1 Talent Identification and Development in Sport

An Introduction to a Field of Expanding Research and Practice

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Whether attending an event or watching on TV, sporting excellence can be simultaneously absorbing, exciting, and bewildering. As a lay observer, fan, scientist or sporting practitioner (e.g., coach; talent development program coordinator) understanding sporting excellence is a common topic of conversation and investigation. In sport science, understanding the nuances of sporting excellence is an ever-present focus, albeit the particular disciplinary lens under which investigation is conducted (i.e., physiology, motor control and skill acquisition, biomechanics, psychology, coaching, etc.) may vary. Irrespective of disciplinary stance, consistent, core questions are raised, such as:

- ‘What constitutes and underpins exceptionality in a given sporting context generically (e.g., soccer; athletics), or in a particular performance task specifically (e.g., long jump in athletics)?’
- ‘Can athletic potential be identified?’
- ‘How can coaches and athletes optimise their training and preparation to attain exceptionality?’
- ‘How can sport-systems be designed to optimise athlete development?’

It is these questions (and others) that have stimulated growing research and applied interest in the inter-disciplinary area of Talent Identification and Development (TID) in sport.

Mutuality in Research and Practice Expansion – or Is One Pulling the Other?

Whilst the origins of athletic talent identification can be traced to the formalised training schools in Ancient Greece (Ghristopoulos, 2003), TID in sport as a multidisciplinary research field (Piggott, Müller, Chivers, Papaluca, & Hoyne, 2018) has expanded considerably in the last two decades, particularly since publication of the first edition of this text in 2012. A literature search of key research databases using keyword search terms (e.g., ‘talent’, ‘sport’, ‘expertise’, ‘talent development’) as themes, and associated synonyms, identifies more than 2,700 articles published between 1990 and 2019, with an estimated 75 per cent
published in the last ten years. Expansion is also reflected by the growth of systematic and narrative reviews of the field generally (e.g., Mann, Dehghansai, & Baker, 2017; Johnston, Wattie, Schorer, & Baker, 2018) alongside sport-specific reviews (e.g., soccer – Bergkamp, Niessen, den Hartigh, Frenchen, & Meijer, 2019; Sarmento, Anguera, Pereria, & Araújo, 2018; Unnithan, White, Geogiou, Iga, & Drust, 2012). In tandem, and over the last decade, many books have been published in both sport and other domains (e.g., The Complexity of Greatness – Kaufman, 2013). Moreover, sport-related texts have been directed toward differing audiences, including researchers (e.g., Routledge Handbook of Talent Identification and Development in Sport – Baker, Cobley, Schorer, & Wattie, 2017), sporting practitioners (e.g., Talent Development: A Practitioners Guide – Collins & MacNamara, 2017; Developing Sport Expertise – Farrow, Baker, & MacMahon, 2013), and the broader public (e.g., Bounce – Syed, 2010; The Sports Gene – Epstein, 2014).

The research interest in sporting TID has arguably grown in concert with, or response to, changes in national government policy and economics, as well as the commercialisation and globalisation of sport (Nagel, Schlesinger, Bayle, & Giauque, 2015). As part of what has been termed a ‘global sporting arms race’ (Oakley & Green, 2001; De Bosscher, Bingham, Shibli, van Bottenburg, & De Knop, 2008), national governments (e.g., UK [Green & Houlihan, 2003]) have substantially increased financial investment in national institutions (e.g., the respective English and Australian Institutes of Sport, Canada’s Own the Podium), whose remit has been to systematically attain elite sporting success. For governments, achieving sporting success at international events such as an Olympics or other highly culturally valued event (e.g., FIFA World Cup) has seemingly provided political, social, and economic benefit. Partly driven by economic events (e.g., global financial crisis) and neo-liberal economic policy, over similar time-periods nations’ state-sponsored ‘grass-roots’ sport provision has not shown equivalent growth. Instead, the financial reach and administrative control by sport governing bodies has increased, along with a growing number of independent, privatised, sport providers. (Evans & Davies, 2015). As a result, TID programming now contains a mixture of centralised state-funded, sport governing body, and local private sector providers.

Commercially speaking, an increase in several inter-dependent ‘top-down’ and ‘bottom-up’ demands (Gerrard, 2004) are likely responsible for increased TID programming. ‘Top-down’ demands include corporate organisations (e.g., TV corporations) seeking to attract consumers (audiences) to their sporting coverage. Similarly, sporting consortiums and professional teams within elite national leagues also exert top-down demands, as they seek to attract and/or develop the best senior athletes for (inter-)national success (e.g., the National Rugby League – Australian rugby league; the European Champions League – soccer). The impact of top-down commercial growth is exemplified by increasing global audiences in contexts such as the English Premier League (EPL – soccer) with an estimated 1.35 billion viewers in 2018/2019 (Premier League, 2019). In addition, new international sporting competitions have emerged, such as Indian Premier League (IPL) cricket and the International Swimming League (ISL), both of which attract
the best-performing athletes from around the globe. Given the possible financial
gains, as well as the benefits of attracting local and international audiences, the
demand for competitive success has grown (Reilly, Williams, Nevill, & Franks,
2000; Vaeyens, Lenoir, Williams, & Philippaerts, 2008). As such, there are bene-
fits from investment in (i) the recruitment of successful junior/youth athletes to
help ascertain future success (or market growth); and (ii) professionalised TID
programming (e.g., soccer academies; rugby development pathways within pro-
fessional and amateur clubs). Expansion is also reflected in the creation of (inter-)
national ‘feeder-clubs’ or links with private TID providers (so-called: ‘talent fac-
tories’) within sports (e.g., soccer schools) to help capture developing talent.

By contrast, ‘bottom-up’ demand refers to the accelerated consumerism (e.g.,
fandom, merchandise purchasing, TV subscription, gambling) of sport via
national and international media exposure. Increased consumerism, the desire
to emulate competitive sport, and be part of a sport-system, may all be asso-
ciated with recent intensifications of youth sport, and the almost unquestioned
popularity of TID programming. Researchers in the field, however, do not
share such a position. Whether the forms of change and expansion are ulti-
mately beneficial (e.g., increased practitioner base; opportunities for specialised
training from an earlier age) or end up propagating emerging problems (e.g.,
athlete mental health) are key concerns (Cobley, 2016; Rongen, McKenna,
Cobley, & Till, 2018). Emerging problems arguably represent the unintended
by-products of (unregulated) growth and expansion in TID practice. We pre-
sently know so little about these issues that researchers are unable (currently)
to accurately inform practice.

To provide a backdrop to the content, and topics, addressed in this second
edition, the following sections define and explain concepts at the heart of the
TID research and practice field, notably: talent in sport, talent identification, talent
development, and development systems. Some of these terms, with their underly-
ing meaning and component parts, can be complex as is the case when defining
talent. Similarly, the components and processes involved in talent identification
across and within sports can vary substantially, introducing assessment and
practical challenges. What is required to optimally develop athletes can differ
according to sport context demands, as well as the present capabilities and
attributes of cohorts and/or individual athletes. Indeed, athletic development
depends on an array of factors. To complicate matters, TID is often nested
within different, sport-specific, development systems – each likely containing
common structural attributes (e.g., stages akin to a pyramidal structure), but
potentially exhibiting unique differences in their provision, and ‘day-day’ train-
ing programs. Thus, there is the potential for overlap and substantial diversity in
the process of athlete development, with an abundance of research opportu-
nities available to generate greater understanding, evaluation and learning. Part
2 of this text illustrates several international case-studies that highlight how
particular issues/concerns are being examined in their context. In the
meantime, and to help set up Part 1, let us begin by discussing talent.
Defining Talent in Sport: Mission Impossible or Concept Requiring Careful – Context-Specific – Application?

Across research, sport and lay contexts, there are differing definitions, descriptions and applications of the word ‘talent’, with little consensus on what talent ‘is’ (Schorer, Wattie, Cobley, & Baker, 2017). Understanding is certainly not helped by simplistic definitions in the popular press that consistently associate talent with ‘innate pre-dispositions’ that remain static and unchanging over time. Across sport contexts, practitioners also often apply the term interchangeably (e.g., ‘he/she has raw talent’), sometimes referring to a general ability (i.e., across skills) or using the term as a descriptor of overall performance, such as a player’s performance relative to others in a given age-group or level of competition. In other circumstances, talent is used to refer to a specific capability to execute a learned skill exceptionally (e.g., passing decision-making in netball; scrummaging in rugby). These multiple meanings make it difficult to empirically test the notion of talent since the concept is hard to operationalise (i.e., it means different things to different people).

In an initial attempt to provide some clarification and meaning from a sport-science perspective, we previously defined sporting talent as ‘referring to the quality (or qualities) identified at an earlier time that promotes (or predicts) exceptionality at a future time’ (Cobley, Schorer, & Baker, 2012). This definition allows both general factors, such as broad abilities (e.g., fundamental movement skills, intelligence), holistic performance (e.g., netball game-performance) as well as sport-specific skills (e.g., court movement and positioning) to be considered as predictors of talent. Still, given most sports have simultaneous physical and cognitive demands, which in themselves have multiple possible components, we orientated focus toward a multi-faceted composition of sporting talent, and the idea that the definition could be applied to different contexts and/or task-specific situations, knowing that the nature and number of factors constituting talent would change across sporting contexts. Exceptional court movement in badminton, for example, would involve a unique combination of perceptual-cognitive (e.g., anticipation), psychological (e.g., self-sustained vigilance of self and other players’ movement), motor (e.g., leg-coordination; balance adjustment), anthropometric (e.g., lean body mass), and physical characteristics (e.g., lower leg muscle strength; aerobic capacity) that could all help explain current performance.

The Cobley et al. (2012) definition also implicitly suggested talent by quality competency accumulation and talent by rarity were both possible. The former relates to the idea that high proficiency in each of underlying component qualities increases the likelihood of exceptionality, relative to others or a given reference group (commonly age groups). A lower proficiency in one or more underpinning qualities reduces the likelihood of being ‘talent identified’, as performance may be constrained in a particular manner. Alternatively, the unique combination of particular competencies may also help explain the occurrence of unique, novel skills or performance capabilities. The unique combination leads to situations where low frequencies of previously observed skills provide a performance
advantage. The example of unique bowling actions in cricket, sequential combinations of movement patterns in martial arts or boxing are illustrative context-specific examples where talent by unique combinations of competency (or rarity) is possible.

The definition, admittedly, also has some notable shortcomings. For instance, it does not identify the mechanisms underlying talent and was not ascribed to any theoretical perspective informing the research field (e.g., the role of specific gene variants or the value of certain types of environment). That said, a deterministic approach is implied, since talent is suggested as being determined at an earlier time point, implicitly emphasising early attributes, whether driven by innate and/or early life experiences, thereby encouraging an ‘early looking’ identification process. Although such a process may be possible in theory, the reality is much different. Most physical and technical capabilities involved in high performance sport develop over time, and our understanding of these developmental processes including the role of deliberate practice (Ericsson, Krampe, & Tesch-Römer, 1993) and/or biological factors is very limited. Many capabilities and competences may not emerge (or accelerate) until later in development or after significant practice behaviour has occurred. For continued discussion on the possible origins and emergence of talent, see Baker and Young in Chapter 2 of this volume.

From a developmental and ecological perspective (Lerner & Castellino, 2002; Davids & Araújo, 2010) talent qualities are not seen as stable (as our earlier definition implies) but change over time. In this view, talent is positioned as a ‘temporary state’ derived from several or multiple underlining factors (e.g., performance indicators) that emerge, progress, surge or accelerate from positive development (Cobley, 2016) based on complex gene–environment interactions. By contrast, negative development can be associated with deceleration, regression and loss relative to self or others in one or several underpinning factors (Abbott, Button, Pepping, & Collins, 2005; Cobley, 2016). This emergenic nature of talent (Simonton, 1999; 2001) involves a multitude of individual (e.g., interest and intent to learn), social (e.g., peer and coach relationships, family support) and ecological factors (i.e., the ecological coaching niche or broader developmental system) that combine and interact, to determine who may be defined as talented. For instance, related to ecological factors, the changing, evolving, nature of the performance environment, such as age-group standards, changing qualification times, increasing pace and tempo of team sports, are all examples that can dictate who may be designated as ‘talented athletes’ at particular points in time. In Chapter 3, Rothwell, Davids, Stone, Araújo and Shuttleworth provide further exploration of the concept of ecological niches and their importance in athlete development.

In addition to defining talent as multi-dimensional, dynamic and emergenic, Baker, Wattie and Schorer (2019) recently provided a guiding framework from which understanding and defining sporting talent could benefit. Baker et al. (2019) highlight the importance of grounding talent in ‘innate’ qualities. While many of these markers have not yet been identified (and may never be identified), it is important to have clarity in how the concept of talent is operationalised. For instance, without grounding talent in innate factors that have the potential to be
identified, it is not possible to distinguish talent from skill or performance. These distinctions may seem trivial, yet they are actually anything but; researchers need clear operational definitions to design appropriate studies to support or refute hypotheses, and practitioners need clarity when communicating messages about talent to athletes and other stakeholders (e.g., parents). When coaches and practitioners have a clear vision of talent as reflecting innate factors that may affect performance at a given time-point, identifying athletes during talent selection requires (a) they understand the influence of biological factors on the performance outcome; and (b) that they have ruled out the possibility that the athlete could move to a different position in their population at a future time-point (i.e., they are not always going to be in the same location relative to peers). Given the current ‘state of the science’ in talent research, neither of these requirements are possible. This is particularly problematic given the consequences of early talent selection decisions on athletes’ long term development. More on this below.

**Talent Identification in Sport – a Task with Many Methods and Many Potential Flaws!**

In sporting practice, talent identification typically refers to the process of recognising exceptional or talented athletes – however defined – at a particular age or developmental stage, with the potential to perform at a more advanced level of competition (Williams & Reilly, 2000). Identification in practice commonly includes *subjective assessments* (e.g., coach or scout observations) of performance holistically or with reference to specific skill-competencies. *Objective assessment* approaches are also becoming increasingly common in practice and may include match-performance analysis, such as quantification of performance indices (e.g., passing accuracy or sprint rates using GPS devices in team sports; Cummins, Orr, O’Connor, & West, 2013; Gray & Jenkins, 2010) as well as testing procedures implemented by applied sport science practitioners to evaluate factors deemed to underpin performance (see e.g., Buekers, Borry, & Rowe, 2015, for an overview of research studies and further discussion). Applied sports science has an array of standardised field anthropometric and physiological tests that attempt to capture performance components, while in other disciplinary areas (e.g., psychological; perceptual-cognitive skills) there are relatively few that are practically feasible. Exactly which approaches are used varies according to the sport context, including historical practices within the sport, the preference, knowledge and expertise of those involved and, importantly, the time and resources available to conduct the assessments.

From a research standpoint, attempting to accurately and reliably identify athletic talent is fraught with challenges (Buekers et al., 2017). For instance, as sport-skills or performance holistically is comprised of multiple interacting variables, being able to subjectively or objectively assess such variables simultaneously represents a significant logistical undertaking. Further, to assess such variables repeatedly over time to determine developmental trajectories, and help better detect who may indeed be (or become) talented, necessitates additional resource
demands (Cobley & Till, 2017). Being able to assess variables using different measurement instruments in both ‘on and off’ field conditions, while still attempting to simulate performance is also an ever-present challenge. These challenges, alongside traditional, mono-disciplinary, research views on athletic talent (Glazier, 2017) have thus hampered existing research and applied work in the area.

With such complexity at hand and the limitations evident in many approaches to TID, it is perhaps understandable why subjective assessments (i.e., coaching intuition and heuristics) of athletes have prevailed (Collins, Collins & Carson, 2016; Williams & Hodges, 2005). Nonetheless, such strategies are not immune to psychological error or bias in judgement and decision-making (Plessner & Harr, 2006). Identification errors are reflected in the limited accuracy in forecasting exceptionality at future time-points (note: a problem also for objective measures – see Vaeyens et al., 2008). Meanwhile, biases are reflected in the tendency to either over- or under-value particular factors or providing attention to factors not relevant to the identification process (Bar-Eli, Plessner, & Raab, 2011; Deaner, Lowen, & Cobley, 2013). In Chapter 4, Lath, den Hartigh, Wattie and Schorer continue the discussion on coaching selection error and bias in talent identification; while Farah and Baker (Chapter 10) evaluate the accuracy of talent selection in the ages/stages associated with transition into elite professional athletes. Farah and Baker examine selection flaws in the ‘entry draft’ within the four major North American sports. Both chapters also highlight strategies for error and bias prevention, including combined subjective and objective athlete assessment strategies.

Even if assuming that accurate subjective and/or objective assessment of skills and competencies exists and could contribute to improving predictions of performance in a given sport, many issues remain. For instance:

- What ‘cut-off’ criteria should be applied for identification or selection purposes? Should a particular percentage (e.g., 5 per cent, 10 per cent or higher) in a given population at a particular age, developmental stage or time-point be designated as talented?
- Given the emergenic, dynamic and symbiotic nature of talent, should those not presently identified be given opportunities to improve and develop?
- Should sport identification move toward identifying predictors of learning and discipline toward self-improvement (e.g., cognitive and psychological) as opposed to performance (i.e., physical factors)?
- Should identification be oriented toward selecting attributes associated with greater performance success right now (e.g., age-group; sub-elite levels) or those necessary for success at the elite adult (future) level?

These philosophical questions are not easy to answer, but all are important to consider and to resolve when adopting particular identification practices. Aligned to the last question, in Chapter 6, Cobley, Romann, Javet, Abbott and Lovell highlight how physical developmental differences, based on maturation status and relative age, confound identification and selection particularly in sport contexts
prioritising competitive success during adolescence. They highlight how short-term advanced physical size provides physiological performance advantages that eventually dissipate with transition into adulthood. Thus, being able to distinguish temporarily advanced physical development from genuine talent presents an added challenge for accurate talent identification.

**Talent Development – a Multi-Faceted Process of Optimal Improvement over Time**

Considered generically, talent development refers to the multi-faceted process of optimally nurturing athletes over time, who presently may (or may not) be identified as talented within a sport-system. Once again, this definition highlights the importance of development in the multiple areas that typically underpin performance (i.e., physiological, technical skill, perceptual-cognitive [e.g., tactical] and psychological skill [e.g., communication; self-regulation]). Optimal environments generally refer to the factors that affect the structure and quality of training programs responsible for accelerating capabilities in key performance facets, without detrimental health outcomes over a given time-period (e.g., overtraining syndrome and injury – Bergeron et al., 2015; Rongen, McKenna, Till, & Cobley, 2015). The definition also emphasises that athletic talent can emerge through development, thereby discrediting the idea that only already ‘talent identified athletes’ can be developed. It is also accepted that optimal nurturing may occur outside a typical sport-system context, if optimal coaching, training programs and environments are available.

While athletes are at the focus of developmental change, talent development as a process emphasises provision of the most appropriate technical/skill, physiological, psychological and educational training by experienced coaches and supporting practitioners. Supporting practitioners may include strength and conditioning specialists, physiotherapists, psychologists and nutritionists, who may additionally contribute to the day-day training environment (Abbott & Collins, 2004; Cobley et al., 2012), all at the epicentre of the development process. The importance of coaching instruction and training programming necessitates individual and combined knowledge, experience, and wisdom to adequately implement the developmental process (i.e., the what, when and how to do it), potentially helping discriminate whether a given athlete makes accelerated, steady or stagnated progress over time. In alignment with these themes, in Chapter 5, Buszard, Maloney, Krause, and Oppici explain how particular theoretical principles can be utilised by coaches to optimise ‘day-day’ skill acquisition, helping athletes optimise learning and transfer of skills from training to competition. Further, in the case-study chapters, Chapter 9 by Pinder, Maloney, Renshaw, and Barris exemplify the contribution of skill-acquisition specialists working alongside coaches within Australian (Para-)Olympic and professional TID systems.

To help capture the core requirements of the talent development process from a coaching and supporting practitioner perspective, Cobley (2019) provides the ‘jigsaw analogy of athlete development’ – see Figure 1.1. Figure 1.1 is designed
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1. Aerobic capacity (Physiological)
2. Anaerobic capacity (Physiological)
3. Anaerobic power (Physiological)
4. Upper & lower body strength (Physiological)
5. Energy pacing strategy (Psycho-physiological)
6. Dive-start (Technique)
7. Turns (Technique)
8. Race finishing (Technique)
9. Stroke efficiency (Technique)
10. Body positioning & connection (Technique)
11. Growth mindset (Psychological)
12. Cognitive adaptability (Psychological)
13. Resiliency in adversity (Psychological)
14. Self-regulation (Psychological)
15. Striving to improve & perform (Psychological)
16. Sleep (Recovery)
17. Nutrition (Recovery)
18. Hydration (Recovery)
19. Stretching & flexibility (Injury prevention)
20. Mobility strengthening (Injury prevention)

**Figure 1.1** Cobley’s (2019) jigsaw analogy of athlete development with reference to swimming, specifically a 100m freestyle swimmer

with reference to a 100m freestyle swimmer. However, the jigsaw analogy can be adapted to athletes in their respective sport contexts. The analogy proposes talent development centres around a multi-faceted understanding of the factors (i.e., jigsaw pieces) underpinning performance in a given sporting context (e.g., 100m swimming). The coach has to have understanding of an athlete’s pre-existing skills and capabilities (i.e., competency in jigsaw pieces [reflected by jigsaw depth in Figure 1.1]), their present developmental stage within a sporting TID system, and an understanding of how and when to optimally instigate skill change for particular (or several) performance facet(s). For example, what training programming is required to improve technical proficiency in ‘turns’ (see jigsaw piece no. 7). Being able to develop such ‘pieces’ optimally may benefit other, related, facets (e.g., stroke efficiency) as well as holistic performance (i.e., ‘bigger jigsaw picture’).


Regardless of talent definitions, the processes of identification, selection, and development typically occur within national-local sporting systems. To illustrate the typical structures associated with TID systems, Cobley and Cooke (2009) provide a model (see Figure 1.2), loosely based on popular team sport contexts. The figure outlines generic system features, stages, and highlights where
identification and selection might occur. However, even at an abstract level, it is noteworthy that the exact size, structure and composition of a sport-system can vary substantially between sports within similar cultural/national contexts, or the same sport but in different cultural/national contexts. For instance, consider the possible variation in baseline popularity which may influence ‘grassroots’ participation, amenity and infrastructure availability within schools and local communities across sub-regions, the number of developmental steps and when these might occur, as well as how athletes make the transition between stages. In Till, Barrell, Lawn, Lazenby, Rock and Cobley’s (Chapter 12) examination of UK Rugby Union, a highly structured and formalised system is evident with multiple pathways for player development. By contrast, in Bjorndal and Ronglan’s (Chapter 7) examination of Norwegian handball, a more decentralised system with fewer developmental stages is apparent. Together, these chapters highlight the potential similarities and differences in TID systems internationally.

Within TID systems, it is presently more common that identification procedures are applied during child or youth stages of participation. Once identified from a broader, mass participation base (e.g., schools, local community leagues, etc.), a smaller percentage accesses what might be considered the first development stage of a sporting system, which might contain more formalised training and competition, but is still conducted at a local level. For example, this may include age-group competition within a town/city or local district soccer leagues across Europe and North America, respectively. From here, selection into representative, city or regional, events and competitions may occur, again, dependent on participant numbers (i.e., degree of competition) and infrastructure provision within the sport system. At respective selection stages, the model recognises that different underpinning factors (e.g., sprint speed; lean body mass) and overall performance will likely need to be ‘better’ (i.e., higher in the percentile rank)
relative to others at that particular developmental stage to ensure selection to the next TID system level. A hypothetical consequence of successive selection is that athletic cohorts become comparatively ‘more homogeneous’; at least on the variable(s) used to identify and select (e.g., anthropometrics, physical attributes). With homogeneity, performance facets that were predictive at one development stage may have less (or no) predictive power at further selection stages. Instead, alternative factors (e.g., technical skill, tactical awareness) may become predictive, discriminating those deemed more suitable for higher TID system stages. From this perspective, it is understandable how TID structure, along with how and when identification and selection occurs, can (in)directly influence who, and what kind of athlete, can access higher levels of the TID system, where concentrated expertise and training programming resources may reside.

To illustrate how athlete development systems, and their challenges, can impact the identification and development process, readers are referred to Faber, Damsma and Pion’s (Chapter 8) as well as Stoter and Elferink-Gemser’s (Chapter 11) research and applied work related to two different TID contexts (i.e., table tennis and speed skating), but which exist within the same country (i.e., The Netherlands). In Chapter 8, Faber et al. describe the challenge of how Netherlands Table Tennis, given their comparatively small participation base and limited resources, attempt to identify and develop their ‘talent pool’. They highlight how an assessment of underlying perceptual-motor skills at an early age helps inform potential capability, prior to the necessary long-term training investment needed to develop technical skills in table tennis. By comparison, being culturally popular, Dutch speed-skating has a significant participation base, with The Netherlands considered a leading nation in competition. In Chapter 11, Stoter and Elferink-Gemser overview the Dutch speed-skating TID system. They explain how a multi-dimensional research assessment of speed-skating events is leading to identification of requisite criteria (e.g., physical and psychological), and the levels required by performers at particular ages/stages of development. Such information is being used to inform development processes, such as coach and practitioner education within lower levels of the TID system. Further, such information is helping orientate the performance facets required in the ‘talent pipeline’ to shape the broader TID system.

As high-level, or elite, sport typically has very few ‘selection spots’ or ‘professional contracts’ available relative to the number attempting to attain elite status, it remains inevitable that not all athletes will be selected for higher tiers in respective TID systems. Therefore, many athletes will remain at a given skill/performance level until a particular constraint forces a change (e.g., de-selection or age constraints on state-level under-18s swimming squad). Figure 1.2 acknowledges that athletes may, temporarily or permanently, transfer to another level of competition (e.g., competitive to recreational), choose to participate or transfer to another sport (e.g., club representative soccer to cricket), withdraw from continued involvement in the specific sport, or withdraw from the sport altogether. With forms of withdrawal all considered detrimental, others may be regarded as part of the normative ‘life-cycle’ within TID systems. Nevertheless,
knowing that many athletes have invested significantly in their training, and have developed their ‘athletic jigsaw profile’, some TID systems have increasingly, likewise, invested in ‘talent transfer’, often with the intention of achieving short-term performance goals (e.g., medals at Olympic events). That is, systems look to identify and incentivise existing highly trained athletes to transfer into sports with similar performance requirements (e.g., anthropometric or physical demands; Bullock et al., 2009; Rea & Lavallee, 2017).

Typical talent transfer between sports has been more associated with athletes at the higher stages of a donor TID system (i.e., right of Figure 1.2), and who have transferred directly into similar, parallel, stages of development in a recipient sport (e.g., national-level rowing – cycling). In Chapter 13, Pion, Teunissen, ter Welle, Spruijtenburg, Faber, and Lenoir see this strategy as a product approach to talent transfer. However, they also explain how a process (developmental) approach could be adopted during the early ages and stages of participation and TID system involvement. Based on research conducted in Belgium and The Netherlands, Pion et al. explain how understanding sporting activity preferences at early ages, alongside understanding the similarities and differences of sport demands, could help more youngsters to sustain involvement and transition across systems with similar performance requirements. Further, the approach suggests TID systems do not have to be self-serving practices, but rather TID systems can interact to have broader cross-sport, coordination roles in athlete development.

To close the opening chapter, we’d like to again thank the contributors to this second edition. The chapters, and their content, have again surpassed our expectations. Chapters highlight the breadth and depth of research being undertaken in the field, and the application of this work in settings around the globe. While considerable work remains to be done (see our concluding chapter – Chapter 14), the quality of research and practice described herein suggests the field is in good ‘developing’ hands.

References


