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Transformational leadership in sport: current status and future directions

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Borrowed from organizational psychology, the concept of transformational leadership has now been applied to a sport context for a decade. Our review covers and critically discusses empirical articles published on this growing topic. However, because the majority of studies used cross-sectional designs and single-source questionnaires to tap what has been a fuzzy construct, current theoretical and methodological issues impede understanding of whether transformational leadership matters for sport outcomes. To make a difference to applied practice and policy, the transformational leadership construct requires a refined definition and stronger empirical tests allowing for robust causal inference. We highlight avenues for advancing research on transformational leadership in the sport context.

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Introduction

Transformational leadership flourished in organizational psychology at a time when research on leadership was otherwise being heavily criticized. Bass' [1] proposal of a theory of transformational leadership was given impetus by House's [2] theory of charismatic leadership along with work from Burns [3]. In basic terms, Bass' theory suggests that the strongest effects of leaders on followers occurs as a consequence of leadership that is transformational (*i.e.* a style of leadership that is inspiring, developmental, values based, and intellectually stimulating) rather than quid pro quo or transactional forms of leadership based on the use of rewards and sanctions [1,4]. The enormously popular but rather atheoretically developed [5^{••},6] Multifactor

Leadership Questionnaire is most typically used to measure the constructs of the theory.

In organizational psychology, the transformational leadership paradigm is the most widely researched [7,8^{••}] and results from meta-analyses provide some support for its predictive validity, suggesting that transformational leaders are more effective and generate more satisfied followers [9,10]. Recent critical reviews, however, have underlined conceptual and methodological issues regarding the theory and its application on matters including definitions, measurement, operationalization, and appropriate selection of estimators [5,6,11]. Overall, these critiques have cast some doubt on the validity of the theory.

Against this backdrop, we discuss the state-of-the-science regarding this theory as applied to the sport context. One key problem is endogeneity, which renders estimates not interpretable (*i.e.* inconsistent and biased). This pervasive ill usually stems in the leadership literature from using measures of leadership style to predict outcomes, and can have various sources, such as: (a) when key correlates of the regressors and outcomes have been omitted, (b) regressor and outcome simultaneously determine each other, or (c) all ratings come from the same source and use the same method (what is usually referred to as common-source common-method bias) [11]. We hope with this commentary to stimulate more relevant and causally informative leadership research in a sport context so that research in the area can better capture the true extent to which sport leaders make a difference to individual and team outcomes. We conclude by offering some guidance for future empirical tests of the theory and provide avenues for future research.

Review of transformational leadership in sport

Despite its widespread interest in organizational psychology, the empirical exploration of transformational leaders in sport is relatively recent. The sport environment differs on many aspects from organizational settings where the bulk of transformational leadership research has been conducted. Although a multi-billion dollar industry, engagement in sport is most typically voluntary in nature. Participants can be of almost any age, from the very young to the very old; they can have different degrees of expertise, ranging from novices to accomplished elite performers; and they can partake in team or individual activities. If only judged by the numerous accounts of inspirational and effective sport leaders, the sport context

– characterized by close, frequent and direct interactions, where performance outcomes are immediate and objectively observed [12] – offers ample opportunities for coaches to have influential effects on individual and group-level outcomes.

Zacharatos *et al.* [13] wrote the first article using the transformational leadership construct in a sport environment. Since then, interest has grown with most investigations coming to publication fruition in the last decade (see Table 1). So far, empirical investigations have exclusively modelled coaches' or peers' transformational leadership as an independent variable (*i.e.* a predictor). Findings generally indicate a positive effect of transformational leaders on various outcomes such as athletes' performance [14], aggression behaviours [15], organizational citizenship behaviours [16], satisfaction [17] as well as cohesion [18,19,20*].

To shed some light on the potential mechanisms explaining transformational leaders' effectiveness, studies have investigated various mediators. Mechanisms examined have included intrinsic motivation [14], psychological empowerment [16], need satisfaction [21], sacrifice [20], team aggression [15], and intrateam communication [19]. Researchers have also been interested in situational

or contextual moderators of this relationship, such as experience [22], team performance [18,23*] and narcissism [24]. Although the proliferation of mediators and moderators is encouraging to see, we encourage researchers to test them competitively (*e.g.* would psychological empowerment and need satisfaction remain significant mediators if they were tested simultaneously? See Ref. [6]).

Samples used in sport research have been fairly heterogeneous with respect to location (originating from North America, Asia, Australia and Europe) and sport activity (*e.g.* karate, frisbee, ice hockey, soccer, mixed sport samples). There is however less variation in the levels of sport participation studied: Most athletes were youth and/or with lower-level abilities. Gaining access to study elite and professional athletes can be difficult so, at this point, only qualitative studies with restricted sample sizes have been conducted on such samples (*e.g.* [25]). Thus, empirical investigations of elite and professional athletes are needed if we are to advance our understanding of transformational coaches.

Finally, with one exception [26], all empirical studies were cross-sectional; in terms of questionnaires, the Multifactor Leadership Questionnaire (MLQ-5X; [27]) and

Table 1

Empirical investigations of transformational leadership in sport contexts

Reference (sorted by publication year)	Measure of TFL	Independent variable	Mediator (Me)/moderator (Mo)	Dependent variable
Zacharatos <i>et al.</i> [13]	MLQ-5X	Parent TFL	Adolescent TFL (Me)	Adolescent leadership effectiveness
Charbonneau <i>et al.</i> [14]	MLQ-5X	Coach TFL	Intrinsic motivation (Me)	Athlete performance
Rowold [46]	MLQ-5X	Coach TFL & TSCL	–	Coach effectiveness
Beauchamp <i>et al.</i> [22]	MLQ-5X	Coach TFL & TSCL	Experience (Mo)	Self-efficacy
Callow <i>et al.</i> [18]	DTLI	Captain TFL	Team performance (Mo)	Team cohesion
Tucker <i>et al.</i> [15]	GTLS	Coach TFL	Team aggression (Me)	Player aggression
Arthur <i>et al.</i> [24]	DTLI	Coach TFL	Narcissism (Mo)	Follower effort
Lee <i>et al.</i> [16]	MLQ-5X	Coach TFL & TSCL	Psychological empowerment (Me)	Organizational citizenship behaviour
Vella <i>et al.</i> [26]	DTLI-YS	Intervention	–	Athlete development experience
Vella <i>et al.</i> [47]	DTLI-YS	Coach TFL, coach-athlete relationship, Team success	–	Positive developmental experiences
Smith <i>et al.</i> [19]	DTLI	Captain TFL	Intrateam communication (Me)	Team cohesion
Price and Weiss [48]	MLQ-5X	Peer and Coach TFL	–	Perceived competence, enjoyment, intrinsic motivation, task and social cohesion, collective efficacy
Stenling <i>et al.</i> [21]	TTQ	Coach TFL	Need satisfaction (Me)	Well-being
Cronin <i>et al.</i> [20*]	DTLI	Coach TFL	Sacrifice (Me)	Task cohesion
Kao and Tsai [17]	MLQ-5X	Coach TFL	Coaching competency (Me)	Athlete satisfaction
Bormann <i>et al.</i> [23*]	TLI	Coach TFL	Team performance & win orientation (Mo)	Athlete performance

Note: TFL = transformational leadership; TSCL = transactional leadership. DTLI-YS = Differentiated Transformational Leadership Inventory for Youth Sport [49]; GTLS = Global Transformational Leadership Scale [50]; DTLI = Differentiated Transformational Leadership Inventory [18]; TTQ = Transformational Teaching.

the Differentiated Transformational Leadership Inventory (DTLI; [18]) were the most widely used. Although these measures have been shown to provide relatively good psychometric data, there are important conceptual and methodological issues that limit the strength of conclusions that can be drawn on the topic, as discussed subsequently.

Issues with the transformational leadership construct in sport

As a preliminary remark, we emphasize that the issues identified next are not relevant only to the literature on sport leadership (see Ref. [11] for a discussion of the broader leadership literature). The preceding section suggests an essentially exclusive reliance on cross-sectional designs using single-source questionnaire measures as independent variables. Such designs preclude causal interpretations, which render tenuous recommendations for applied practice and policy [11]. Although we intuitively expect leadership in sport to matter, if a modelled independent variable is not exogenous (*i.e.* not manipulated or, if measured, does not vary randomly in nature), it most likely leads to inconsistent and biased estimates. Because of space limits, we only cover what we identified as the three most important threats to current sport research: Omitted variable bias, simultaneity, and common-source common-method variance.

To highlight the issue, imagine we wish to study how transformational leadership (as measured using MLQ-type measures with items such as ‘Expresses confidence that goals will be achieved’) affects the satisfaction with the leader (*e.g.* ‘Uses methods of leadership that are satisfying’; [27]). A coach could score higher on the former item because, among other reasons, she is very competent and has instrumental expertise in the domain. The problem is that she will also probably be rated higher on the latter item for the same reasons, at least partially because of cognitive, fill-in-the-blanks stereotypical reasoning [28**]. Thus, an observed positive correlation may vanish when omitted causes are included in the regression equation. This problem is called the *omitted variable bias*: Any variable correlated with both the independent and dependent variable that is omitted from the regression model will engender biased estimates.

Continuing the above example, imagine that some players (or the team) perform well. The coach will likely adapt her behaviour to the improved performance: She will be calmer, more composed and will thus be (or appear to be) more confident. This is an example of *simultaneity bias*, where performance drives the display of leadership behaviours. In addition, knowledge of outcomes (*i.e.* good performance) may induce followers to rate leaders higher on stereotypically related causes of the outcomes, the so called performance-cue effect, and this independently of

whether the leader demonstrates the behaviour or not [29].

The forgoing problems are exacerbated by the reliance on one type of data source (*i.e.* players fill various questionnaires serving as independent, mediator and dependent variable) as occurred in the majority of studies in our review. Because individuals may be biased by factors not included in the questionnaire (*e.g.* overall impression of the coach, her expert knowledge, her attractiveness), or because of halo effects, they may use some cognitive mechanisms to keep some consistency in their ratings, that is *common-source, common-method variance* bias [30].

Beyond issues of design, measurement, and estimation, there is also a more fundamental problem regarding the conceptualization of the transformational leadership construct. The pervasive use of tautological definitions – describing transformational leaders in terms of what they do rather than what they are – confounds transformational leadership with its outcome [5**,6] and prevents the construct from being used as an independent variable. For example, the assertion that transformational leaders behave in ways ‘to achieve superior results’, ‘that motivate and inspire those around them’ or that ‘stimulate their followers’ efforts to be innovative and creative’ [4, pp. 5–7] describes transformational leaders by their outstanding outcomes on followers, and makes a test of the construct true by definition. But how do leaders come to achieve these effects? The theory remains vague and elusive about such issues. Theoretical clarifications and proper definitions are thus needed to advance our understanding of the phenomenon.

Another issue relates to the multidimensionality of the transformational leadership construct. If, as some argued (see Refs. [5**,31]), transformational leadership is composed of conceptually distinct factors (*e.g.* idealized influence and intellectual stimulation being independent factors), measures should not be averaged into a global, single-score index [28**]. Only unidimensional items (*i.e.* those pertaining to the same factor) can be properly added or summed [32]. Note that high interfactor correlations do not justify *per se* the creation of index, because these correlations could simply be due to common-method variance [11].

Finally, the inherently nested nature of sports data – players nested in teams, teams nested in leagues or in colleges – requires the use of multi-level techniques [33,34*]. Whereas there are a number of factors that researchers need to consider when implementing multi-level models, a full discussion of them is beyond the scope of this article. However, an important consideration within the current discussion of endogeneity is the need to ensure that fixed-effects are correctly modelled and corrections for clustered standard errors are undertaken.

Advancing the field: need for causal testing

Despite our critical assessment of the field, we believe there is a rosy future for research on transformational leadership in sport. To produce causal knowledge that will inform policy and applied practice, we sorely need well-executed field experiments where coaches are randomly assigned to a transformational training or a control training, ideally placebo, condition (see Ref. [36], regarding unfair comparisons). Indeed, there is empirical evidence showing that leaders can be trained to become more transformational [37–39] or charismatic [40–42]. Although we did find a pilot quasi-experiment in our review [26], it was not robustly designed. The treatment and control groups were not equivalent at the start, and the control group received no training, so the observed effect may have merely been a placebo effect.

Furthermore, to eliminate selection effects (another endogeneity threat), athletes could also be randomly assigned to coach. Although difficult, a well-designed randomized experiment would ensure strong causal inference by eliminating all confounds that could explain a significant correlation between the treatment and the outcome [43]. Of course, randomly assigning athletes to coaches would reduce the ecological validity of such an experiment; thus, we encourage multi-study research programmes that accommodate both tightly designed causal studies (*e.g.* randomly assigning athletes to coaches) alongside more ecologically valid designs (*e.g.* field based research). Importantly, presenting these studies within a single multi-study paper would afford greater rigour and impact.

Whereas it is our view that questionnaire measures should not be routinely used as independent variables, judicious use of questionnaire measures could nonetheless be warranted in certain limited circumstances. At very early stage of work, and if a strong design to infer causality cannot be used because of pragmatic reasons, there may be some value in reporting questionnaire measures; nonetheless, this sort of approach precludes any causal statements and replicating results using a causally-relevant effort must be made before generalizing findings.

An alternative to questionnaires is the use of objective measures of coaches' behaviours that would not be affected by raters' perception [5**]. For example, speeches performed by coaches at critical times (before or after a practice or a match) or coach press conference (at elite levels) could be coded for charismatic tactics [42]. We also suggest to make more use of objective consequential outcomes, such as individual or team performance, and objective measures of motivation and effort, such as the use of GPS trackers. Furthermore, following the recent trend in leadership research to integrate insights from the economic literature, we encourage researchers to consider alternative designs (*e.g.* incentivized control conditions, quasi-experiments) or

methods (*e.g.* instrumental variable estimation) that have strong internal validity (this literature is quite technical and readers are urged to consult in-depth reviews, *e.g.* [11]).

Future theoretical development would benefit from efforts to separate conceptualizing behaviours of leaders (*i.e.* what leaders do) from attributed characteristics (*i.e.* imputed traits that depend on behaviours or other causes) and outcomes of leaders. We encourage authors to be diligent when defining transformational leadership and to adhere to behavioural referents (*i.e.* measuring unambiguous items) in the development of new measures. In this endeavour, the Vision, Support and Challenge meta-cognitive model of transformational leadership could prove useful. This model suggests that coaches' transformational behaviours result in the proximal outcomes of vision, support and challenge which in turn affect athletes' attitude and motivation, finally resulting in athletes' behaviours. Originally developed in an applied military context [39], this framework has been subsequently adapted for use in sport [25,34*,44]. Preliminary evidence seems promising [25,45], though the model awaits further empirical development with respect to scale development and proper causal testing. Another area that is yet to be explored in a sport context involves the antecedents and further exploration of moderators of transformational leadership. The former includes factors relating to leader characteristics (*e.g.* general intelligence, extraversion, narcissism) whereas the latter concerns follower characteristics and preferences as well as situational constraints (see Ref. [34*]).

Conclusions

Understanding why some coaches are better at motivating their charges is of paramount importance for sport organizations. Given the large body of knowledge developed in organizational psychology, transformational leadership theory offers a relevant framework. However, our review of studies indicates that empirical findings can only offer limited guidance. Rather than repeat the mistakes made in the management and organizational psychology literature, it is high time for applied researchers to grab the baton from methodologists and undertake more consequential research to robustly inform on professional practice and policy.

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