Academic Paper

Developing our Knowledge for Complex Times: The Contribution of Critical Realism to Coaching

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Abstract

This conceptual article aims to stimulate reflection and debate on the contribution of the philosophy of science to coaching, an area which remains under-represented in the literature. Specifically, critical realism, evolved from the original work of Roy Bhaskar, is proposed as a valuable foundation for developing the knowledge base of coaching in a climate of increasing global complexity. The need for fresh perspectives is discussed and the distinctive features of critical realism are summarised. Examples of how critical realism has already been applied within coaching are provided and the potential benefits for coaching of embracing a critical realist perspective are explored.

Keywords

coaching, critical realism, retroduction, transdisciplinarity, wicked problems

Article history

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Introduction

How best can coaching approach the task of developing a knowledge base that is sufficiently robust to satisfy the different and at times competing requirements of practitioners, researchers, purchasers and clients? This question has acquired a new and pressing significance as the challenges confronting individuals, communities, organisations and societies have become increasingly complex.

In this conceptual article, the authors make the case that for coaching to fulfil its potential as a vehicle for social change, there needs to be a refashioning of the types of explanation sought and the notion of reality that underpins them. Specifically, it is argued that coaching needs to ground the development of its knowledge in a more explicit philosophical framework. To date, both positivist and interpretivist paradigms have been dominant in the coaching literature yet, with some exceptions, the consequences of these paradigmatic foundations have remained largely

unexamined. It is argued that revisiting the actual and desired philosophical underpinnings of coaching is important and necessary at this time; doing so can guide the categorisation of diverse forms of knowledge and the development of new approaches to research design and enquiry that can address the economic, political, social and welfare challenges confronting the global community. In pursuit of a philosophy for coaching this article examines how critical realism (CR) might provide a valuable foundation for conceptualising, designing and developing the knowledge base of coaching. As described below, there is evidence of a growing interest in CR informed research and this article considers how, for coaching, this still emerging philosophical perspective might complement, challenge and ultimately advance the knowledge base of the discipline.

The article begins by examining the need for fresh perspectives in the context of the often cited research-practice divide and the call from numerous disciplines for transdisciplinary methods of enquiry that can address the challenges confronting the social and natural worlds. The distinctive features of CR are then introduced as a basis for considering how this philosophy might aid coaching in advancing its role as an influencer of positive social change. Examples of how CR has already been applied within coaching research are provided and the opportunities afforded coaching of incorporating CR philosophy into its knowledge base are considered. Although historically under-represented in the coaching literature, a steady growth of CR informed studies suggests that this philosophical perspective is recognised as adding value in advancing the knowledge base of coaching. It does, therefore, seem timely to review its foundational assumptions, its relevance to coaching and to consider to what extent a more explicit use of CR within coaching might facilitate avenues of research that befit the complexities of our times.

Revisiting the foundations of coaching research

The contribution of the philosophy of science to theory and practice is an under-represented topic in the coaching literature. This is perhaps unsurprising given that its abstract and seemingly esoteric nature can seem disconnected from the "real world" concerns with which coaching scholars and practitioners engage. Yet, examining any branch of knowledge through the lens of philosophy can contribute a clarity and discipline that illuminates both key questions and methodological responses to those questions (Alvesson & Sköldberg, 2018). This may be critical for coaching in the current global climate.

The ways in which coaching has historically approached its knowledge generation might not be optimal for developing the type of knowledge that is needed to address present and future concerns. The unfolding consequences of a global pandemic, the emerging manifestations of climate change, economic crisis and the rising costs of living are prompting questions that will likely require novel approaches to research within the social sciences generally and coaching specifically. The challenges that arise from these types of complexity have previously been termed "wicked problems" (Brown, Harris & Russell, 2010). Wicked, in this context, does not denote moral depravity but rather a form of social problem that occurs in a context of continual and unprecedented challenge and involves multiple stakeholders who have different and often conflicting priorities, values and expectations. The factors implicated in wicked problems are typically complex, enmeshed and lack any ideal solution or existing precedent on how to proceed. A further characteristic of wicked problems is that they change with each attempt to resolve them (Brown et al., 2010).

The belief that wicked problems necessitate novel research approaches has been championed by scholars promoting transdisciplinarity (Brown et al., 2010; Gibbs, 2015; Patton, 2020), a term differentiated from multi- and inter-disciplinary approaches in the attempt to achieve a "fusion" of knowledge drawn from across disciplines and stakeholder groups (Horlick-Jones & Sime, 2004). The Covid-19 pandemic is an exemplar of a context that necessitates a transdisciplinary approach to investigation. Responses to the pandemic have interwoven health, welfare, science, politics and economics. However, the response by health sciences was largely driven by a positivist approach

to solving health problems. This response did not recognise the consequences of the mitigation strategies of lockdowns and social distancing on other dimensions of life such as worsening social inequities, loneliness, the rise of mental health problems, disruptions to education provision and the delivery of non-Covid related health care.

In addition to the complexity of the challenges confronting the human race, the development of a knowledge base unique to coaching has been hampered by a disconnect between research and practice. Fillery-Travis and Corrie (2019), for example, highlight how academics and practitioners still often operate in silos creating two distinct communities that do not intersect. They lament the lack of the "seamless collaboration" that they propose is necessary for optimum knowledge development in coaching. This view is shared by Syed and Mingers (2018) among others (e.g. Bansal, Bertels, Ewart, MacConnachie & O'Brien, 2012; Lion, Donovan & Bedggood, 2013) who, in focusing specifically on the gap between research development and business practice, argue that there is often a disconnect between management research and its practice in organizations and that the fundamental differences between the two has played a role in recent global economic crises. These concerns echo the earlier concerns of Starkey and Tiratsoo (2007) who argued that teaching in business schools was becoming increasingly organised around theoretical, academically-oriented research that was divorced from the priorities and needs of professional practice. One consequence of the separation of research and practice for coaching is that its knowledge has tended to develop through a series of distinct, separate and limited perspectives which have prevented a comprehensive and contextualised understanding of coaching as it is practiced (North, 2013). Yet, while the disjuncture between research and practice has long been recognised and is widely identified as a source of regret, less attention has been given to how it might be addressed (Syed & Mingers, 2018).

In summary, the challenges facing the world of today give rise to three independent but related dilemmas for developing the evidence base of coaching: (1) the limitations of reductionist, positivist, approaches for investigating challenges that are embedded in complex contexts. The positivist approach continues to remain dominant within coaching research yet is not fit for purpose for investigating complex, systemic and "wicked" problems; (2) the value of transdisciplinary approaches for investigating and responding to complex challenges and (3) the lack of translation of fundamental research into practice. This article focuses principally on the first of these three issues and makes the case that in order to theorise practice accurately and effectively and to ensure a translation of research into practice, it is necessary to look beyond methodology to the philosophy that underpins it. Specifically, in the context of emerging global complexities and an escalation of wicked problems, this article proposes that CR contributes one valuable perspective on knowledge development that complements and extends the achievements of coaching research to date. The central tenets of CR are considered next.

An introduction to critical realism

Critical realism (CR) is a branch of philosophy concerned with understanding science and scientific enquiry. Emerging during the 1970s and 1980s, it attempts to provide a robust post-positivist philosophy that offers an alternative to the paradigms of positivism and interpretivism.

The development of CR is attributed to Roy Bhaskar (e.g. 1975/1997; 1979/1998). It is important to note, however, that CR is not a single unified philosophical system but a heterogeneity of perspectives on the nature of knowledge (epistemology), the nature of being (ontology), the causes of events, human agency and the ways in which collectively we construct explanations about the world. Despite its heterogeneity, CR is grounded within a set of broad philosophical commitments which are summarised in Table 1^[1].

Table 1. Four main feature	ures of CR
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Premise	Description	
Central	CR is a philosophy concerned with the nature of being. The nature of the world is different from, and cannot be reduced	
assumption	to, our knowledge about the world (e.g. our theories, observations, narratives, human thought and social discourses).	
Ontological	Reality is multi-layered and comprises three typically desynchronised levels: the empirical, the actual and the real. This	
realism	third level, a "real" world, exists independently of our perceptions, interpretations and beliefs about the world (see	
	below).	
Structure	The social structures which permeate how we live, think and make decisions exist independently of our knowledge of	
	them. These structures enable and constrain human action but cannot reproduce themselves without human action and	
	intervention. They can also be altered by human action. As a result, human agency and social structures are	
	interdependent. Social structures change over time and are both causal and emergent. Structure, like agency, plays a	
	causal role in the events that occur, and any outcomes obtained. (See agency below.)	
Agency	Our ability to be conscious, active agents in the world despite operating within structures that enable and constrain that	
	ability. Human capacity for agency is seen as real and impacting the world in vital ways. Agency, like structure, plays a	
	causal role in any events occurring and any outcomes obtained. (See structure above.)	

As identified in Table 1, central to CR is the view that human beings live and work in a complex and multi-layered or stratified reality. This reality, according to CR, comprises the following interdependent, nested (Archer, Bhaskar, Collier, Lawson & Norrie, 2013) and typically desynchronised layers:

- 1. The empirical: those phenomena that we can readily perceive and experience and which are accessible for the purposes of observation and measurement. These are the phenomena that are captured through experimental methods and which we attempt to measure through experimental designs.
- The actual: phenomena that actually occur; the events and occurrences which are activated by causal mechanisms, which exist independently of any observer and which provide the basis of our experience.
- 3. The real: the generative mechanisms, causes, powers and structures that exist independently of us and which give rise to the domains of the actual and empirical. These latent structures are often hidden from direct observation and so are not amenable to measurement, yet they are responsible for those events or effects that can be observed and measured.

Each of the above layers is present in any social situation, event or environment. However, from a CR perspective, the primary aim of research is to identify the causal mechanisms - the domain of the real - which enable us to explain what is observed (Fletcher, 2017). For example, outcome research tells us that coaching works but does not explain why and how. Research underpinned by CR philosophy would focus on uncovering knowledge in the form of theoretical accounts of why coaching works and in which contexts. The pursuit of this type of enquiry might, therefore, lead to an interest in uncovering the mechanisms that generate an effective and trusting working relationship. Factors of potential causal relevance could include shared communication or social norms, the confidence of the coach, the developmental level of the coach, shared values between coach and client and the propensity of the client to develop positive working relationships. In addition, as coach and client exist as entities in relation to one another it follows that a trusting relationship is likely to be built through the interaction of causal powers in both entities. Yet some causal powers might hinder the development of a trusting relationship such as a coach using a communication style that is perceived as inappropriate based on the cultural norms of the client. Thus, CR research allows scholars to differentiate the events that are observable and measurable (such as coaching outcomes) from the mechanisms and structures that cause those events (the interventions provided by the coach, the unfolding process of the coaching and the coaching relationship).

As a distinct philosophical position, CR provides a critique of and response to the limitations of the two historically dominant and often polarised paradigms within social science: the positivist and the interpretivist. For example, CR rejects positivism on the grounds that it conflates what is real with

what is observable and measurable. This causes researchers to overlook the phenomena that they cannot measure. In consequence, CR rejects the use of experiments as a means of acquiring absolute and objective knowledge about the world. The fact that something can be measured reveals nothing about the causal mechanisms that determine the empirical level as these may be present in what is observed or may be present but remain dormant until activated by specific circumstances.

Interpretivism would also be rejected as a secure foundation for social science. As the foundational principle of interpretivism is that reality is a social construction, this paradigm seeks to generate knowledge through the actions, perceptions and interpretations of social actors. Yet if explanations of the world are reduced to social constructions, it is not clear how to study phenomena which exist outside the narratives that individuals and societies construct. From a CR perspective, individual accounts are always subject to error and bias as they are formed within the social structures and conceptual systems within which researchers operate.

On initial encounter, the central tenets of CR can seem complex, challenging to grasp and distant from the immediate priorities of practitioners. Bhaskar's work in particular can appear somewhat impenetrable, especially without a prior introduction to the philosophy of science. Nonetheless, CR philosophy has garnered interest in healthcare and applied psychology as well as business and economics. For example, an early study by Baillie and Corrie (1996) examined how a CR perspective could be applied to understanding the construction of clients' narrated experiences of psychotherapy. In clinical psychology, Pilgrim (2020) has provided a series of case studies to illustrate how CR might be applied in a variety of clinical and social contexts. Williams, Rycroft-Malone and Burton (2017) have applied CR to research aimed at enhancing professional practice in nursing, and CR was used to develop an understanding of project management challenges in a Nigerian government organisation (Lawani, 2021). (For a useful introduction to the application of CR in research, see Fryer, 2022.)

Within coaching, CR has been gathering momentum as a distinct orientation to research, especially in the context of understanding complex phenomena and events. For example, as coaching becomes a global practice with greater cultural and systemic diversity, CR can provide a useful framework within which to explore how these factors may influence practice. A recent study by Roche and Passmore (2022) which examined the complexities of anti-racism in coaching practice provides an example of how CR may be useful in this context. Nichol, Potrac, Hayes, Boocock, Vickery, Morgan & Hall (2021) applied a CR approach to understand and theorise the mechanisms underpinning examples of (non) influential and unintentionally influential (sports) coaching practice. Research conducted by Kovacs and Corrie (2017a; 2017b) used a CR informed research methodology, realist evaluation (Pawson, 2013), to investigate the impact of case formulation in complex executive coaching assignments. Additionally, CR has been used to investigate coaching as an intervention to facilitate expatriate acculturation (Abbott, 2006), explore the events that lead to insight within coaching sessions (Lightfoot, 2019), and investigate the impact of coaching on addressing resistance to change (Brandes & Lai, 2022). Thompson (2021) also employed a CR approach to identify the mechanisms by which the use of metaphor in coaching achieves positive results and, in the field of mentoring, Norris (2019) examines the mimetic effect of mentoring through a CR mixed-methods case study.

Methodological implications

As CR seeks to explain patterns and outcomes in real world social contexts, including the complex, emergent environments in which coaches practice, a CR philosophy has significant consequences for how the purpose of coaching research is conceptualised and the ways in which research methods are used. As noted above, CR is concerned with developing theoretical accounts which explain what is observed. In consequence, the methodological approach adopted is, as O'Mahoney

and Vincent (2014) observe, "necessarily deeply conceptual" (p.10) in pursuit of theories concerning the mechanisms that determine the social world. Specifically, CR favours approaches to enquiry that (1) adhere to retroduction as a system of reasoning; (2) privilege methodological flexibility and (3) tend to adopt a non-linear and iterative approach to knowledge generation^[2]. These distinctive characteristics are considered in turn.

Retroduction

In contrast to the inductive and deductive forms of reasoning that have historically dominated social science research, CR is grounded in retroductive logic. Retroduction moves research beyond the limits of both what can be observed (the empirical worldview) and description (the interpretivist worldview) in favour of understanding what is effective for whom, in which contexts and why (Sturgiss & Clark, 2020). Retroduction, then, is a system of logic that is concerned with uncovering the causal mechanisms that "sit behind" those patterns, outcomes or phenomena of interest that researchers can observe and measure. While inductive logic focuses on deriving generalisations from specific data points or observations and deductive reasoning develops a concrete statement about a particular situation based on a general claim or law, retroduction works back from what is observed or measured to answer the question of what could explain the phenomena that has been identified in a specific situation (Olsen 2009). As Vincent and O'Mahoney (2016) explain,

The task of the researcher...is to work out a better and causally accurate, correct, or reliable explanation for these patterns of events via the development of more adequate... accounts of the powers, entities, mechanisms and relations which created them (p. 7).

To ensure that this form of retroductive logic is rigorous and systematic requires that researchers take an iterative approach, ensuring that any theoretical accounts are revised and reviewed as new information comes to light (see below).

Methodological flexibility

Although rejecting the foundational assumptions of positivist and interpretivist science as a secure foundation for research enquiry, CR is compatible with qualitative, quantitative and mixed method approaches to investigation (North, 2013; Haigh, Kemp, Bazeley & Haigh, 2019). Given the multi-layered nature of reality that CR advocates, a flexible and pluralist approach to methodology is a necessary response (Fletcher, 2017). Nonetheless, the way in which CR research uses quantitative and qualitative methods is different from empiricist and interpretivist approaches when seen through the lens of retroduction. For example, social systems are continually evolving and from a CR perspective, the open systems of the real world are fundamentally different from the closed systems created in experimental conditions. While quantitative methods can, therefore, be used to identify relationships between variables that might in turn be used to infer latent mechanisms, or uncover how mechanisms are affected by different contexts, they cannot be used to make predictions about what will occur in real world settings.

Similarly as the social world is seen as comprising practices, traditions and norms that have causal powers, CR research would understand discourses and narratives as real social products that exert a causal influence. The value of qualitative research from a CR perspective lies in discovering how narratives and text function as causal mechanisms evident in the specific outcomes to which they give rise.

A useful framework for informing methodological choices from a CR perspective is the distinction between intensive and extensive research proposed by Ackroyd and Karlsson (2014). Intensive research favours qualitative research methods which tend to be selected when there is a known context but the causal mechanism is not known (Olsen, 2009). An example might be where a health and wellness coaching service for weight loss obtains results that consistently surpass the

rates of effectiveness reported in the wider literature. In this case, the context is known but the reason for these consistently superior results is unknown and becomes the desired focus of investigation.

In contrast, extensive research favours quantitative methods which are relevant where the causal mechanism is known but the context is unclear. Using the health and wellness coaching example above, this would occur where there is an understanding of why the weight loss programme is effective (i.e. the mechanisms responsible for the consistently positive results) but where the contexts in which this programme is effective are not understood. Here the focus would be on identifying the effect of different contexts on the causal mechanism.

The focus of intensive research might lead a researcher to select in-depth case studies of individuals, organisations or wider systems, or action research where the aim is to trigger or change a causal mechanism in order to understand its functioning more fully. The focus of extensive research would likely lead to a preference for surveys and other quantitative methods that would enable a wider sampling of contexts or populations.

Research as a non-linear and iterative process

Research that is informed by a CR perspective is non-linear and iterative. As CR is concerned with theories that explain the world rather than seeking empirical generalisations, the uncovering and exploration of causes, powers and structures emerge through iterative approaches to enquiry as emerging theories are reworked and reassessed in light of new information. This is again congruent with the quest of CR to construct theories about problems encountered in the real world, including wicked problems, which elude clear, definitive or straightforward solutions (Fleetwood & Hesketh, 2010).

Significantly, CR research welcomes the contribution of insights, intuition and hunches that stem from professional experience and expertise. The theorising that retroductive reasoning requires justifies the role of professional knowledge and the knowledge of research participants:

Retroductive theorising requires that inquirers use their common sense, intelligence, expertise, and informed imagination to build and test theories about underpinning causal processes. These may not be able to be tested immediately: truly novel theories often precede the means or technologies to test them (Rameses II Project, 2017).

The implications for coaching of embracing CR philosophy

Enquiry grounded in a CR philosophy has the potential to contribute new approaches to scholarly investigation that are likely to be both relevant and appealing to a field as diverse as coaching. This is reflected in the growing CR literature across disciplines and the large body of realist methodology available to scholars interested in transdisciplinary enquiries. Yet, the role of CR research in coaching is still relatively under-developed. In this final section, therefore, some of the potential benefits for coaching of CR are considered.

CR provides a more effective route into investigating the complex, emergent realities which coaches encounter in their practice

The emphasis on uncovering causal mechanisms renders CR well-placed to contribute to the analysis of complex social problems (Fletcher, 2017). Coaching is a complex phenomenon and a challenging activity to research. The multiple settings in which coaches operate, the variety of services that they deliver and the typical need to take account of the perspectives and priorities of multiple stakeholders are testament to the fact that coaches work in a world that is multi-layered and characterised by nested rather than independent layers of reality. For example, the

organisations in which coaches deliver their services are multi-dimensional and comprise numerous interacting mechanisms that impact the events observed, including the events that various stakeholders might wish to change through coaching. CR could assist in generating a knowledge base that helps identify and explain the mechanisms which result in specific coaching outcomes in particular contexts. This would provide coaches with research findings that might be more easily applied in practice (North, 2013). CR also provides a framework for analysing the interplay between structures and actors that unfolds over time (Frederiksen & Kringelum, 2021). Not only do the coaching process and the outcomes obtained emerge over time, but so too do the past structures and life experiences that shape how a client responds to particular coaching interventions and to the coaching relationship itself. Thus a case can be made that CR approaches to investigation attain a closer proximity to the realities that coaches confront in their work.

CR provides a more coherent philosophical basis for methodological flexibility and pluralism that can better facilitate a seamless collaboration between research and practice

Approaches to enquiry that are embedded in a CR perspective have the potential to ease the research-practice divide noted by Fillery-Travis and Corrie (2019). CR research champions methodological plurality as different methodologies enable access to different aspects of the world. Organising research around the notion of an asynchronous and stratified reality creates valuable opportunities for designing enquiries that have direct relevance to the complexities increasingly encountered by coaches. Yet CR retains ontological and epistemological commitments (see Table 1) and so differs from pragmatism – the position that any methodological means can be justified in pursuit of the endpoint of interest. A CR philosophy permits flexibility but can also ease the unhelpful dichotomising of objectivist and subjectivist approaches (Vincent & O'Mahoney, 2016). It might also enable the coaching community to critically reflect on the robustness of the current evidence base through offering a means of categorising the available knowledge according to the layer of reality that is being investigated: the empirical (the observed), the actual (the unobserved) or the real (the unobservable) (Frederiksen & Kringelum, 2021). This might in turn go some way towards addressing North's (2013) criticism of coaching as having historically drawn upon disparate, partial perspectives that have hampered a holistic understanding of the complexities of coaching practice.

CR can support the development of the transdisciplinary knowledge needed to address the concerns of an increasingly complex world

There are many types of knowledge. Within a world of open systems and emergent realities there is an implicit invitation to consider the myriad ways in which clients come to understand themselves, their circumstances and their options, how individuals, organisations and wider systems function and how these different forms of knowing can be threaded through the work of coaching to create opportunities for insight and change. A CR philosophy encourages scholars to look beyond individual differences to explore complex phenomena in holistic ways. Moreover, as CR subscribes to the belief that society can be improved through understanding the interactions of social structures and human agency, CR research is often directly concerned with what can be done to improve current social situations (Haigh et al., 2019). This is not only congruent with the beliefs, values and aims of coaching but also with the agenda of transdisciplinarity in its quest for approaches to research that can address the complex social, political and economic problems of the current age.

Challenges of embedding CR within coaching

Despite the potential benefits of underpinning the development of coaching with a CR philosophy, it is also recognised that adopting such a position is not without its challenges. First, as a philosophy concerned with advancing knowledge of why and how coaching is effective and in which contexts, it challenges the notion that research can identify generalisable findings concerning whether or not coaching "works." This may prove unappealing for commercial clients and sponsors for whom the allure of quantitative data sets, derived from positivist perspectives, appear to provide more

definitive pronouncements about the effectiveness of coaching that can equate to key economic drivers.

Second, as has also been noted, CR philosophy is complex and often difficult to navigate. This might prove alienating for some coaches and prevent a wider uptake of CR informed principles and methods from within the coaching community. Although the increasing body of CR coaching research would suggest that this is surmountable, it is likely that a more widespread embracing of CR informed research will require scholarly "ambassadors" who can support the community with translating the philosophy into accessible methods whose relevance for coaching practice are clear. Such methods might include action research, mixed methodological studies and realist evaluation drawing on Ackroyd and Karlsson's (2014) notion of intensive and extensive research described above. Thus, if CR is to fulfil its potential as one fruitful means of developing coaching knowledge that is fit for the demands of an increasingly complex global environment, this will likely require a broader consideration of how philosophy can and should be utilized within coaching and how coaching practice.

Conclusion

To engage with the philosophy of science is to be confronted with fundamental questions about the world, the nature of reality and the methods best suited to investigating the pressing questions of our time. As Hayes (2004) comments, "...all scientists bring assumptions to their work because no symbolic or analytic system can function without assumptions that lie outside of the system itself" (p.1). These assumptions are still arguably relatively unexplored within coaching (North, 2013) and a philosophy of coaching is yet to be fully developed. This hampers the ability to theorise practice and to consider which types of knowledge are needed for coaching to fulfil its potential as a vehicle for social change.

The aim of this article has been to stimulate reflection and debate in an area that is often neglected within the coaching literature. An additional aim has been to present the case that in the spirit of evolution, rather than revolution, CR has much to offer the development of the knowledge base which informs coaching practice and can support the coaching community in critiquing, refining and expanding its methodologies. The number of CR studies remains limited in comparison with research derived from the more traditional positivistic and interpretivist perspectives, but there is a growing presence of CR research in coaching. This article has sought to build on this emerging interest by articulating a rationale for the explicit adoption of CR within coaching research. Such a development could not only provide coaching with a more robust philosophical foundation but also pave the way for the development of novel, transdisciplinary forms of enquiry that can address the questions that are confronting coaches and their clients in an era of unprecedented uncertainty, volatility and change.

Endnotes

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Table 1 is intended as an introduction to some of the main philosophical tenets that are relevant to this article only. A comprehensive overview of the CR philosophical system can be found in Bhaskar (1975/1997) and Pilgrim (2020).

[2] ~

This article does not claim to provide a comprehensive introduction to critical realist-inspired methodology. For a comprehensive review the reader is referred to Emmel et al. (2018).

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