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Is it time to retire 'talent' from discussions of athlete development?

## Abstract

*Purpose*: The word "talent" is used across many sport disciplines - to describe an athlete's prowess (i.e., "he is talented"), as a term for what is sought after during assessment and selection (i.e., talent selection camps) or in reference to players to be developed (i.e., "a group of talents"). While the term has received research attention regarding its definition and criteria, its utility in practical settings is often debated. *Methods*: In this paper, we review several areas of concern researchers have raised for using the term 'talent' and why this matters in the context of athlete development. *Conclusion*: While the notion of talent continues to resonate with coaches, scientists and practitioners, we suggest several areas for future research and recommendations for the use of this controversial term.

Key words: identification, development, athlete selection, expertise, sport.

## Introduction

Over the past two decades, there has been a marked increase in research on athlete identification, selection, and development (Baker et al., 2020). Although this work has led to impressive improvements in many areas of sport science (e.g., athlete monitoring, recovery, sport analytics and data modeling), there are notable areas where development has not been as impressive. One area, in particular, relates to the integration of genetic and biological elements of development (i.e., 'nature' variables such as the presence or absence of certain genetic markers) with environmental influences (i.e., 'nurture' variables such as hours of practice, access to quality coaching, etc.). Despite calls to reject or discard the well-known 'nature versus nurture' dichotomy (e.g., Baker & Wattie, 2018; Davids & Baker, 2007), it continues to anchor how many practitioners and researchers frame issues related to athlete development (e.g., Johnston & Baker, 2022; Jones et al., 2020). At the centre of this discussion about nature and nurture, is the notion of 'talent'.

# What is talent?

Despite its centrality in discussions of athlete development, including processes such as talent identification, talent development, talent selection, and talent systems (Till & Baker, 2020), the concept of talent is neither well-defined nor understood. For instance, studies examining elite sport coaches indicate considerable variability in how this concept is understood and used across different contexts. A study of collegiate level coaches (spanning multiple sports for both men's and women's teams) found coaches had different and sometimes conflicting definitions of 'talent' in the context of their sport and program (Jones et al., 2020). This inspired Johnston and Baker (2022) to investigate coaches' beliefs of talent from a singular sport (i.e., distance running). Perhaps surprisingly, distance running coaches with a similar profile (i.e., all male, relatively close to the same age, from Canada, coaching elite level distance runners), each had unique definitions of talent. Adding to the complexity was their synonymous use of talent with terms like 'potential' and 'gift', further complicating the ability to interpret and understand sporting talent.

The clarity is not much better amongst scientific researchers. For instance, in Gagné's (2004) Differential Model of Giftedness and Talent, talent is seen as "outstanding systematically developed skills" (p. 119). This model has been influential in several studies from researchers based at the Australian Institute of Sport (e.g., Gulbin et al., 2010). Others have used the term talent in more general ways. For example, Issurin (2017) defined talent as "a special ability that allows someone to reach excellence in some activity in a given domain" (p. 1994, see Cobley et al., 2012 for a similar definition), while Davids et al. (2017) positioned talent as representing a "functional relationship developed between a performer and a specific performance environment" (p. 193). In perhaps the most widely known discussion of what talent 'is', Howe, Davidson, and Sloboda (1998) proposed a definition of talent as: (a) originating in genetically transmitted structures and therefore (at least partly) innate; (b) involving identifiable and measurable indicators of future potential; that (c) provide an early basis for predicting who is most likely to succeed, (d) found in a minority of people, and (e) are relatively domain-specific. A recent re-examination of these criteria in sport found that most (apart from 'domain specificity') were still relevant (Baker & Wattie, 2018).

In 2019, Baker and colleagues proposed a sport specific model of talent, based on the presumption that the unique elements of this domain necessitated a model that captured these nuances. In their model, talent is positioned as innate (i.e., originating in variables present at birth), multi-dimensional (i.e., reflecting capacities from a range of cognitive, physical, and psychological domains), emergenic (i.e., involving interactions among different types of variables that combine multiplicatively), dynamic (i.e., evolving across development due to interactions with environments) and symbiotic (i.e., the ultimate value of an individual's talent is determined by social and cultural factors in the environment). These varying definitions, regardless of which one proves most accurate and practical, lead to a confusing and blurry picture of what talent is, and how it might be assessed or developed, ultimately undermining its value for practitioners and other stakeholders. The confusing terminology used in practice, such as when talent is described as a biological predisposition (e.g., a talent for football), the quality being developed (e.g., nurturing a player's talent) as well as the players themselves (e.g., football talents; Till & Baker, 2020), is problematic for athlete development and expertise (e.g., Johnston et al., 2023; McAuley et al., 2022; Mosher et al., 2020), and may at least partially explain the poor predictive capacity of talent identification and forecasting initiatives (Johnston & Baker, 2020).

## Why is conceptualizing, identifying, and assessing athlete talent so difficult?

The inconsistent definitions of talent are only one of the factors making athlete assessment and performance forecasting so difficult. Aside from the obvious measurement limitations of blurry terminology and poor theory/conceptualization, most approaches to evaluating athlete talent have significant flaws. For instance, talent identification and selection tends to begin during early stages of the athlete pathway (usually during adolescence but in some circumstances as young as 6 years). During this time, young athletes have both the largest variation and greatest instability in measures of interest (e.g., usually physical or technical variables), which ultimately affects the accuracy of talent prediction. Identifying and assessing talent at earlier time points relative to future events (often 10+ years in the future) is extremely difficult for two reasons: first, it is unclear what attributes at an earlier timepoint contribute to future successful sporting performance, and second, sports evolve and change over time (e.g., rules, tactics, player development), increasing the likelihood that selections made in the 'here and now' will not be relevant for future versions of the sport. Furthermore, selections likely have a disproportionate impact early in development when young athletes are still developing intrinsic motivation and resilience against setbacks, compared to later in the pathway when significant investments of time, motivation and resources have occurred (Scanlan et al., 2013).

In addition to the problematic time at which early talent assessments and selections occur, approaches to assessment do not normally reflect the dynamic and chaotic nature of sport as a system, or development as a highly individualized process. A recent scoping review (Baker et al., 2020) noted most research uses cross-sectional designs, with male athletes from a few popular team sports (e.g., football, rugby) and countries (e.g., United Kingdom, Australia). Importantly, current research very rarely considers athletes who are early in the development process (e.g., childhood). While there are undoubtedly general principles of learning and development that can be applied across athletes (e.g., the value of intrinsic motivation and/or psychological coping skills), under-appreciating the variability between individuals and the sports they participate in can lead to the use of simplistic, one-size-fits-all approaches that have limited value.

Additionally, the way many sports are structured has led to persistent biases that affect the efficiency of athlete development. Perhaps the best known of these is the 'relative age effect', which advantages youth in an age cohort of individuals born nearest to the date in the calendar used to create the cohort. These 'relatively older' athletes are believed to be advantaged in talent identification and selection due to their advanced chronological and developmental ages relative to the peers they are being compared to, which results in them gaining access to greater developmental opportunities. Although these biases pervade across sports systems, they usually reflect limitations in how coaches make decisions at specific points in an athlete's development. For instance, when coaches are required to make selection decisions early in development (e.g., childhood), they are more likely to confuse advanced chronological or biological development for indicators of future potential or talent. Compared to the rest of their peers, relatively older athletes are often stronger, more powerful, and better at executing sport-related tasks, but this is because they are older, further along in their development, and/or have acquired greater experience than the peers they are being compared against. When coaches are made aware of these developmental differences, relative age effects disappear (Mann & van Ginneken, 2017). Other biases related to how talent is identified, selected, and developed have been identified, including maturational bias (e.g., Hill et al., 2020; Till et al., 2010), socioeconomic biases (Beamish, 1990), and geographic biases (Baker et al., 2014).

In summary, talent decisions need to consider both current performance (i.e., how is the individual performing at that specific time point?) and potential (i.e., what is the individual's potential for achievement in the long-term?). However, because current performance is easier to assess and evaluate, talent decisions are often disproportionately based on this information, leading to selection biases, low accuracy, and system inefficiencies.

## Why does the use of 'talent' persist in sport settings?

Despite the pitfalls noted above, which many practitioners and stakeholders seem to be aware of, use of the term talent persists in both research and practice. There may be several reasons for this. Most notably, many sport systems have resource limitations that affect athlete identification, selection, and development. These include limitations in time, technology, and/or support for data collection/data management as well as broader factors such as the availability of key developmental resources such as skilled coaches or high-quality training facilities, and athletes' accessibility to such resources. These limitations often require coaches and other practitioners to make decisions about *which* athlete(s) gets access to these available resources. In the absence of clear predictors of long-term success, coaches and other decisionmakers are often left using personal mental models of talent, which are shaped by their beliefs and experiences– leading to further variability in how talent is conceptualized.

Relatedly, our brain may be uniquely designed to categorize memories and experiences into broad and distinct groups (Dutton, 2020), a phenomenon evolutionary biologist Richard Dawkins (2011) refers to as the 'Tyranny of the Discontinuous Mind'. This may lead us to remember and emphasize generalities and disregard specifics to better fit narratives that match with our learned pattern recognition/stereotypes. For instance, if an athlete is believed to be a 'natural talent', someone may see this as distinctly different from an athlete who is categorized as being the 'hard worker' (see this concept explored in the context of music by Tsay and Banaji, 2011). This simple classification of athletes being 'talented' or 'not talented', may be easier for our brains to compartmentalize and interpret. In this sense, perceptions of talent make it easier for someone to assign value or to provide praise or criticism. For example, if Athlete A performs well in competition, a commentator may express that it was because his/her/their talent facilitated it. Conversely, it may be easy for a sport commentator to express the notion that if Athlete A worked as hard in practice, then his/her/their skill would have been greater, and they would have won the competition. In reality, sport performance is much more complicated, and impossible to split into this simple dichotomy (Davids & Baker, 2007).

It is also possible that the social construction of sport embraces and romanticizes notions of talent, making the idea difficult to ignore. For instance, sociological and historical scholars of elite or high-performance sport note the notion of 'natural talent' pervades discourses about sport, athlete development and performance (e.g., Tudor, 2018). In his 2008 book, Gladwell described the fascination with talent in sport, and its capacity to draw our interest and attention to stories where athletes become elite straight 'off the couch' (i.e., with little training and sport experience). While there is much to explore in this space to further understand why this fascination exists, it appears the 'shock and awe' element of talent contributes to its intrigue and attention.

#### Why does this matter for athlete development?

### Challenges with transferability of findings without definitional clarity

Researchers in several sport science fields including athlete development, coaching, and athlete identification and selection, have emphasized the need to improve the precision and clarity of how researchers use language in their work (e.g., Johnston et al., 2023; McAuley et al., 2022; Mosher et al., 2020). For example, a recent review revealed 243 unique terms for 'positive youth development' in the context of sport involvement (Bruner et al., 2022). As fields of work have evolved, the lack of consensus on key terms has become a significant impediment for drawing conclusions from the available evidence and providing recommendations to end users of this evidence. Specifically in the context of the term talent, without greater conceptual clarity, much is left up for debate regarding what it looks like, acts like, and/or develops with, which has further implications for organizational alignment, athlete development, and resource allocation (amongst other things).

### The impact of 'outcome bias' on talent identification, selection, and development

As discussed earlier, a common practice exists whereby coaches and other sport stakeholders assess athlete talent through formal strategies, often referred to simply as 'talent identification'. This can be in the form of multi-day camps, tryouts, or sessions to assess the athlete's physical, physiological, cognitive, social and emotional qualities. Often, the efficacy of such identification (and subsequent selection) practices is judged through the success of the athlete's performance with the team. For example, a 'scout' or 'recruiter' responsible for judging an athlete's performance at a talent identification camp may be reprimanded for recommending Athlete B who ended up underperforming in their organization. This concept of judging the quality of a decision (in this case, the selection of Athlete B) solely based on the outcome (his performance after a given time), is considered in behavioural science to reflect a 'resulting' or 'outcome bias' (Baron & Hershey, 1988). In reality, this type of thinking fails to acknowledge the interaction between the decision-making and development processes in place for developing talent after it has been 'identified'. In other words, the organization, coaching, training opportunities, teammates, opposition, environment and so on, all directly impact the performance of Athlete B, which undoubtedly muddies the waters for determining whether the selection was successful or not.

Furthermore, while the notion of talent makes sense as a theoretical concept (at least if it is captured as simply the 'qualities that affect an individual's likelihood of success in a domain'), in many sports, the idea of talent identification may not be not feasible due to a limited understanding of how elements of human development (e.g., social, emotional, cognitive, physical) emerge and interact over time, and the inability to parse out the gene x environment interactions during development (e.g., how do you know a young person's superior performance is not the result of more practice/experience?).

#### Fixed notions lead to fixed approaches

Most approaches to talent identification generally emphasize talent as a fixed variable, where early instances of success have value for predicting future success (e.g., the highest performers in youth are more likely to succeed in adulthood). While this approach contradicts much work on young prodigies who do not eventuate into elite adult performers (Gagné & McPherson, 2016), it may also undermine the importance of opportunities and experiences in athlete development. By focusing on talent as a fixed, and easily identifiable commodity (i.e., the athlete is talented), researchers, coaches, and parents may devalue the importance of time spent in high quality practice and a long-term process-focused approach, which are more powerful predictors of future development and performance (Baker, Young et al., 2020). A focus on talent may also drive earlier and earlier identification initiatives in the hopes of gaining a competitive advantage. This can promote limited or specialized sport engagement in youth, which may be problematic for both health and development (Güllich et al., 2022).

In a similar sense, fixed notions of whether an athlete believes he/she/they is/are 'talented' or 'not talented' may have long-term consequences for how athletes think about their engagement in sport (Wattie & Baker, 2018). For instance, an athlete who believes she is not talented may believe that no matter how hard she works in practice, her ceiling for improvement and subsequent performance is always going to be lower than other more talented teammates. This in turn may affect the way she trains, who she trains with, how she spends her time outside of training, how she views improvement, and may possibly lead to her quitting long-term engagement and participation in sport. This fixed mindset approach (see Dweck & Yeager, 2019) for further explorations into this concept), can be a dangerous psychological place for individuals to be, especially younger athletes, as it directly informs their perceptions of their abilities and agency over their future development.

#### Enhanced opportunities through greater resources

As sports design and implement athlete development pathways and systems, how talent is situated will be important. De-emphasizing the concept of talent in identification, selection and development practices may allow sporting governing bodies and organizations to support more athletes. For example, it has been recommended to delay athlete identification and selection until post maturity (Till et al., 2014) so that athletes remain in the system for longer, thereby allowing more time and opportunity to develop their skill. Till and Baker (2020) recently posed the idea that it may be "more effective, and ethical, to apply appropriate and research informed practices to everyone (or as many as possible) for as long as possible" (pg. 11). Such an approach may also allow a greater utilization of resources whilst having the potential to improve both performance and health for more athletes by increasing both participation and performance.

## **Moving Forward**

So, what are we to do with the notion of talent in sport systems. If the potential harm and confusion associated with this term outweighs any potential value, is it time to retire the term talent? Given how firmly entrenched this word is in many athlete development systems around the world, this is a difficult challenge and removing it from sport contexts (to the extent this is possible) will obviously take considerable time. In the section below we provide two lines of thinking to promote this change, grounded in recent research on athlete development.

## Proposal #1 – Retire Talent!

As noted by Johnston et al. (2023), if a term like talent cannot be properly defined, then there will be repercussions for measurement, and if there are measurement concerns, there will be assessment and interpretation concerns, which further lead to the question of a term like talent's utility in athlete development. Because of this and along with the inconsistencies in how it is used and applied, perhaps the time has come to retire the word 'talent' *in some sport settings*.

For instance, retiring the word talent in the context of athlete development would leave room for terms that may be more representative and appropriate. For example, in settings that focus on elements of development and learning, talent could be replaced with a more accurate word like 'athlete', 'player', 'participant', or 'performer'. Instead of calling it 'talent identification', the phrasing could become 'athlete identification'. Such a strategy would reduce incongruencies between how different stakeholders use talent and mitigate some of the complexity associated with this concept. Furthermore, sports organizations and national governing bodies may want to consider re-naming such athlete development programmes. 'Player academies' or 'development pathways' may be more appropriate names to reduce the emphasis on talent terminology. In addition, it is important to note that it is only in more recent models (e.g., Australia's FTEM model, Gulbin et al., 2013) where talent has a clear role; earlier development models (e.g., the Long-Term Athlete Development model, the Developmental Model of Sports Participation) do not use the term. Therefore, changing coach education models and curricula to remove such terminology may be an appropriate strategy for coach and practitioner education.

Retiring talent in these contexts may also discourage early identification within sporting pathways and systems since the focus would shift from trying to find indicators of future success to designing appropriate environments for athletes to develop and thrive. This would help delay identification and increase developmental opportunities for more individuals, which is in line with recent recommendations (e.g., Till & Baker, 2020). Retiring the word talent may help solve the blurry question of what talent is and how it applies in some sport settings by removing it altogether. This may have numerous benefits for stakeholders ranging for improving clarity in policy and education documents to enhancing the experiences and development of youth sport participants.

## Proposal #2: Don't Retire Talent Altogether!

Whilst this article has discussed the challenges associated with the word 'talent', its blurry meaning and the difficulties in identifying and assessing talent, removing the notion of talent from athlete development altogether may be counterproductive. First, recent work (Baker et al., 2019; Till & Baker, 2020), has emphasized the value and complexities of talent in athlete development. This has been positioned from both academic (e.g., Baker et al., 2019) and practitioner perspectives (Baker et al., 2018). For example, Baker and colleagues' (2018) risk matrix helps practitioners consider performance and potential of youth athletes to help decisions for athlete identification and selection. Still further, Till and Baker (2020) presented talent as emergent (i.e., the process of becoming, Simonton, 1999; Baker et al., 2018b), influenced by a host of factors within an environment (e.g., parents, coaches, peers, and opportunities; Henriksen et al., 2010; Rees et al., 2016; Davids et al., 2017) and individual (e.g., athletes with different abilities and skills require different developmental programs; De Oliveira et al., 2014). Although not fully encapsulating the full definition and complexity of talent, the presentation of such terms helps practitioners consider talent differently, which can only be seen as a positive. Such findings have had implications within sports whereby more

opportunities are created for more individuals based on these ideas (e.g., England Hockey, Rugby Football Union).

From this perspective, retiring 'talent' could result in practitioners reverting to, and reinforcing, the assessment of current performance over future potential, thereby selecting early for a limited number of individuals. This would ultimately undo the many forward steps taken in this space over the past decade emphasizing the process of athlete development over talent identification. Moreover, removing the word talent from the contexts which coaches and other stakeholders operate within may also promote a form of 'blank slate', egalitarianism, based on the problematic hypothesis that all individuals have equal potential for eventual success. Although this may seem beneficial on the surface, it perpetuates 'Matthew Effects' where those with initial advantages gain further advantages that compound over time (Pinker, 2001). Given the widespread systemic biases previously noted in many sports (and discussed above), it is critical that participants with actual disadvantages (e.g., due to lower socioeconomic resources and so on), are recognized so appropriate supports can be provided.

## **Concluding Thoughts**

It is time to retire the term talent in settings where it is used generically, and in an inappropriate and incorrect manner. This may be in day-to-day language to describe a good performance (i.e., they are talented). While this will be a tough challenge, it is one that will help stakeholders develop athletes in a more appropriate, holistic and ethical way. However, removing the term completely from the context of sport, coaching and athlete development may be detrimental and unproductive to the long-term development of athletes since it may promote views that are too simplistic to capture the complex interaction between environmental, experiential and biological factors explaining the development of exceptional sporting achievement.

Whilst the removal of the term may help reduce the influence of inconsistent and blurry language, there has been important work done in this area and current practices may still be evolving in line with recent developments. For example, delaying identification, creating more developmental opportunities, having clear performance models for any selection-based decisions, considering athlete age (e.g., chronological, biological, training), using objective and subjective data to inform decisions, and effectively financing the system have all been recommended (Till & Baker, 2020). Ultimately, understanding the individual and emergent nature of talent and its relationship(s) to the micro to macro environments of athlete learning, training and development may create more opportunities for more athletes, and extend recent work within the athlete (talent) development space.

# Declarations

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