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Sport scientists *in-becoming*: From fulfilling one's potential to finding our way along

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Abstract

It is common to encourage people to envision life as a process of fulfilling their potential. But what exactly does this mean? Traditionally, this question has been addressed by way of ‘complementarity’; dividing the human into biological and cultural components. Fulfilment is placed on the side of the cultural; an acquisition of encoded secondary information, transmitted from predecessors, that represents what it means ‘to know’. Potential has been defined from the biological, as a suite of innate capacities localised to the mind and body, passed on through a mechanism of genetic inheritance. Founded upon a metaphor of *inter-generational transmission*, this perspective leads to a conceptualisation of life as a progressive closure, ‘filling up’ the biologically innate with the culturally acquired. Despite its prominence, this static view leads to a troubling question: *with one’s potential fulfilled, where is one to go next?* In this theoretical commentary, we offer an alternate, dynamical account of potential and fulfilment by leaning on Ingold’s notion of *wayfaring*. From this perspective, life is not a process of filling up with knowledge, but opening up; *corresponding* with varied experiences cast forward by others, as they to ours, situated within a continually unfolding field of relations. Ontologically, this view is of ‘us’, not as beings, but as *becomings*, finding their way along generative paths inhabited alongside others. Knowledge is not transmitted inter-generationally, but is developed by primarily experiencing the *coming-into-being* of things we enter into correspondence with. Initiated through a prologue, these ideas are exemplified in sharing our storied journey as sport scientists in-becoming, following not objects of convention, but corresponding with things of curiosity.

Key words: Correspondence; Becoming; Knowing; Skill; Information; Wayfinding; Transdisciplinarity

“As in life, what matters is not the final destination, but all the interesting things that occur along the way. For *wherever you are, there is somewhere further you can go.*” – Tim Ingold (2007, p. 174)

Prologue: Carrying on

“*Why are you reading literature in anthropology?*” is a question I (the first author) am routinely asked. After all, I underwent traditional training as a sport scientist. My typical response to this question is “*why should I not?*”. Indeed, I did not plan or set out to be ‘here’. Rather, I have been following various lines of inquiry in their unfolding; lines that have ebbed and flowed in response to questions that have jagged my attention along the way. These are questions which often have no answer, carrying on through various places in which they lead me. What can be said, then, about the works written with colleagues in response to such fundamental questions? For me, adopting an Ingoldian perspective, they are not so much disciplinary articles with starts and ends, but knots entangled along a path of continual growth. These knots have off-shooting ends that others may or may not want to pick up and run with while moving along their path of growth (Woods & Davids, 2022). Otherwise stated, these knots are *places*¹ in which I have pitched my tent, pausing to join in conversation with others, all the while keeping a responsive ear and eye directed toward an undetermined future (Woods et al., 2022a). Aligned with Ingoldian insights, knowledge of my surrounds has not as much been acquired over the years, but grows in moving from place to place (Woods et al., 2022b).

As implied by the opening question, I guess I now find myself rather far from ‘home’, dwelling where many sport scientists typically might not. Recently, I have been considering what this would mean for my ‘potential’ as a sport scientist if it were to be adjudged based on its ‘fulfilment’? If I am not where a sport scientist is ‘supposed’ to be, then some may think me considerably lost, stumbling through places that are unfulfilling relative to my potential as a sport scientist. Needless to say, I firmly disagree with such disciplinary territorialization, and feel it is an artefact of a rather archaic, superficial

¹ See Ingold (2011, ch. 12) for a detailed account of *places as knots*.

perspective of what it means to fulfill one's potential. I have never felt lost in the sense that I should be moving across a pre-determined disciplinary route leading toward a defined point of fulfilment as a sport scientist, so much as *wayfaring along an ongoing path of observation* (Ingold, 2007), following the various things that spark my curiosity, weaving them together as best and as carefully as I can (Woods et al., 2021). Maybe it would be better to think of such a voyage, not fulfilling my potential as a sport scientist, but of continually finding my way. Best, then, I carry on.

Introduction

In many parts of society, it is common to encourage people to envision life as a sequential process of fulfilling their potential. But what exactly does this mean? In Western scientific thought, such a question has typically been addressed by way of 'complementarity': dividing the human into separate, but complementary parts related to the biological and the cultural (cf. Ingold, 1998; 2000; 2004; 2011). Potential is placed on the side of the biological: a suite of innate capacities localised to the mind and body, passed on through a mechanism of genetic inheritance (Ingold, 2000, ch. 6). Fulfilment is located on the side of the cultural: pre-packaged, second-hand information transmitted into the minds of others, encoded in rules, symbols, representations and systems of classification that provide operational specifications for what it means 'to know' in order 'to function as' (Geertz, 1973; cf. Ingold, 1998, 2004; Sperber, 1996). Thus, fulfilling one's potential, according to the principle of complementarity, is quite literally a process of 'filling up' the biologically innate with the culturally acquired (Sperber, 1996).

Despite its prominence within various academic disciplines, such as anthropology, psychology and sport science (cf. Davids & Araújo, 2010; Dawkins, 1999; Geertz, 1973; Kashima, 2008; Maslow, 1970; Narvaez, 2018; Sperber, 1996; Tooby & Cosmides, 1992), this principle has not been without criticism (Bouzenita & Boulanouar, 2016; Ingold, 1998, 2000, 2004; Isham & Jackson, 2022). Generally, such critiques have targeted its determinist, individualist, asymmetric and reductionist undertones, leading

some toward a more relationally dynamic account of potential and fulfilment. Anthropologist Tim Ingold (1998), for example, argued that:

“[...] the human being is not a composite entity made up of [...] body, mind and culture, but rather a singular locus of creative growth within a continually unfolding field of relationships” (p. 23).

The forthcoming conceptualisation of human behaviour, focused on potential and fulfilment, is critically aligned in a similar way. In this paper we situate ‘being’ within Gibsonian ecological psychology (Gibson, 1979; Reed, 1996; Heft, 2013), allowing us to frame it in *relation* to ongoing changes in environing conditions (Heft, 2013). Gibsonian ecological realism is fundamentally anti-representational in its account of behaviour, specified not indirectly by second-hand content (termed *knowledge about* the environment) localised to the mind, but by an embodied perceptual system attuned to the ‘pick up’ of information that directly specifies information for affordances (opportunities for action) *with-in* a richly structured environment (Gibson, 1979; Reed, 1996; Heft, 2013). Ecological realism signifies that ‘knowing’ is not a matter of a mind imposing structure on a static world, but of *actively finding* structure (knowledge of the environment) in a dynamic, unfolding field of relations (Heft, 2013; for more details see Woods et al., 2020).

To elaborate on these ideas, we introduce Ingold’s (2007) notion of *wayfaring*. Life, it will be suggested, is not a sequential point-to-point progression of mechanistically ‘filling up’ innate capacities with representational content transmitted by predecessors. But is an active process of ‘opening up’, finding our way along a generative path of growth by *corresponding* with the varied experiences of others – as they to ours – encountered along the way (Ingold, 2000; 2011).

Correspondence, in the sense presented here, differs to that of interaction. According to Ingold (2016), where the latter goes back and forth transversally, the former *goes along with longitudinally*. Interaction, then, could be understood as the oscillation between two pre-existing and bounded ends, whilst correspondence is a multilinear binding of lines joined in the middle (Ingold, 2016). This means that in correspondence, ends are not provided in advance, but emerge “only in the acknowledgement

of *new beginnings*” (Ingold, 2016, p. 18, emphasis added). Otherwise stated, ends are not terminals or nodes in a networked connection that closes in on itself, but are moments in a meshwork that are continually formed in moving from place to place (Ingold, 2007).

There are epistemological corollaries to the argument presented here, with clear implications for understanding human potential and fulfilment. In these processes, knowledge is not conceived as a corpus of secondary information transmitted inter-generationally, waiting to be applied in practice. But is *grown by way of practice*, by primarily experiencing the coming-into-being of things we enter into correspondence with (Ingold, 2011, ch. 12-14). Knowledge, in other words, is not tantamount to concept categorisation and classification, denoted through the ascription of labels to objects, but is *storied* in the tangled coming-into-being of things we go along with (Ingold, 2011, ch. 14). This ecologically dynamic perspective implies that we (i.e., sport scientists) are not moving toward a pre-determined point of fulfilment (i.e., ‘an ends’) through the consumption and application of transmitted, secondary information specifying *for us about* what it means ‘to be’. But are rather *wayfaring along an ongoing path of participant observation² suspended in correspondence with others*. These theoretical ideas are exemplified in the shared experiences initiated within our prologue and sections thereafter. Moreover, they foreground an ontological departure from the common pronominal accounts of what it means to fulfil one’s potential (see Narvaez, 2018), pushing against the labelling of humans ‘as’, in favour of one that situates ‘us’ in a perpetual state of *becoming-with*.

Potential fulfilment and the genealogical model

In the second chapter of his seminal text *The Interpretation of Cultures*, anthropologist Clifford Geertz proclaimed:

² Our phrasing here can be traced to Gibson’s (1979/2015) ecological approach to way-finding. “An observer who is getting around in the course of daily life”, Gibson (1979/2015, p. 188, emphasis in original) argued, “sees from what I will call a *path* of observation”. This ‘can be thought of as a unitary movement, an excursion, a trip, a voyage that can last over short (minutes, hours) or long (days, weeks, years) periods’ (Ibid., paraphrased).

“For man [*sic*], what are innately given are extremely general response capacities, which, although they make possible far greater plasticity, complexity, and, on the scattered occasions when everything works as it should, effectiveness of behaviour, leave it much less precisely regulated. [...] Undirected by culture patterns – organized systems of significant symbols – [...] behaviour would be virtually ungovernable, a mere chaos of pointless acts and exploding emotions” (1973, p. 45-46)

This statement reflects a long-held tradition within Western scientific thought echoing that of potential fulfilment. It views the human as a composite entity existing in two separate, parallel worlds: the biological (emphasising “general response capacities”) and the cultural (emphasising “organized systems of significant symbols”). In the former, an individual is ‘given’ *innate* capacities by way of genetic inheritance. In the latter, these capacities are ‘filled’ with *acquired* content passed on by predecessors (Ingold, 2000). Within the corpus of acquired content are specifications for knowing how to regulate behaviour effectively. Grounded in a metaphor of *inter-generational transmission* (Ingold, 2011; Lave, 1990), this is to posit that pre-existing biological capacities underwrite and define all potential for subsequent learning and knowledge acquisition (for an overview of this in the sport sciences, see Davids & Araújo, 2010).

Differing to the biological, the transmission of cultural content is non-genetic (Ingold, 2011; Lave, 1990). It is purportedly established through some type of direct instruction founded upon the acquisition of rules, symbolic representations and classification systems, which are stored in the mind and believed to dictate the functioning of already knowledgeable others (also see Maslow, 1962, p. 4). This ideology reflects what Jean Lave (1990, p. 310) refers to as “the culture of acquisition”, in which learning is understood sequentially. First, one acquires a body of transmitted knowledge in the form of rules and representations (i.e., ‘culture’), and then one uses such knowledge to construct an action to be ‘properly’ applied in practice. It is to imply that learning is context-free, internalised and generalizable – or in a word, is tantamount to a process of *enculturation* (Ingold, 2000). Thus, while

humans supposedly exist in two parallel worlds, they enter life into a “gap”, a vacuum “[b]etween what our body tells us and what we have *to know* in order *to function*” (Geertz, 1973, p. 50, emphasis added). What fills this gap, is the transmission of “information (or misinformation) provided by culture” (Geertz, 1973, p. 50).

This view follows the logic of what Ingold (2000, p. 134-139) refers to as the “genealogical model”; an assumption that individuals are independently pre-specified by way of their genetic and non-genetic constitution. Fulfilling one’s potential, in following such a model, could be surmised as a point-to-point sequence of instants, starting as an innate capacious *organismic* container, whose ‘being’ is pre-written within a genomic code; ending as a *person* filled with acquired representational content specifying what it means ‘to be’ (Sperber, 1996). This perspective leads to an appreciation that by addressing components of the biological (i.e., organismic) and cultural (i.e., person) separately, we are only able to ascertain a partial view of the human individual (Ingold, 1998). To glean an account of the whole, we must *add* these component parts together. It is to “assert that the human being is not merely a biological organism nor merely a social person, but the compound of one thing *plus* the other” (Ingold (1998, p. 24, emphasis added).

To exemplify, one could argue from the biological premise that all humans possess an innate organismic potential ‘to be’ a sport scientist. But the expressive and interpretative value associated with being such would reside within cultural specifications coded in the rules, representations and classification systems transmitted into one’s receptacle mind by governing bodies, institutions, organisations, or groups of senior sport scientists themselves. These specifications, according to such a transmissive model, would supposedly provide a person with the knowledge needed in order to fulfill their potential *as* a sport scientist, perhaps reflected in the texts one must read, the stylistic ways in which one must communicate research, the methods one must apply, the topics one is allowed to explore (and by default, those which are out of bounds), and the reasoning of others which one must follow. Accordingly, while the potential to be a sport scientist may be biologically universal, its

fulfilment is represented in the cultural specifications acquired. That is, the accumulation of secondary information specifying *for one about* what it means ‘to know’ in order ‘to function’ *as* a sport scientist. This, we suggest, is to *script one’s life*; mapping where one is against prior-established conventions that dictate where they (putatively) should be.

Though, in following this model of potential fulfilment, we quickly encounter some problematic implications. The first is the presumption that human existence is founded on two parallel worlds: the biological (potential / organism) and the cultural (fulfillment / person). In reality, there is only one world (Ingold, 2018), and all organisms inhabit it (Gibson, 1979, p. 130 ff.). This is a world co-determined by actions of inhabitants, which from an ecologically dynamic rationale, are reciprocally shaped by those of others (Heft, 2007; Lave, 1990; van Dijk, 2021). Indeed, we are not denying that humans inhabit a world with signs, pictures, words and systems of classification. Nor that genomes circulate multicellular matrices within all organic matter, including humans. Our argument is that such things *do not* pre-determine, nor specify, what it means for one ‘to be’, as if such things are encoded with information waiting to somehow be decoded by a passive recipient. Such pre-determinism disregards the key idea that *context is everything* (Juarrero, 2023). Instead, human behaviour continuously emerges as a relational property within the dynamic constraints of the environment and tasks people undergo through the lifecourse (Juarrero, 2023). The complementary, transmissive model, thus fails to account for the *ontogeny of human development* (Oyama, 1985): how humans grow in richly structured environments that continually come-into-being-with-others (Ingold, 1998; 2004; 2015, ch. 23; Thelen, 1995). Stated differently, if life was to be lived as a progressive filling up of an ‘information gap’ (see Geertz, 1973, p. 50), how *responsive* could one be to the varying experiences of others encountered along the way? Would they not be destined ‘to be’ what was pre-specified for them, first by way of genetic inheritance, and then by way of cultural transmission? If this were so, how would one find their way through events ‘off-script’? After all, as Ingold and Hallam (2007, p. 12) emphasise, a system strictly bound to the execution of a pre-specified plan would be unable to *respond*, being thrown off course by the slightest perturbation.

202 This points us toward the second problem of such a model: its presumption that knowledge *pre-exists*
203 its practical engagement with the world. If true, knowing would have to be tantamount to
204 *classification*; a view aligned to the *complex-structure* metaphor introduced by David Rubin (1988).
205 According to such, knowledge is viewed as the instillation of a concept or representation determined
206 prior to its application in various contexts (see Woods & Davids, 2022, p. 6). Meaning that for one ‘to
207 know’, they must be able to establish some type of match between the representation transmitted
208 and the object that is of concern in their surrounds. It is to imply that knowledge:

209 [...] takes the form of a comprehensive configuration of mental representations that has been
210 copied [transmitted] into the mind of the individual, through some mechanism of replication, even
211 before he or she steps forth into the environment. The application of this knowledge in practice
212 is, then, a simple and straightforward process of sorting and matching, so as to establish a
213 homology between structures in the mind and structures in the world” (Ingold, 2011, p. 159, text
214 in brackets added)

215 This leads to a pre-determined view of the world, static and complete, filled with objects waiting to
216 be known about by way of classification into prior formed disciplinary frameworks or familiar classes.
217 Though, as eloquently shown by sociologist of science David Turnbull (2008), it is not enough to know
218 by applying systems of classification onto similar tasks, given changes in environing circumstances,
219 even in strictly controlled laboratory settings. Specifically, Turnbull (2008) noted the difficulty
220 scientists had in attempting to recreate the TEA laser developed by Bob Harrison in the late 1960s
221 using only published methodologies and other sources of secondary information purportedly
222 describing its procedures. This is because what had not been considered in such secondary
223 information were the effects of locally nuanced differences between distinct laboratory settings in
224 which the procedures were being applied. For this very reason, it was not enough for the scientists to
225 proclaim ‘to know’ simply by possessing the methodology. Doing so, according to Blumberg and
226 Wasserman (1995), would be to commit the ‘nomological fallacy’: believing that naming and

classifying something is tantamount to knowing and explaining it. Acquiring a recipe, in other words, does not mean one can actually *cook* a meal, in much the same way acquiring a map does not mean one actually *knows* the terrain. Such a sentiment is heeded by the words of philosopher of science Joseph Rouse (1987, p. 72), who proclaimed that “[s]cience is first and foremost knowing one’s way about in the laboratory (or clinic, field site)”. Stated differently, one has to learn to actively participate within their surrounds before procedures, rules or systems of classification can be applied. Discussed in the following sections, this viewpoint encourages a shift from the transmissive model of potential fulfilment, toward a more generatively relational account of what it means to find our way along. To start this shift, we pick up from Turnbull’s observations, contending that knowing is not established before we go, waiting to be applied in practice, but is grown *as* we go, in moving from place to place.

To know

In advocating against complementarity, Ingold (1998) introduced the principle of obviation. This principle takes as its starting point that humans are *both* biological and cultural, constituting a locus of ongoing growth within structured environments inhabited alongside others. Humans are not, in other words, ‘organism’ (biological) *plus* ‘person’ (cultural), but are “*organism-person* within a nexus of environmental relations” (Ingold, 1998, p. 26, emphasis added). By doing away with the biological and cultural dichotomy associated with complementarity, the principle of obviation eschews the inter-generational transmissive metaphor, as it is not the ‘passing on’ of innate and acquired content that specifies what it means ‘to be’. Rather, ‘being’ is ongoing and ever-emergent, resultant from complex, dynamic and self-organising relations established and sustained with others (Oyama, 1985, also see Ingold, 1998, p. 25). “Real people”, Ingold and Hallam (2007, p. 6) contend, “continually create themselves and one another, forging their histories and traditions as they go along”. If anything is ‘transmitted’, it is the alignment of one’s perception to the movements of a more experienced companion adaptively finding their way through the ebbs and flows of various tasks. Thus, what fosters one’s coming-into-being is not the backward reading of a transmitted code or representation, but the *forward reading* of activity *joined with*.

253 To exemplify, humans are indeed not born readily to be sport scientists, nor any other role. These
254 skills are continually learnt, oft under the guidance of experienced companions while situated within
255 a structured environment affording opportunities to partake in such practice. It is biological, as one's
256 actions when partaking in such practice are part of their form of life as a human. And it is cultural, not
257 because its expressive value is adjudged based on a corpus of secondary information passed on from
258 predecessors, specifying what it means 'to know *as*'. But because such practice unfolds in *response* to
259 the presence and experiences of others within dynamic environments (Woods & Davids, 2022).
260 Simply, it is not the transmission of genetic and non-genetic information that creates the essence of
261 what it means 'to be' a sport scientist, but an *ongoing co-respondence with others encountered along*
262 *the way* (Woods et al., 2022a). Following this line of thinking would mean that 'being' a sport scientist
263 has no pre-determined end, no point of fulfilled potential. It would rather *carry on*. Knowing, then,
264 would be to primarily experience things in-becoming, watching, listening, and feeling while moving
265 along, together.

266 In contrast to the *complex-structure* metaphor, this aligns to what Rubin (1988) referred to as a
267 *complex-process* metaphor. People, according to such, do not apply their knowledge in practice by
268 way of classification, so much as *know by way* of their practice, joining with the activities of more
269 experienced companions to see, feel, hear, taste and smell things for themselves³. In his seminal text
270 *Art as Experience*, John Dewey (1934/2005) drew similar lines. For one to *really* know that which is of
271 concern, Dewey contended, they need to "begin with it in the raw; in the events and scenes that hold
272 the attentive eye and ear [...] arousing interest and enjoyment as one looks and listens" (p. 3). Dewey's
273 example was that of a plant, arguing that if one wanted to know its flowering tendencies it would not
274 be enough to simply *recognise* its features: matching what was looked at against a prior formed
275 scheme representing it. For in doing so, one would risk moving toward a narrowing point in which

³ In the chapter *The Culture of Acquisition and the Practice of Understanding*, Jean Lave (1990) refers to this as "understanding in practice". Knowing, according to this perspective, occurs "in situations whose specific characteristics are part of the practice as it unfolds" (p. 19).

there is nowhere further to go; occupying a world of *objects* that have all been categorised away into their pre-specified familial classes. The caveat to such a view is that we do not occupy a created world of objects, but *inhabit a crescent world of things* (Heidegger, 1971; Ingold, 2011; 2015, ch. 3; Woods & Davids, 2022). The difference between these statements is critical to our theorising, and requires elaboration before carrying on.

First, the contrast between ‘occupancy’ and ‘inhabitation’ relates to the extent of correspondence between the observer and the observed. For example, the former implies a distance, a removal in which one documents and records features from afar, being careful not to engage with what the observed has to say. In the sport sciences, such occupancy is common in research practices that follow the hypothetico-deductive theory of scientific method, manifest in researchers focusing on data collection or recorded observations used to ‘prove or disprove’ hypotheses determined *a priori* (Woods & Davids, 2022). There is little room in such an approach to *listen* to the storied coming-into-being of what is observed, viewed instead as an ‘object of analysis’ waiting to be classified away⁴. Conversely, inhabitation is deeply immersive, in which an observer actively participates within the broader ecology of the observed, knowing by way of *participant observation*⁵:

“[...] to the *occupant* the contents of the world appear already locked into their final forms, as though they had turned their backs on us. To *inhabit* the world, by contrast, is to *join in* the process of formation.” (Ingold, 2013, p. 89, emphasis in original and added)

Second, the referral to a ‘created world’ imbues a view of a static surround, in which everything encountered is already locked into its final form, independent of its engagement with everything else. This is a world of ‘objects’, fixed and bounded; facts waiting to be explicated by way of classification. A

⁴ This is especially noted in research that ascribes the label of ‘talent’ to youth sports participants based on deterministic models of ‘identification’ and ‘development’. See Ribeiro et al. (2021) for a detailed overview of such criticisms.

⁵ For a detailed overview of participant observation as a way of knowing in sport science, see Woods and Davids (2022).

297 'crescent world', however, is dynamic, suspended on the cusp of becoming. It is a world replete with
298 'things' that are "always in the making" (Jackson, 1996, p. 4):

299 "The thing about *things*, is that far from standing before us as fait accompli, complete in itself,
300 each is a 'going on' – or better, a place where several goings on become entwined [...] It is a
301 gathering together of *materials in movement*." (Ingold (2011, p. 315, emphasis added)

302 How one comes to know 'things' in a 'crescent world' is not by way of classification based on a corpus
303 of transmitted secondary information, but by *directly perceiving* and *primarily experiencing* the very
304 conditions that sustain its ongoing growth; seeing, smelling, tasting, feeling and hearing what it has to
305 share (Dewey, 1934/2005; Gibson 1979/2015). It is, in other words, to join with the generative
306 conditions of life (Ingold, 2016), appreciating that every-*thing* we encounter and directly perceive, is
307 some-*thing* on its way to becoming some-*thing* else, 'us' included. A wonderful example of this in
308 science is noted in the work of biologist, Barbara McClintock⁶. By moving from an occupant with an
309 organism-centric focus, toward an inhabitant focusing at the ecological scale of the organism-
310 environment relation, McClintock made seminal, paradigm shifting discoveries in the field of biology.
311 This manifest in McClintock 'not pressing nature with leading questions, but dwelling patiently with-
312 in the complexity and variety of organisms [...]. What for others was interpretation, or speculation,
313 [for McClintock], was a matter of trained *direct perception*' (Henry, 1997, p. 158, paraphrased).
314 Appreciating this, it would not be enough for a sport scientist to proclaim 'to know' by way of enacting
315 secondary information specifying *for* them *about* what it is they are *looking at*. Rather, they would
316 need to join with the broader ecology of what sparks their curiosity, following along in correspondence
317 (Camiré, 2022; Despret, 2013; Woods et al., 2022a). This process would be to grow with and into one's
318 knowledge by finding their way along a *path of participant observation*, a path that *opens up* and

⁶ For a detailed recount of McClintock's seminal work and approach to inquiry, see Henry (1997).

319 *carries on* in response to others (Morris et al., 2022). Given this open-endedness, how would such an
320 epistemological shift implicate our understanding of potential and fulfilment?

321 **Finding our way along**

322 Recall that within our prologue, I (the first author) spoke of how some within my homely discipline of
323 sport science may consider me lost, perhaps even dwelling in places that sport scientists are typically
324 not seen. To this, I responded in the negative, emphasising that I – along with colleagues – have simply
325 been following the scent of things that have sparked our curiosity, moving through the various places
326 in which they have led. Such a journey is less about fulfilling our potential *as* sport scientists, and more
327 of continually finding our way, creatively improvising a path ahead by corresponding with the coming-
328 into-being of things encountered. This is a journey captured by what Tim Ingold (2007, p. 78) refers to
329 as *wayfaring*.

330 To start, it is worth briefly contrasting wayfaring to transport, as the two are ontologically and
331 epistemologically distinct. Transport is *destination-oriented*; it starts with an end in mind (Ingold,
332 2007). The journey in-between is simply a means to an end, a mode that carries one *across* in order
333 to arrive *at*. For example, when one sits on a train to reach a destination oft established before they
334 leave the station, the journey is typically of little concern, with the train transporting the passenger
335 across the landscape on the shortest possible route to reach their destination in the fastest possible
336 time. Location, during such moments of transport, is commonly specified *for* the passenger by some
337 type of indirect, augmented information – perhaps gleaned from timetables, announcements, a map,
338 or a global positioning device – that updates them *about* their current position relative to the
339 coordinates of a pre-determined route or destination (see Gell, 1985, p. 280). Given this point-
340 indexicality (Woods, 2021), knowledge could be understood in a similar way to that denoted by the
341 *complex-structure* metaphor: knowing where one is by matching their position relative to a pre-
342 established point in space. Transport can, therefore, be epistemologically aligned to the genealogical
343 model of potential fulfilment: potential being the place one starts their journey, fulfilment being the

344 pre-determined end they navigate toward by following the rules, representations and systems of
345 classification that specify *for* them *about* where they *should* be. It is a view surmised by Edwin Hutchins
346 (1995, p. 286):

347 “When the navigator is satisfied that he [*sic*] has arrived...he [*sic*] might look to the chart and say
348 ‘Ah, yes; I am here, off this point of land.’ And it is in this sense that most of us feel we know where
349 we are. We feel that we have achieved reconciliation between the features we see in our world
350 and a representation of that world.”

351 Wayfaring, comparatively, is *journey-oriented*; there is no end in mind, no terminus to be destined,
352 no potential to be fulfilled. It is open-ended, with the wayfarer continually being on the move, or as
353 Ingold (2007, p. 78) eloquently surmises, they *are* their movement. Far from being a static space to be
354 transported across, the environment, to the wayfarer, is a dynamic place to *move along with*,
355 sustained by corresponding with that which sparks their curiosity (Ingold, 2007, p. 78). Accordingly, in
356 contrast to transportation, where location and movement are mediated indirectly, it is the
357 attunement of the wayfarer’s movements in *response* to the informational ebbs and flows of events
358 in an environment that affords the opportunities for them to carry their voyage on (Ingold, 2000). In
359 other words, there is no mentalistic separation between the deeply integrated wayfarer and the
360 environment they inhabit, which means that the more dynamic and richly variegated the
361 environment, the easier it is for the wayfarer to directly perceive the changing layout and find their
362 way through. After all, in an environment “where nothing moves there is nothing to which one can
363 *respond*” (Ingold, 2000, p. 242).

364 In contrast to the transmissive genealogical model, we propose wayfaring as an alternate description
365 of one’s journey in-becoming, citing four key principles. First, it is *generative*: giving rise to form as
366 people creatively improvise a path ahead. Second, it is *relational*, sustained co-responsively with and
367 alongside others. Third, it is *temporal*: carrying on in rhythmic procession guided by the tight coupling
368 of perception and action. Fourth, it is *animated in what we ‘do’*: manifest in the dexterous practice of

everyday tasks⁷. Each principle, discussed next, is exemplified through our journey as sport scientists in-becoming.

Wayfaring is generative

Since it is journey-oriented, wayfaring always overshoots destinations (Ingold, 2011). In fact, as the world is crescent, suspended in-becoming, destinations are somewhat indeterminable, always open to possibility. Finding one's way is not a matter of passively following a script or route laid down by another, but is "to advance along a line of growth, in a world which is never quite the same from one moment to the next, and whose future configuration can never fully be known" (Ingold, 2000, p. 242). Given this dynamism and indeterminacy, wayfaring requires "a good measure of *creative improvisation*", forging a path ahead by attending directly to things as they occur (Ingold, 2011, p. 162, emphasis added). Do not misread us here: people do follow the actions of more experience companions, and they may even follow methodologies, recipes or sets of instructions when attempting to learn particularly unfamiliar tasks. Our contention, though, is that it is not the passive following of a script laid down by another that regulates a wayfarer's behaviour, but their ever-emergent attentive responsiveness to the movements of others within dynamic environments (Woods et al., 2020). Following another's movement, otherwise stated, is a way to help orient oneself toward the pick-up of key specifying information, which means that the skill of the wayfarer resides not within mindless automation, but in the actively tight coupling of perception and action (Gibson, 1979/2015).

To exemplify, I (the first author) am a less experienced academic sport scientist to that of my co-author. This means I often find myself observing the ways in which they skilfully undertake various tasks, like responding to reviewer comments when publishing academic works. This observation is *not* an emulation or replication of 'the' way one 'must' respond, as if residing beneath what is being

⁷ We have drawn inspiration for this section from the opening chapter of *Creativity and Cultural Improvisation*, written by Tim Ingold and Elizabeth Hallam (2007). While these authors situate 'improvisation' beneath similar principles, to us, they equally relate to wayfaring given their ecological grounding.

observed is a representation waiting to be decoded, specifying *for me about* how to undertake such a task. Rather, by observing them closely in practice – seeing and hearing them work – I am educating my attention⁸ toward the specifying information they are attuned to, allowing me to align my perception to the dynamics of the task, as they do. Though, just as the world is never settled, no two reviewer comments are ever the same, which means that even as the task becomes more familiar to me, I still have to adaptatively find a way forward, creatively improvising a path by adjusting how I respond to insights cast forward by the reviewer. This is not autonomous, nor mindless, but requires a carefully attuned perceptual system trained toward the ‘pick up’ of information that guides the way forward. Accordingly, as no two tasks, no matter how similar or familiar, are ever the same, the form of things – like a reviewer response letter – emerge as people creatively improvise a path ahead, guided not by a transmitted representation, but by a trained perceptual system (Gibson, 1979/2015).

Wayfaring is relational

Following along from the above, wayfaring is thus not indirectly regulated by a series of transmitted representations. It is achieved *directly* through the attunement of one’s entire perceptual system to ongoing changes in environing and task dynamics (Ingold, 2011; Gibson, 1979/2015). More specifically, through *responding* to such changes, wayfarers open up the possibility of carrying on. Elsewhere, we have explained this responsiveness through the intransitive verb ‘commoning’ (Woods et al., 2022a, also see Ingold, 2018, and Menzies, 2014). People, in following this relational concept, do not start life innately ‘having in common’. Instead, it is an aspiration, something people continually strive toward through a responsiveness directed toward various experiences cast forward by others. It is a process, according to Ingold (2018, p. 38, emphasis added), that entails:

⁸ See Gibson (1979/2015) and Ingold (2000).

“[...] an attentive stretch whereby every participant casts their experience forward in ways they can answer to the experiences of others, and they likewise, so as to achieve a *correspondence* that goes *beyond* what any of them could have imagined at the outset”.

As implied in the above excerpt, corresponding dissolves ends into new beginnings, opening further opportunities for people to carry their lives on with one another. Differing to the verticality of an interaction detailed earlier, correspondence follows what Ingold (2016, p. 18) refers to as a longitudinal directionality. Think, for example, of people walking side-by-side while immersed in conversation. The flow of this correspondence literally moves along longitudinally, carrying on for as long as the conversation is sustained. Indeed, such conversations come to an end, though these ends are not points of closure, but openness. This is because the doing of a conversation always overflows, in that we are a somewhat different person upon entering into the next (Dewey, 1966). Contrast this to a face-to-face interaction in which people talk at and to one another, as if in debate. Ends, in such moments of interaction, are oft pre-established based on a pre-determined agenda (see Ingold, 2016). It is best, then, to think of correspondence more harmonically, with participants attempting to resonate with one another by casting experiences out. This means that as one makes their way through the world, corresponding with the experiences of others, they actively contribute to the very conditions that sustain growth by casting forward their experiences in ways that can be harmonically responded to by another (Woods et al., 2022a). This means that for the wayfarer, there would be nowhere further to go if there was no-*thing* for them actively correspond *with*. Stated differently, in a static, homogenised environment in which varied experiences remain uncast, there would be nothing to which one could resonate (Ingold, 2000).

Take this very paper. It was not activated mechanistically, as an isolated, disciplinary idea housed to my (the first author's) mind, waiting simply to be written up by a passive body. It progressively emerged as *we* (both I and the co-author) conjoined our varied experiences, cast forward in responsive ways over prolonged periods of correspondence. Where we find ourselves now is a place somewhat

unscripted and uncharted, as rather than starting with an 'end in mind' to which we navigated toward through interaction, we have been following the inquiry together in its unfolding, creatively improvising a path by selectively responding to the various experiences shared along the way. By default, then, this paper has no start (i.e., potential), nor end (i.e., fulfillment). It is an ongoing inquiry issuing forth along a line of harmonic growth that is sustained by the conjoining of experiences forged in correspondence. Wayfaring, then, is relational, *precisely because it can only carry on in correspondence with and alongside others.*

Wayfaring is temporal

In the genealogical model of potential fulfilment, life is surmised as a point-to-point sequence of instants, rooted in the metaphor of inter-generational transmission. This perspective is a process of replication, a backward reading of movement regulated indirectly by secondary information. Indeed, there is a temporality associated with such a model, a metronomic kind where people are destined to replicate that which has been transmitted to them by those gone before. The problem of understanding temporality in such a way, is that in a crescent world of things that are never settled and always open to possibility, replication would have to be *imperfect*. "No repeating system in the living world can be perfect", Ingold and Hallam (2007, p. 10, emphasis added) state, "and it is precisely because imperfections in the system call for continual correction that *all repetition involves improvisation*". For this reason, the temporality of the wayfarer is not metronomic, connecting up points in a sequence of interactive transmission, but *rhythmic*, issuing forth along a line of growth in which activity is read *forward* manifest through the tight coupling of perception and action (Ingold & Hallam, 2007). Following philosopher Henri Bergson (1911, p. 4-5, emphasis added), this rhythmic temporality can be understood as *duration*:

"Our duration is not merely one instant replacing another; if it were, there would never be anything but present – no prolonging of the past in the actual [...] Duration is the *continuous progress* of the past which gnaws into the future and which swells as it advances".

Life, for the wayfarer, is an ongoing rhythmic movement, a duration in which experiences undergone are bound together while simultaneously cast out along a line of growth, directed toward an undetermined future. As an aside, given its grounding in ecological psychology, time for the wayfarer is not directly perceived, but events and locomotions are (Gibson, 1979/2015). This perspective contrasts with conventional understanding of time in the physical sciences as flowing equably, independent to anything else. To the wayfarer, though, events do not occur in space, “but in the medium of an environment that is rigid and permanent” (Gibson, 1975, p. 295). Events should be thought of here as ‘primary realities and time as an abstraction for them, not, as convention would have it, the other way around’ (Gibson, 1979/2015, p. 93 paraphrased). This nuance helps us to appreciate that the undergoing of events we experience *overflows*, in the sense that whatever the wayfarer does next will be shaped by that which they have already undergone (Dewey, 1966). Indeed, there is a repetition associated with this duration, but echoing the words of Nikolai Bernstein (1967, p. 234), it is a ‘repetition *without* repetition’: meaning, the wayfarer’s search for behavioural solutions is *guided* by experiences undergone, not (pre-)determined by them. For this reason, it is appropriate to say that wayfarers do not know *more* as they go, implying the storage of information to be rolled off in future states, but that they know *better*, manifest through an ever-attuned coupling of perception and action to the informational ebbs and flows of a dynamic environment that is never the same from moment to moment.

To exemplify, the flow of the various works cited within our prologue that ‘we’ (the broader authorship team) have written in recent years has a temporality similar to the durational rhythmicity described here. These works are not perfectly synchronised, each precisely picking up where the other left off like a sequence of instants, forming a pre-programmed network of literature. Rather, each are imperfect knots, that when threaded together, form a broader *meshwork* of inquiries (Ingold, 2011; Woods, 2021). What makes these knots imperfect is that they consist of *loose ends*, each slightly different to those gone before, given the varied experiences we have undergone in their threading (Woods & Davids, 2022). This imperfection, though, is not something to be artificially smoothed over,

nor should it be looked upon negatively, as it is precisely in these loose ends where possibilities of carrying the meshwork on *open up*. After all, if these works did in fact precisely fit in place, connecting up to generate a ‘watertight network’, then there would be nowhere further for us to go⁹. Accordingly, what sustains our growth as sport scientists in-becoming, is not a metronomic sequencing of instants, but a rhythmic weaving of threads; an ongoing duration that has led us to where we are now.

Wayfaring is animated in what we ‘do’

To the wayfarer, life is unscriptable. It cannot be codified into systems of classification waiting to be passed on into the receptive mind of other. This is because a hardened system of classification cannot pin down a fluid reality. For the wayfarer to carry on, they have to join with these formative processes, attentively responding to ongoing changes in both environing and task dynamics. Though, while life may indeed be unscripted and unscriptable, it does not seem to preclude organisations, institutions or governing bodies from attempting to script it through the establishment of rules, plans and conventions that seek to control the functioning of others, oft in the name of efficiency (Reed, 1996). Think, for example, of the common myth in sports coaching that people must learn the ‘fundamentals’ of a game – fitting in by replicating prior-established ‘ways of moving’ – before they can ‘efficiently’ and ‘correctly’ play it (see Rudd et al., 2021). Skilled response, though, is not attributed to the passive following of rules or rigid following of a plan. It requires a tight coupling of perception and action to the most subtle of changes in task and environing conditions, a coupling that can only be learnt by *doing for oneself* (Ingold, 2013, ch. 1). What distinguishes a skilful practitioner from their novice counterpart, then, is not a mind filled with codified knowledge about their respective task specifying for them about ‘how to do’. But an attentiveness that sees them respond to, and join with, the unfolding task dynamics with care, sensitivity, precision and dexterity.

This is a distinction denoted through what design theorist David Pye (1968) referred to as the ‘workman of certainty’ and the ‘workman of risk’. The former is indicative of transport, in which one

⁹ See Ingold (2014, p. 390) for a critique detailing the pitfalls of an “interconnected world”.

proceeds across a pre-determined route toward a destination identified prior to departure. For the workman of certainty, movements are mechanically constrained by autonomously following what has been prescribed for them. This means that they “cannot alter course in mid-flow, but must stop, alter the settings of the apparatus, and start again” (Ingold & Hallam, 2007, p. 13). Changes in one’s direction of travel can thus be surmised as a series of stop/starts: stopping to match what one is doing against how it ‘should’ be done, adjusting what is needed, and then starting their sequence of movement again. The latter, however – the workman of risk – is the way of the wayfarer. They carefully respond to the unfolding ebbs and flows of a crescent world in order to keep going. Importantly, this response is not just embodied, but *animated in-motion* (Sheets-Johnstone, 2010). This means that the workman of risk appreciates that at any moment, their task could alter course, requiring them to dexterously and adaptatively respond *as they go* (Bernstein, 1967). There is a submission in this dexterous response, an appreciation that in a crescent world, perceived control is a falsity, even in seemingly repetitious tasks. This is crucial for the wayfarer, as it is what keeps them openly responsive to the unfolding fluctuations of the task and environment.

As noted within our prologue, I (the first author) did not plan or set out to be ‘here’. In fact, when questioned about my ‘five-year research plan’, I have shared feelings of unease and confinement (cf. Woods et al., 2022b). This, though, should not be misconceived as aimless drifting. I do have an intended direction of travel, just not a pre-determined route or an end in mind. Leaning again on the process of this paper’s coming-into-being, we did set out to challenge conventions related to ‘potential fulfillment’. We did not, however, script the paper in advance, nor collage sections together, as though they were written independently waiting to be inserted in their correct place. We have been figuring out conceptualisation, meaning and communication as we have gone, manifest in weaving words into words, sentences into sentences, paragraphs into paragraphs. In realising these smaller-scaled affordances while working, we concurrently held open the larger-scaled opportunity to keep the paper going in a direction determined as we went. Perhaps it is appropriate to view the ‘page’ you are reading, then, in its Latin origin – *pagus*; an inhabited countryside (Illich, 1991) – with our writing being

the tracks formed as we have found our way through. Doing so would mean that our paper has literally animated its very message – navigating not toward a point of fulfilment, as though we started with it already completed, but wayfaring along an undulating path formed as we have gone, established in and by our *doing together*. It is only now, in looking back, that we are able to see the path left behind, a path that others may or may not want to follow. Wayfaring, thus, is animated in what people ‘do’, *precisely because what people ‘do’ is always open to the possibility of a crescent world*.

Concluding remarks

Here, we set out to challenge conventional interpretations of what it means to fulfill one’s potential. Specifically, it was proposed that life is not a process of ‘filling up’ the innate with the acquired, but one of ‘opening up’, corresponding with the coming-into-being of affordances encountered along the way. Leaning on Ingold’s notion of wayfaring, this idea led us to situate life as an ongoing rhythmic procession, of skilfully moving through a crescent world open to possibility. It would be remiss, and perhaps even contradictory, to now suggest that our paper is coming to an end. For in doing so, we would risk tying off any loose ends exposed, proclaiming that this paper is ‘done’, ‘complete’, there is nowhere further for it to go. The reality is that while its writing is coming to a pause, the paper is positioned to now be responsively cast out into the world, waiting to be joined with by attentive others who happen to stumble into it while moving along their path of growth. As Withagen and colleagues (2012, p. 254) note, inhabiting a diverse affordance landscape provides multiple opportunities for system trajectories with ‘inviting potential’, contrasted with a (de)‘limited’ affordance landscape, replete with prescribed pathways to pre-determined outcomes. Maybe it is best to think of our paper in similar terms? Not as coming to an end – a ‘prescribed outcome’ – but as an affordance with ‘inviting potential’ that is on its way in becoming something else?

As a departing note, we wish to return to our journey as sport scientists in-becoming, following not the objects of convention, but corresponding with things of curiosity. Where is this correspondence to lead us next? While we have a direction of travel, this is a question we cannot answer, as where we

564 are going is somewhat uncertain, open to the possibility of what could come-into-being. There is a
565 trepidation associated with this openness and uncertainty, a risk that at any moment, our journey
566 could alter. Though, this trepidation is not because we are trying to 'stay the course', impatiently
567 moving toward a point of fulfilment *as* sport scientists. To us, such a point does not even exist. Rather,
568 our trepidation can be traced to our itchy feet, our eagerness to carry on, to pack up our tents and
569 responsively follow the scent of what is on the horizon, guided by experiences undergone. After all, in
570 a crescent, unscripted world replete with things on the move, there are no dead ends, just renewed
571 beginnings, further opportunities to get to know that which is of interest to us better than before.
572 Echoing the eloquently inspiring words of Tim Ingold with which we opened: what matters in life is
573 not the final destination, but all the interesting things that occur along the way. For *wherever you are,*
574 *there is somewhere further you can go.* Best then, we carry on.

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