

On a Corresponsive Sport Science.

WOODS, Carl T <<http://orcid.org/0000-0002-7129-8938>>, ARAÚJO, Duarte and DAVIDS, Keith <<http://orcid.org/0000-0003-1398-6123>>

Available from Sheffield Hallam University Research Archive (SHURA) at:

<http://shura.shu.ac.uk/32957/>

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

Published version

WOODS, Carl T, ARAÚJO, Duarte and DAVIDS, Keith (2023). On a Corresponsive Sport Science. Sports medicine.

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

1 On a corresponsive sport science

2

3 **Carl T. Woods^{1*}, Duarte Araújo², Keith Davids³**

4

5 ¹Institute for Health and Sport, Victoria University, Melbourne, Australia

6 ²CIPER, Faculdade de Motricidade Humana, Universidade de Lisboa, Cruz Quebrada, Lisbon,

7 Portugal

8 ³Sport and Human Performance Research Group, Sheffield Hallam University, Sheffield, UK

9

10 *Corresponding Author

11 Carl Woods, Institute for Health and Sport, Victoria University, Melbourne Australia

12 Email: carl.woods@vu.edu.au

13 Abstract

14 In our societally extractive age, sport science risks being swept up in the intensifying desire to
15 commodify the experiences of those that scientists proclaim to study. Coupled with the
16 techno-digital revolution, this stems from a vertical (onto)logic that frames the sporting
17 landscape as a static space filled with discrete objects *waiting for us* to capture, analyse, re-
18 present and sell on as knowledge. Not only does this commodification degrade primary
19 experience in the false hope of epistemological objectivity, it reinforces the unidirectionality
20 of extractivism by setting inquirer apart from, and above of, inquiry. Here, we advocate for a
21 different, more sentient logic grounded in the relationality of gifting as understood in
22 Indigenous philosophies. This foregrounds an ecological orientation to scholarship that sets
23 out neither to objectify or describe that which is of concern, but to *correspond with its becoming*.
24 On this, there are three threads we cast forward. First, in a corresponsive sport science,
25 inhabitants are not objects of analysis, but *lines in-becoming*, who in answering to others, form
26 *knots in a meshwork*. These knots constitute communal places in which inhabitants have joined
27 with the differentiating coming-into-being of others. Second, knowledge is not authoritatively
28 (re)cognitive, but *humbly ecological*; not produced vertically through imposition, but *grown*
29 *longitudinally in responsively moving from place to place*. Third, research does not follow a
30 vertically extractive (onto)logic, but is a practice of *participant observation*. This perspective
31 appreciates that we, sport scientists, are also lines in-becoming that form parts of the knots in
32 which we seek to know. In coda, our thesis is not a call for more qualitative or applied research
33 in the sport sciences. It is a call to response-ably open up to that which sparks our curiosity,
34 answering to what is shared with care, sensitivity and sincerity.

35 **Key words:** Ecological; Gift logic; Knowing; Extractivism; Response-ability; Correspondence

36 Key points

- 37 • We sketch an ecological orientation to scholarship that sets out neither to objectify or
38 describe that which is of concern, but to *correspond with its becoming*.
- 39 • We ground this sketch in the relational episteme of gifting as understood in Indigenous
40 philosophies.
- 41 • Three threads to a corresponsive sport science are cast forward: i) inhabitants are not
42 objects of analysis, but *lines in-becoming*, who in answering to others, form *knots in a*
43 *meshwork*; ii) knowledge is not authoritatively (re)cognitive, but *humbly ecological*; not
44 produced vertically through imposition, but *grown longitudinally in responsively moving*
45 *from place to place*; iii) research does not follow a vertically extractive (onto)logic, but
46 is a practice of *participant observation*.

47 1. Prologue: The gift of a communal garden

48 I¹ (first author) grew up not too far from a communal garden. Located on Kaurna Land, this
49 was a place where seasonal fruits and vegetables were planted, harvested and cared for by
50 inhabitants, many of whom were neighbours and friends. Accompanying this garden was a
51 wooden sign that read: “*a place for all, looked after by all, nourishing for all*”. The use of ‘all’ on
52 this sign was apt, as the garden constituted a rich multispecies entanglement – a meshing of
53 various plant and microbial life, with humans, birds, small mammals, reptiles, insects, fungi and
54 worms. There were no rules or regulations governing how this place was to be sustained, as
55 no authority controlled it. Rather, inhabitants learned to care for the garden *together*, educating
56 each other’s attention to subtle variations of an unfolding ecology they were a part.

57 Unbeknownst to me at the time, this would be my first experience of a genuinely communal
58 place – a commons. In the exceptional text *Reclaiming the Commons for the Common Good*,
59 philosopher-activist Heather Menzies [1] defines such a place as “a habitat of
60 interrelationships, bound by mutuality: mutual obligation...and also, hopefully, affinity” (ch.
61 13). This is precisely what the garden was to the community in which I grew up; a place
62 sustained by the responsive actions of those who cared. Because of this, it was not just a site
63 of fruit and vegetable production; it was a place in which *gifts were shared*². This logic was
64 seminal for me; when you view things as gifts, your relation with them profoundly changes. It

¹ The grammatical use of singular pronouns “I” and (forthcoming) “me” do not denote a separation from the world. Rather, “I/me” constitute a posthuman self, in which “I/me” am always unfolding *with-in* a field of relations [2 (p. 15)]. The use of such pronouns are grammatical conventions of communicating in the first person. In a similar vein, the forthcoming collective pronouns “we”, “us” and “our” do not refer to a conformed view of humankind; a homogenised universal. They appreciate a profoundly diverse and uneven multiplicity of human (and nonhuman) becomings in the sport sciences and beyond [2-5].

² Gifts would often take on varying temporalities and materialities, and were not anthropocentric. This logic was better reflective of a worldview that called for our responsibility to the land in which the communal garden resided. This perspective stemmed from the cascading question: *what gave its life for ‘our’ garden to grow?*

65 led to a gratuitousness that kept me from taking more than was needed, while concurrently
66 opening an invitation to reciprocate: *to give back to the garden that gave to us.*

67 In our societally extractive age, characterised by anthropocentrism, capitalism, individualism,
68 entho-centrism and datafication [6], the environment and its inhabitants are typically
69 perceived resourcefully, as commodifiable objects used to further ways of life replete with
70 social and ecological degradation [2, 7]. A garden like the one described here is, thus, now a
71 rarity. In fact, I have not encountered such a place since leaving home many years ago. This
72 is why upon returning more recently, I was deeply saddened to see that it had been covered
73 over by concrete, the land ‘purchased’ by a body-corporation who had turned it into a carpark
74 estate. Somewhat ironically, the wooden sign denoting its communality had been removed,
75 replaced with an authoritative notice dictating it illegal to park in the estate for more than an
76 hour at a time. I bring this to your attention, as it reflects what Menzies [1] refers to as:

77 “a shift from a society and economy embedded in *social relations* and *relations with the*
78 *land* to a society and economy centred in the market and the utilitarian logic of
79 *maximising production* for market gain” (ch. 14, emphasis added)

80 We are not immune to such a shift in the sport sciences. Phrases like ‘data mining’, ‘knowledge
81 production’ and ‘knowledge transfer’ proliferate the field, noted in countless articles, policies
82 and in the documents of many national governing bodies and institutions³. Such phrases are
83 perverse and can be deeply problematic. They risk seeding a commodified and asymmetric
84 view of athletes, coaches, teams and organisations, situating ‘research’ as an explicit practice
85 of *extraction* – going in to harvest ‘data’ for re-presentation as ‘knowledge’. This is to deal
86 almost exclusively in what ecological psychologist Edward Reed [8] referred to as an economy

³ See [9] for an interesting critique on such a ‘productive’ account of what it means ‘to do’ sport science.

87 of second-hand information. It is a knowledge economy that not only quietens the voices of
88 those that we proclaim to study in the sport sciences, but risks an immunity to *listening*, closing
89 ourselves within an objectified surround of our own arrogant creation [1].

90 Over the years, we (the authorship) have grown uncomfortable with this objectified form of
91 extractivism in the sport sciences, leading us to (re)search for an alternate logic. Recently, it
92 dawned on me that the communal garden I attended all those years ago was offering yet
93 another gift: a thread to guide our ongoing pursuit. This would root the ethics of openness,
94 participation, generosity, reciprocation and responsibility; appreciating relationality not as a
95 unidirectional interaction between independently bounded objects, but as a *correspondence*
96 *that flows along with-in a world never settled*. To some, such a view of the sport sciences may
97 seem utopic, and arguing for it a philosophical discourse in what is anti-experiential
98 mainstream. Such sentiment, though, just speaks to the current extractive state. If we are to
99 take seriously our role in fostering conditions supportive of a communal future, then we have
100 an obligation to work toward a sport science responsive to *all*⁴. Among other things, this
101 perspective would require attunement to different ways of knowing – moving from a discourse
102 rooted in the epistemological inversion of objectification, toward an eagerness to be present;
103 coming to know things of concern by joining with their becoming, answering to what is shared
104 with care, sensitivity and sincerity. Science, after all, depends not on objectification, but on
105 observation:

⁴ Like denoted on the garden's welcoming sign, the grammatical use of "all" includes human and nonhuman beings. For recent posthumanist theorising in the sport sciences, see [10].

106 “[...] and all observation depends on *participation* – that is, on a close coupling, in
107 perception and action, between the observer and those aspects of the world that are
108 the focus of attention” [11 (p. 75, emphasis added)].

109 Our challenge is to bring this observant participation – the tight coupling of perception and
110 action – to the fore in the sport sciences. This is not a call for more qualitative, applied or
111 translated research. But a call to *correspond* with what we proclaim to study, learning directly
112 from what it has to share. Occupying a representational space above, guised under the (false)
113 premise of objectivity, it is all too easy for us to wash our hands of what is actually going on;
114 to blame those on the ground (i.e., coaches, athletes, practitioners) for not applying and
115 complying with what we have authoritatively told them. Perhaps this hierarchical occupancy
116 is one of the reasons why the integration of research has been questioned within our
117 discipline⁵? Like experienced in the communal garden all those years ago, joining *with* may
118 just be what helps us move toward a more corresponsive future; a future where we are bound
119 together *in* difference, not *by* it.

120 2. Introduction

121 *Can sport science be un-disciplined? What if instead of imposing (sub)disciplinary concepts*
122 *from afar, we joined in; inhabiting the places we studied, learning to go along with the goings*
123 *on? How would this un-disciplined inhabitation change the way we come to know things?*
124 *What possibilities could the un-disciplining of sport science open up?*

125 These cascading questions are not intended to be answered. They are more like paths of travel
126 that help us attune to ways sport science could be re-imagined. Recently, these questions led

⁵ For overviews to the limitations of instigating change through research in the sport and exercise sciences, see [12, 13].

127 us to consider research as a sustainable practice in the sport sciences [14] – a practice of
128 opening up to what is of interest, educating our attention to what it has to share by seeing,
129 hearing, feeling, smelling and tasting things *directly* [15-17]. Here, we develop this thesis,
130 sketching steps toward *a corresponsive sport science*. While by no means is this unfolding sketch
131 complete, it does present an important philosophical progression in our⁶ emerging line of
132 research, opening a path to be explored in the years to come.

133 To start, we situate the current state of mainstream research in the sport sciences within our
134 societally extractive age [2, 6]. Characterised by anthropocentrism, capitalism, individualism,
135 datafication and an ethno-centric market economy, this is an age in which the environment
136 and its inhabitants are at continual risk of objectification and commodification. Within the
137 sport sciences, this (onto)logic⁷ plays out subtly through the proliferation of second-hand
138 information, in which primary experience is transformed into ‘data’ for re-presentation as
139 ‘knowledge’ [7, 8, 18]. Through the deeply-entrenched hypothetico-deductive theory of the
140 scientific method [19], research has seemingly become a vertically integrated process of
141 *knowledge production through extraction* [cf. 11, 14, 20]. While undoubtedly fostering important
142 discoveries in the sport sciences, this inversive and extractive episteme is fundamentally
143 limited; positioning inquirer apart from, and above of, inquiry; severed from the unfolding ebbs
144 and flows of an environment in flux [20]. Not only is this perspective of research vertical,
145 extractive, unidirectional and representational, it is *unresponsive to the experiences of those it*
146 *commodifies*. There is, in other words, no gratitude for what is taken, no reciprocation for what

⁶ The grammatical use of “our” here should not be construed to denote an exclusive ownership, as if “our” research is locked away from the goings on of the world. Rather, “our” appreciates the many correspondences that continue to shape the coming-into-being of “our” ideas – from scholars in disparate fields and coaches of many different sports, to farmers in North Queensland, hiking trails along Southern coastal regions and coffees with friends. Unashamedly, “our” ideas are response-ably leaky!

⁷ The grammatical use of “(onto)logic” is intended to denote a logic of imposition, germane to extractivism. That is, a ‘logic’ to impose ‘onto’ that which we seek to produce knowledge about a performance environment through extraction.

147 is shared. Just hard facts, results and outputs, produced and sold on behind paywalls⁸, waiting
148 to be re-packaged and transmitted back to those on the ground for application in practice.

149 To counter this unsustainable extractivism in the sport sciences, we work toward a logic
150 grounded in the relationality of gifting as understood in Indigenous philosophies [21, 22]. The
151 gifting logic offered extends far beyond the mere economic exchange of objects or the
152 transmission of pre-packaged, secondary information. It is a deep and respectful appreciation
153 of our coexistence *with* the world, a responsibility to that which is shared. This is about letting
154 things speak for themselves; paying close attention such that we can *respond* with care,
155 sensitivity and sincerity [1, 15]. Thus, gifting logic opens up an entirely different way of relating
156 with the world, foregrounding an ecological orientation to scholarship that sets out neither to
157 objectify or describe that which is of concern, but to *correspond with its becoming* [14, 23]. This
158 corresponsiveness, we suggest, can foster the growth of a communal sport science, where
159 people, who are attentive to the experiences of others, *share gifts together*⁹. Community,
160 however, is not to be construed as a push for conformity, homogeneity or (sub)disciplinary
161 integration. It is a recognition of the immense variation (and profound inequality) of life that
162 constitutes an ongoing process of *differentiation* [3, 24; also see Footnote 1). Otherwise stated,
163 in a corresponsive sport science, because ‘we’ are different and ever-differentiating, *everyone*
164 *has something to give precisely because they have nothing in common*; an appreciation echoing the
165 very etymology of ‘community’ – *com-* (together), plus *-munus* (gift) [23 (p. 6)].

⁸ While we welcome the dissemination of scientific findings, the rise of ‘pop-science’ in the sport sciences and beyond exemplifies such extraction and production. Such work oft-focuses on re-packaging ‘simple’ messages that are sold onto mainstream readerships without careful consideration of the nuance entangled in the original ideas.

⁹ As mentioned in Footnote 2, gifts can take on many different materialities and temporalities. While we explore this later, we have chosen not to elaborate on what gifts may ‘be’, given it is more reflective of a worldview, not a material exchange *per se*.

166 Next, three threads of a corresponsive sport science are cast out. First, inhabitants are
167 observed, not as objects of analysis, but *lines in-becoming*, who in answering to the lines of
168 others, form *knots in a meshwork* [25 (ch. 3)]. These knots constitute communal places where
169 inhabitants have joined with the differentiating coming-into-being of others. Moreover, they
170 are not tied off, but consist of loose ends that responsively stretch out in the hope of
171 entanglement with others [26 (ch. 9)]. Second, knowledge is not authoritatively (re)cognitive,
172 but *humbly ecological*; not produced vertically through imposition, but *grown longitudinally in*
173 *responsively moving from place to place* [1, 15, 24]. This episteme flips the invasive and
174 extractive knowledge economy of the sport science mainstream – moving scientists from
175 objective bystanders who occupy a static space above, to *observant participants who inhabit a*
176 *dynamic place with* [1, 3, 20, 26]. Third, research does not follow a vertically extractive
177 (onto)logic of that which is ‘done to’ or ‘on’, but is undergone together, through the carefully
178 diligent practice of *participant observation* [20, 26]. This echoes the relationality of our
179 theorising: a corresponsive sport science is not a method to be applied in research; it is a way
180 of knowing in research. That is, only because we are *of the world* can we correspond with the
181 various things that call for our attention: *we are part of the knots in which we seek to know, not*
182 *apart*.

183 3. An extractive (onto)logic

184 In the first chapter of the book *Our Extractive Age*, Shapiro and McNeish [6] discuss how human
185 extraction of natural resource has contributed to a significant environmental crisis. Such is the
186 magnitude of this crisis and our societal role in it, some have gone as far as to (controversially)
187 suggest that we are living in a new geopolitical era, situating humankind as the major catalyst
188 to geological change [27]. While consisting of many complex features, this extraction-based
189 crisis is most noted through the advancement of industrial capitalism and colonialism

190 stemming from 17th century Europe [2], leading to the mechanisation of labour, the mining of
191 hydrocarbons, global warming, ecological degradation, social injustice, and the rapid
192 datafication of primary experience. With specific reference to the latter, this ‘advancement’
193 has bled into models of science, education, and mass communication [2], driving a teleology
194 that positions humans and other beings as resources to be mined and objectified, ultimately
195 leading to their commodification. Not only does this seriously degrade primary experience, it
196 dampens collaboration and communality in favour of production and conformity [2, 8]. The
197 extractive (onto)logic explored by Shapiro and McNeish is thus wide reaching, woven through
198 varying domains, materialities and temporalities, rendering it not only spectacularly apparent
199 through immediate environmental degradation, but also silent and hidden, manifest in “a
200 process of long dyings” [6 (p. 2), 28 (ch. 2)].

201 Such expansive views shed new light on emergent forms of extractivism, and even bring into
202 question purportedly ‘sustainable’ discourses focused on ‘green development’, ‘green building’
203 and the use of totalising technologies that attempt to ‘greenwash’ the crisis such technologies
204 risk perpetuating [6, 18]. For example, many industrial-scaled renewable energy projects still
205 follow an (onto)logic grounded in anthropocentrism and capitalism, in which the earth is re-
206 configured, and its ‘resources’ exploited and commodified, for the betterment of humans¹⁰.
207 Extractivism, thus, is more than just an act of resource exploitation and degradation; it is:

208 “a particular way of thinking and the properties and practices organized towards the
209 goal of maximising benefit through extraction...” [29, (p. 20, emphasis removed)]

¹⁰ While we use the term “humans” abstractly here, we do appreciate that such “human” betterment is not a betterment *for all humans*.

210 This definition helps us attune to how an extractive (onto)logic could concurrently play out in
211 the abuses of individual rights, affecting human well-being and flourishing. Whether as a
212 political regime, a theory, a scientific method, a principle of organisation, or an attitude that
213 “rests upon a universalizing ‘natural law’ in which the exploitation of ‘nature’ features as an
214 ontological prerequisite” [18 (p. 177)], extractivism is far more prevalent than what may be
215 assumed.

216 Recently, this (onto)logic has been unfolding in the ever-intensifying techno-digital landscape
217 through the extraction of personal data embroiled in the use of devices purported to offer
218 ‘online’ entertainment, mass communication and quick access to ‘knowledge’ [18]. Not only
219 can such personal data be stored, it can be mined and leveraged for monetization, thereby
220 situating the consumer as “both the resource for collecting data and the target of the potential
221 uses and abuses of the data collected” [18, (p. 176)]. A datum, by its very definition, is that
222 which is given – an offering. Though, what practices of digital extractivism reflect is not a
223 reception of an offering, but a taking of what is not. The erosion of individual rights can occur
224 subtly, through the collection, storage, sharing, selling or stealing of secondary information that
225 documents features about one’s life, thereby representing a major risk to the right of privacy.

226 *3.1 A hidden (onto)logic in the sport sciences?*

227 Here, the relevance of such digital extractivism in the sport sciences is explored through the
228 pervasive tendency for sport scientists to ‘collect’, ‘store’, ‘mine’, ‘process’, ‘analyse’, ‘model’
229 and ‘visualise’ *data*. Sport science, it seems, has rapidly become a (sub)discipline simply bound
230 up in the production of ‘big data’ [30], as if its collection and analysis characterise what it is
231 that a sport scientist ‘does’ [cf. 31]. Such data-centrism, though, begs the question: *how many*
232 *sport scientists are actually spending time with the phenomena they proclaim to know, not just the*
233 *datasets, harvested indirectly, that specify features about them?* Asking such a question, while

234 perhaps uncomfortable, does help highlight the oft-unspoken dangers of incessant
235 datafication. Not only does it risk degrading primary experience in favour of ‘objective truths’
236 believed to be encoded within fragmented bits of extracted data [8, 31, 32], it proliferates into
237 an economy of second-hand information, where observations rooted in primary experience
238 are transformed into data for re-presentation as ‘knowledge’ – fostering an estimated (not
239 actual) view of reality [cf. 8, 11, 20, 33]. Stated differently, with all these data at their fingertips,
240 sport scientists risk conflating secondary information with knowledge, inadvertently blinding
241 themselves from what the world can share *directly* with them [34, 35].

242 In research, this can lead to an arrogating tendency for sport scientists to *look at* what is of
243 interest *through* a conceptual lens, all while occupying an authorised position from afar [20].
244 This is founded on a vertical ontology [36], where reality is sought in hidden layers below what
245 is apparently observed. It follows that to *actually* explain a phenomenon, one must search for
246 causal processes or mechanisms that reside somewhere beneath its goings on. Such
247 positionality privileges the production of supposed ‘objective truths’ that are generated from
248 *the scientist’s vantage* – an epistemological process Haraway (1988) refers to as ‘the god trick’¹¹.
249 In mainstream sport psychology, for example, this ontology rears itself through the (oft-fiercely
250 defended) presumption that decisions and actions are distinctive, separable entities driven
251 by mentalistic (computational) inferences, predictions or representations constructed and
252 stored in advance [cf. 37]. Tied to this ontology is an objective episteme that views knowledge
253 possessively; that is, something to be produced, commodified and transmitted into the

¹¹ As noted by Haraway (1988), ‘the god trick’ is performed by the dislocated scientist who sees “everything from nowhere”, turning observations into resources for appropriation by the supposedly authorised ‘knower’ (i.e., the scientist).

254 receptable minds of passive recipients, waiting for application when the time is ‘right’ [cf. 33].

255 Surmised by Ingold [26], it is a belief in which:

256 “...lessons learned through observation and participation are recast as empirical
257 material for subsequent interpretation.... Lessons in life become ‘...data’, to be
258 analysed in terms of an exogenous body of theory [or concept]” (p. 4-5, text in brackets
259 added).

260 Driven by the pervasive use of hypothetico-deductive theory of the scientific method [19], it
261 appears as though knowledge-producing research has become the ‘flavour of the month’ in
262 the sport sciences. Indeed, while undoubtedly leading to interesting discoveries, there are deep
263 philosophical, moral and ethical concerns associated with this vertical ontology scantily
264 considered by sport scientists. First, it oft-demands that phenomena be leveraged from
265 context, sterilised from the messiness of life so that it can be controlled and explained by way
266 of reduced, quasi-mechanical processes – all in order to (supposedly) advance ‘our’ knowledge
267 [26, 38-40]. This perspective typically leads phenomena to be conceptualised as an articulated
268 or connected up network consisting of fundamental parts that must first be experimentally
269 deconstructed and isolated, and then put back together so as to ‘understand’ how it functions.
270 This fosters an overly-simplified re-presentation of the phenomena, purported to be controlled
271 by abstractly conceived mechanisms, construed in the mind of the scientist, that are located
272 beneath or within its goings on [36, 40]. By default, this worldview encourages sport scientists
273 to *cut through and look at*, not *go along with and feel*; turning wonder, astonishment, humility
274 and observation into control, prediction, management and objectification.

275 Second, given such verticality, research is oft-framed as something that a sport scientist ‘does
276 to’ or ‘on’, guised under a representational lens [13, 20]. It is to look at the world

277 deterministically backwards. That is, in a representation-before-phenomena sequence, where
278 phenomena are viewed independently, as objects of analysis complete and coherent in and of
279 themselves, waiting to be known about through the extraction of data matched against prior-
280 formed hypotheses [11 (p. 141-165)]. Akin to fitting pieces of a puzzle into their correct place
281 on a board, such vertical integration is static, pinning down a fluid reality through
282 classifications, categorisations, labels and representations. Though, as Ingold [41 (p. 38)]
283 argues, no appeal to verticality gets around the fact that the individuals whose behaviour
284 scientists proclaim to explain are in fact representations of their own imagination reflected
285 back in the observations recorded. In other words, what is encountered in knowledge-
286 producing research is an intellectualisation of what is going on, not necessarily the coming-
287 into-being of the thing itself. This begs the uncomfortable question, are ‘we’ at risk of
288 committing epistemicide¹² in the sport sciences – turning other people’s ways of knowing into
289 objects for scientific analysis in the name of ‘research’? If so, should we rid ourselves of the
290 word ‘research’ in the name of un-extractivism? Or, should we move toward redefining
291 ‘research’ in a way that it was intended: *the ongoing pursuit of truth*? If this pursuit is never
292 finished, never complete, then ‘research’ would not be a commodifiable practice of generating
293 ‘outputs’, but an aspiration, a curious process of trying to get things right, be that empirically,
294 conceptually, ethically or aesthetically. It is through its perpetuality where ends become new
295 beginnings, and answers new questions; where we search, *and search again*.

296 Third, the unidirectionality associated with a vertical ontology actively separates the scientist
297 from the very thing they proclaim to know, preventing them from directly attending and
298 responding to its coming-into-being [14, 15]. Paradoxically, this separation of knowing from

¹² Like Haraway (1988) suggests, this manifests in the insistence that one form of knowledge reigns supreme. In this instance, we suggest that ‘the scientists’ knowledge is prioritised over others; a view which risks flattening the world, reducing it of its infinitely rich variegations.

299 becoming implies that to know what is of interest, one must occupy a space inside the field of
300 inquiry while absolving themselves from its unfolding ecology of relations [26 (ch. 1)]. Oddly,
301 the production of such “knowledge without a knower” [42 (p. 52)], is to accept that the sport
302 scientist’s presence in the same world – that is, their sociocultural positioning, experiences,
303 interests and skilled attentive responsiveness – is not just unessential, but actively avoided
304 when seeking to know what is of concern. Indeed, some may claim this positionality is integral
305 for sport scientists to be ‘objective’. To us, however, such a claim is nothing more than a guise
306 to ease the discomfort one may feel for getting away with taking that which has not been given.
307 Framed differently, this objectively detached positioning would be akin to suggesting that in
308 order to know something or someone we love and care about, we must somehow remain
309 distant to their goings on, such that we can objectively ‘build up’ our knowledge about them,
310 produced by way of mediated observations cut through from afar.

311 **4. Toward a different logic**

312 For most of us, of course, this is not how we come to know loved ones. We do not objectively
313 (re)produce knowledge about them through the extraction of data used to indirectly specify
314 features of interest. Rather, we grow knowledge *of* them by spending time together – dwelling
315 in each other’s presence, joining with their interests, as they with ours, to become deeply
316 woven into each other’s lives [1]. That is, we *go along together*, educating our attention to things
317 that unfold within various contexts, like changes in facial expressions, vocal inflections, or
318 alterations in touch and grip, such that we can respond with care and sensitivity [40]. Care, in
319 this sense, is far more than abstract well-wishing. It is to become affectively and ethically
320 entangled – getting involved with that which is of concern to us. For it is in this actively
321 responsive presence where knowledge grows, manifest in the attunement of a perceptual
322 system to the detection of patterns in information omnipresent in the surrounds, allowing us

323 to experience the coming-into-being of things without need for mental inference or
324 representation [43-45]. This knowledge *of* the world is not found in texts, data or symbols, nor
325 is it vertically 'built up', transmitted from supposedly knowledgeable superiors or approved
326 authorities. Rather, it is grown by *looking*, along with *listening*, *feeling*, *smelling*, and *tasting* [44
327 (p. 242)]. It is the knowledge, according to Menzies [1 (ch. 22)], that arises from direct
328 observation and attentive experience, grown in the deep relations sustained with the particular
329 places we inhabit, with and alongside others. Why, then, should it be any different for sport
330 scientists setting out to know the very things that are of concern to them? Why, we wonder,
331 must they pervasively follow a vertically integrated and extractive (onto)logic that actively
332 separates; driving a compulsion to cut through and look at, not go along with feel? Why must
333 they follow an episteme that renders their presence unresponsive to the very things they care
334 about; cutting themselves off from the generative ebbs and flows of a world in flux in order to
335 become 'knowledgeable'?

336 *4.1 From interrogating to conversing*

337 In thinking through these questions, searching for a way forward, we found inspiration in the
338 approach to scientific inquiry pioneered over two centuries ago by polymath, Johann
339 Wolfgang von Goethe (1749 – 1832). Specifically, Goethe's delicate empiricism does away
340 with explanations, abstractions and classifications of phenomena-as-objects by encouraging *a*
341 *conversation with* [40, 46]. This is based on a mutuality in which one discovers the limitlessness
342 of knowing when directly conversing with what is of interest, positioned not atop, but *alongside*
343 [40]. In essence, it is to ask, not "how can I find ways of adapting the phenomena to my specific
344 approach", but "*how can I make myself into a better, more transparent instrument of knowing?*" [40
345 (p. 31, emphasis added)]. Think, for example, of when we enter into a conversation with loved
346 ones. In these conversations, we are actively open to response from the other – that is, we are

347 *present* to them. This presence is not a series of discrete instances that are connected up, but
348 meanders along nested timescales, as we are ever-drawn into attending and responding to
349 subtle (and not-so-subtle) changes in the others well-being, ebbing and flowing in response to
350 fluctuations in environing conditions. Often while in these conversations, we ask sincere
351 questions¹³, and they are asked of us. The sincerity of these questions resides within their care
352 and inherent uncertainty – they are not cloaked with answers hidden beneath their asking, but
353 are ways of helping us remain open to the other [40]. This means they are not pre-planned,
354 unidirectional or interrogative; they are suspended in an attentiveness to what is shared –
355 flowing not vertically, from-to, but *longitudinally*¹⁴, along-side.

356 The caveat is that conversations can only flow along if what is shared is done so in a way that
357 invites *response*. This means that science as a conversation ontologically situates the scientist
358 as part of the world in which they seek to know [40]. It does not expel them to the sidelines,
359 mediating observations through (sub)disciplinary concepts used to produce secondary
360 information, but foregrounds their active participation ‘with’ – requiring them to ask questions,
361 and offer responses, in ways that keeps the conversation going along. This renders knowing,
362 not a matter of accumulation and construction (i.e., knowing more), but of sensitivity and
363 attunement (i.e., knowing *better*), a distinction which appreciates the generative dynamics of
364 inquiry when undergone as an ongoing conversation: it does not end, nor is there a limit to
365 knowledge growth [40]. As Reed eloquently notes:

¹³ While situated verbally between people, questioning need not be de-limited to such. One can, for example, pose a question to a plant by manipulating various features of the environment. By carefully observing how the plant responds to such a ‘question’, one can adjust their response accordingly. Questions, thus, are akin to ‘probes’ or ‘experiments’ that help us come to know another *better*.

¹⁴ See [14, 26] for an overview as to this directionality. Moreover, such a directional shift in ontology aligns with the Wittgensteinian attitude of horizontality [36].

366 “When one is examining the world for oneself there is no limit to the scrutiny – one
367 can look as carefully as one wishes, and one can *always discover new information*. But
368 this is emphatically not the case with secondhand information” [8 (p. 94, emphasis
369 added)]

370 A photograph of my parents, for example, may indeed help me know about various features
371 captured on the image, like their clothing, facial expressions or acquaintances at that particular
372 moment. It is an object of analysis in this regard; an object to be scrutinised. Though, such
373 scrutiny is limited, constrained by the confines of the pixels and colour hues imprinted onto
374 the film I *look at*. Comparatively, when I am *with* them, actively participating in their coming-
375 into-being (as they with mine), there is no limit to observation. Every question and response
376 are replete with curiosity, care and sincerity, presenting an opportunity to know the other
377 better than before by growing ever-sensitive to the information that directly specifies their
378 becoming. Our conversing, in other words, could be considered as the unfolding of a
379 perception-action system. The use of ‘unfolding’ here is important, as not only does it
380 foreground a temporality, but it fosters a deep sense of humility; an appreciation that the world
381 is not filled with discrete objects waiting to be known about through the imposition of prior-
382 formed concepts. But that it constitutes ever-entangling *things* perpetually suspended on the
383 cusp of becoming some-*thing* else; my parents and I included. This is precisely why, even after
384 all these years, they are still a source of wonder and astonishment to me.

385 According to Menzies [1 (ch. 22)], humility is important in helping us come to know what is of
386 interest, as it fosters an encounter that allows us to learn with and alongside others. This would
387 imply that to know is not to cut through and look at, but to go along with and feel, appreciating
388 our coexistence in a world that is never quite the same from one moment to the next. Perhaps
389 knowing, then, is not (re)cognitive, but *ecological*; it is not what or how much you possess, nor

390 what you have produced, extracted, or consumed, *but who you are as a fellow traveller in a world*
391 *of flux*. This means that knowing would come from creative acts of discovery with and
392 alongside others, grown by attending to the unfolding of things positioned not as an occupant,
393 but as a participant contributing the worlds worlding. As explored next, this perspective
394 foregrounds an entirely different relationality – progressing from a unidirectional, vertical and
395 extractive (onto)logic rooted in production, objectification, commodification and transmission,
396 toward a logic grounded in the ethics of openness, participation, gratitude, reciprocation and
397 responsibility.

398 *4.2 The relationality of gifting*

399 Historically, gifting theories have been based on an understanding of the gift as a mode of
400 exchange shrouded in obligations, forced returns and pay-backs [21]. Such views are
401 embroiled in a capitalist economy, where one seeks to maximise profit in return for goods and
402 services. This renders gifting a self-vested practice that compels “[t]he receiver...to give back
403 to the giver an equivalent of what she has received” [47 (p. 28, emphasis added)]. Though, in
404 a series of compelling works, Rauna Kuokkanen offers a profoundly different insight to gifting
405 through its grounding in Indigenous philosophies:

406 “The gift is a reflection of a particular worldview, one characterised by the perception
407 that the natural environment is a living entity which gives its gifts and abundance to
408 people provided that they observe certain responsibilities and provided that those
409 people treat it with respect and gratitude (i.e., if certain responsibilities are observed)”
410 [21 (p. 72)].

411 Not only does this situate gifting from a ‘together-oriented’ perspective, it opens an
412 ecologically dynamic conception of the world, viewed as an intricate mesh of nested and lively

413 relations. As Kuokkanen [21] explains, the land in many Indigenous philosophies is a physical
414 and spiritual entity, of which humans form just one part (also see [41]). What gifting rituals
415 maintain is the intricate relations with the land on which all life is contingent, thereby helping
416 secure the physical, social and spiritual well-being of an individual, group and broader
417 community [22].

418 The notion of community here is not to be construed as a conformed and anthropocentric
419 universal – a community of rationalised human similarity. Rather, it is a recognition of the
420 immense variation of *all* life suspended in a continual process of differentiation, positioned
421 with-in an unfolding field of relations [3, 24]. Thus, because all are different and ever-
422 differentiating, all have something to give – rendering *difference*, not similarity, as the bind that
423 weaves communities together [48]. In a community bound by emergent difference – that is, in
424 ‘a community of those who have nothing in common’ – not only are the ethics of openness,
425 participation, generosity and reciprocation central, but *responsive* and *responsible* presence by
426 all is required [48 (ch. 3)]. For example, the gifting logic woven into the communal garden
427 discussed in our prologue was integral to its continuity. Not only did it prevent inhabitants
428 from extracting and commodifying ‘produce’, it fostered an invitation to reciprocate; to
429 respond to that which was given. In doing so, inhabitants became deeply implicated in the
430 garden’s unfolding ecology, progressively learning to attend to its ebbs and flows in ways that
431 fostered its continual regeneration. Otherwise stated, by relating deeply with the garden,
432 inhabitants became *responsive* to and *responsible* for its offerings.

433 In this gifting worldview, responsibility extends far beyond the possession of accountability. It
434 reflects one’s willingness and ability to respond – their *response-ability* [3, 14, 23, 49, 50]. When
435 woven into the humility espoused by Menzies [1], this is to commit oneself to an openness
436 ground in presence; to learn with and from the world by allowing one’s attention to be

437 responsively educated to things that may have otherwise remained hidden, perhaps cloaked
438 behind authoritative, prior-established concepts or representations. A wonderful example of
439 such humble response-ability in science is noted in the profound reflections of primatologist
440 Shirley Strum [51]. Specifically, in seeking an approach to inquiry that allowed her to get to
441 know baboons from a “baboon’s perspective”, Strum [51] recounts:

442 “I made a determined effort to forget everything I knew *about* how baboons are
443 *supposed* to behave [by way of vertically integrated concepts, paradigms or
444 representations]. Instead, I tried to let the baboons themselves ‘tell’ me what was
445 important” (p. 30, emphasis and text in brackets added).

446 Becoming response-able is to let the world to speak for itself and to openly dwell in its
447 presence, rendering oneself available for the response of another. Like entering into a
448 conversation with a loved one, it is in this presence where knowledge grows; where we learn
449 to pay attention to what is shared with us, to adaptively going along with its goings on [15, 17].
450 As noted in Strum’s eloquent reflection, this is not a matter of ‘decoding’, ‘translating’,
451 ‘interpreting’ or ‘making sense of’ what has been gifted to us – cutting through and looking at.
452 But of learning to *observe, hear* and *feel* that which has been shared, leading to the unfolding of
453 a careful, sensitive and sincere *correspondence*.

454 There is a subtle, but important point to highlight here. In response, we are qualitatively
455 different than before; we are “ourselves in encounter with another” [52 (p. 46)]. By their nature,
456 such encounters are indeterminate, meaning that in response, we are transformed in a
457 somewhat unpredictable way. To correspond, then, is not to impose onto, but to *join with*,
458 actively coupling our perception and action to the unfolding of what captures or attention to
459 keep the conversation moving in direction determined *as we go*. Not only does this

460 responsiveness require participation, it calls for the ethics of openness, generosity and
461 reciprocation, as without which, correspondence would likely regress into an extractive,
462 unidirectional interrogation. Thus, the relationality of gifting we advocate for here foregrounds
463 an ecological orientation to scholarship that sets out neither to objectify or describe that which
464 is concern, but to *correspond with its very becoming*.

465 5. A corresponsive sport science

466 What does such an ecological orientation imply for the re-imagination of scholarship in the
467 sport sciences? To initiate conversation in response to this question, we now cast out three
468 threads germane to its logic. First, inhabitants (i.e., coaches, athletes, practitioners) are
469 observed, not as objects of analysis, but *lines in-becoming*, who in responding to the lines of
470 others, form *knots in a meshwork* [25 (ch. 3)]. These knots, which are of loose ends, constitute
471 communal places where inhabitants have joined with the differentiating lines laid down by
472 others [26 (ch. 9)]. Second, knowledge in a corresponsive sport science is not authoritatively
473 (re)cognitive, but *humbly ecological* [1]. It is not produced vertically through imposition, but
474 *grown longitudinally in moving from place to place with others* [25 (ch. 3)]. This flips the extractive
475 epistemological inversion of the sport science mainstream, moving scientists from objective
476 bystanders who occupy a static space above, to *observant participants who inhabit a dynamic*
477 *place with* [3, 20, 26]. Third, research evolves from an extractive process of knowledge
478 production, to a responsive practice of *participant observation* [20, 26]. This evolution echoes
479 the relationality of our theorising: a corresponsive sport science is not a method to be applied
480 in research; it is a way of *knowing in research*.

481 5.1 Corresponsive lines in-becoming (re)forming knots in a meshwork

482 In a study of wayfinding in the community of Igloodik, Aporta [53] noted that for the Inuit, as
483 soon as one moves, they become a line. To hunt an animal, or to find another who may be

484 lost, is to search for their line in-becoming woven into the very texture of the unfolding
485 surround. This means the land is perceived, not as a passive, discrete surface on which objects
486 sit atop, but as an active mesh of interweaving lines created and sustained by the movements
487 of all living things. It is, in a word, a *meshwork*. We borrow this term from Ingold [54], who
488 describes the meshwork as a reticulation of lines “laid down by animate beings as they thread
489 their ways through the world” (p. 82). While these lines follow no consistent direction, they are
490 ever-responsive to those laid down by others. This responsiveness does not lead to a
491 connecting up, but a joining with; forming not an originating point in a network, but an
492 unfolding *knot in a meshwork* [17, 54; see Figure 1].

493 *****INSERT FIGURE 1 HERE *****

494 These distinctions are important and require elaboration. In a network, life is lived at the points
495 connected up by straight lines of *transport*. Think, for example, of one sitting on a train
496 travelling across a landscape in order to arrive at a station determined prior to departure [5].
497 While on the train, the passenger is most likely unresponsive to the goings on of their
498 surrounds, some of which may be rapidly passing by their window. Locomotion and
499 perception, for the passenger, are thus uncoupled – they themselves do not move, but are
500 *moved* from station to station in a series of stop/starts. The network, thus, is based on a logic
501 of connecting *up*. A meshwork, however, takes as its basis that all life is lived *along* lines of
502 growth and movement that meander *through* various places [54]. This meandering is not
503 connected in a stop/start sequence, but rather *carries on*, which means that the knots
504 constituting it are not points or destinations determined prior to departure, but emergent
505 communal places where many lines in-becoming have been drawn tightly together through
506 correspondence [26]. These lines are not destined to reside within the knots they form, but to
507 always overtake them, reaching out in search for entanglement with others. In other words,

508 everyone you meet – as an unbound line in-becoming – is already on their way to somewhere
509 else. Life, in the meshwork, carries on not because it is connected up or fully articulated, but
510 because it is response-ably open, perceptible and always on the move. Otherwise stated, in
511 the network, life is lived *at* the points *between*, while in the meshwork life is lived *along* the lines
512 *in-between*; the former is *unresponsive*, ground in the logic of connecting up; the latter
513 *corresponsive*, ground in the logic of joining with. As an aside, the notion of the meshwork
514 echoes similarity to Deleuze and Guattari's [55] philosophic concept of the rhizome, which
515 contrasts to that of the arborescent thought, represented as the tree. In a tree, a seed takes
516 root and grows vertically by way of a robust trunk supporting many branches, coherently
517 linked to the point of origin that connects *up* – like that of the network – representing an
518 essentialist, linear and bounded logic generating 'either/or' binaries. Contrastingly, in
519 rhizomatic thought, the process of existence and growth does not come from a single or
520 central point, but consists of living filaments with no particular form, unity or structure. A
521 rhizome – like that of the meshwork – does not start from anywhere or end anywhere; it *grows*
522 *from everywhere*, suspended in a state of *becoming*.

523 The implications of this first thread are profound for the sport sciences. They imply that
524 inhabitants are not as objects of analysis to be studied about, but lines in-becoming to be
525 studied *with*. This 'with-ness' immediately positions the scientist alongside the very line in
526 which they seek to know, rendering their presence integral to the very knot forming the
527 meshwork [20]. In accord with our ecologically oriented theorising, knots in a meshwork
528 would be conceptualised as communal places replete with shared affordances [43], inviting
529 opportunities to grow knowledge of the environment. Indeed, while exemplifying what these
530 knots could be risks de-limiting their emergent richness, some apparent examples may include
531 parks, ovals, courts, chess-boards, rock-climbing walls, sporting organisations, or surf breaks

532 – that is, communal places in which differentiating lines in-becoming are woven through
533 corresponsive processes of growth and movement. Think of the intricately messy relations
534 that knot together when a surfer corresponds not only with another, but with the movements
535 of the swell, wind, socio-historical constraints entangled into that particular break, and the
536 coming-into-being of various avian and marine life that may also inhabit that particular coastal
537 region. The surfer needs to be attentive to the ever-differentiating lines laid out such that they
538 can move in ways that keeps the correspondence going along, thereby playing their part in
539 sustaining the knots, *knotting*. As reflected in the relationality of gifting, this requires *all* to
540 participate, remaining open to what is cast forward by others in ways that invites response.
541 For a sport scientist to know the surfer, they would need to join with the goings on and respond
542 in ways that tangles them further into the knot, which includes a need to resonate with the
543 discourses and norms that also shape the knots coming-into-being. In other words, *knowledge*
544 *is grown in the midst of joining with the world's goings on*. Moreover, given the lines that form the
545 knots in a meshwork are bound by difference, not similarity, inhabitants must be responsive
546 to all precisely because all are different [48]. This appreciation opens up a corresponsive sport
547 science to communality, binding together the differentiating lines of scientists, coaches,
548 athletes, practitioners and many others in ways supportive of their unfolding difference¹⁵.

549 *5.2 Knowing is ecological*

550 Central to the relationality of gifting is an appreciation that the continuity of all life is suspended
551 on the intricate mesh of relations woven between inhabitants and the land. This implies that
552 to know is to join with these relations and to go along with their goings on. In the seminal text
553 *Art as Experience*, John Dewey [56] argued along similar lines, proposing that if one *really*

¹⁵ As an aside, this leads us to an interesting question: what would a communal sport science – *a sport science for the common good in a community of those with nothing in common* – entail? While we have foregrounded a direction of travel in response to this question here, we will leave its traversal for future works.

554 wanted to know the flowering of plants, they must join with the soil, air, water and sunlight,
555 which in their weaving, condition the plants' growth. Joining with such relations requires
556 immersion within the field of inquiry so that one can primarily experience the coming-into-
557 being of what is of interest. It is, thus, not the production of secondary information that fosters
558 the growth of one's knowledge, but an ever-attuned perceptual system resonating with
559 specifying information available for pick-up in the surrounds [44]. For in the production of
560 secondary information, perception risks being arrested, as one falls back upon some
561 previously formed scheme that creates the basis of what it is they *recognise* [56].

562 This process of knowing through recognition is denoted by what David Rubin [57]
563 metaphorically described as a *complex-structure*. In this metaphor, knowledge is mentalistic; a
564 representation that has been transmitted into the mind of an individual prior to stepping forth
565 into the environment. The application of this knowledge is:

566 "a simple and straightforward process of sorting and matching, so as to achieve a
567 homology between structures in the mind and structures in the world" [11 (p. 159)].

568 Comparatively, through immersion one comes to know by responsively opening up to the
569 goings on of what interests them [56]. There is an inevitable surrender here; a giving up on the
570 desire to interpret and control, replaced with a humble openness that allows one to attend to
571 things as they emerge [58]. Such a view aligns with Rubin's [57] counter-metaphor: a *complex-*
572 *process*. In this metaphor, the active practice of knowing is prioritised over the property of
573 knowledge, which is to say that knowledge is not *applied* in practice, but to know is *by way of*
574 practice. Far from being produced and transmitted, ready-made, into the mind of a passive
575 recipient, knowledge is grown through ongoing correspondence with-in an unfolding mesh of
576 relations [11]. This is precisely why, in a corresponsive sport science, knowledge is predicated,

577 not on the production of secondary information, but on direct perception [44]; it is not
578 (re)cognitive, but *ecological*.

579 There are important corollaries of this un-extractive episteme for the sport sciences, four of
580 which are briefly outlined here¹⁶. First, knowledge is not produced from afar, but dynamically
581 grown in context through *immersion* – requiring one to expose themselves to the goings on of
582 what captures their interest [59]. For example, to know the goings on of a sports organisation,
583 one would need to immerse themselves in the everyday practices of that particular context,
584 exposing themselves to the intricate relations that come-into-being as inhabitants knot
585 together in correspondence. Indeed, this exposure invites vulnerability and requires a deep
586 sense of humility. But it is in this vulnerable humility where one learns with and from others,
587 attending to things that could guide them along their way [14]. Second, knowledge is *attentional*
588 – it requires one to be drawn out into the world such that they can respond to what is shared;
589 reflecting an attitude that Ana Tsing (2015, p. 17) refers to as the “arts of noticing”. The ‘arts
590 of noticing’ is not about searching inwardly for putative control mechanisms, nor is it to impose
591 prior formed concepts onto a fluid reality. It is about being open to an epistemic mood of
592 wonder; joining with the coming-into-being of what draws one’s attention; learning to see, hear
593 and feel things – *to notice* – in ways that invite response. Third, knowledge is not acquired or
594 transmitted, but *grown by dwelling-with-others-in-place* [60]. The knowledgeable sport scientist
595 is not the one who ascribes hard facts to the constituents of what interests them, but the one
596 who is deeply embedded within the context of what holds their attention, aligning their
597 perception and action to its ebbs and flows. This is why, in a corresponsive sport science,
598 knowledge is not what you have, *but who you are as a fellow line in-becoming knotting into a*

¹⁶ For a detailed insight, see [14].

599 *(re)forming meshwork*. Fourth, knowledge is *limitless* and *inexhaustive*, extending for as far as one
600 seeks to travel [8]. The corollary of this is that the world is conceptualised as an ever-knotting
601 meshwork woven by lines in-becoming already on their way to somewhere else. In this
602 dynamical perspective, knowing would involve going along with these lines as closely as one
603 wishes, following up all the interesting things encountered along the way. By default, this
604 means that 'being' a sport scientist would have no end; it would be an ever-unfolding journey
605 *in-becoming* [5].

606 *5.3 Research as a practice of participant observation*

607 In speaking of his journey into phenomenology, anthropologist Tim Ingold [61] reminds us
608 that when studying people whose background and experiences are different from our own:

609 "...the task is not to interrogate them with pre-prepared questions, answering to our
610 personal agendas, but rather to observe what they do and listen to what they say, and
611 to learn – as far as practically possible – to perceive things in ways that *correspond with*
612 *theirs*" (p. 719, emphasis added).

613 This view resonates deeply with the last thread cast out here; in a corresponsive sport science,
614 research moves from a vertically integrated process of that which is 'done to' and 'on', to that
615 which is undergone together through the diligent practice of *participant observation*. Espoused
616 in the above excerpt, this is not about directing pre-determined questions *at* the world in order
617 to study *about* its constituents, but is to join with its goings on, learning to attend, as best we
618 can, to its continued unfolding, answering to what we learn to see. To this, there are two
619 threads we open.

620 First, participant observation is not an ethnographic method of inquiry. For clarity,
621 ethnography – by its very definition – is a description of people, rendering it documental

622 [26]. In an attempt to ‘make sense of’ documented observations, ethnography could still fall
623 into a vertically extractive (onto)logic by deducing observations through a conceptual or
624 representational lens, thereby fostering the production of qualitative data stored ‘after the fact’
625 [20]. Participant observation, in contrast, is a way of *knowing in research*. This is to situate the
626 scientist *with-in* the field of inquiry [26], rendering their presence open, allowing them to learn
627 from what captures their interest by watching, listening and feeling. It is to undergo what the
628 ecological psychologist James Gibson [44] referred to as an *education of attention* – coupling
629 one’s perception and action to various features of the world that draws their curiosity. By
630 observantly participating with-in the field of inquiry, sport scientists could learn to directly
631 attend to features of their surrounds that may have otherwise remained unattended – perhaps
632 cloaked behind strict adherence to (sub)disciplinary method – and learn to respond in ways
633 resonant with inhabitants. This makes participant observation, not documentary, but
634 *transformational*.

635 Indeed, while observation implies participation, it does not discount the importance of noting
636 or writing about the very things that one undergoes during research. Such writing, though, does
637 not serve as a repository for secondary information to be mined in the production of
638 knowledge at a later date. It relates far more deeply to the immediate *experiences* one
639 undergoes when participating with-in an unfolding field of relations different to that of their
640 own. One may write, for example, on how performing a certain task encouraged them to
641 attend to their surrounds in ways not experienced before. This sentence in writing brings us
642 to the second point of research as a practice of participant observation; *it acknowledges the*
643 *visceral involvement of the scientist as a responsive line in-becoming with-in the field of inquiry they*
644 *seek to know*. In the vertically extractive (onto)logic of knowledge production, this involvement
645 would likely be seen as a weakness, perhaps rendering results ‘too subjective’ to yield any

646 'objective truth'. However, as noted in the relationality of gifting, such involvement is not just
647 a strength, but a necessity, for it opens observation to truth beyond objectification. This means
648 that writing as an observant participant does not absolve others from attending to things
649 themselves; it opens a path rooted in experience, actively encouraging others to join. As Ingold
650 [61] surmises, this:

651 “[...] is to join our own lines with the writing of the world, whether with the paths of
652 human inhabitants as they find their ways around, or the tracks of animals, or the
653 meandering vegetation. And just as our minds mingle with the world in writing, so the
654 minds of readers mingle in turn with ours. All these lines...are braided in a meshwork
655 which ravel and unravels as it goes along” (p. 737).

656 This is precisely why we opened our paper by sharing my experiences of attending a
657 communal garden as a child many years ago. Its purpose was not to document facts about
658 the garden or its constituents, but to open a path for us *all* to explore; a path grounded in
659 primary experience. For in casting these experiences out response-ably, it was our hope that
660 you – the reader – would mingle and join with them, knotting your line in-becoming with ours
661 as the paper unfolded. Herein lies the emancipatory potential of a corresponsive sport science:
662 it is *how* one writes, not as much *about* what is written. After all, the very point of writing as an
663 observant participant is not so others can read about, but so that others can read *with* – joining
664 their experiences with ours such that together, in our unfolding difference, we can find ways
665 of carrying on.

666 **6. Coda**

667 Continuing along our emerging line of inquiry, the aim the current paper was to sketch a
668 corresponsive sport science. Differing to the vertically extractive (onto)logic of the

669 mainstream, the scholarship we advocated for neither explains or describes that which is of
670 concern, but corresponds with its very becoming. This is about joining with what we seek to
671 know – learning from what it has to share such that we can, in turn, go along with its goings
672 on, and it with ours. Importantly, in an ecologically dynamic world that is never quite the same
673 from one moment to the next [33], a corresponsive scholarship does not reach a point of
674 finality or completion. It carries on. Paradoxically, then, how are we to surmise where we
675 currently find ourselves? Are we not writing what convention would refer to as a ‘conclusion’?
676 And if we conclude, are we not closing down opportunities for our correspondence to carry
677 on?

678 In accord with our theorising, it is perhaps better to consider this not a conclusion – that is, a
679 point in which we look back and retrace the ground covered to determine whether (or not)
680 we achieved our aim, or how closely we held the course – but as the continuation of a line in-
681 becoming, that in joining with others, has formed a knot. This would make our paper a
682 communal place bound by many differentiating lines in-becoming; (y)ours included. And as
683 like all knots in a meshwork, the line woven through here is already on its way to somewhere
684 else. So, while indeed this paper may be coming to a pause, we, the authors, and perhaps you,
685 the reader, are already joining with the coming-into-being of other lines stretching out
686 somewhere along the horizon. Hopefully, our lines will join together again somewhere along
687 the way, moving toward ends un-defined, and form another knot in the meshwork of which
688 we are all a part. But until then, we encourage you to join with what sparks your curiosity,
689 opening up to what it has to share such that you, in turn, can respond with care, sensitivity and
690 sincerity. This, after all, is the gift of a corresponsive sport science.

691 **Acknowledgments**

692 As mentioned in Footnote 6, the ideas presented here are responsibly leaky. We would like
693 to thank our friends and colleagues for the ongoing correspondences that grew into the knot
694 that is this paper.

695 **Availability of data and materials**

696 Not applicable

697 **Funding and conflicts of interest**

698 The authors declare no conflicts of interest associated with the publication and dissemination
699 of this article. Moreover, no funding was sought nor received for the writing or publication of
700 this article.

701 **Ethics declaration**

702 Not applicable

703 **Authors' contributions**

704 Carl Woods conceptualised the idea, while Duarte Araújo and Keith Davids offered detailed
705 critique throughout the conceptualisation process. All authors contributed to manuscript
706 writing and drafting.

707 **References**

- 708 1. Menzies, H. (2014). *Reclaiming the commons for the common good*. New Society
709 Publishers.
- 710 2. Murris, K. (2022). *Karen Barad as educator: Agential realism and education*. Springer.
- 711 3. Barad, K. (2007). *Meeting the universe halfway: quantum physics and the entanglement of*
712 *matter and meaning*. Duke University Press.

- 713 4. Juelskjær, M., Plauborg, H., & Adrian, S. (2021). Intra-active entanglements: An
714 interview with Karen Barad. *Kvinder, Køn & Forskning*, 2, 10-23. doi: 10.7146/kkf.v0i1-
715 2.28068
- 716 5. Woods, C. T. & Davids, K. (2023). Sport scientists *in-becoming*: from fulfilling one's
717 potential to finding our way along. *Sport, Education and Society*. doi:
718 10.1080/13573322.2022.2163231
- 719 6. Shapiro, J., & McNeish, J. A. (2021). *Our extractive age: expressions of violence and*
720 *resistance*. Routledge.
- 721 7. Le Billon, P., & Middeldorp, N. (2021). Empowerment or imposition?: Extractive
722 violence, Indigenous peoples, and the paradox of prior consultation. In J. Shapiro &
723 J.A. McNeish (Eds.), *Our extractive age: Expressions of violence and resistance* (71-93).
724 Routledge.
- 725 8. Reed, E. (1996b). *The necessity of experience*. Yale University Press.
- 726 9. Hornsby, W. G., Gleason, B. H., DeLong M., & Stone. M. H. (2022). "Are you doing any
727 sport science?" A brief editorial. *Journal of Functional Morphology and Kinesiology*, 7,
728 69-77. doi: 10.3390/jfmk7030069
- 729 10. Davies, M., Stone, J.A., O'Sullivan, M., Williams, J., & Davids, K. (2022). Can't jump,
730 won't jump: Affordances of the horse-rider dyad underpin skill adaptation in
731 showjumping using a constraints-led approach. *International Journal of Sports Science*
732 *& Coaching*. doi: 10.1177/179541221107379
- 733 11. Ingold, T. (2011). *Being alive: essays on movement, knowledge and description*. Routledge.
- 734 12. Fullagar, H. K., McCall, A., Impellizzeri, F., Favero, T., & Coutts, A. J. (2019). The
735 translation of sport science research to the field: A current opinion and overview on

- 736 the perceptions of practitioners, researchers and coaches. *Sports Medicine*, 49, 1817-
737 1824. doi: 10.1007/s40279-019-01139-0
- 738 13. Camiré, M. (2022). Proposing an ontological shift from intervention to intravention in
739 sport and exercise psychology. *Psychology of Sport & Exercise*, 64. doi:
740 10.1016/j.psychsport.2022.102342
- 741 14. Woods, C.T., Araújo, D., & Davids, K. (2022). Joining with the conversation: Research
742 as a sustainable practice in the sport sciences. *Sports Medicine Open*, 8.
743 doi.org/10.1186/s40798-022-00493-0
- 744 15. Despret, V. (2013). Responding bodies and partial affinities in human-animal worlds.
745 *Theory, Culture & Society*, 30, 51-76. doi: 10.1177/0263276413496852
- 746 16. Henry, E. (1997). Toward a “feeling for the organism”. *NWSA Journal*, 9, 156-162. doi:
747 10.2979/NWS.1997.9.3.156
- 748 17. Ingold, T. (2016). On human correspondence. *Journal of the Royal Anthropological*
749 *Institute*, (N.S.), 9-27. doi: 10.1111/1467-9655.12541
- 750 18. Chagnon, C. W., Hagolani-Albov, S. E., & Hokkanen, S. (2021). Extractivism at your
751 fingertips. In J. Shapiro & J.A. McNeish (Eds.), *Our extractive age: Expressions of violence*
752 *and resistance* (176-188). Routledge
- 753 19. Bishop, D. (2008). An applied research model for the sport sciences. *Sports Medicine*,
754 38, 253-263. doi: 10.2165/00007256-200838030-00005
- 755 20. Woods, C. T., & Davids, K. (2022). Thinking through making and doing: sport science
756 as an art of inquiry. *Sport, Education & Society*. doi: 10.1080/13573322.2022.2054792
- 757 21. Kuokkanen, R. (2007). The gift logic of Indigenous philosophies in the academy. In G.
758 Vaughan (Ed.), *Women and the gift economy: A radically different worldview is possible* (pp.
759 72-84). Inanna Publications.

- 760 22. Kuokkanen, R. (2008). *Reshaping the university: Responsibility, Indigenous epistemes, and*
761 *the logic of the gift*. University of British Columbia.
- 762 23. Ingold, T. (2018). *Anthropology and/as education*. Routledge.
- 763 24. Ingold, T. (2022). *Imagining for real: Essays on creation, attention and correspondence*.
764 Routledge.
- 765 25. Ingold, T. (2007). *Lines: A brief history*. Routledge.
- 766 26. Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. Routledge.
- 767 27. Crutzen, P. J., & Stoermer, E. F. (2000). The “Anthropocene”. *Global Newsletter*, 41, 17-
768 19.
- 769 28. van Dooren, T. (2014). *Flight ways: Life and loss at the edge of extinction*. Columbia
770 University Press.
- 771 29. Durante, F., Kröger, M., & LaFleur, W. (2021). Extraction and extractivisms: Definitions
772 and concepts. In J. Shapiro & J.A. McNeish (Eds.), *Our extractive age: Expressions of*
773 *violence and resistance* (19-30). Routledge
- 774 30. Araújo, D., Couceiro, M. S., Seifert, L., Sarmiento, H., Davids, K. (2021). *Artificial*
775 *intelligence in sport performance analysis* (1st ed.). Routledge.
- 776 31. Woods, C.T., Araújo, D., Davids, K., & Rudd, J. (2021). From a technology that replaces
777 human perception-action to one that expands it: some critiques of current technology
778 use in sport. *Sports Medicine Open*, 7. doi.org/10.1186/s40798-021-00366-y
- 779 32. Williams, S. & Manley, A. (2016). Elite coaching and the technocratic engineer:
780 thanking the boys at Microsoft!. *Sport, Education and Society*, 21, 828-850. doi:
781 10.1080/13573322.2014.958816
- 782 33. Woods, C.T. (2021). Toward Ithaka: hiking along paths of knowing of/in an
783 ecologically dynamic world. *Sport, Education and Society*, Rolling Special Issue:

- 784 Environmental attunement in health, sport and physical education.
785 doi.org/10.1080/13573322.2021.1994939
- 786 34. Brooks, R. A. (1991). Intelligence without representation. *Artificial intelligence*, 47, 139–
787 159. doi: 10.1016/0004-3702(91)90053-M
- 788 35. Morris, C., Davids, K., & Woods, C. T. (2022). On the wisdom of not-knowing:
789 Reflections of an Olympic canoe slalom coach. *Sport, Education and Society*. doi:
790 10.1080/13573322.2022.2140135
- 791 36. van Dijk, L. & Withagen R. (2014). The horizontal worldview: A Wittgensteinian
792 attitude towards scientific psychology. *Theory & Psychology*, 24, 3-18. doi:
793 10.1177/095935431351715
- 794 37. Araújo, D., Hristovski, R., Seifert, L., Carvalho, J., & Davids, K. (2019). Ecological
795 cognition: Expert decision-making behaviour in sport. *International Review of Sport and*
796 *Exercise Psychology*, 12, 1-25. doi:10.1080/1750984X.2017.1349826.
- 797 38. Araújo, D., & Davids, K. (2015). Towards a theoretically-driven model of
798 correspondence between behaviours in one context to another: Implications for
799 studying sport performance. *International Journal of Sport Psychology*, 46, 745–757. doi:
800 10.7352/IJSP.2015.46.745
- 801 39. Brunswik, E. (1956). *Perception and the representative design of psychological experiments*
802 (2nd ed.). University of California Press.
- 803 40. Holdrege, C. (2005). Doing Goethean science. *Janus Head*, 8, 27-52. doi:
804 10.5840/jh20058132
- 805 41. Ingold, T. (2000). *The perception of the environment: Essays on livelihood, dwelling and skill*.
806 Routledge.

- 807 42. Ross, A., Sherman, K. P., & Snodgrass, J. G. (2011). *Indigenous peoples and the*
808 *collaborative stewardship of nature*. Taylor & Francis Ltd.
- 809 43. Reed, E. (1996a). *Encountering the world: Toward an ecological psychology*. Oxford
810 University Press.
- 811 44. Gibson, J. J. (1979). *The ecological approach to visual perception*. Mifflin and Company.
- 812 45. Turvey, M. T., & Kugler, P. N. (1984). A comment on equating information with symbol
813 strings. *American Journal of Physiology*, 246, R925-7. doi:
814 10.1152/ajpregu.1984.246.6.R925
- 815 46. Wahl, D. C. (2005). "Zarte Empirie": Goethean science as a way of knowing. *Janus*
816 *Head*, 8, 58-76. doi: 10.5840/jh20058134
- 817 47. Vaughan, G. (1997). *For-giving: A feminist criticism of exchange*. Plain View Press.
- 818 48. Biesta, G. (2006). *Beyond learning: Democratic education for a human future*. Paradigm
819 Publishers.
- 820 49. Cage, J. (2011). *Silence: letters and writings, 50th anniversary*. Wesleyan University Press.
- 821 50. Haraway, D. (2016). *Staying with the trouble: making kin the Chthulecene*. Duke University
822 Press
- 823 51. Strum, S. (1987). *Almost human*. Random House.
- 824 52. Tsing, A. (2015). *The mushroom at the end of the world: on the possibility of life in capitalist*
825 *ruins*. Princeton University Press.
- 826 53. Aporta, C. (2004). Routes, trails and tracks: Trail breaking among the Inuit of Igloolik.
827 *Études/Inuit/Studies*, 28, 9-38. doi: 10.7202/013194AR
- 828 54. Ingold, T. (2015). *The life of lines*. Routledge.
- 829 55. Deleuze, G., & Guattari, F. (2013). *A thousand plateaus*. Bloomsbury.
- 830 56. Dewey, J. (1934/2005). *Art as experience*. Perigee.

- 831 57. Rubin, D. (1988). Go for the skill. In U. Neisser & E. Winograd (Eds.), *Remembering*
832 *reconsidered: Ecological and traditional approaches to the study of memory* (pp. 374-382).
833 Cambridge University Press.
- 834 58. Dall Jensen, R., Brydges, R. & Grierson, L. (2022). Re-examining the integration of
835 routine and adaptive expertise: There is no such thing as routine from a motor control
836 perspective. *Advances in Health Sciences Education*, 27, 1283-1291. doi:
837 10.1007/s10459-022-10163-1
- 838 59. Masschelein, J. (2010). E-ducing the gaze: the idea of a poor pedagogy. *Ethics and*
839 *Education*, 5, 43-53. doi: 10.1080/17449641003590621
- 840 60. Woods, CT., & Davids, K. (2021). “You look at an ocean; I see the rips, hear the waves, and
841 *feel the currents*”: Dwelling and the growth of enskilled inhabitant knowledge. *Ecological*
842 *Psychology*, 33, 279-296. doi: 10.1080/10407413.2021.1965481
- 843 61. Ingold, T. (2023). Postscript: An anthropologist lands in phenomenology. In F. Vaujany,
844 J. Aroles, M. Pérezts (Eds.), *The Oxford handbook of phenomenologies and organization*
845 *studies* (719-C37). Oxford University Press.

846 **Figure 1.** The openly corresponsive meshwork, (re)formed by lines in-becoming knotting with
847 others (above). The closed and unresponsive network connecting up points by straight lines
848 of transport (below). In the meshwork, life is lived *along*, while in the network, life is lived *at*.

849