva, 2010). This questionnaire measures fifteen factors of athletic satisfaction and addresses important aspects of athletic participation related to individual and team performance, coach's leadership, the team, the organization, and the individual. For the purpose of this chapter, we applied four subscales concerning the athlete's satisfaction with leadership (19 items): (a) ability utilisation; (b) strategy; (c) personal treatment; and (d) training and instruction. The items were answered on a Likert scale with seven response options (1=*Not at all satisfied*; 7=*Extremely satisfied*). The highest values in each dimension indicate higher satisfaction with the leadership style that was assumed by the coaches.

Coach-Athlete Compatibility Measure (CACM)

This instrument was proposed by Gomes and Paiva (2010). The development of this instrument was based on the work of Kenow and Williams

(1999) and Williams et al. (2003). The major difference was that we used a version with five items rather than merely one as originally proposed. Thus, the instrument evaluates more broadly the compatibility between the coach and the athlete, namely the degree to which athletes' behaviors (1 item), goals (1 item), personality/temperament (2 items), and beliefs/ideas (1 item) are consistent with coaches' behaviors, goals, personality/temperament, and beliefs. The items were answered on a Likert scale with nine response options (1=*Nothing compatible*; 9=*Highly compatible*) with the higher scores indicating greater compatibility between the coach and the athletes.

Procedure

The research followed ethical procedures as outlined in the Declaration of Helsinki, starting with informing the coaches and athletes about the study's goals, and the Questionnaire's administration procedures. After obtaining their written consent, one of the researchers met each team to collect the data. This data collection could occur on specific occasions (e.g., before or after a training session, when it was guaranteed that the coaches were not present while the athletes completed the assessment protocol), or on two distinct occasions (the Questionnaire was distributed to the athletes, who took it home to complete, and the Questionnaire was subsequently collected).

Altogether, 475 questionnaires were distributed, 348 were collected and considered valid, which suggest a highly acceptable return rate (73.3%).

RESULTS

Data Analysis

Regarding the first goal of the chapter, the following procedures were adopted. We began with an individual analysis of item characteristics (e.g., standard deviations, skewness and kurtosis). The standard deviations for each item were greater than 1.00 (the results were equal to or greater than 0.97 only in two cases), suggesting that the response variability was satisfactory. With respect to skewness and kurtosis, all items were distributed within the tolerance levels, assuming the "cut-off" of two points (West, Finch, & Curran, 1995).

In the second step, we tested the factorial validity of the three instruments using Confirmatory Factor Analysis (CFA) with Amos 19. We used the Maximum Likelihood estimation (ML), which is a procedure that seems quite robust in protecting against violations of the assumption of multivariate normality (Schutz, 1998). Given the different validity goals, we applied three structure analysis procedures (see Joreskög & Sörbom, 1993): a strictly confirmatory analysis, which tested one model for acceptance or rejection (this procedure was used for the Coach-Athlete Compatibility Measure); alternative or competing models that were used to select one final model (this procedure was employed for the Athlete Satisfaction Questionnaire); and model generating that allowed the modification and testing of each model via analysis (this procedure was applied for the Multidimensional Scale of Leadership in Sports). These testing options were based on the actual validity status of the instruments and the goals of this chapter. Thus, in the case of the CACM, only one model could result from the analysis, due to its unidimensional nature. Regarding the ASQ, we were interested in testing two different models: four correlated factors that result from the evaluated dimensions, and one higher-order model that evaluated one factor related with satisfaction with leadership (Riemer & Chelladurai, 1998) and was particularly relevant in the regression analysis (as explained below). In the case of the MSLS, we began by analysing each dimension of the scale to test the possibility of creating a shorter version of the instrument and subsequently proceeded to test the scales' organization, considering the fit results and the conceptual background of the MSLS development (e.g., transformational, transactional, and decision-making domains). This procedure of model generation is particularly useful when the researcher does not have a single final model to test and allows for model specification that takes into account not only the adjustment values but also the theory proposals (Joreskög & Sörbom, 1993).

To test the models, we used absolute (e.g., χ^2 and the adjusted goodness of fit index, AGFI) and incremental fit indices (e.g., comparative fit index, CFI, the root mean square error of approximation, RMSEA, and the Tucker-Lewis Index, TLI) as recommended by Hu and Bentler (1995) and Hoyle and Panter (1995). For the AGFI and the CFI, values of .90 and .95, respectively, were assumed to be indicative of acceptable and good fit; for the RMSEA, we assumed values of .08, .05, and .00, respectively, to indicate reasonable, close, and exact fit (Browne & Cudeck, 1993). For the TLI, the values generally range from 0 to 1 with indices above 0.90 representing a good fit.

Finally, in order to test the augmentation effect hypothesis (second goal of the chapter), we carried out hierarchical regression analysis with satisfaction with leadership and coach-athlete compatibility as the predictor variables. This procedure seems particularly appropriate when the relative importance of the variables is established, thereby allowing the researcher to control the advancement of the regression process (Tabachnick & Fidell, 2001). The predictor variables in the models were entered in the following order: in blocks one and two, two sports variables were controlled (years of practice with the current coach and sport records achieved with the current coach) because they were significantly correlated with the predicted variables; in block three, we inserted the decision-making dimensions of the MSLS; in block four, we inserted the transactional dimensions of the MSLS; and in the final block, we inserted the transformational dimensions of the MSLS. All of the models showed no problems with multicollinearity and normality (Tabachnick & Fidell, 2001), but we had to control some outliers, due to the results obtained in the “residuals casewise diagnostics”.

Factorial Validity of the Instruments

Table 1 presents the results of the Confirmatory Factor Analysis of the three instruments (the MSLS, ASQ, and CACM). Starting with the MSLS, in the first step, we attempted to achieve a simpler and shorter version of the instrument. Items were retained according to their contribution to the acceptable fit values. We also followed the suggestions of Jackson and Marsh (1996), who propose that four items are needed for describing a construct. We decided on this value of four because reducing the number of items per factor to less than three could make it difficult to achieve an internal consistency (alpha) coefficient above the generally accepted criterion (0.70) (Watson & Clark, 1997). This step was successful for the nine MSLS factors being the fit indices according to the defined criteria. Thus, we proceeded with the analysis with the following three main goals: (a) to test the correlated factors of the three domains separately (i.e., transformational, transactional, and decision-making); (b) to test the existence of a higher-order factor that could explain the transformational domain (this procedure was not applied for the transactional and decision-making domains because they were represented by only two dimensions); and (c) to test the full model with nine correlated factors.

Concerning the first goal, the fit indices for Model 1 (correlating the five factors of transformational leadership), Model 2 (correlating the two factors of

transactional leadership), and Model 3 (correlating the two factors of decision-making leadership) were acceptable. For the second goal, the models' fit also showed the possibility of aggregating the five dimensions in a single model of transformational leadership (Model 4). For the third goal, the fit indices of the full model with nine correlated factors (Model 5) were almost adequate, failing in the AGFI and in the TLI (but in the latter case, the values were almost acceptable). For a better understanding of the MSLS items, Appendix 1 presents the version of the scale with 36 items. Alpha values for this version (with four items per subscale) were above 0.70 for all the nine subscales, which were at adequate levels when considering a cut-off of 0.70 (Nunnally & Bernstein, 1994).

Analysis of the ASQ demonstrated that Models 6 and 7 were acceptable, which serves as a positive indicator that the four subscales of the Athlete Satisfaction Questionnaire could be aggregated into a single construct related to "satisfaction with leadership" (this dimension was created as a predictor variable in the regression analysis). Alpha value for the satisfaction with leadership was 0.95. Finally, a single construct was supported in the case of the CACM (Model 8), being the Alpha value equal to 0.92.

Prediction of Athletes' Satisfaction with Leadership and Coach-Athlete Compatibility

To examine whether and how athletes' perceptions of leadership account for variations in satisfaction with leadership and coach-athlete compatibility, a regression analysis with blocked entry procedures was performed. Because no differences were found between futsal and soccer players in their perceptions of satisfaction with leadership ($t_{(346)} = 1.27, p = .21$) and coach-athlete compatibility ($t_{(346)} = .76, p = .49$), regressions were done for the entire sample.

Starting with satisfaction with leadership, blocks 1 and 2 did not reveal significant results. When decision-making leadership was entered, the model was found to be significant, explaining 35% of the variance. Satisfaction with leadership was predicted by higher perception of active management and lower perception of passive management. In the fourth block, the model remained significant, explaining 48% of the variance. Satisfaction with leadership was predicted by higher perception of positive feedback. The final block also revealed a significant model, explaining 61% of the variance. Satisfaction with leadership was predicted by higher perception of vision,

technical instruction, and personal respect. Three outliers were removed from the analysis (see Table 2).

Table 1. Summary of fit statistics for the instruments of leadership (MSLS), satisfaction with leadership (ASQ) and coach-athlete compatibility (CAC)

Models	χ^2	<i>df</i>	<i>RMSEA</i>	<i>AGFI</i>	<i>CFI</i>	<i>TLI</i>
Model 1. MSLS: five correlated factors (Transformational)	228.726***	139	0.043	0.902	0.969	0.957
Model 2. MSLS: two correlated factors (Transactional)	55.187***	19	0.074	0.931	0.943	0.916
Model 3. MSLS: two correlated factors (Decision making)	38.486**	19	0.054	0.947	0.974	0.962
Model 4. MSLS: one higher-order factor (Transformational)	233.881***	141	0.044	0.900	0.968	0.956
Model 5. MSLS: nine correlated factors (Full model)	1006.69***	453	0.050	0.822	0.912	0.898
Model 6. ASQ: four correlated factors (Satisfaction with leadership)	253.663***	138	0.049	0.900	0.975	0.969
Model 7. ASQ: one higher-order factor (Satisfaction with leadership)	250.945***	137	0.049	0.901	0.975	0.969
Model 8. CACM: one factor (Coach-athlete compatibility)	0.430	2	0.00	0.996	1.00	1.00

** $p < .01$; *** $p < .001$

Regarding coach-athlete compatibility, block 1 did not reveal significant results. However, block 2 revealed marginally significant results, explaining 1% of the variance. In this case, athletes who had achieved better sports records with their current coach demonstrated higher compatibility with their coaches. The decision-making leadership model was found to be significant, explaining 29% of the variance. Coach-athlete compatibility was predicted by higher perception of active management and lower perception of passive management. In the fourth block, the model remained significant, explaining 38% of the variance. Coach-athlete compatibility was predicted by higher

perception of positive feedback. The final block also revealed a significant model, explaining 50% of the variance. Coach-athlete compatibility was predicted by a higher perception of technical instruction and personal respect. Four outliers were removed from the analysis (see Table 2).

DISCUSSION

Research has demonstrated that transformational leadership can produce positive effects on follower performance and organizational success (Bass, 1985; Bass, Avolio, Jung, & Berson, 2003; McColl-Kennedy & Anderson, 2002). However, less is known about the potentially transformational effects of coaches on athletes' experiences and performance. This chapter attempted to gain a better understanding of coaches' actions on athletes' psychological experiences by proposing a measure that evaluates three main domains and by testing the augmentation effect of transformational leadership on the explanation of athletes' satisfaction with leadership and coach-athlete compatibility.

Concerning the MSLS, results confirmed the advantages of a "shorter" version of the instrument with 36 items with minor changes in the names of the variables relative to the second version of the scale (Gomes, 2008). The CFA indicated acceptable fit indices for the three domains of leadership, which were organised by correlation (Models 1, 2, and 3) and with a second-order factor of transformational leadership (Model 4). The fit indices for the nine correlated factors (Model 5) were close to the acceptable levels being necessary to test this new version in future studies. In addition, the internal consistencies of the nine factors reinforce the advantages of maintaining the 36-item version. Regarding satisfaction with leadership and coach-athlete compatibility, the CFA indicates acceptable fit indices for both instruments. Aggregating the four subscales concerning athletes' satisfaction with leadership into a single construct was performed for the specific purpose of this chapter but could represent a useful option when this variable serves as a predictor variable in the regression models. For the CACM instrument, the main advantage is that this version includes five items with psychometric properties that may now be tested, which is a possibility that did not emerge in other studies where a single item was applied to measure this dimension (see Kenow & Williams, 1999; Williams et al., 2003).

Table 2. Regression model for the prediction of athletes' satisfaction with leadership and coach-athlete compatibility

Satisfaction with leadership				
Block 1	R^2(Adj.R^2)	$F(1, 331)$	β	t
Years of practice with the current coach ^a	.00 (-.00)	.44	.04	.66
Block 2	$F(2, 330)$			
Sport records achieved with the coach ^b	.01 (-.00)	.85	.07	1.12
Block 3 – Decision-making	$F(4, 328)$			
MMLS: Active management	.36 (.35)	45.19***	.56	11.96***
MMLS: Passive management			-.42	-9.04***
Block 4 – Transactional leadership	$F(6, 326)$			
MMLS: Positive feedback	.48 (.48)	50.99***	.41	8.52***
MMLS: Negative feedback			.07	1.45
Block 5 – Transformational leadership	$F(11, 321)$			
MMLS: Vision	.62 (.61)	48.45***	.18	3.01**
MMLS: Inspiration			.10	1.45
MMLS: Technical instruction			.18	3.37**
MMLS: Personal respect			.24	5.02***
MMLS: Personal support			-.05	-.89
Coach-athlete compatibility				
Block 1	R^2(Adj.R^2)	$F(1, 330)$	β	t
Years of practice with the current coach ^a	.00 (-.00)	.10	.02	.31
Block 2	$F(2, 329)$			
Sport records achieved with the coach ^b	.01 (-.01)	1.92	.11	1.93 ⁺
Block 3 – Decision-making	$F(4, 327)$			
MMLS: Active management	.30 (.29)	35.47***	.50	10.35***
MMLS: Passive management			-.39	-8.04***
Block 4 – Transactional leadership	$F(6, 325)$			
MMLS: Positive feedback	.39 (.38)	34.18***	.35	6.63***
MMLS: Negative feedback			-.02	-.44
Block 5 – Transformational leadership	$F(11, 320)$			
MMLS: Vision	.51 (.50)	30.60***	.07	1.06
MMLS: Inspiration			.13	1.54
MMLS: Technical instruction			.13	2.16*
MMLS: Personal respect			.26	4.81***
MMLS: Personal support			.09	1.34

Note: ^a **Years of practice with the current coach:** 0-Until one year of practice with the current coach; 1- More than one year of practice with the current coach;

^b **Sport records achieved with the current coach:** 0-Without sport records with the current coach; 1- With sport records with the current coach.

⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Finally, the variance explained by satisfaction with leadership (61%) and coach-athlete compatibility (50%) indicates the predictive value of the leadership domains evaluated by the MSLS. Most importantly, the introduction of transformational leadership in the final step of the regression models contributed significantly to the explanation of satisfaction with leadership and coach-athlete compatibility, confirming the augmentation effect. Regarding the predictive factors of leadership, three aspects should be mentioned. First, decision-making leadership assumed a clear pattern of results, demonstrating that satisfaction with leadership and coach-athlete compatibility are predicted by more participative management and less passive management. Second, transactional leadership also revealed the importance of positive feedback, suggesting that coaches can improve perceptions of satisfaction and compatibility using this behavior. Finally, three transformational leadership factors emerged as main predictors, suggesting also that coaches can promote satisfaction with their leadership by expressing an appealing and positive vision, using technical instruction, and conveying personal respect. Additionally, they can increase their compatibility with athletes using technical instruction and by conveying personal respect. These results confirm the augmentations effect (Bass, 1985) and the research done in several contexts (Bass et al., 2003; Lowe, Kroeck, & Sivasubramaniam 1996; Waldman et al., 1990), including one study with martial-arts athletes (Rowald, 2006). However, because the technical instruction dimension was an important predictor of satisfaction with leadership and coach-athlete compatibility, these results also reinforce the need to consider the specificities of sport leadership.

In sum, this chapter indicates the possibility of evaluating leadership in three main domains, emphasising the need to consider transformational leadership in sports contexts and the advantages of attending to the specificities of coaches' actions. However, only partial support was found for the factorial validity of the MSLS, and it is thus necessary to test this version of the scale in new empirical studies that include athletes of various sports and different sexes. One of the main conclusions of this chapter is that by assuming a transformational leadership style, coaches gain significant advantages in the way that they relate to their athletes and manage their teams.

APPENDIX 1. MSLS

The following statements describe specific behaviors that a coach can assume.

For each statement there are five alternative responses:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always
	(About 25% of the time)	(50% of the time)	(About 75% of the time)	

Please indicate the present behavior of your CURRENT coach and circle a number from 1 to 5.

Try to answer all the statements, thinking about the **normal** or **usual** behavior of your coach.

My coach...	Never	Rarely	Sometimes	Often	Always
1. Encourages me to work the best I can	1	2	3	4	5
2. Helps me when I have a personal problem	1	2	3	4	5
3. Shows optimism and confidence concerning my future	1	2	3	4	5
4. Uses punishments when I fail or commit errors	1	2	3	4	5
5. Congratulates me when I have a good performance	1	2	3	4	5
6. Respects me as a person	1	2	3	4	5
7. Sets challenging goals for me	1	2	3	4	5
8. Congratulates me when I do a very good job	1	2	3	4	5
9. Uses punishments when I have a performance lower than expected	1	2	3	4	5
10. Delays to solve important issues	1	2	3	4	5
11. Explains to me what should and what should not be done	1	2	3	4	5
12. Defines a positive vision for my future	1	2	3	4	5
13. Asks my opinion on important issues related to training/competition	1	2	3	4	5
14. Makes sure that I'm rewarded for my good performance	1	2	3	4	5
15. Gets angry and punishes me when I don't have a good performance	1	2	3	4	5
16. Lets things go wrong before doing something	1	2	3	4	5
17. Lets me participate in the decisions to be taken	1	2	3	4	5
18. Demonstrates satisfaction when I perform well	1	2	3	4	5

(Continued)

My coach...	Never	Rarely	Sometimes	Often	Always
19. Appreciates well-structured training methods	1	2	3	4	5
20. Demonstrates respect for my personal feelings	1	2	3	4	5
21. Encourages me to give suggestions about what to do in training/competitions	1	2	3	4	5
22. Stand up for the idea of “leave for tomorrow what you can do today”	1	2	3	4	5
23. Demonstrates the affection he/she feels for me when I have a personal problem	1	2	3	4	5
24. Expresses optimism about my future	1	2	3	4	5
25. Promotes my will of achievement and being successful	1	2	3	4	5
26. Gets irritated with me when I don’t do things as planned	1	2	3	4	5
27. Promotes my desire to push myself more and more	1	2	3	4	5
28. Tells me what to do and how to do it	1	2	3	4	5
29. Lets problems go on before doing something about it	1	2	3	4	5
30. Points out an interesting future for me	1	2	3	4	5
31. Encourages me to talk about my personal problems	1	2	3	4	5
32. Behaves in order to respect my personal needs	1	2	3	4	5
33. When calls me to attention, gives me examples on how to correct the situation	1	2	3	4	5
34. Exchanges opinions with me when he/she has to solve a problem	1	2	3	4	5
35. Encourages an informal relationship with me when I have a personal problem	1	2	3	4	5
36. Treats me with respect	1	2	3	4	5

Items dimensions	Vision: 3, 12, 24, 30	Positive feedback: 5, 8, 14, 18
	Inspiration: 1, 7, 25, 27	Negative feedback: 4, 9, 15, 26
	Technical instruction: 11, 19, 28, 33	Active management: 13, 17, 21, 34
	Personal respect: 6, 20, 32, 36	Passive management: 10, 16, 22, 29
	Personal support: 2, 23, 31, 35	

Note: add and divide the results obtained in each dimension by four to obtain the scores in the nine subscales.

REFERENCES

- Arthur, C. A., Woodman, T., Ong, C. W., Hardy, L. & Ntoumanis, N. (2011). The role of athlete narcissism in moderating the relationship between coaches' transformational leader behaviors and athlete motivation. *Journal of Sport & Exercise Psychology*, 33(1), 3-19.
- Avolio, B. J. (1999). *Full leadership development: Building the vital forces in organizations*. London: Sage Publications.
- Avolio, B. J. & Bass, B. M. (1995). Individual consideration viewed at multiples levels of analysis: A multi-level framework for examining the diffusion of transformational leadership. *The Leadership Quarterly*, 6(2), 199-218.
- Avolio, B. J. & Howell, J. M. (1992). The impact of leader behavior and leader-follower personality match on satisfaction and unit performance. In K. E. Clark, M. B. Clark & D. R. Campbell (Eds.), *Impact of leadership* (pp. 225-235). Greensboro, NC: The Center for Creative Leadership.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: The Free Press.
- Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership: Theory, research and managerial applications* (3rd Ed.). New York: The Free Press.
- Bass, B. M. (1998). *Transformational leadership: Industrial, military, and educational impact*. New Jersey: Lawrence Erlbaum.
- Bass, B. M. & Avolio, B. J. (1997). *Full range leadership development: Manual for the Multifactor Leadership Questionnaire*. Redwood City: Mind Garden.
- Bass, B. M., Avolio, B. J., Jung, D. I. & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, 88, 207-218.
- Bass, B. M. & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Bennis, W. & Nanus, B. (1985). *Leaders: The strategies for taking charge*. New York: Harper & Row.
- Bloom, G. A. (2002). Role of the elite coach in the development of talent. In J. M. Silva & D. E. Stevens (Eds.), *Psychological foundations of sport* (pp. 466-483). Boston: Allyn and Bacon.
- Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Structural equation models* (pp. 136-162). Newbury Park, CA: Sage.

- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Bycio, P., Hackett, R. D. & Allen, J. S. (1995). Further assessments of Bass's (1985) conceptualization of transactional and transformational leadership. *Journal of Applied Psychology, 80*, 468-478.
- Charbonneau, D., Barling, J. & Kelloway, E. K. (2001). Transformational leadership and sports performance: The mediating role of intrinsic motivation. *Journal of Applied Social Psychology, 31*(7), 1521-1534.
- Chelladurai, P. (1993). Leadership. In R. N. Singer, M. Murphey & L. K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 647-671). New York: Macmillan.
- Chelladurai, P. (2007). Leadership in sports. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 113-135). Hoboken, New Jersey: John Wiley & Sons.
- Chelladurai, P. (2012). Models and measurement of leadership in sport. In G. Tenenbaum, R. C. Eklund & A. Kamata (Eds.), *Measurement in sport and exercise psychology* (pp. 433-442). Champaign, IL: Human Kinetics.
- Chelladurai, P. & Reimer, H. A. (1997). A classification of the facets of athlete satisfaction. *Journal of Sport Management, 11*, 133-159.
- Chelladurai, P. & Reimer, H. A. (1998). Measurement of leadership in sport. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 227-253). Morgantown: Fitness Information Technology.
- Conger, J. A. & Kanungo, R. (1987). Toward a behavioural theory of charismatic leadership in organizational settings. *The Academy of Management Review, 12*(4), 637-647.
- Conger, J. A. & Kanungo, R. (1998). *Charismatic leadership in organizations*. London: Sage Publications.
- Côté, J., Salmela, J. H., Trudel, P., Baria, A. & Russell, S. (1995). The coaching model: A grounded assessment of expert gymnastic coaches knowledge. *Journal of Sport & Exercise Psychology, 17*(1), 1-17.
- Gomes, A. R. (2005). *Liderança e relação treinador-atleta em contextos desportivos* [Leadership and coach-athlete relationship in sports contexts]. Unpublished doctoral dissertation. Braga: University of Minho.
- Gomes, A. R. (2008). Escala multidimensional de liderança no desporto: Reanálise da estrutura factorial [Multidimensional Scale of Leadership in Sports: Re-examining the factorial structure]. In A. P. Noronha, C. Machado, L. Almeida, M. Gonçalves & V. Ramalho (Eds.), *Actas da XIII conferência internacional de avaliação psicológica: Formas e contextos*. Braga: Psiquilíbrios Edições.

- Gomes, A. R. & Paiva, P. (2010). Liderança, compatibilidade treinador-atleta e satisfação no andebol: Percepção de atletas novatos e experientes [Leadership, coach-athlete compatibility and satisfaction in handball: Perceptions of novice and experienced athletes]. *PsicoUSF*, 15(2), 235-248.
- Haas, S. (1992). Coaching: Developing key players. *Journal of Nursing Administration*, 22(6), 54-58.
- Horn, T. S. (2008). *Advances in sport psychology* (3rd ed.). Champaign, IL: Human Kinetics.
- House, R. J. (1977). A 1976 theory of charismatic leadership. In J. G. Hunt & L. L. Larson (Eds.), *Leadership: The cutting edge*, (189-207). Carbondale: Southern Illinois University Press.
- Hoyle, R. H. & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158-176). Thousand Oaks, CA: Sage.
- Hu, L. & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues, and applications* (pp. 76-99). Thousand Oaks, CA: Sage.
- Jackson, S. A. & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: The Flow State Scale. *Journal of Sport & Exercise Psychology*, 18, 17-35.
- Joreskög, K. G. & Sörbom, D. (1993). *LISREL 8: Structural equation modelling with the SIMPLIS command language*. Chicago: Scientific Software International.
- Jowett, S. (2007). Interdependence analysis and the 3+1 Cs in the coach-athlete relationship. In S. Jowett & D. Lavalley (Eds.), *Social psychology in sport* (pp. 15-27). Champaign, IL: Human Kinetics.
- Kenow, L. J. & Williams, J. M. (1999). Coach-athlete compatibility and athlete's perception and evaluative reactions to coaching behaviors. *Journal of Sport Behavior*, 22, 251-259.
- Kouzes, O. & Posner, B. (1987). *The leadership challenge: How to get extraordinary things done in organizations*. San Francisco, CA: Jossey-Bass.
- Lowe, K. B., Kroeck, K. G. & Sivasubramaniam N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. *The Leadership Quarterly*, 7(3), 385-425.

- McCull-Kennedy, J. R. & Anderson, R. D. (2002). Impact of leadership style and emotions on subordinate performance. *The Leadership Quarterly*, 13(5), 545-559.
- Nunnally, J. C. & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw Hill.
- Rafferty, A. E. & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The Leadership Quarterly*, 15(3), 329-354.
- Riemer, H. A. (2007). Multidimensional model of coach leadership. In S. Jowett & D. Lavallee (Eds.), *Social Psychology in sport*, (57-73). Champaign, IL: Human Kinetics.
- Riemer, H. A. & Chelladurai, P. (1998). Development of the athlete satisfaction questionnaire (ASQ). *Journal of Sport & Exercise Psychology*, 20(2), 127-156.
- Rowold, J. (2006). Transformational and transactional leadership in martial arts. *Journal of Applied Sport Psychology*, 18(4), 312-325.
- Sashkin, M. (2004). Transformational leadership approaches. In J. Antonakis, A. T. Cianciolo & R. J. Sternberg (Eds.), *The nature of leadership* (pp. 171-196). Thousand Oaks: Sage Publications.
- Schmidt, R. A. (1991). *Motor learning and performance: From principles to practice*. Champaign, IL: Human Kinetics.
- Schutz, R. W. (1998). Assessing the stability of psychological traits and measures. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 393-408). Morgantown, WV: Fitness Information Technology, Inc.
- Shamir, B. (1999). Leadership in boundary less organizations: Disposable or indispensable? *Journal of Work and Organizational Psychology*, 8, 49-71.
- Smith, R. E. & Smoll, F. L. (1996). The coach as a focus of research and interventions in youth sports. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport. A Biopsychosocial perspective* (pp. 125-141). Dubuque, IA: Brown & Benchmark.
- Tabachnick, B. G. & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.). New York: HarperCollins.
- Waldman, D. A., Bass, B. M. & Yammarino, F. J. (1990). Adding to contingent-reward behavior-the augmenting effect of charismatic leadership. *Group & Organization Studies*, 15(4), 381-394.
- Watson, D. & Clark, L. A. (1997). Measurement and mis-measurement of mood: Recurrent and emergent issues. *Journal of Personality Assessment*, 68, 267-296.

- West, S. G., Finch, J. F. & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues and applications* (pp. 56-75). Newbury Park: Sage.
- Williams, J. M., Jerome, G. J., Kenow, L. J., Rogers, T., Sartain, T. A. & Darland, G. (2003). Factor structure of the coaching behavior questionnaire and its relationships to athlete variables. *The Sport Psychologist, 17*(1), 16-34.
- Woodman, L. (1993). Coaching: A science, an art, an emerging profession. *Sport Science Review, 2*(2), 1-13.
- Yammarino, F. J., Dubinsky, A. J., Comer, L. B. & Jolson, M. A. (1997). Women and transformational and contingent reward leadership: A multiple levels of analysis perspective. *Academy of Management Journal, 40*, 205-222.
- Yukl, G. (1981). *Leadership in organizations*. Englewood Cliffs, NJ: Prentice-Hall.