The Learning in Development Research Framework for Sports Organizations

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The Learning in Development Research Framework for sports organizations

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ABSTRACT

Research has shown how social and cultural factors continually shape an athlete's development journey. For example, the types of practice designed, in which individuals are identified as talented and the characteristics that distinguish a good coach, are continually shaped by sociocultural constraints. This potential for a myriad of possible complex and ill-defined challenges (a *wicked problem),* highlights a need for a framework to guide both research and practice within specific sports organizations. In this paper, we present the Learning in Development Research Framework (LDRF), a deeply contextualized, transdisciplinary approach to action research that is founded in ecological dynamics that utilizes the Skilled Intentionality Framework (SIF) to capture the role of sociocultural forces in shaping athlete development. Further, we present a practical example from a professional football club highlighting the main aim of the LDRF: that player development frameworks should evolve in, interaction with the specific sociocultural context in which practitioners and individuals are embedded. The implication is that there are no 'copy and paste' templates. Practitioners and applied scientists should seek to comprehend the distinct contextual complexities of cultures, communities and situations as they encounter them, co-creating practices that, respectively, amplify and dampen helpful and unhelpful aspects of sport forms of life.

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Introduction

A sports club or organization is part of a complex, multi-layered system with a potential rich range of outcomes, facilitating factors and challenges related to the athlete development environment and wider sociocultural influences (Henriksen, 2010). It has been argued that the athlete development setting alone cannot account for the behavior of its inhabitants (Rothwell et al., 2020). This idea highlights the extent to which learning and skill development are embedded in a larger sociocultural context, creating a potential for a myriad of possible complex, unpredictable and ill-defined challenges: a *wicked problem* (Bjørndal & Ronglan, 2019; Vaughan et al., 2019). For example, inherent barriers to changing practice in sports organizations shaped by sociocultural-historical constraints can limit the adoption of new and innovative approaches (Woods et al., 2020). Therefore, in sports, like other performance environments, context means everything! There is a need for an approach that will guide reliable ways of conducting research, and designing practical applications, that reveal

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insights on the sociocultural complexities and sub-system interrelatedness of athletes and environments.

To comprehend the myriad of sociocultural constraints that influence behaviors of athletes, coaches and practitioners, we turn to Wittgenstein's (1953) notion of *form of life*, which consists of values, beliefs, practices and customs that continually shape how we live (Rietveld & Kiverstein, 2014). This notion also appears in the Skilled Intentionality Framework (SIF), a conceptual framework that directly couples forms of life[1] to the relevant fields of affordances (opportunities for action) that influence skilled action (see van Dijk & Rietveld, 2017). More directly, the SIF foregrounds the notion of *sociomaterial entanglement,* stressing that affordances are not just passively situated in isolation in the materiality of immediate behavioral settings of a sports organization (training session, competition). Rather they are entwined within a more culturally encompassing, socially and historically developed constellation of practices and forms of life (van Dijk & Rietveld, 2017). So, while forms of life can influence the way sports organizations implement their athlete development programs (Rothwell et al., 2018), the SIF can illustrate the extent to which sociocultural and historical constraints in a form of life (e.g. a football or rowing club) shape the intentions of athletes, soliciting some affordances over others and directing skill development.

Of critical importance is the recognition that similar types of sociocultural constraints can shape vastly different sociocultural practices from context to context as they interact with, and within, different forms of life (e.g. playing style). What is possible in Barcelona or Melbourne might not be possible, or needed, in Stockholm or Beijing. The implication is that athlete development frameworks should evolve in interaction with the specific sociocultural context in which practitioners and individuals are embedded (Vaughan et al., 2019). As yet, no specific research framework has been proposed to help sports clubs and organizations with this endeavor.

It is our intention with this paper to advocate for (and later outline) an athlete development research framework to meet the challenge of highlighting, harnessing and re-shaping the sociocultural practices that emerge and persist within a specific sports organization. We now introduce the Learning in Development Research Framework (LDRF) which has emerged to guide an ongoing cycle of research and action at a professional football club in Sweden.

The Learning in Development Research Framework

Extending the work of Uehara et al.'s Contextualised Skill Acquisition Framework (CSAF) (2014), the LDRF proposes a deeply contextualized, transdisciplinary approach to action research that is founded in Ecological Dynamics and the Skilled Intentionality Framework (SIF) (Button et al., 2020; Rietveld et al., 2018). Here, we foreground aspects of qualitative inquiry (i.e. ethnographic), while remaining open to quantitative modeling of dynamic systems (see Vaughan et al., 2017).

While the CSAF is adept at providing a descriptive account of the current context in which athletes develop, there seems to be little or no intention to initiate change or evolve practice in that context. In contrast and adopting a transdisciplinary view, the LDRF promotes collaborative problem solving (Nicolescu, 2002) and knowledge mobilization – the act of moving research into the hands of research users (teachers, coaches, professionals) to effect change (Gainforth et al., 2014). In the LDRF the knowledge of practitioners and researchers is utilized to co-create methods and methodologies to optimize the athlete development environment/context under investigation.

Following the recommendations of Araújo et al. (2019), the LDRF focuses on ecological approaches that can illuminate the interplay between sociocultural constraints and affordances for skill learning and athlete development. To capture this interdependence of affordances and constraints, we recommend research designs that can zoom in and out on a form of life at various levels of analysis as outlined within the SIF. For example, (1) a zoomed-out perspective can help identify the relatively regular and stable patterns of behavior found among individuals taking part in a practice. This level of analysis of a form of life highlights how 'ways of doing things' (style of play, coach behaviors, task designs) reveal themselves in the regularities that characterize sociocultural practices

(training, preparation for performance, competition) and the way we consider them (e.g. type of language used). We complement this by (2) zooming in on the practices in which people partake, observing how individuals selectively engage with relevant fields of affordances in a particular training session or competitive event; and (3) further zooming in on the *lived perspective* of a skilled individual being responsive to their surroundings (van Dijk & Rietveld, 2017).

This *zooming in* and *zooming out* on a form of life (e.g. by means of ethnographic methodologies), helps us to appreciate how landscapes of affordances (i.e. available sports and pastimes in certain cultural contexts) shape the relevant fields of affordances (opportunities for action relevant for an individual in a particular situation) and regular patterns of behavior within specific practices (e.g. training sessions and competition). These patterns are what Reed (1993) called *embodied intentions*: the persistent ways in which people engage with relevant fields of affordances. Indeed, the landscape of affordances across football's form of life is rich, resourceful and dynamical, showing how cultural contexts can simultaneously shine a light on some affordances while overshadowing others (Vaughan et al., 2021). Here, affordances are understood in relation to the many abilities available in the form of life (Rietveld & Kiverstein, 2014; Vaughan et al., 2021). The field of relevant affordances is also relational in nature, but it is relative to an individual. This conceptualization can enrich our understanding of why some affordances invite movement and others do not. For example, the opportunity to exploit space (in a certain situation) by dribbling may not yet be part of a player's field of relevant affordances (due to a history of engagement with affordances), but it belongs to the wider landscape of affordances within the 'football form of life'. An astute observing coach may manipulate task designs in practice to help educate the players' intentions and attention toward this opportunity. These nuanced perspectives highlight how people act on relevant affordances (rejecting the use of others) because of the abilities they have acquired, due to a history of interactions in forms of life. By capturing this ecological perspective on the form of life, the LDRF aims to illuminate the relevant field of affordances that stand out, inviting the development of certain skills, habitual interactions in performance, and patterns of behavior.

As the intention with the LDRF is to initiate change and/or evolve practice in a specific athlete development environment, the impact of being immersed in a local setting, utilizing the SIF, is complemented by an action cycle that aims to implement its findings. Here, we propose interventions devised to probe the system (Snowden & Boone, 2007). Interventions can be aimed at macro or microsystem levels. For example, the organizational structure within a club may be changed and/or how coaches might aim to shape athletes' intentions in order to educate attention (see Sullivan et al., 2021). We suggest that interventions should aim to *amplify* or *dampen* sociocultural constraints shaping the form of life, and relevant fields of affordances, in sport organizations (Vaughan et al., 2019). For instance, avoiding language that reinforces ideas and narratives associated with sociocultural constraints can dampen their influence. e.g. referring to under nine football players as *elite* (see Kirkland & O'Sullivan, 2018). As findings are being implemented through interventions during the action cycle, in tandem, the next research cycle (utilizing SIF) seeks to capture the evolving sociomaterial environment as it persists and changes, connecting the research back into the next action cycle.

The approach we advocate aims to remain sensitive to the notion that sociocultural constraints influence practices in means that differ from context to context. Aligning with North and colleagues (2015) warning against the uncritical application of good practice ideas from other successful countries, this approach recognizes that there can be no 'copy and paste'. We must aim to comprehend, and attend to, the contextual complexities of our situations and co-create practices that *amplify* and *dampen* helpful and unhelpful aspects of our form of life.

Philosophical foundations: towards re-contextualizing our ways of knowing in athlete development environments

Before the intervention of ecological psychology, most psychologists and philosophers followed a historically dominant understanding of mind and behavior in mechanistic terms using reductionist

philosophies and methods (Withagen et al., 2012). In this traditional perspective, the environment was understood to be linear and deterministic, passively complying with physical laws governing matter in motion (Withagen et al., 2012). This ontological assumption has had a deeply engrained ripple effect, influencing western philosophy/psychology and science for hundreds of years (Baggini, 2018). Some influential thinkers such as Alicia Juarrero (1999) have criticized traditional philosophy of science and historically dominant theoretical ideas, pointing out that they were predicated on premises of the 'covering-law model', which invokes universals and general statements to explain human behaviors. This model of theory, philosophy and science dates back to the dialogs of influential philosophers, such as Aristotle and Socrates. Indeed, Plato's dialog, The Meno, seeks to explain knowledge acquisition in human learning with reference to internalization of universals and templates. According to Riley and Turvey (2001), Juarrero's criticisms of the 'covering-law model' in philosophy and science are relevant and influential because they are severely critical of its attempts to 'dump context in favour of universals' (p. 164). This historical trend is evident in football methodologies that prioritize the internalization of shared (coach-driven) mental models (e.g. tactical plans and game models), over the need to shape a learner's intentions, and educate their attention toward environmental properties (e.g. context), enhancing athlete autonomy through engagement opportunities (see Vaughan et al., 2021, for details).

A path dependency of seventeenth-century scientific ideas (i.e. the Newtonian/Cartesian paradigm, see Birhane, 2021; Montuori, 2011) has arguably led sports science and pedagogy to downplay the role of environmental (sociocultural, historical, political) constraints, creating an *organismic asymmetry* (Davids & Araújo, 2010). This biased preference for organism-centered explanatory mechanisms has had an influence in shaping applied research and practical interventions, arguably inhibiting our understanding of the myriad of complex interactions that typify an athlete's world (Davids & Araújo, 2010). In response, a growing body of research encompassing sociological and ecological approaches to coaching and athlete development are echoing the recognition that the 'current positivist hegemony may be restricting our understanding of human behavior' (Uehara et al., 2014, p. 4). Further, van der Kamp et al. (2019) highlighted a need to radically broaden our ways of knowing (i.e. epistemologies).

A central aim of the LDRF is to shift the focus of athlete development research away from just the *individual* athletes and towards understanding behavior at the level of interactions between a performer and their performance environment, both continuously shaping each other (Araújo et al., 2019). Providing the philosophical (ontology and epistemology[2]) foundations for this shift, van Dijk and Rietveld (2017) describe the ontology of *constitutive sociomaterial entanglement*. This worldview aims to demonstrate the extent to which sociocultural practices (e.g. football) and opportunities for action (affordances) exist as 'two sides of the same coin' (p. 2) and exhibit a constitutive relation, where practices and affordances do not admit of a prioritization.

Constitutive sociomaterial entanglement is the ontological notion used to explain the active, dynamic and transdisciplinary reality of the environments in which we live and develop. It proposes that the ways which we live (i.e. forms of life), the practices we partake in (i.e. sports training methods), the affordances we perceive (i.e. invitations/opportunities for action in these contexts) and the skills we develop (i.e. passing, dribbling) are constitutive relations and aspects of a holistic system that continuously form each other (van Dijk & Rietveld, 2017). Within the realm of player development, the constitutive sociomaterial entanglement might be productively portrayed by the ATDE working model (see Figure 1, Henriksen, 2010). Transcending the path-dependent organismic asymmetry bias, the SIF makes a significant contribution by outlining the extent to which the intentionality of any organism-environment system is an interdependent and constitutive relationship (van Dijk & Rietveld, 2017). In other words:

> Intentionality characterizes the system, not just biological organisms within the system. Thus, intentionality in the sense of value-directedness characterizes environmental structures [i.e., a form of life/ATDE] and processes [i.e., sports training methods] as much as it does the organisms [football players] who shape and are shaped [e.g.,

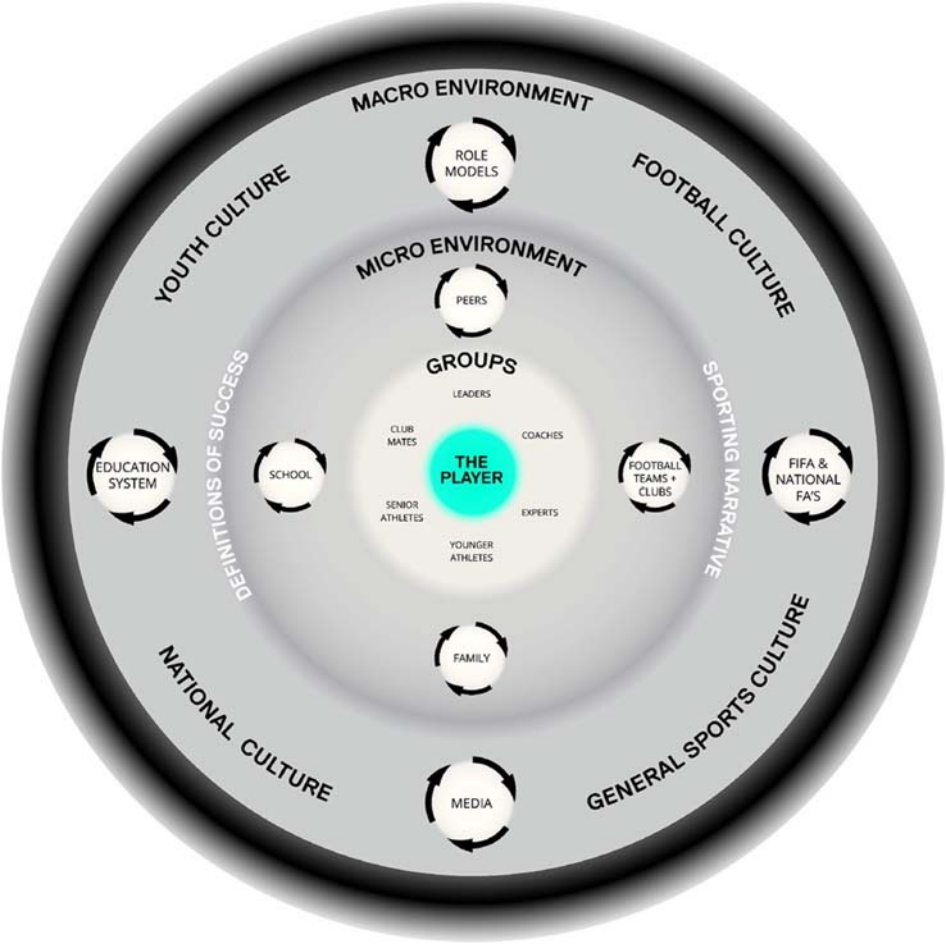

Figure 1. A football specific version of the ATDE.

Note: Originally adapted from 'Athlete Talent Development Environment', by Henriksen (2010), taken from Vaughan et al. (2019) reproduced here with permissions from the Player Development Project Copyright 2017.

> skill development] by those structures and processes. This implies that values are necessary constraints on both the constitution and the selection of affordances (Hodges & Baron, 1992, pp. 269–270, text in brackets added)

Crucially, the SIF connects social and cultural aspects of life with the skill development of athletes by demonstrating the resonance between a form of life and the relevant field of affordances that stand out in their training sessions. This resonance has been explained as the value-directedness of player-environment intentionality (see Vaughan et al., 2021).

Theoretical foundations: towards understanding a human ecology of complex adaptive systems

To counteract the previously mentioned organismic asymmetry in research and player development, ecological dynamics has emerged as a guiding theoretical framework to inform new approaches to athlete development and pedagogical practice in sport (Button et al., 2020). Providing an integrated explanation for human behavior, ecological dynamics utilizes key concepts from ecological psychology (Gibson, 1979), dynamical systems theory (Kelso, 1995; Newell, 1986), complexity sciences

(Edelman & Gally, 2001), evolutionary science (see Button et al., 2020), and the seminal research of Brunswik (1956).

From an ecological dynamics rationale, player development frameworks should account for an understanding that player development is multidimensional in nature, emerging from the complex and dynamic interactions of groups of individuals with a range of task and environmental constraints in practice (Davids et al., 2008). Constraints were first categorized by Newell (1986) as Individual (e.g. height, speed and motivation); Task (e.g. specific to the activity to be performed); and Environmental (e.g. light, facilities, values and societal/cultural expectations) in nature. These three classes interact and evolve over varying timescales, helping us to appreciate the ecological scale of analysis, the player-environment relationship (Araújo et al., 2006). This broader perspective on player development encourages researchers to investigate the environmental, historical, and sociocultural constraints that shape the intentions (i.e. intentionality) of the athlete-environment system. Indeed, Reed (1993) argued that intentions are not enclosed or insulated from the agent's body and the environment, but a dynamic relational interaction exists.

Player-environment system intentionality

Player-environment system intentionality might be best conceptualized and experienced as a directedness (van Dijk & Rietveld, 2017) toward *something* or *someone* in the sporting environment (Rasmussen et al., 2017). In football, players might experience a directedness toward, and simultaneously pay attention to, the positioning and movement of certain teammates in specific situations, shining a bright light on some affordances, and overshadowing others (e.g. a central pass might overshadow the opportunity to dribble into space). We might say that the intentionality experienced frames processes of perception and action, leading players to attend to certain environmental properties, and selectively engage with some affordances over others (Rietveld et al., 2018; Vaughan et al., 2021). Crucially, the intentionality of a player-environment system is embedded within, and related to, the broader intentionality that characterizes forms of life (van Dijk & Rietveld, 2017). Brazilian football provides a vibrant example, where the form of life has contributed to a relevant field of affordances whereby the gap between an opponent's legs stands out, resonating with cultural significance. The directedness experienced (player-environment intentionality) toward this inter-pedal gap invites players to deceive opponents (with a nutmeg) and embody a way of playing football (playing with *ginga*) as one with Brazil's cultural identity (Uehara et al., 2020). In this way, Hodges and Baron (1992) have argued that intentionality is value-directed and that affordances are value-realising.

The value-directedness of intentionality offers insight into the role forms of life play in constraining athlete attunement to available affordances (Hodges & Baron, 1992). More directly, it allows us to gain a perspective on how social and cultural phenomena can (shape and re-shape organizational structures, coaching methodology and) directly constrain the relevant fields of affordances that stand out in sporting environments. We propose that sociocultural constraints can both illuminate and characterize the value directedness that shapes player-environment intentionality and ultimately influences the development of expertise in athletes in different forms of life (Araújo et al., 2010; Rothwell et al., 2018).

Affordances: the key relation of the player-environment system

Gibson's theory of affordances (1979) emphasized the interdependence of the organism and its environment. From an ecological dynamics rationale, humans perceive the environment in relation to its functionality, and its meaningfulness (i.e. the value-directedness) detected in affordances, which are understood as properties of an individual-environment system, scaled to each individual's action capabilities (e.g. speed, strength) and body dimensions (Araújo et al., 2006). This perspective provides insights into what individuals learn and know and how they decide to act (Araújo et al.,

2006). Pertinently, affordances are not only related to a particular individual, but specific to forms of life (Rietveld & Kiverstein, 2014; van Dijk & Rietveld, 2017). Sociocultural constraints have shaped models of learning and underpinned ideas of linear causality that have had powerful influences on practices within sport (Button et al., 2020). For instance, top-down, early selection mechanisms can exclude or marginalize players who do not display, in that specific snapshot of time, the required traits to fit into a sports organization (Uehara et al., 2018).

Bronfenbrenner's bioecological model

The application of a Gibsonian approach to human development, utilizing Bronfenbrenner's (1995, 2004) *bioecological model*, can provide a reference point to understand the athlete-environment relationship in a specific ecological niche (or human ecosystem). Bronfenbrenner's model, applied to sport contexts, is defined by the interaction of four key elements; process (opportunities to practice and play offered to the individual), person (soma-type), context (settings in which the individual is found); and time (e.g. training session, season, career). The model is conceptualized as four levels of nested systems (Krebs, 2009): (i) the microsystem, where interpersonal roles and relations are engaged in over time (home, school, practice), (ii) the mesosystem (the relations among two or more microsystems in which the developing person actively participates), (iii) the exosystem (setting in which the developing person does not participate actively, but nonetheless experiences its influence), and (iv), the macrosystem (economic, social, education and political systems). This conceptualization reveals the reciprocity of humans and environments coupled as a complex adaptive dynamical system (Davids et al., 2015).

Conceptualizing sociocultural constraints as impinging on and shaping intentionality is crucial if we are to comprehend and ultimately re-shape the fields of affordances that invite skill development and team coordination (Rasmussen et al., 2017). For example, decisions made at the National Governing Body level about pedagogical approaches (subject to sociocultural constraints) are promoted through coach education. The type of player development programs they promote can have a cascading influence on organized practice and opportunities for action, shaping learning, development and participation opportunities for young players in their performance environments (Rothwell et al., 2019). In turn, this can shape commonly accepted beliefs, values and practices (e.g. parental expectations), further influencing how these approaches to practice task design and player development become identified as a normative part of the culture (Rasmussen et al., 2017).

To illustrate this broader perspective, it is useful to view Henriksen (2010) proposed adaption of Bronfenbrenner's bioecological model, the Athlete Talent Development Environment (ATDE) in Figure 1. Referring to the model can illustrate the intertwined relationship between forms of life and relevant fields of affordances, providing a sense of how a form of life can influence and sustain practices, customs, beliefs and attitudes within a sporting ecological niche (Button et al., 2020). Further, learning experiences are continually shaped as much by the social milieu as they are by each individual's physiology, anatomy or psychology (Uehara et al., 2014). The ATDE can be used to provide methodological guidance and a framework for organizing knowledge (prospective findings). The ATDE is explained as:

> … a dynamic system comprising (a) an athlete's immediate surroundings at the micro level where athletic and personal development take place, (b) the interrelations between these surroundings, (c) at the macrolevel, the larger context in which these surroundings are embedded and (d) the organizational culture of the sports club or team, which is an integrative factor of the ATDE's effectiveness in helping young talented athletes to develop into senior elite athletes. (Henriksen, 2010, p. 160)

Methodological foundations

We have already identified a need for a framework (to guide both research and practice) to meet the challenge of highlighting and harnessing the sociocultural practices that emerge and persist within a

specific sports organization. In order to engage with the sociocultural complexities and sub-system interrelatedness of athletes and environments, we have outlined the relationship between sociocultural constraints, player-environment intentionality and fields of affordances. In this section, we draw attention to the potential methodological connection between system complexity and action research. Further, we will suggest that a combination of ethnographic strategies and action research can offer a deeply contextualized and continuous analysis and assessment of a form of life in a particular ecological niche, even while findings are being implemented.

Action research to address complex issues (wicked problems)

Our intention to promote action research grounded in an ecological dynamics rationale to enhance the effectiveness of a transdisciplinary approach is based upon the following characteristics:

1. An ecological dynamics perspective can help us to conceptualize the inherent non-linearity of the learner and the learning process in sports organizations characterized as complex systems (Renshaw & Chow, 2019). Furthermore, this nonlinear perspective highlights the notion that small changes in system properties can lead to large changes in emergent behavior and vice-versa (Chow et al., 2011). The idea of working with the nonlinearity of the research context is central to action research (Phelps & Hase, 2002), where the purpose is to instigate changes in dynamic and complex systems (Brooks & Watkins, 1994).
2. Action research is consistent with the notion of viewing change (learning) as an adaptation to the environment, which is fundamental to complexity (Phelps & Hase, 2002). Learning in complex systems can be understood as self-organization under constraints, where instead of understanding the whole, by isolating its parts, we understand the whole by understanding the relations between, and continuous interactions of, its parts (Heylighen, 2008). Interactions within and between system levels are central to the conceptualization of forms of life within the SIF, contrasting with deterministic models of human behavior where 'one size fits all' approaches are deemed necessary to guide performance. Action inquiry rejects the idea that one generalizable solution can fit multiple situations (Brooks & Watkins, 1994).
3. Complexity acknowledges the uncertainty of prediction of system outcomes over longer timescales. The input of a new idea or 'action' (e.g. subtle change in how people interact) into the system can lead to different outcomes that cannot be predicted (different social structures) (Eve et al., 1997). Action researchers have embraced notions of unpredictability, seeing it as a goal and 'the stuff of which 'real life' is made or enacted' (Wadsworth, 1998, p. 7).

Emphasizing the development and enrichment of a reciprocal and functional relationship between athletes and environments forming complex, interconnected systems (Araújo & Davids, 2020), can provide a valuable theoretical underpinning for action research (Phelps & Hase, 2002). In turn, action research can provide a valuable methodological approach to the critical and practical study and evolution of complex systems in contexts like sport, work and education (Phelps & Hase, 2002).

Action research utilizing ethnographic forms of inquiry as a suitable research methodology

In an effort to move away from conventional research methods, researchers have recommended the use of ethnography in sports environments as a method of inquiry to generate and analyze data (Uehara et al., 2014). Ethnography provides an avenue to highlight the contextual interactions of complex social phenomena, broaden the scope of ecological psychology and provide insights into athlete-environment intentionality (van Dijk & Rietveld, 2017; Vaughan et al., 2021). While ethnography supports long-term immersion in a local setting, to understand community issues and

relate them to wider cultural issues, it can have limited impact (Hearn et al., 2009). However, it has been argued that when complemented by action research, ethnographic research is more 'likely to be useful and usable by those working on the ground … and to address the identified gaps between research and the ability to implement its findings' (Tacchi et al., 2009).

We advocate that combining ethnographic form of inquiry and action research can support a suitable methodological approach to help us better understand and further player development environments. It can help us access experiential (through daily interactions of coaches, players, stakeholders in a form of life) and empirical knowledge that can uncover the influence of social, cultural, and historical constraints (Rothwell et al., 2020). Such (iterative) integration of knowledge types may emphasize a focus on co-creation, sharing and development of living knowledge, 'producing useful results to make positive changes' (Nelson et al., 1998, p. 12), and support the uptake of innovative and novel approaches to learning in sport (Renshaw et al., 2019). Essentially, ethnography can inform both, the initial research cycle, providing insights into the form of life, with the following action cycle (interventions) helping us to capture real-world changes in practice and connect the research back into the development of a player development framework. This can mobilize the social and cultural participation of individuals and community members so that they become engaged in their personal development and in the development of their community (Foth, 2006).

We will now briefly highlight the ethnographic strategies of inquiry that help us link a zoomed-out view on the form of life to a zoomed-in perspective on concrete situations. We will then proceed to provide examples of how the LDRF informed present and future possibilities of evolving practice and player development at AIK youth football, a professional club in Sweden.

Historical contextual analysis

Adopting a transdisciplinary point of departure (see Vaughan et al., 2019), in an effort towards cultivating a more holistic understanding to support a broader perspective on player development, contextual analysis can illuminate some social, cultural and historical constraints that influence skill development in a form of life (Araújo et al., 2010). This way of monitoring a form of life is significant as it gives insights into what is understood as normative, what is changing, what are the path dependencies and what opportunities (pathways) are emerging. This perspective can inform participant observation and interview methods and what data should be collected in the field (Uehara et al., 2014).

Observation

Fieldwork in the form of observation can take place at various levels or grains of analysis. Unobtrusive observation (Schensul et al., 2012) can provide the opportunity to observe behaviors and actions, sociocultural practices and events. Participant observation provides more exposure to, or involvement in the day-to-day activities, offering the opportunity to follow the participants across several contexts (Uehara et al., 2014). Observant participation is a methodological technique which allows for a more 'embedded' exploration of a form of life (Moeran, 2007). Further, observant participation can provide further insights into the functioning of relationships and rules, all of which are fundamental to ethnographic research (Wilkinson, 2017). For example, during later research phases, observant participation can reflect the embeddedness required during 'on field' support, where the integration of the research (action) is being explored. Initial field notes can include text, audio and video and can be reviewed, combined and categorized into a detailed log of field notes. Observation may explain some of the contextual analysis findings previously unearthed and inform future interviews.

Semi-structured and informal interviews

Interviews allow access to different perceptions and give meanings to observations. As highlighted by Uehara and colleagues (2014), open-ended questions that elicit the views and opinions of participants can maximize the exploration of the topic.

Case example

AIK Youth football is based in Solna, Stockholm and engages over 1500 players between 5 and 19 years of age. In April 2017, the club disbanded its early talent selection policy and set about investigating possibilities to build a player development framework guided by three strategic goals: (i) to support the well-being of the child; (ii) to follow supporting documents from the United Nations Convention on the Rights of the Child and Swedish Sports Confederation and (iii), secure the promotion of more youth players to participate in the under 16, under 17 and under 19 years teams and in the clubs senior teams. At the beginning of 2018 a newly formed Department of Methodology (DoM), consisting of professional coaches and sports scientists, began investigating the current athlete development environment to inform present and future possibilities of evolving practice and player development.

Connecting young players interactions with relevant fields of affordances and the intentions of coaches, with the socio-cultural and historical context

Historical contextual analysis, observations, field notes, and unstructured interviews contributed to the initial research phase. This gave the DoM an appreciation for how landscapes of affordances (seen as *persisting* sociocultural practices) were being maintained by stable patterns of behavior, revealed in the persisting ways in which people (e.g. players) engage with relevant fields of affordances (van Dijk & Rietveld, 2017).

It was identified that coaching skill was being shaped by a landscape of traditional coach education practices, founded upon specific sociocultural and historical constraints. For instance, training designs in Swedish coach education have typically been underpinned by a culturally dominant planning paradigm, arguably promoting the assumption that human behavior can be predicted and controlled (e.g. coach determines in advance the specific theme, presents predetermined coaching points and controls the sequence and duration for each part of the session). Within the younger teams, global-to-local processes were amplified in a coaching culture that attempted to control future outcomes. The actions of young players were routinely 'drilled' in choreographed practices where predetermined passing patterns were performed to be later regurgitated in competitive games. Indeed, these practices promoted in coach education highlighted a cultural-historical inheritance. This can be traced back to the 1970s, when the pedagogical legitimacy of the Swedish Football Association's 'Swedish model' (based on West German football) was being questioned by the successful sporting results and the seemingly more professional nature projected by the 'English model' (introduced to Sweden by Bob Houghton and Roy Hodgson). This model promoted a 'teacher-centered' pedagogy, where the coach had the overall picture of how the game should be organized and the players needed to internalize the systematized knowledge that the coach promoted (Eliasson, 2003; Peterson, 1993). Subsequently, Sven Göran Eriksson successfully adopted the English model, developing it into the 'Swenglish model' which became the accepted model of practice for the SvFF (Peterson, 1993).

We will now provide a practical example, from the first research phase, highlighting how players (un)skilled behavior can be culturally embedded in a history of engagement with affordances.

> You see when I began (2011), there was a little nerve that influenced pedagogy. You were forced to have results even at 9, 10 years. A lot of decisions were pre-decided – very clear decided patterns which we also practiced very hard in training. It can look very good with a team of 10-year-old's because the opponents cannot solve the problem which means it looks good but it's not really that good.

> He belonged to our academy from the first year at 9 and this was the start of the whole academy journey when we lowered the selection age (in 2011) and there, a lot of decisions were pre-decided decisions (In training and in the games). This set the pattern for him as in his first year at AIK academy, he didn't own one of his decisions or test himself with regards to what worked or didn't work for him. Doing these programed patterns meant he

developed a habit of doing what you are told. Which is a big reason why, despite being free, he decides to play centrally to another free player, who probably hasn't the best situation to take the ball forward. (Coach A)

Patterns of behavior can embody the persisting ways in which people engage with relevant fields of affordances. This highlights what Reed (1993) called embodied intentions or skilled intentionality, defined as 'the selective engagement with multiple affordances simultaneously in a concrete situation' (Rietveld et al., 2018, p. 1). Our example (see Figure 2) captures what we have termed unskilled intentionality, characterized as selective engagement with only a narrow range of affordances (Vaughan et al., 2021). In this example, the affordance to pass centrally *stands out* and solicits the players' attention to such an extent that it overshadows the obvious opportunity (within the sociocultural practice of football) to carry the ball forward into space. Coupling these observations to the explanations of coach A, we can appreciate how the broader intentionality of a form of life has shaped coach intentions when designing and delivering practices in training sessions: 'You were forced to have results … It can look very good' (Coach A). The interview data suggest that the player in question was drilled to remember/recall 'pre-decided decisions' (passing patterns) rather than search for in-game solutions. This exemplifies the dominance of a 'global to local' (e.g. a top-down imposed game model) process (Ribeiro et al., 2019) that can fail to educate attention toward key environmental properties and representative information in the game. In this instance, the player's pass suggests that they are not attuned to key environmental prosperities and relevant information that would inform engagement with multiple affordances. Over time, players exposed to practices that do not contain key environmental properties (teammates and opposition) and representative information (non-scripted movements) may develop unskilled intentionality (coordinate with only a narrow range of affordances). As previous interactions with the form of life placed a value on passing centrally, the player may not have perceived the affordance to dribble forward because they have not been provided with enough opportunities to develop the skills (capabilities/effectives) to do so. This situation exemplifies the extent to which forms of life, practices like football, affordances we perceive, and the skills we develop, are constitutive relations and aspects of the same whole that continuously form each other (van Dijk & Rietveld, 2017).

The action part of the cycle enables research data to be fed back into the system, where we can continuously investigate the ongoing impact of the research in action. Considering that macro-level sociocultural constraints evolve over years and can be challenging to influence, the DoM focused on the micro-level of on pitch coaching pedagogy, and in particular practice task design. More directly, the landscape of affordances continually shapes the terms in which the environment presently invites individuals to act. However, it is the field that contributes to the landscape's maintenance, where through the invitations of relevant affordances, practices are preserved. Therefore, initial interventions were devised to probe the system and re-shape the relevant field of affordances that stand out as dynamical invitations to express agency (Withagen et al., 2017) in training sessions. For example, supporting coaches in recognizing the dominant historical and cultural ideas and tendencies, while also reflecting on the impact of their interventions (e.g. what is contextually more

Figure 2. Case study example.

(in) appropriate or (un)functional). As highlighted in the case exemplified here taken from the initial research phase, there was a need to dampen the influence of the culturally dominant (predict and control) planning paradigm and the pervasive 'results focus' that were acting as sociocultural constraints on coaches' intentions (in session design) and players' attention (during learner interactions in the sessions themselves).

To form a coherent foundation for the club's practice design and education programs the theoretically, empirically and experientially informed 'AIK Base' framework (for more detail see Woods et al., 2020) was adopted to encourage the coordination of shared principles and language. The DoM provided in-house coach education and 'on field' support, where the integration of the research to support the development of a player development framework was explored. These interventions (education and 'on field' support) provided further opportunities to help capture (through research) real-world changes in practice and connect the research back (through action) into the development of a player development framework.

Grounded in the theoretical framework of Ecological Dynamics, coaches at AIK were encouraged (with 'on field' support) to adopt methodologies and principles of a constraints-led approach to enhancing skill learning (Renshaw & Chow, 2019). These principles informed a nonlinear pedagogical framework in practice (Chow et al., 2011). The notion of Football Interactions was introduced to replace the idea of acquiring and applying isolated football actions. This signaled a shift in the coaching narrative away from implementing predetermined 'optimal' techniques and prescribed actions, towards developing a more adaptive, interactive performer, guided by the emerging information and affordances, of the performance environment. Football Interactions acknowledge that everything that happens on the football pitch is an interaction and these interactions take place in a broader ecology of interactions, beyond the playing area, that shape development within overlapping forms of life. Further, football itself was defined as a dynamic team sport, in which players routinely flowed between attacking and defensive phases of play. This dynamic offensive and defensive flux, underpinned by the Ecological Dynamics framework and informed by a modified three-stage learning model, search and exploration; discovery and stabilization; exploitation (see Davids et al., 2012), informed 'principles of play' at AIK youth football.

'AIK Base' set the foundation for future practical applications of co-designed tasks, where players are invited to search their affordance landscape to improve the coupling of perception and action and promote the actualization of relevant affordances through football interactions. With designs informed by 'principles of play', emerging behaviors revealed in football interactions can be observed and further facilitated by highlighting informational constraints (e.g. through manipulation of constraints) that allow players to learn new ways of interacting adaptively through exploration.

Summary

Recognizing that athlete development environments are not blank slates devoid of social, historical and cultural influence, but provide the potential for a myriad of possible complex challenges, we proposed the need for a framework to guide both research and practice within a specific sports club or organization. We highlighted how different and unique cultural constraints reinforce issues associated with trying to 'copy and paste' best practice from successful countries or clubs. Further, we highlighted a need to help practitioners become more aware of the extent to which sociocultural constraints continuously shape their work.

To access this broader view, we presented the LDRF as a novel way of guiding research and action, supporting the notion that athlete development frameworks should evolve in interaction with the sociocultural context in which individuals are embedded. Within the LDRF, the opportunity of analyzing the phenomenon in greater depth each time (research action cycles), as it is evolving, offers the potential for the co-creation (researchers and practitioners) of practices that respectively amplify and dampen helpful and unhelpful sport forms of life. In this way, the model supports the development of a research culture through knowledge mobilization – the act of moving research

into the hands of research users. The LDRF does not prescribe a universal solution, rather we hope that it can guide how researchers, practitioners, clubs and organizations could challenge themselves to adapt strategies to design contemporary athlete development frameworks within their ecosystem.

A strength and limitation of this model is that different organizations and clubs will present different opportunities and challenges regarding its implementation, particularly in relation to resources (financial barriers, access to qualified staff) and stakeholder patience (e.g. the growth of knowledge that helps practitioners to understand and identify the socio-cultural constraints, is likely to take time). We propose that future research should look for innovative ways to implement and refine the LDRF model across a broad range of sports and sporting contexts.

Notes

1. 'A form of life is a kind of animal with a certain way of life and ecological niche. A form of life refers to a certain kind of practice: coordinated patterns of behavior of multiple individuals' (Rietveld et al., 2018, p. 5).
2. Ontology (which addresses beliefs about reality) and epistemology (which considers the nature of knowledge/ways of knowing) represent the philosophical pillars of research paradigms (Sefotho, 2015).

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