

# Transformational Leadership and Sports Performance: The Mediating Role of Intrinsic Motivation<sup>1</sup>

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We developed and tested a model in which transformational leadership affects sports performance indirectly, through the mediating effects of intrinsic motivation. During the season, 168 university athletes provided data on their perceptions of their coach's transformational leadership and their own intrinsic motivation. At the end of the season, their coaches assessed the performance of the athletes. Using LISREL VIII, three models were estimated following the sequence of mediator tests outlined by Kelloway (1996, 1998). The proposed model received considerable support. The results isolate intrinsic motivation as a mediator of the relationship between transformational leadership and sports performance, suggesting that transformational leadership may enhance intrinsic interest in the task.

The theory of transformational leadership was developed by Bass (1985) and has attracted considerable attention since then (Bass, 1998). Transformational leaders display certain characteristics, such as espousing ideals, acting as role models, and showing care and concern for each subordinate. Also, they inspire their followers by formulating a vision and setting challenging goals, and stimulating them intellectually to think about old problems in innovative ways. Research has demonstrated that perceived transformational leadership is associated with increased performance in various work settings, such as the Navy

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(Yammarino & Bass, 1990), banks (Barling, Weber, & Kelloway, 1996; Geyer & Steyrer, 1998; Howell & Avolio, 1993), teams of Air Force officer cadets (Clover, 1990), and blue-collar maintenance workers (Barling, Moutinho, & Kelloway, 1998).

To date, the transformational leadership model has received most empirical attention within organizational settings, and the utility of the model would be enhanced if it could be shown to be valid in other contexts as well. There has been speculation about the relevance of transformational leadership within the sports domain (Murray & Mann, 1998). However, this has been descriptive only and limited to charisma and the importance of having a vision (Yukelson, 1997). Chelladurai and Saleh (1980) showed that coaches' social support aimed at promoting the welfare of athletes (which parallels individualized consideration) predicted performance.

Just how transformational leadership affects performance only recently has begun to attract empirical scrutiny. Early indications suggest that transformational leadership affects performance indirectly via several mediating mechanisms. First, Kirkpatrick and Locke's (1996) experimental study pointed to the mediating role of self-efficacy beliefs. Second, survey research using longitudinal data points to the mediating effects of affective commitment (Barling et al., 1996, 1998) and trust in management (Barling et al., 1998). In the current study, we identify a different possible mediator, namely intrinsic motivation, and predict that transformational leadership affects sports performance indirectly through the mediating effects of intrinsic motivation.

The concept of *intrinsic motivation*, which reflects individuals choosing to engage in activities for the pleasure that they bring, is by no means new (e.g., Deci & Ryan, 1985). There are several reasons for postulating a link between transformational leadership and intrinsic motivation. Ryan, Mims, and Koestner (1983) suggested that the controlling aspect of rewards decreases intrinsic motivation (see Rummel & Feinberg, 1988, for a discussion of cognitive evaluation theory). However, transformational leaders are known to empower rather than control their followers (Kanungo & Mendonca, 1998). This is supported to some extent by data showing that a leadership style that is supportive and promotes autonomy, which would be consistent with transformational leadership, enhances intrinsic motivation (Richer & Vallerand, 1995). This empowering process is thought to increase followers' self-efficacy and capacity for self-determination (Kanungo & Mendonca, 1998). One objective of the present study is to verify the self-determination claim. Indeed, self-determination, or the experience of choice, is an essential component of intrinsic motivation (Deci & Ryan, 1985).

Pelletier, Fortier, Vallerand, Tuson, and Brière (1995) applied intrinsic motivation to the sports context. In this context, intrinsic motivation consists of three aspects, namely (a) knowing, learning, and understanding; (b) accomplishing and

being task oriented; and (c) experiencing stimulation and sensations. We suggest that the very nature of the different components of transformational leadership will be particularly suited to predicting Pelletier et al.'s notion of intrinsic motivation. With its emphasis on stirring individuals to think for themselves, and to approach old problems in new ways, the intellectual-stimulation component of transformational leadership is likely to increase knowledge, learning, and understanding. Similarly, charisma raises individuals' and groups' expectations about what they can achieve and is likely to increase the accomplishment and task-orientation component of intrinsic motivation.

In turn, we predict that it is intrinsic motivation that will result in enhanced sports performance. Generally, motivation has been found to be a weak predictor of performance. However, there is some evidence linking intrinsic motivation to some aspects of performance, such as effort and persistence in school (Vallerand & Senécal, 1992) and on a competitive swimming team (Pelletier & Tuson, 1992), as well as academic performance in high school (Vallerand & Bissonnette, 1992). Additional evidence supporting a link between intrinsic motivation and performance comes from the literature on goal orientation. Indeed, increased performance in martial arts has been linked to a mastery orientation, which consists of improving skills and gaining understanding (King & Williams, 1997). The definition of mastery orientation is reminiscent of the knowledge and task-orientation aspects of intrinsic motivation, as defined by Pelletier et al. (1995), respectively. Intrinsic motivation is uniquely appropriate to the sports context; as Deci and Ryan (1985) noted, the primary motivation for amateur athletes is intrinsic.

The main objective of the present study is to test a model in which transformational leadership affects sports performance indirectly, through the mediating effects of intrinsic motivation. That is, intrinsic motivation is examined in the particular interpersonal context of a transformational influence strategy. Related concepts (e.g., transactional leadership and extrinsic motivation) were not examined, in order to limit the scope of the study.

Several methodological comments are in order. First, leadership studies are often plagued by the exclusive use of self-report data. To avoid monomethod bias, we asked sports players to rate their coaches' leadership and their own intrinsic motivation, and we asked team coaches to rate each individual's performance. Second, in an attempt to arrive at a representative perspective of performance, we used two performance indicators; namely, performance relative to other fellow athletes and each individual's improvement over the season. Finally, the nature of the athletic season allowed us to use a short-term, longitudinal design. Specifically, athletes filled out the transformational leadership and intrinsic motivation questionnaires during the season. At the end of the season, performance data were collected from the coach. Because of this short-term, longitudinal format, prospective relations are permitted.

## Method

### *Participants*

The participants were athletes and their coaches recruited from among the varsity sports teams at one small university. These teams were all competing, but at different levels. Some were competing at the university level, whereas others competed at the collegiate level, which is considered a lower level. Eight of these teams would be considered individual sports (e.g., judo, swimming), and the remaining eight would be considered team sports (e.g., volleyball, basketball). Of the teams, two were all-female, six were all-male, and eight had both female and male members. In total, 170 male athletes and 65 female athletes completed the questionnaires on transformational leadership and intrinsic motivation, while 16 team coaches (all males) provided performance data for each athlete. A complete data set consisted of the questionnaires filled out by athletes and the coaches' evaluation of the same athletes.

Data from two teams (squash, all males; and biathlon, males and females) were excluded because of missing performance data. In total, 45 participants were excluded because of missing performance data. Another 22 participants were excluded because of incomplete data on leadership, motivation, or both. After the elimination of incomplete data sets, 168 participants (123 males, 45 females) remained (representing a response rate of 71%). On average, the respondents, all of whom were undergraduates, were in their second year of studies ( $M = 2.12$ ,  $SD = 1.07$ ) and were between 17 and 22 years of age.

### *Instruments*

The university from which the data were collected is a bilingual institution (English and French). Most respondents took the language version that corresponded to their stated official language. That is, 133 (79%) respondents took the English questionnaires, whereas the remaining 35 (21%) answered in French.

*Leadership.* The Multifactor Leadership Questionnaire-Form 5X (MLQ; Bass & Avolio, 1995) measures athletes' perceptions of their coaches' leadership. For the purpose of this study, only those sections that measure transformational leadership are discussed. Transformational leadership is divided into three factors: charisma (8 items; e.g., "Talks optimistically about the future"), intellectual stimulation (4 items; e.g., "Seeks different perspectives when solving problems"), and individualized consideration (4 items; e.g., "Considers me as having different needs and abilities than others"). The 5-point Likert-type answer scale ranges from 0 (*not at all*) to 4 (*frequently or always*). Scores on each of these three factors were obtained by dividing the raw score by the number of items.

Translation of the questionnaire from English to French was completed by the principal investigator with the help of a professional translator. This French version was backtranslated into English by a bilingual individual who did not have access to the original questionnaire. The content of the questions, when backtranslated, remained the same.

Reliabilities for the different scales are reported in the diagonal in Table 1, as measured from the overall sample. Reliabilities obtained on the English and French questionnaires are comparable: .81 and .81 for charisma for English and French, respectively; .77 and .69 for intellectual stimulation; and .57 and .62 for individualized consideration. The reliability for individualized consideration falls just under the considered acceptable range, but was nevertheless included in the analysis. Further analyses reveal that reliability was higher for individual sports than for team sports for both language versions. For instance, in the English version, individual sports provided a reliability of .65, whereas the reliability was only .45 for team sports (.57 and .49, respectively, for the French version). The reliability of intellectual stimulation in French and that of individualized consideration in both languages were below the typical levels found in the literature ( $\alpha > .77$ ; Bass & Avolio, 1996).

*Intrinsic motivation.* Intrinsic motivation was measured with the Sport Motivation Scale (SMS). This questionnaire is available both in French (Brière, Vallerand, Blais, & Pelletier, 1995) and in English (Pelletier et al., 1995). For the purpose of the present study, only the sections on intrinsic motivation are discussed. Respondents were asked to answer the question, "Why do you practice your sport?" There are 28 items in total, but only the 12 items pertaining to intrinsic motivation were used in this study. Intrinsic motivation is composed of three factors: knowledge (4 items; e.g., "For the pleasure of discovering new training techniques"), stimulation (4 items; e.g., "For the intense emotions I feel doing a sport that I like"), and accomplishments (4 items; e.g., "For the satisfaction I experience while I am perfecting my abilities"). The 7-point answer scale ranges from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Reliabilities for the three motivation scales range between .74 and .85, as indicated in the diagonal of Table 1, for the entire sample. The English and French scales revealed acceptable reliabilities: .83 and .89 for knowledge for English and French, respectively; .68 and .80 for stimulation; and .79 and .72 for accomplishment.

*Performance.* Performance of the athletes was measured at the end of the season using two questions. Coaches estimated the athletes' performance during both training and competition. They provided an estimate of the percentage of improvement for each team member throughout the season. In addition, coaches categorized each athlete on a 5-point scale ranging from 1 (*poor*) to 5 (*excellent*) in terms of performance relative to all other athletes on the team.

Table 1  
*Descriptive Statistics and Intercorrelations for All Study Variables*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Percentage improvement	41.46	26.66	— <sup>a</sup>							
2. Performance category	3.18	1.14	.15*	— <sup>a</sup>						
3. Knowledge	4.81	1.36	.21**	.18*	.85					
4. Stimulation	5.52	1.30	.14	.23**	.56**	.74				
5. Accomplishment	5.41	1.16	.22**	.25**	.77**	.68**	.80			
6. Charisma	3.03	0.63	.03	.01	.13	.19*	.19*	.81		
7. Intellectual stimulation	2.53	0.78	.19*	.15	.39**	.28**	.41**	.52**	.78	
8. Individualized consideration	2.90	0.68	.21**	.21**	.32**	.27**	.37**	.44**	.55**	.57

*Note.* *N* = 168. Italicized numbers are alpha coefficients.

<sup>a</sup>One-item scale, no reliability.

\**p* < .05. \*\**p* < .01.

### Procedure

Athletes completed the questionnaires within 2 weeks of the midpoint of the season for their respective sports. This variability was necessary to accommodate the teams' availability and competing schedule. Performance data were obtained from the coaches at the end of the season. Participants wrote their names on a removable yellow Post-It™ note attached to the questionnaires, making it possible to pair the questionnaires with the performance evaluation supplied by the coaches. All identifying information was removed from the questionnaires after the performance data were obtained.

### Results

Descriptive statistics and intercorrelations of all variables in this study are presented in Table 1. The correlation between the two indexes of performance ( $r = .15, p < .05$ ), improvement and performance category, although significant, is rather low. Contrary to expectation, charisma did not correlate with either index of performance and appears to be the least influential factor on intrinsic motivation. The remaining two transformational factors, intellectual stimulation and individualized consideration, are related to all three aspects of intrinsic motivation ( $r$  range = .27 to .41,  $p < .01$ ). In spite of its low reliability, individualized consideration correlated significantly with intrinsic motivation.

Structural equation models were used for data analysis. All model tests were based on the covariance matrix and were estimated using maximum likelihood estimation as implemented in LISREL VIII (Jöreskog & Sörbom, 1992). Our sample falls below the commonly recommended standard of 200 (e.g., Kelloway, 1998), raising the possibility of (a) an overly liberal test of model fit, and (b) overly conservative tests of individual parameters comprising the model. Thus, in evaluating our proposed model, we use multiple measures of model fit. Moreover, our focus is on the comparison of different models within the same sample. Thus, any biasing effects of sample size should be constant across the model tests we perform.

Model fit was assessed through consideration of the chi-square test, the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the normed fit index (NFI), and the comparative fit index (CFI). Acceptable model fit is indicated by a nonsignificant chi-square test and fit indexes exceeding .90.

Following the recommendations of Anderson and Gerbing (1988), we first established the fit of the measurement model before moving to a consideration of the full structural model. The proposed model was estimated as a latent variable model with three indicators for leadership, three indicators for intrinsic motivation, and two indicators for performance. The measurement model provided a satisfactory fit to the data,  $\chi^2(17, N = 168) = 20.59, ns$ ; GFI = .97, AGFI = .94,

Table 2

*Standardized Parameter Estimates for the Measurement Model*

Observed variables	Latent variables		
	Performance	Motivation	Leadership
Percentage improvement	.37		
Performance category	.41**		
Knowledge		.80**	
Stimulation		.71**	
Accomplishment		.95**	
Charisma			.61**
Intellectual stimulation			.83**
Individualized consideration			.69**

\*\**p* < .01.

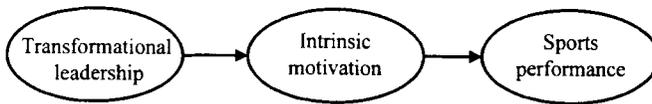


Figure 1. Proposed model linking transformational leadership and sports performance.

NFI = .95, CFI = .99. Standardized parameter estimates for the model are presented in Table 2. As shown, all estimated parameters were significant (*p* < .01).

To assess the proposed structural model (Figure 1) we estimated three models following the sequence of mediator tests outlined by Kelloway (1996, 1998). First, we estimated a fully mediated model suggesting that leadership predicted intrinsic motivation and that motivation predicted performance. Second, we estimated a partially mediated model suggesting that leadership predicted both motivation and performance and that motivation predicted performance. Finally, we estimated the nonmediated model suggesting that leadership predicted both intrinsic motivation and performance (but that motivation did not predict performance). Both the fully mediated and nonmediated models stand in nested sequence, with the partially mediated model allowing for their comparison with the chi-square difference test.

Fit indexes for the three models are shown in Table 3. As shown, the partially mediated model provided a better fit to the data than did the nonmediated model,  $\chi^2_{\text{difference}}(1, N = 168) = 7.61, p < .01$ , but was not significantly different from

Table 3

*Fit Indexes for the Structural Models*

Model	$\chi^2$	df	GFI	AGFI	NFI	CFI
Mediated	22.43	18	.97	.94	.95	.99
Nonmediated	28.20	18	.96	.92	.94	.98
Partially mediated	20.59	17	.97	.94	.95	.99

Note. GFI = goodness of fit index, AGFI = adjusted goodness of fit index, NFI = normed fit index, CFI = comparative fit index.

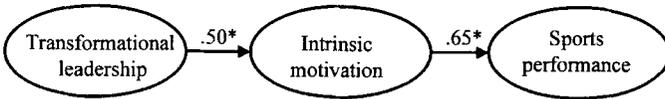


Figure 2. Results of the LISREL VIII analyses linking transformational leadership and sports performance.

the fully mediated model  $\chi^2_{\text{difference}}(1, N = 168) = 1.84, ns$ . Moreover, the addition of the path from leadership to performance in the partially mediated model resulted in a nonsignificant parameter estimate ( $\beta = 0.27, ns$ ). Based on these observations, the fully mediated model was retained for further analysis.

Standardized parameter estimates for the model are presented in Figure 2. As shown, performance was predicted by intrinsic motivation ( $\beta = 0.65, p < .01$ ), and intrinsic motivation was predicted by transformational leadership ( $\beta = 0.50, p < .01$ ). The fully mediated model accounted for 40% of the variance in performance and 24% of the variance in intrinsic motivation.

Discussion

The results of this study provide strong support for the proposed model in which intrinsic motivation mediates the relationship between transformational leadership and athletic performance. These results extend findings from previous studies, contributing to a greater understanding of the several ways in which transformational leadership affects performance.

First, in isolating intrinsic motivation as a mediator of the relationship between transformational leadership and sports performance, we point to a mediator not addressed in previous research. While there is no research on intrinsic motivation in organizations, Kirkpatrick and Locke (1996) showed that having a charismatic leader is associated with perceiving one's work as more interesting.

Taken together with the findings in the present study, we suggest that future research should focus on whether transformational leadership is effective in the extent to which it enhances intrinsic interest in the task.

Second, our findings extend previous research by showing that transformational leadership influences behavior in a context that has not received much attention previously. Bass (1998) points to the extent to which transformational leadership has been applied in contexts other than formal work organizations (e.g., the military), and there are indications that the model is equally valid in the educational context (Koh, Steers, & Terborg, 1995). Nonetheless, external validity remains an empirical issue (Cook & Campbell, 1979), and the present results add to the external validity of the model. Finally, with few exceptions (e.g., Zacharatos, Barling, & Kelloway, 2000), very little research has focused on younger adults' use of transformational leadership. By focusing on university athletes in this study, we further extend transformational leadership, showing that it can be effective among young people.

The degree of confidence inherent in these findings is strengthened by two methodological issues. First, we used a short-term longitudinal design in which data on performance were collected several months after the data on perceived leadership and intrinsic motivation were collected. As a result, the possibility of reverse causality is less likely. This is important because of the concern inherent in many leadership studies that the perception of leadership is a function of performance (Lord & Maher, 1991). Second, because students provided perceptions of their coaches' leadership and self-ratings of intrinsic motivation, while coaches evaluated sports performance, we reduced the extent to which the findings could be a function of single-source bias. However, at midseason, the athletes may have been aware of their coaches' opinions on their performance, which could have biased their self-reported motivation or their leaders' evaluations. This possibility cannot be ruled out.

One surprising finding in the study is the smaller relative contribution of charisma to intrinsic motivation, in comparison with intellectual stimulation and individualized consideration. This may reflect a difference between sports teams and organizational teams. It is possible that on sports teams, athletes already have the purpose of winning and do not benefit as much from a leader's vision as would organizational teams, for whom the purpose and vision need some clarification.

Several avenues for future research can be suggested. First, previous experimental research (Barling et al., 1996) has shown that transformational leadership can be enhanced via training. In the current study, we tested for mediation using correlational data. Inferences concerning mediation could be strengthened, however, if support was derived from experimental studies using longitudinal data (i.e., training coaches in transformational leadership enhances players' intrinsic motivation, which later has positive effects on performance). Second, Vallerand

(1983) has shown the importance of positive verbal feedback on intrinsic motivation. Future research may investigate the possible mediating role of positive verbal feedback between transformational leadership and intrinsic motivation. Indeed, transformational leaders may provide more informational feedback on performance than nontransformational leaders. Third, it would be interesting to contrast transformational leadership with transactional leadership in terms of intrinsic and extrinsic motivation. The use of extrinsic reward to control performance, the essence of transactional leadership (in particular, contingent reward), should decrease intrinsic motivation and increase extrinsic motivation (Deci & Ryan, 1985).

Fourth, our measure of sports performance had to accommodate individuals from different sports, and as a result may have been too general. Indeed, the comparison of performance across different team sports and individual sports presented a hurdle. The use of performance-standardized scores for each athlete within each team was rejected because of the difficulty of identifying a criterion that would have been fair to all players within a team sport. Indeed, in team sports, players often have different roles. In addition, the two items measuring performance may not have adequately captured a sufficient variety of performance aspects. However, the correlation between improvement and relative performance was low, indicating that two independent aspects of performance were measured. Improvement may depend more on personal effort than on skills. In contrast, relative performance may be related more to skills than to effort. While these two issues do not threaten the validity of the present results, as they would both bias any results conservatively, future research should still use a more comprehensive and specific measure of sports performance.

Similarly, the MLQ (Bass & Avolio, 1995) was not adapted to the sports context, and the reliability of one factor (individualized consideration) is less than desirable. This may be an issue because there was a difference in the reliability of individualized consideration of team sports and individual sports. Perhaps the perceived individual attention given to athletes in team sports is less consistent than in individual sports. Furthermore, there are differences between sport teams and organizational work teams. For instance, Zhang, Jensen, and Mann (1997) claim that scales developed in industry and business areas are not necessarily relevant to sports contexts because of the time-limited nature of athletic teams, the win-lose dichotomy, and the amount of time required to train for competitions. Again, while any effects of these differences on the present findings would be to bias the results conservatively, future research might profitably use a more specific measure of transformational leadership.

In conclusion, the results of the present study extend our understanding of how transformational leaders affect performance, suggesting that any such influence is indirect. In this study, intrinsic motivation mediated the relationship between transformational leadership and sports performance.

## References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*, 411-423.
- Barling, J., Moutinho, S., & Kelloway, E. K. (1998). *Transformational leadership and group performance: The mediating role of affective commitment*. Manuscript submitted for publication, Queen's University, Kingston, Ontario, Canada.
- Barling, J., Weber, T., & Kelloway, E. K. (1996). Effects of transformational leadership training on attitudinal and financial outcomes: A field experiment. *Journal of Applied Psychology*, *81*, 827-832.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York, NY: Free Press.
- Bass, B. M. (1998). *Transformational leadership: Industry, military and educational impact*. Mahwah, NJ: Lawrence Erlbaum.
- Bass, B. M., & Avolio, B. J. (1995). *Multifactor Leadership Questionnaire manual*. Palo Alto, CA: Mindgarden.
- Brière, N. M., Vallerand, R. J., Blais, M. R., & Pelletier, L. G. (1995). Développement et validation d'une mesure de motivation intrinsèque et extrinsèque et d'amotivation en contexte sportif: L'Échelle de Motivation vis-à-vis les Sports (EMS) [Development and validation of a measure of intrinsic and extrinsic motivation and amotivation in sports]. *Journal International de Psychologie du Sport*, *26*, 465-485.
- Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. *Journal of Sport Psychology*, *2*, 34-45.
- Clover, W. H. (1990). Transformational leaders: Team performance, leadership ratings, and firsthand impressions. In K. E. Clark & M. B. Clark (Eds.), *Measures of leadership* (pp. 171-184). West Orange, NJ: Leadership Library of America, Inc.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis for field settings*. Boston, MA: Houghton Mifflin.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Geyer, A. L. G., & Steyrer, J. M. (1998). Transformational leadership and objective performance in banks. *Applied Psychology: An International Review*, *47*, 397-420.
- Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of Applied Psychology*, *78*, 891-902.
- Jöreskog, K. G., & Sörbom, D. (1992). *LISREL VIII: Analysis of linear structural relations*. Mooresville, IN: Scientific Software.

- Kanungo, R. N., & Mendonca, M. (1998). Ethical leadership in three dimensions. *Journal of Human Values*, *4*, 133-148.
- Kelloway, E. K. (1996). Common practices in structural equation modeling. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (Vol. 11, pp. 141-180). London, UK: John Wiley & Sons.
- Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.
- King, L. A., & Williams, T. A. (1997). Goal orientation and performance in martial arts. *Journal of Sport Behavior*, *20*, 397-411.
- Kirkpatrick, S. A., & Locke, E. A. (1996). Direct and indirect effects of three core charismatic leadership components on performance and attitudes. *Journal of Applied Psychology*, *81*, 36-51.
- Koh, W. L., Steers, R. M., & Terborg, J. R. (1995). The effects of transformational leadership on teacher attitudes and student performance in Singapore. *Journal of Organizational Behavior*, *16*, 319-333.
- Lord, R. G., & Maher, K. J. (1991). *Leadership and information processing: Linking perceptions and performance*. Boston, MA: Unwin Hyman.
- Murray, M. C., & Mann, B. L. (1998). Leadership effectiveness. In J. M. Williams (Ed.), *Applied sport psychology* (pp. 92-114). Mountain View, CA: Mayfield.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., & Brière, N. M. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport and Exercise Psychology*, *17*, 35-53.
- Pelletier, L. G., & Tuson, K. M. (1992). Swimmers' self-determination and coaches' interpersonal behavior: Conceptualization, development, and implementation. In M. Temple and I. Curry (Eds.), *The swimming development centres manual* (pp. 4-35). Ottawa, Canada: SNC.
- Richer, S. F., & Vallerand, R. J. (1995). Supervisors' interactional styles and subordinates' intrinsic and extrinsic motivation. *Journal of Social Psychology*, *135*, 707-721.
- Rummel, A., & Feinberg, R. (1988). Cognitive evaluation theory: A meta-analytic review of the literature. *Social Behavior and Personality*, *16*, 147-164.
- Ryan, R. M., Mims, V., & Koestner, R. (1983). Relation of reward contingency and interpersonal context to intrinsic motivation: A review and test using cognitive evaluation theory. *Journal of Personality and Social Psychology*, *45*, 736-750.
- Vallerand, R. J. (1983). The effect of differential amounts of positive verbal feedback on the intrinsic motivation of male hockey players. *Journal of Sport Psychology*, *5*, 100-107.

- Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of Personality, 60*, 599-620.
- Vallerand, R. J., & Senécal, C. B. (1992). Une analyse motivationnelle de l'abandon des études [An analysis of the motivation to drop out of school]. *Apprentissage et Socialisation, 15*, 49-62.
- Yammarino, F. J., & Bass, B. M. (1990). Transformational leadership and multiple levels of analysis. *Human Relations, 43*, 975-995.
- Yukelson, D. (1997). Principles of effective team building interventions in sport: A direct services approach at Penn State University. *Journal of Applied Sport Psychology, 9*, 73-96.
- Zacharatos, A., Barling, J., & Kelloway, E. K. (2000). Development and effects of transformational leadership in adolescents. *Leadership Quarterly, 11*, 211-226.
- Zhang, J., Jensen, B. E., & Mann, B. L. (1997). Modification and revision of the Leadership Scale for Sports. *Journal of Sports Behavior, 20*, 105-122.