

ROUTLEDGE RESEARCH IN SPORTS COACHING

The Psychology of Sports Coaching

Research and practice

Edited by
Richard Thelwell,
Chris Harwood and
Iain Greenlees



The Psychology of Sports Coaching

This is the first book to offer a comprehensive review of current research in the psychology of sports coaching. It provides detailed, critical appraisals of the key psychological concepts behind the practice of sports coaching and engages with contemporary debates in this field. Organised around three main themes, it discusses factors affecting the coaching environment; methods for enhancing coach performance; and how to put theory into practice through coaching work.

Written by an international team of researchers and practitioners at the cutting edge of psychology and coaching, each chapter introduces a key concept, defines key terms, provides a comprehensive literature review, and considers implications for future research and applied practice. Encompassing the latest developments in the field, it addresses topics such as:

- the theory behind effective coaching
- creating performance environments
- promoting psychological well-being
- developing resilience through coaching
- transformational leadership and the role of the coach.

The Psychology of Sports Coaching: Research and practice is an indispensable resource for sport psychologists and sports coaches, and is essential reading for all students and academics researching sport psychology.

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Introduction

*Richard Thelwell,¹ Chris Harwood,²
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Welcome to *The Psychology of Sports Coaching: Research and Practice*, a text that reflects both the development of psychology research focused on the sports coach, and the editorial team's extensive practitioner experience of working with such individuals. In addition to the increased research interest in the area in recent years, there is a developing acceptance that practitioners are spending more time working with, and through, sports coaches. Despite the maturing of the area, it is surprising that to date, no text or collection of works exists to comprehensively review and summarise the scientific literature in the area, or to direct future investigation and recommendations for applied practice. Our response is to provide a text that reviews the conceptual and theoretical components of the selected topic areas while also detailing how the research informs practice application. In doing so, the text moves beyond the existing available resources that focus on enhancing coaches' awareness of psychology (e.g. Burton & Raedeke, 2008), integrating psychology into coach practice (Nicholls & Jones, 2013), and outlining how coaches become more successful (Martens, 2012). The result is a distinctive three-part text comprising reviews of the most prominent thematic areas in which the majority of the coaching psychology research has been conducted. The first part addresses factors that affect the coaching environment and provides coverage of topics ranging from athlete-development phases, developmental environments, to parental involvement. The second part provides a focus for how coach performance can be enhanced, in which demands and development of high performance coaching, understanding of athlete expectations, and impacts of coach psychological well- and ill-being are among the topics covered. Attention in the final part is directed to how psychology practitioners work through coaches, with chapters covering, for example, transformational leadership, enhancing coach efficacy, and the integration of decision-making strategies in training.

As outlined, our intention was to assemble a collection of in-depth literature reviews on key areas that have emerged within the last decade to assist future research and practice within the fields of sport psychology and coaching science. Further to this, we also wanted to invite contributions from emerging researchers in addition to established international experts, so that fuller coverage of areas are presented with a distinctive conceptual, theoretical, and practical focus. It is

hoped that the empirical evidence presented within each chapter, together with the dissemination of this body of research into practical implications for applied practice, offers a comprehensive, thought-provoking essential library for students, graduates, doctoral students, academics and professionals working in the fields of applied sport psychology and coaching science. The format of each chapter has been standardised as much as possible to resemble the works published in academic journals, with chapters divided into several sections: an introduction; a section clarifying and defining key terms; a comprehensive and contemporary review of literature; the directions for future research; and the implications of the work for applied practice.

The first part, *Factors that affect the coaching environment*, commences with Paul Wylleman, Nathalie Rosier, Koen De Brandt, and Paul de Knop who critique key coaching considerations through athlete development phases. The chapter details the transitions and stages athletes face in different domains of development using both a lifespan model and a holistic perspective to outline the development of the elite athlete career, before considering future research directions and implications for professional practice. In Chapter 2, Andrew Mills and Matt Pain critically review the creation of development and performance environments for adolescent athletes. Factors perceived by successful coaches to underpin optimal development environments are examined prior to critiquing the research findings that, when put together, highlight the importance of establishing cohesive player-centred environments guided by a clear vision and philosophy. Chapter 3, written by Megan Gilchrist and Cliff Mallett, reviews the theory behind effective coaching. Using self-determination theory as a framework, the authors unpack the complexity associated with why coaches coach the way they do, and provide direction on future research, and the relevance of this knowledge and understanding to coaching practice. In Chapter 4, Sophie Yang and Sophia Jowett use the 3+1Cs model to evaluate the understanding and enhancing of coach–athlete relationships in relation to individual differences, relationship characteristics, and environmental factors. In doing so, they explore key determinants of coach–athlete relationships, and how relationship quality associates with motivation, self-concept, team cohesion, and collective efficacy. In Chapter 5, Chris Wagstaff considers how sport psychologists can support coaches during organisational change, and provides a comprehensive review of research examining change in these domains. Given the increased focus of research in the area, the authors provide an insight to how coaches may seek to maintain effective performance during periods of substantial change. The final chapter within Part I by Camilla Knight and Daniel Gould reviews the coach–parent interaction and covers issues that coaches encounter with parents, and potential strategies to optimise parent–coach relationships. Given the paucity of literature examining coach–parent interactions, the chapter concludes with future research options focused around education and intervention strategies.

The second part, *Enhancing coach performance*, starts with Paul McCarthy and Burt Giges who, in Chapter 7, examine how the needs of coaches are met. The chapter highlights how coaches satisfy particular psychological needs

through the coaching process and in particular how psychological needs are identified, satisfied, or unsatisfied. Having highlighted future research priorities, the authors comment on how practitioners may wish to integrate such material when consulting with coaches. Steven Rynne, Cliff Mallett, and Martin Rabjohns, in Chapter 8, consider research examining the work of high performance coaches, the factors that influence coach performance, and the qualities of successful coaches. The authors illustrate the concept of the coach as a learner, individual strategies to enhance coach performance, and organisational strategies to support coaches, prior to highlighting future research opportunities in the area with a focus on performance development. Chapter 9, written by Peter Olusoga and Richard Thelwell, reviews the literature examining coach stress and coping. In addition to reviewing the salient literature, the authors consider potential intervention strategies to manage stress experiences, before reviewing the implications for professional practice and future research. In Chapter 10, Andrew Manley, Iain Greenlees, and Richard Thelwell outline the key components associated with expectations that athletes have of coaches. The critique examines the subsequent effect of athletes' coach expectations on their attention, effort, and general behaviours prior to concluding with suggestions for applied practice and future research. Chapter 11, by Ryan Flett, Sarah Carson-Sackett, and Martin Camiré, reviews literature associated with the actions that coaches take to promote effective outcomes. In addition to critically reviewing the antecedents of effective coaching across the context of participation coaching, performance coaching, and high-performance coaching, the consequences and outcomes of both positive and negative actions are discussed in order to provide practitioner implications and future research directions. Juliette Stebbings and Ian Taylor bring Part II to a close with their chapter on coach well- and ill-being, and impacts on coach and athlete performance. Literature examining the influence of sporting environments on coach well-being is also reviewed, before the authors explore the often ignored processes for how athletes influence coaches' psychological health. The chapter concludes with suggestions as to how research can stimulate and improve applied practice.

The final Part of the text addresses issues associated with *Working through coaches* and starts with Calum Arthur and Alan Lynn, who review transformational leadership and how it may be used for, and by, the sports coach. A comprehensive review of the literature is presented, outlining how coaches can engage with the theory. Having identified a number of future research directions, the chapter closes with a detailed description of the potential applied implications within the sport, and, in particular, the coaching domain via use of the Vision, Support, and Challenge model. In Chapter 14, Chris Harwood discusses the concept of coaching efficacy with a specific focus on the importance of developing the confidence of coaches to integrate mental skills and psychological strategies into their daily coaching practice and philosophy. In addition to potential research directions, attention is given to the methods and behaviours by which coaches shape the psychosocial development of young athletes. Matthew Smith, Sean Figgins, and Chris Sellars, in Chapter 15, review the inspirational

communication literature with a particular focus on how coaches interact with their athletes. Throughout, future research ideas to further our understanding of this process are offered in addition to practical suggestions on how coaches might inspire their athletes. Chapter 16, by Mustafa Sarkar and David Fletcher, synthesises the research evidence regarding the effectiveness of resilience training. Best-practice approaches to resilience development are presented in addition to explanations of how resilience training can enhance well-being and performance. The authors conclude by exploring what resilience training can achieve in the context of coaching, and what coaches should consider when developing resilience in athletes. Matt Dicks and Mark Upton, in Chapter 17, review decision-making research with a particular focus on coaching applications. Adopting an ecological psychology approach, the authors consider how the theory of affordances can be used as a framework for studying real-time decision making, with suggestions for future work to bridge the gap between theory, research, and practice presented. The final chapter by Andrew Evans, Matthew Slater, Pete Coffee, and Jamie Barker details how social identity theory can be used by coaches to enhance team functioning. In doing so, a discussion of the applied implications (e.g. creating team identities and contents) for coaches and practitioners is provided, with a narrative centred on future research opportunities.

Notes

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Part I

Factors that affect the coaching environment

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1 Coaching athletes through career transitions

*Paul Wylleman,^{1,2} Nathalie Rosier,²
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Introduction

While initially geared towards the topic of athletic retirement or ‘end-of-career’ transition, research during the past decades has lead to the current developmental and holistic perspective taken on a spectrum of transitions faced by talented and elite athletes. To be able to support athletes in achieving optimal development as well as maximum athletic potential, coaches need a good understanding of how talent development is influenced by multilevel transitions and the stages athletes face in different domains of development, such as athletic, psychological, psychosocial, academic. After reviewing some of the major lines of career transition research, the Holistic Athletic Career model (Wylleman, Reints, & De Knop, 2013a) will be used to provide a developmental and holistic perspective on one of the most important transitions, namely the junior-to-senior transition, as well as to identify three approaches coaches can use in order to optimize the development of athletes when faced with transitional challenges.

Key terms

As researchers studied the ‘end-of-career,’ a transition was defined as “an event or non-event which results in a change in assumptions about oneself and the world and thus requires a corresponding change in one’s behaviour and relationships” (Schlossberg, 1981, p. 5). Continued research showed that transitions could be categorized by their degree of predictability, namely as normative transitions that are generally predictable and anticipated, or as non-normative transitions that are generally unpredicted, unanticipated, and involuntary in nature. Using a normative perspective on transitions, different ‘within-career’ transitions were identified, occurring from the start of the athletic career (initiation stage) up to its end (discontinuation stage), not only in the athletic development of athletes, but also in other aspects of athletes’ development. Building upon research with talented athletes, elite student athletes, and former elite athletes, the Holistic Athletic Career (HAC) model was developed, reflecting the concurrent, interactive, and reciprocal nature of the development of athletes in five domains – athletic, psychological, psychosocial, academic/vocational, financial – as reflected in a

conceptual normative framework combining a developmental perspective (i.e., from the initiation stage to the discontinuation stage) with a holistic perspective (i.e., athletes' development at different aspects of life). Using this model, the normative 'junior-to-senior' transition can be detailed in terms of the transitions athletes face at various levels: athletic, from the development to the mastery stage; psychological, from adolescence into young adulthood; psychosocial, from friends, coach and parents to national senior coach, support staff, partner; academic, from secondary to higher education or vocational, from secondary to semi-professional athlete; and financial, from support from family and sport governing body to support from sport governing body, national Olympic Committee, and sponsor. Using the HAC model, coaches and applied practitioners can take an educational approach by teaching their athletes from the end of the initiation stage transition-related competences such as knowledge, skills, attitude/experiences as part of their training, and an intervention approach, such as career support services, career transition programs to support their athletes' personal growth, balance their lifestyles, and optimize their post-athletic career lives.

Review of the literature

From athletic retirement to multilevel transitions

Interest in the occurrence of career transitions can be traced back to research in the 1960s and 1970s (e.g., Haerle, 1975; Mihovilovic, 1968) revealing that former professional athletes experienced a range of negative or traumatic experiences, such as alcohol and substance abuse, acute depression, eating disorders, identity confusion, decreased self-confidence, and attempted suicide during, as well as after, athletic retirement (e.g., Blinde & Stratta, 1992; Sinclair & Orlick, 1993; Wylleman, De Knop, Menkehorst, Theeboom, & Annerel, 1993). Interesting to note is that later research relativized the traumatic character of elite athletes' career termination (Alfermann, 2000; Wylleman et al., 1993). While athletic retirement was initially considered to be a singular, dichotic event (Lavallee, 2000), continued research revealed it actually to be a transitional process consisting of different stages – pre-retirement, retirement, and post-retirement – during each of which the effects of this transition could be moderated (e.g., Alfermann & Gross, 1997; Webb, Nasco, Riley, & Headrick, 1998).

The perspective that 'end-of-career' transitions can be seen as a process of change linked up with conceptual frameworks from outside of sport such as Schlossberg and colleagues' Model of Human Adaptation to Transition (Charner & Schlossberg, 1986; Schlossberg, 1981, 1984). By defining a transition as "an event or non-event which results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships" (Schlossberg, 1981, p. 5), Schlossberg could identify three interacting sets of factors (i.e., the athlete's characteristics, athlete's perception of the particular transition, and the characteristics of the pre-and post-transition environments)

which influenced the process of transition. In its wake, sport-specific career transition models were also proposed which confirmed the ‘end-of-career’ transition as a process of change. For example, Taylor and Ogilvie (1998) described the transition process in terms of causal factors initiating the transitional process, developmental factors related to transition adaptation, coping resources affecting the responses to career transitions, the quality of adjustment to career transition, and the possible treatment issues for distressful reactions to career transition. Furthermore, models also described the influence athletes could have on the possible effects of this transition during this process. This is illustrated in Stambulova’s (2003) Athletic Career Transition model, which states that, in order to cope with transitional challenges, athletes need to find an effective fit between the demands of the transition and their coping resources and strategies: the closer the fit, the higher the probability of athletes experiencing a successful transition; however, if athletes are ineffective in coping, have a lack of resources, or are unable to analyze the transitional situation, then a possible crisis transition awaits (Stambulova, 2000).

As research gathered momentum, so did the understanding that transitions should be distinguished by their degree of predictability. By considering normative transitions, which are generally predictable and anticipated (e.g., athletic retirement), and non-normative transitions, which are generally unpredicted, unanticipated, and involuntary in nature (e.g., an injury), researchers started to identify transitions occurring during, rather than at the end of, the athletic career. These normative ‘within-career’ transitions, such as the junior to senior transition, initiating a dual ‘study and elite sport’ career, a first-time Olympic participation (Wylleman, Lavalée, & Theeboom, 2004; Wylleman, Verdet, Lévêque, De Knop, & Huts, 2004) also enabled researchers to delineate specific normative career stages. This is reflected, for example, in Salmela’s (1994) three-stage model of initiation, development, perfection, and in Stambulova’s (1994) analytical athletic career model, which identifies five normative stages: preparatory stage, start of specialization, intensive training in the chosen sport, culmination stage, final stage and career end.

In line with this normative approach, and building upon research with talented athletes, elite student athletes, and former elite athletes (e.g., Wylleman, 2000; Wylleman, De Knop, Verdet, & Cecić Erpič, 2007; Wylleman, Verdet, et al., 2004), Wylleman introduced the Developmental Model of Transitions faced by Athletes (Wylleman & Lavalée, 2004). This model was found to take a significant step forward in understanding the importance of transitions to athletes (Alfermann & Stambulova, 2007) as it described not only normative transitions at athletic level, but also included normative transitions occurring in other aspects of athletes’ development, such as the psychological. In this way, it combined a developmental (i.e., initiation into post-athletic career) with a holistic perspective (i.e., athlete’s multilevel development) reflecting domain-specific normative transitions in athletes’ psychological, psychosocial, and academic and vocational development. During the past years, the model was further developed, leading up to the current HAC model (Wylleman et al., 2013a) (see Figure 1.1).

AGE	10	15	20	25	30	35
Athletic level	Initiation	Development	Mastery			Discontinuation
Psychological level	Childhood	Puberty/ Adolescence	(Young) Adulthood			
Psychosocial level	Parents Siblings Peers	Peers Coach Parents	Partner Coach Support staff Teammates Student athletes Students			Family (Coach) Peers
Academic and vocational level	Primary education	Secondary education	(Semi-) professional athlete			Post-athletic career
			Higher education	(Semi-) professional athlete		
Financial level	Family	Family Sport governing body	Sport governing body/NOC Sponsor Family			Family Employer

Figure 1.1 The Holistic Athlete Career model representing transitions and stages faced by athletes at athletic, psychological, psychosocial, academic/vocational and financial levels (Wylleman et al., 2013a).

Note
A dotted line indicates that the age at which the transition occurs is an approximation.

The Holistic Athletic Career model

The HAC model represents the concurrent, interactive, and reciprocal nature of the development of athletes in five domains: athletic, psychological, psycho-social, academic/vocational, financial.

The top layer represents the transitions and stages athletes face in their athletic development, namely (a) the initiation stage during which young athletes are introduced to organized competitive sports, from about six or seven years of age, (b) the development stage, during which young athletes are recognized as being talented, bringing with it an intensive level of training and competitions, from about 12 or 13 years of age, (c) the mastery stage, reflecting athletes’ participation at the highest competitive level, from about 18 or 19 years of age, and (d) the discontinuation stage, entailing elite athletes’ transition out of competitive sports, from about 28 or 30 years of age. The second layer reflects the major transitions and stages in athletes’ psychological development, including childhood, adolescence, and young adulthood. The third layer is indicative of transitions and stages occurring in athletes’ psychosocial development and denotes those individuals who are perceived by athletes as being most significant during that particular transition or stage, such as parents, coach, peers, life time partner. The fourth layer represents stages and transitions at academic (primary education/elementary school, secondary education/high school, higher education) and vocational level. For elite athletes, vocational development may also start after secondary education, and may involve a full- or part-time occupation

in the field of professional sports. The final layer illustrates the way in which the involvement of athletes may be financially supported throughout as well as after their athletic career. With family support being significant in the beginning, and for some elite athletes also again before and during retirement, the supportive role of sport governing bodies, national Olympic Committees, and/or private sponsors is clearly present from the end of the development into the mastery stage.

By presenting the concurrent, interactive, and reciprocal nature of these normative transitions, the HAC model shows that normative transitions do not only coincide, but also influence athletes' development and success at every level. It should be noted that, while normative in nature, the specific ages at which these transitions occur can vary. Its holistic lifespan perspective allowed sport psychologists to use this model in research (e.g., Bruner, Munroe-Chandler, & Spink, 2008; Debois, Ledon, & Wylleman, 2015; Pummell, Harwood, & Laval-lee, 2008; Reints, 2011; Rosier, Wylleman, De Bosscher, & Van Hoecke, 2015; Tekavc, Wylleman, & CeciĆ Erpič, 2015; Wylleman, Reints, & Van Aken, 2012), as well as in the provision of athlete career support, for example in Scotland, France, the Netherlands, Belgium (e.g., Bouchetal Pellegri, Leseur, & Debois, 2006; Wylleman et al., 2013a) and in the development of the *EU Guidelines on Dual Careers of Athletes* (2012).

In order to illustrate the use of a 'whole career/whole person' perspective, the next section will describe the challenges faced by athletes in a normative within-career transition that can be considered essential in talented athletes' development, namely the junior-to-senior transition. The relevance of this transition is not only due to the fact that athletes face, during a relative short period, concurrent multilevel transitional challenges, but also because, on average, only one junior elite athlete in three is actually reported to make a successful transition into the senior elite ranks (Australian Sports Commission, 2003; Bussmann & Alfermann, 1994; Vanden Auweele, De Martelaer, Rzewnicki, De Knop, & Wylleman, 2004) with novice senior athletes taking on average 2.1 years to successfully complete this transition (Australian Sports Commission, 2003).

The junior-to-senior transition

At an athletic level, athletes face two specific challenges. First, as a final year junior, they will have a final opportunity to perform to their best level within their own age-category. This may lead to increased – perhaps self-imposed – performance expectations, which may entail increased frustration, anxiety, stress, and even burnout (e.g., Bruner et al., 2008; Pummell et al., 2008; Rosier et al., 2015; Schinke, 2014), as well as physical overload, overtraining, or athletic injury (Australian Sports Commission, 2003; Lorenzo, Borrás, Sánchez, Jiménez, & Sampedro, 2009; MacNamara & Collins, 2010; Orchard & Seward, 2002). Second, as a first year senior, athletes will face more mature and experienced senior athletes as teammates and as rivals and higher frequencies and standards of training and competition (Bruner et al., 2008; Lorenzo et al., 2009;

Pummell et al., 2008). Going from being one of the best as a junior to achieving lower levels of achievement as first year senior athletes (Bussmann & Alfermann, 1994) may have a strong impact on athletes' self-image and athletic identity (Brewer, Van Raalte, & Petitpas, 2000). The need for novice senior athletes to invest more time in their athletic involvement at senior level will also impact their development at other levels, such as social relationships or academic endeavors, possibly reducing athletes' feelings of enjoyment and motivation (e.g., Pummell et al., 2008; Stambulova, Franck, & Weibull, 2012). This may make them feel entrapped in rather than attracted to senior elite level (e.g., Cresswell & Eklund, 2007; Raedeke & Smith, 2001).

As athletes make the concurrent transition from adolescence into young adulthood, they face the challenge to develop their identity. This requires from them greater independence, responsibility and discipline (Rosier et al., 2015), as well as stronger self-regulatory and coping skills to cope with unexpected situations, higher expectations and pressures (Wylleman et al., 2013a) and the adoption of the lifestyle of an elite athlete, such as healthy food intake, recuperation, good sleeping habits, time management (e.g., Stambulova, Alfermann, Statler, & Côté, 2009).

At the psychosocial level, athletes' relations with significant others also develop or change: the involvement and expectations of coaches looking for, for example, more self-discipline and of training partners or teammates seeking high quality training may increase (Lorenzo et al., 2009). As athletes may move into a professional sport academy, private accommodation, or student housing, they will face the challenge of leaving family, friends, club and having to adapt to a new psychosocial environment with a new coach and new teammates. While parental roles and involvement may thus change (e.g., Wylleman et al., 2007), the reduction in daily parents-child interactions in combination with the maturation into young adulthood may actually improve parent-child relationships (Lefkowitz, 2005). Athletes' strong focus on, and involvement in, their elite sport career may impact negatively their friendships and lead to possible feelings of isolation (Pummell et al., 2008; Rosier et al., 2015). For these young adults, romantic relationships may become an important part of their lives (Wylleman & Lavalley, 2004) leading to an increase of support from a significant other, while at the same time possibly requiring athletes to cope with extra expectations and pressure (e.g., Stambulova et al., 2012).

Athletes will not only transit out of secondary education but many continue their dual career by combining an academic career in higher education with an elite athletic career (e.g., Wylleman, Reints, & De Knop, 2013b). The challenges at the academic level will be different from those in secondary education and could include, among others, taking more charge of their own academic career, being more self-regulated, for example by attending classes, re-scheduling exams, investing time in studying, or coping with changing social environments such as student life (e.g., De Knop, Wylleman, Van Hoecke, & Bollaert, 1999). The value attributed to an academic education in view of the risks and disadvantages of elite sport, such as a career-ending injury, or lack of financial stability,

has led to increased importance being awarded to support systems providing elite athletes with the maximum possibility of developing the required competences in order to successfully start and complete a dual career (e.g., De Brandt, Wylleman, & Van Rossem, 2015; *EU Guidelines on Dual Careers of Athletes*, 2012; Stambulova & Wylleman, 2015).

Other athletes may, however, also discontinue their academic career and choose a vocational career as a professional, full-time athlete, or a dual career involving elite sport and another part-time occupation. In the first case, athletes will be faced with the transitional challenges of more and an increased focus on training sessions and competitions, which requires not only more time to recuperate, but leads – perhaps unexpectedly – to also being more available for social activities with family and friends (Rosier et al., 2015). In the latter case, athletes will need to find an occupational context which provides them with flexibilities allowing them to prioritize and plan their elite sport activities within their occupational activities such as time off from work for competitions or training camps abroad.

Finally, athletes will also face a transition at the financial level. More particularly, as not all first year senior athletes will have financial security via a contract as a semi-professional athlete, they may not be self-sufficient. In fact, many novice senior athletes will require continued financial support from significant others such as parents or partners (Reints, 2011), thus having a possible debilitating influence on elite athletes' self-perception and development into independence and self-control.

Implications for future research

While, up until now, a broader understanding of the occurrence of multi-level normative transitions has been gained, a clear need exists for researchers to focus on the occurrence of non-normative transitions. These idiosyncratic transitions, which do not occur to a set plan or schedule (Schlossberg, 1981), may include, from a holistic perspective, an athletic injury, an unexpected de-selection, an emotional breakdown, a sudden loss of a significant other, failing exams at university as an elite student athlete, or being offered a doctoral scholarship after graduation. It will be interesting to uncover in what way their generally unpredicted, unanticipated, and involuntary nature relates to the different normative transitions and thus also affect athletes' multilevel development.

As the HAC model represents a global, non-sport specific perspective on multilevel career transitions and stages, a second need for research consists of studying the sport-, gender-, organisation-, and cultural-specific characteristics that influence the transitional challenges faced by athletes. For example, as transitioning from national to international level is a normative transition in all sports, its challenges may be perceived differently when occurring at different ages in early- and late-specialization sports (e.g., female gymnasts versus male rowers). In another example, researchers should also consider a gender-perspective and focus on the way female and male elite athletes face transitional challenges (e.g.,

Tekavc, Wylleman, & Cecić Erpič, 2015). Finally, researchers should also take heed of the significance of culture. As the holistic perspective is being amalgamated with approaches developed in cultural sport psychology (Stambulova & Ryba, 2014) the avenue is opened to conduct multicultural research by including, for example, culture-relevant variables.

In view of the provision of applied sport psychology services, the HAC model could be used to investigate the competences (i.e., knowledge, skills, attitude, experience) required to cope with multilevel transitional challenges. This could lead to the development of guidelines for coaches on how to educate and train their talented athletes to prepare for upcoming normative transitions, such as entering senior level, starting in higher education, or becoming a parent (e.g., De Brandt et al., 2015; Wylleman, 1999).

Finally, it is not only athletes who are confronted with career transitions and stages. Using the HAC model's developmental and holistic approach, researchers could investigate the transitional challenges faced by developing and elite coaches. In this way, a better understanding could be gained of the multilevel transitional challenges faced by young adult coaches developing into mastery level, or by former elite athletes initiating a coaching profession.

Implications for applied practice

Within the context of the developmental and holistic perspective provided by the HAC model, coaches can assist their athletes in preparing for, and coping with, transitional challenges using three different, yet complementary, approaches. In the first instance, coaches should take a knowledge-gathering approach by ensuring a good knowledge of the multilevel transitional challenges their athletes may face throughout the developmental, mastery and discontinuation career stages. Using the HAC model to gain a good overview of the occurrence of multilevel normative transitions, coaches can acquire a more in-depth knowledge by getting acquainted with research relevant to specific transitional challenges at the athletic level, such as the junior-to-senior transition (e.g., Stambulova et al., 2012), first time participation in Olympic Games (e.g., Wylleman et al., 2012), or the cultural aspects of influence on athletes' careers (e.g., Stambulova & Ryba, 2014). In order to ensure a holistic perspective, coaches should also look for – or be provided by sport psychologists with – information on (a) the developmental tasks and crises athletes will be confronted with during different life-stages (e.g., Newman & Newman, 2006), (b) the role and influence (or lack of influence) of interpersonal relationships and social networks on athletes during each of the athletic career stages (e.g., Wylleman et al., 2007), (c) the challenges created by combining an athletic career with an academic career (see Stambulova & Wylleman, 2015 for a special issue on dual careers of elite athletes), and (d) the possibility of developing a vocational career during (e.g., as member of the Armed Forces, or as a doctoral researcher) as well as after ending their athletic career (e.g., Bouchetal Pellegrini et al., 2006). In order to get a better feel for the interactive and interdependent nature of multilevel transitions and stages, coaches

can immerse themselves in athletes' biographies via research articles (e.g., Debois et al., 2015), books (e.g., Redgrave & Townsend, 2001; Wilkinson, 2006), or videos (e.g., Zidane, 2002).

In the second instance, coaches can take an educational approach by teaching their athletes from the end of the initiation stage transition-related competences (i.e., knowledge, skills, attitude/experiences) as part of their training (Wylleman, 2010). For example, the Life Development Interventions program (LDI; Danish, Petitpas, & Hale, 1995), which emphasizes continuous growth and development across the life span, makes an initial assessment of life events athletes may face, after which athletes are assisted in identifying those already developed, as well as new skills which will increase their ability to cope with the upcoming transitions. When coaches are prepared for, and supported by an expert, this LDI program could become part of the coaching provided to these athletes.

In another example (Wylleman, 1999; 2008), in first instance coaches should educate their athletes about future transitions, and also support them in identifying, as well as learning, those competences required at the time of the onset of a particular transition and career stage. Examples of competences delineated on the basis of the HAC model are related to time management (from age ten), coping with transitions (from age 14), media (from age 16), relationships (from age 18), financial management (from age 22), and networking (from age 26). In the second part, when athletes face actual transitional challenges, coaches are supported by sport psychologists in order to enhance athletes' competences to support their psycho-social network, to mobilize their coping resources, and to learn to buffer the impact of stressful aspects related to the transitions.

Finally, coaches can adopt an intervention approach. Acknowledging the multilevel challenges faced by transitional athletes, coaches can look towards career support services and career transition programs to support their athletes' personal growth, balance their lifestyles, and optimize post-athletic career life (Lavalley, Gorely, Lavalley, & Wylleman, 2001). These programs usually combine workshops with seminars and face-to-face counselling, and provide multidisciplinary support services to athletes with regard to their athletic involvement, developmental and lifestyle issues, and academic and vocational development. Support service provision generally includes career planning, goal setting, mentoring, and life development interventions. Target groups for career programs generally include prospective junior athletes, student athletes, elite senior athletes, and retiring/retired athletes (Stambulova et al., 2009). Provision of support services to elite athletes with regard to transitional challenges is not only growing worldwide but is actually becoming more and more an integrated part of this support provision to elite athletes (Reints & Wylleman, 2009).

As prevention may not be sufficient, some transitional challenges can result in developmental conflicts that affect athletes' mental function and lead to a psychological, interpersonal, social, or financial crisis or traumatic experience (Stambulova, 2010), thus requiring crisis-coping interventions such as counselling or therapy. While research among career assistance providers revealed that transition support is generally crisis-preventive in nature (Wylleman & Reints,

2014), experiential knowledge at Olympic level (Wylleman, 2015; Wylleman & Hendriks, 2015; Wylleman, Harwood, Elbe, Reints, & de Caluwé, 2009) also confirmed a significant need for crisis interventions. This may lead coaches to ensure interdisciplinary support, for example from health psychologists, clinical psychologists, or psychiatrists, in order to provide athletes in transition with behavioural, cognitive, and emotional interventions, or counselling and therapeutic interventions, such as cognitive therapy, rational–emotional behaviour therapy, or cognitive restructuring, aimed not only at reducing anxiety, distress, maladaptive cognitions, and possible depression, but also at developing coping and problem solving skills, self-instructional training, and re-ordering life priorities (Lavallee, Sunghee, & Tod, 2010).

In conclusion

As their athletic careers can span 15 to 25 years (Sosniak, 2006; Wylleman et al., 1993), it is a given that athletes will face a series of multilevel transitions. Within an athlete-centred – coach-driven – expert-supported system, it is also clear that coaches are vital in order to optimize athletes' development and thus enable them to perform consistently at their maximum level. Coaches should therefore not only have the competences but also be able to solicit the interdisciplinary support with which to ensure that these transitions are possible turning points at which talent may actually flourish rather than derail (Dweck, 2009).

Notes

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