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Comments on ‘Expert Performance in Sport and the Dynamics of Talent Development’

It is always good to see reviews, such as the recent article by Phillips et al.,[1] which challenge the extant, simplistic, mono-disciplinary approaches to talent identification and development that are still common in the literature.[2,3]

We are also completely in accord with the complex systems approach espoused; indeed, as co-authors and collaborators of one of the first papers to suggest this approach,[4] we are clearly supporters. We do have concerns, however, that relate to the limited scope of the paper.

One of the most positive features of the complex systems approach is its consideration of interactions between contributory factors. All the more surprising, therefore, to find the factors highlighted by Phillips et al. are limited to those below the neck, despite a growing literature on the importance of psycho-behavioural constructs in the evolution of talent.[5-11]

In a typical study, Van Yperen[5] demonstrates the predictive validity of psycho-behavioural constructs to success in professional football, even when initial performance level is controlled. In simple terms, these characteristics seem to be the driving force that underpins the developing performer’s exploitation of the various environmental factors and physical gifts they experience. In short, this represents a way in which the ‘intrinsic dynamics’[12] of the individual can best be exploited or, sometimes, even overcome. The closest Phillips et al. get to acknowledging this important contribution is their suggestion that the pathway “requires complimentary cognitive attributes (e.g. confidence, sacrifice, dedication and perseverance)”[1] [p 279].[1] As such, we would suggest that their view is somewhat beheaded, or at the very least lobotomized.

A similar issue relates to the social environment in which development takes place; the authors’ use of environment seems much more related to the practice ‘conditions’ than to the wider context. Once again, there is a broad literature on the impact of the social setting for talent development, encompassing the environment itself[13] social support available[14] and the promotion of individual characteristics.[8] Such factors surely underpin the ‘Wagga effect’[15] and the birth place effect,[16] both of which are cited but seemingly mechanistically unconsidered by the authors. The social impact is also missed as a critical qualifier of cited findings. For example, the paper cites Durand-Bush and Salmela[17] as reporting that all experts undergo the stages of Côte and Hay’s[18] “developmental model of sports participation,” namely “sampling, specialization and investment,” in their pathway to the top. Once again, more recent research[19] is suggesting that these stages may be socially specific, with few if any British athletes exhibiting a specialization stage in their pathway to high-level performance.

In summary, the excellent coverage otherwise provided by Phillips et al.[1] seems to miss the psychosocial factors that, we suggest, play a crucial role in the realization of talent. Indeed, it may be that these factors could be considered as “generic emergenics” (cf. Simonton[20]), in that they seem to facilitate the emergence of superior expertise pan domain.[21,22] It may be that, as Phillips et al. claim, “Dynamical systems theory and the complexity sciences might provide the basis of an interactionist perspective on expertise acquisition in sports” (p 280).[1] However, we would suggest that it is more generically and psychosocially driven than the purported and essentially individualistic chaos that complex systems approaches may espouse.

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The Authors’ Reply

In our article entitled Expert Performance in Sport and the Dynamics of Talent Development,[1] we provided a multidisciplinary theoretical framework for expertise in sport and talent development, arguing that the most relevant focus of study concerns the performer-environment relationship, not a separate focus on each of these factors.[1,2] This article complemented our other work that proposed how performer-environment relations frame a comprehensive understanding of skill acquisition and problem-solving processes in neurobiology.[3,4] In these articles, we highlighted the clear weaknesses of approaches that display what Dunwoody[5] termed an ‘organismic asymmetry’ – a fixation with performer-based explanations for emergent behaviours (see also Davids and Araújo[6]). This critical point should not pass over the heads of readers. Expertise in sport emerges from the continuous interaction of a multitude of constraints and does not solely or separately emanate from environmental or personal factors, as we discussed in our article. This ecological dynamics theoretical orientation should not be confused with an environmentalist stance, a misconception of our theoretical position and a misunderstanding of the term ‘ecology’, which emphasizes the relations between organisms and their environments (for an example of this misconception see comments by Gagne[7]). For sports science to move beyond description and improve theoretical understanding of key concepts such as skill, transfer, expertise and talent development, we have advocated[1,5-7] the need to avoid a biased fixation on a single category of constraint alone. Understanding the inter...
action of psycho-social constraints with physical and environmental constraints on behaviour is indeed an important challenge for scientists, but one that requires an emphasis on ‘embodied cognition’, a different ‘headspace’ to that proposed by Collins and MacNamara. This proposal is completely harmonious with the ideas of Van Yperen, who observed that success in sport was not just shaped by psycho-behavioural constructs but also “influenced by a variety of additional psychological, physical, social, and organizational factors” (p 326).

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