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The Open Society and coach education: a philosophical agenda for policy reform and future sociological research

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Abstract

Background: The realisation of the strategic importance of high quality coaching to the achievement of national sport policy objectives is resulting in extensive movements to professionalise the coaching industry. Interest in coach education is therefore growing among academics and policy makers alike. A recent review of literature in this field, however, reveals a troubling problem situation: formal coach education is important for coach learning but tends to be expensive, inflexible and overly technical and therefore has little real impact on coaching practice. The solutions offered by many academics are, unfortunately, vague and often philosophically flawed. This is particularly so when the *descriptive* model of communities of practice (CoP) is suggested as a *prescriptive* model for coach education. The first part of the paper therefore ends with an extended critique of the use of CoP as a model for coach education.

Purpose: To provide a clear philosophical argument for the direction of reform for coach education, drawing on a normative theory of the ideal conditions for the growth of knowledge.

Discussion: Starting with the argument that any descriptive (or 'evidence-based') model is inherently conservative, the second part of the paper offers an alternative solution to the problem of coach education that is openly prescriptive (or normative). It is the Popperian ideal type of an Open Society (OS). It is argued that the concept of an OS is a better prescriptive model for coach learning for a number of reasons. First, it is based on a logically sound epistemological theory of the ideal social conditions for the growth of knowledge. Second, it is simple and easy for lay people to understand. Third, as an ideal type, it offers a target or goal against which progress towards a better method of coach education

can be measured. In this final sense, it also offers a clear agenda for policy reform and future sociological research.

Conclusions: The paper makes a series of practical recommendations for reforming coach education and its institutions based on the model of the OS. Foremost among these are making learning resources free at the point of use and using web 2.0 technologies to democratise educational episodes and widen participation in coach education programmes of all kinds.

Key words: coach learning; communities of practice; paradigm; open society.

Introduction

The importance of coaching to the delivery of current sport policy objectives in the UK cannot be overstated. In two recent sport policy statements – *Playing to Win* (DCMS 2008) and the *Sport England Strategy 2008-2011* (Sport England 2008) – coaching is classed as ‘a core area of activity’ (Sport England 2008, 10) and, to this end, ‘the training of high quality coaches... sits at the heart of government’s plans’ (DCMS 2008, 15). Indeed, the recognition of the importance of coach education and training is reflected in the fact that almost half of the 12 specific ‘strategic action areas’ in the UK Coaching Framework – a document that aims to create a world-leading coaching system by 2016 – focus on the education and development of highly skilled and accredited coaches (sports coach UK 2008). Such policies and plans are reflective of a broader neo-liberal modernisation agenda in sport (Green and Houlihan 2006) that seeks to redefine coaches as highly skilled and educated ‘professionals’ (Taylor and Garratt 2010). However, according to Nash and Sproule (2011), the modernisation agenda in the UK – especially the introduction of the new UK Coaching Certificate¹ – is somewhat behind schedule. This may be due to resistance from local level stakeholders – i.e. community coaches and sports development professionals – who feel that attempts to professionalise a traditionally voluntary and autonomous activity redefines many

coaches as ‘old fashioned’ and leaves them feeling ‘left in limbo’ (Taylor and Garratt 2010, 136).

It is against this backdrop of rapid professionalization and local resistance, then, that academic interest in the process of coach development and learning has grown. In the past six years alone, 23 papers have been published that describe the processes through which coaches are socialised into coaching. It is the purpose of the next section to critically review this emerging literature, focussing specifically on the recommendations made for coach education and learning. Following this review, which concludes with a philosophical critique of the use of the concept of ‘communities of practice’ in coach education literature, the second main section of the paper aims to offer a clear and openly prescriptive model for how coach education might be best facilitated in future. It should be noted at the outset that this paper has no ambitions to make recommendations about the *content* of coach education programmes (i.e. the ‘what’), since compelling suggestions have been offered by others recently (cf. Abraham and Collins, 2011; Nash et al. 2012) and await application and empirical testing. Rather, this paper focusses on the way in which coach education is delivered (i.e. the ‘how’) since these ideas can be instructive regardless of sport, level or context.

Part 1: Critique

Coach learning

Research on coach education is in its infancy. Many of the papers published in the overlapping fields of coach education, coach learning and coach development are therefore concerned with describing, defining and categorising experiences. For example, much ink has been spilled in delineating the conceptual boundaries between formal, informal and non-formal learning (Nelson et al. 2006; Lyle et al. 2009); between

learning and education (Cushion et al. 2010); education and development (Côté 2006); and mediated and unmediated learning (Mallett et al. 2009). Such discussions are necessary and valuable in establishing a shared understanding of key concepts to enable quality debate in an emerging field (Mallett et al. 2009). Indeed, based on this research, it is now possible to make the following fundamental assertions: 1) coach education is often used as a loose synonym for formal or mediated coach education or certification courses (typically those provided by national governing bodies); 2) coach education, so conceived, is a subcategory of coach learning, which may be experienced by coaches as formal, informal or non-formal *learning situations* (Lemyre et al. 2013, 378); 3) coach learning is, in turn, a subcategory of coach development, which refers to a broader process of socialisation into coaching and graduation towards increasing effectiveness and development of expertise (for definitions see Côté and Gilbert 2009 and Nash et al. 2012).

In addition to providing the material for this taxonomical work, empirical research has also been concerned with describing the learning experiences of coaches. The most frequently cited message coming from this literature is that formal coach education – the ‘highly institutionalised, bureaucratic, curriculum-driven and certified’ type of learning (Mallett et al. 2009) – has very little impact on coach development. In the USA, where certification is not a necessary condition for employment, successful coaches spend less than 5% of their total development activity in formal education (Gilbert et al. 2006). Similarly, in the UK, none of the expert and elite coaches interviewed by Nash and Sproule (2009) or Chesterfield et al. (2010) felt that formal education had any impact on their practice. Such findings are echoed with amateur coaches in Canada (Lemyre et al. 2007) and Portugal (Mesquita et al. 2010) and are further supported by a common posture in the literature that dismisses formal learning

as rigid, out-dated and largely irrelevant to coach development (cf. Nelson and Cushion 2006; Cassidy et al. 2006; Roberts 2010; Chesterfield et al. 2010; Nash and Sproule 2011; Nelson et al. 2012).

Upon closer reading of the literature, however, the simple dismissal of formal coach education, which has been ‘widely criticised by scholars and coaches alike’ (Nelson and Cushion 2006, 175), is hard to justify. For example, formal education has been found to be enjoyable and effective under certain conditions: namely, where coaches are less educated or at an earlier stage of development (Lemyre et al. 2007; Vargas-Tonsing 2007; Erickson et al. 2008; Mesquita et al. 2010; Nash and Sproule 2011), and where courses are more open and discursive in pedagogical approach (McCullick et al. 2005; Cassidy et al. 2006; Piggott 2012). In their study of Canadian coaches engaged in the NCCP, Erickson et al. (2008) found that coaches who aspired to higher levels of accreditation were more prepared to learn independently, whereas less ambitious coaches had a clear preference for formal learning. Both kinds of coaches, however, found formal education useful in their wider development. This is perhaps to be expected as early-stage learners in any field often search for ‘discoverable regularities’ (Bailey 2000, 191), which are a necessary step on the path towards deeper and more critical levels of understanding.

Some scholars have suggested that the educational philosophy of formal programmes is all important. When underpinned by behaviourist assumptions, for example, courses tend to be characterised by a technical rationality and a one-size-fits-all pedagogy (Cassidy et al. 2006; Nelson and Cushion 2006). Courses that implicitly draw on this ‘brick wall’ approach to education – where it is assumed that knowledge is accumulated, brick-by-brick, in a smooth progression from novice to expert – have been rightly criticised, and a more flexible and constructivist approach has been advocated

(Werthner and Trudel 2006; Trudel et al. 2013). To summarise then, the picture to be gleaned from the research on formal coach education is far from coherent. Researchers have perhaps been too hasty in drawing simple conclusions, ignoring subtle variations between countries, sports and levels of accreditation; variations that deserve greater scrutiny if deeper understanding is to be achieved.

In addition to the critical work on formal coach education, research has also elucidated common experiences of coach learning and socialisation. Again, at the risk of oversimplifying, the consistent conclusion drawn is that coaches (especially expert coaches) learn predominantly through a combination of informal (i.e. experiential learning and reflection) and non-formal (i.e. continuous professional development) means (Cushion et al. 2010). This process often begins with sustained, high-level playing experience, commonly in excess of 13 years for experts (Gilbert et al. 2006), and continues through an initial informal apprenticeship with a more experienced coach (Nash and Sproule 2009). During this period, the apprentice spends time observing and reproducing practices as they become socialised into a subculture where they learn how things 'should be done' (Lemyre et al. 2007; Nash and Sproule 2009). Such social learning experiences strongly influence coach development as learners mimic and steal from more experienced coaches (Stephenson and Jowett 2009). One of the obvious consequences of this mode of learning is that the ideologies and practices of powerful experienced coaches are unlikely to be challenged by apprentices. Under heavily stratified social conditions, which are common in coaching (Cushion and Jones 2006; Lemyre et al. 2007), the uncritical reproduction of outmoded coaching methods and behaviours is likely. In short, under certain conditions, both informal and formal learning can be powerful forces for the indoctrination of coaches into traditional, hierarchical and often irrational cultural practices (Cushion et al. 2010).

Following naturally from the conclusions outlined above, many scholars feel compelled to make recommendations for the future development of coach education. First, it is suggested that coach education programmes need to account for the inherent social-pedagogical complexity of coaching and recognise the variety of experiences and baggage that different coaches bring to educational settings (Vargas-Tonsing 2007; Côté 2006; Chesterfield et al. 2010; Nelson et al. 2012; Werthner et al. 2012). Second, it is often suggested that national governing bodies (NGBs) increase the opportunities for coaches to engage in informal learning through the creation of mentoring programmes and (virtual) coaching networks (Stephenson and Jowett 2009; Nash and Sproule 2011; Trudel et al. 2013). The considerable value of creating open forums – where coaches can discuss common problems, argue and even disagree – lies in their ability to overcome the problem of relevance, noted above (Cassidy et al. 2006). As Côté (2006, 220) explains, formal courses ‘should be designed more like cooperative learning opportunities where knowledge is created and shared in context’ thus negating the problems created by rigid, one-size-fits-all designs. To this end, by far the most frequent explicit recommendation made in the literature is for the formation of coaching communities of practice (CoP) (Trudel and Gilbert 2004; Nelson and Cushion 2006; Lemyre et al. 2007; Cassidy et al. 2006; Erickson et al. 2008; Cassidy and Kidman 2010; Roberts 2010).

The problem with communities of practice

The concept of CoP was originally intended as a description of how knowledge communities are formed and maintained in organisations composed of skilled participants who share a common craft. The theory grew from the ‘distillation of a number of ethnographic studies’ beginning with Jean Lave’s anthropological work with Liberian tailors (Wenger 1998, 15). According to one simple definition, a CoP is “a

group of people who share a common concern, set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an on-going basis” (Wenger et al. 2002, 4). More specifically, CoPs form ‘as a result of participants sustaining *mutual engagement* in a *joint enterprise* and negotiating meanings around a *communal repertoire* long enough to share significant learning’ (Culver and Trudel 2008, 7).

In coach education research, the concept of CoP is frequently advanced when coaches mention anything vaguely related to learning via interaction with others. Erickson et al. (2008, 534) present a typical example when they suggest that “the frequent mention of interaction with coaching peers as a primary source of coaching knowledge supports the notion of CoP as important contexts for learning”. More dedicated studies have attempted to create and facilitate coaching CoPs with a deeper and more fine-grained appreciation of the concept (cf. Culver and Trudel 2006; 2008). However, even skilled researchers with an interest in developing CoP, and with time and resources to invest, have struggled to create self-maintaining coaching CoP (Culver and Trudel 2006). Some have argued that such difficulties are inevitable, noting that, even within the same club, coaches are often opponents rather than collaborators; that there is little incentive to share knowledge with others; and that the norm is actually to conceal ideas to gain a competitive advantage (Lemyre et al. 2007; Owen-Pugh 2008). Indeed, as Cushion (2008, 16) has noted, the meritocratic and power-ridden nature of sports coaching means ‘it is important to challenge the assumed benign character of CoPs’ (also see Cox 2005, 533).

To balance some of the criticisms of CoP, it is important to understand the original nature and purpose of the concept. Cushion and Denstone (2011) remind us that Wenger’s work is intended as a way to understand learning as a *social practice*. CoP and

its allied concepts can therefore be instructive in several ways: first, as a description of how coaches come to develop their identities through learning, ‘aligning’ themselves with a community, learning its norms and coming to see themselves as members; second, as a way of understanding the relationship between ‘old timers’ and ‘newcomers’ (or mentors and protégés) in the journey from ‘peripheral’ to ‘full legitimate participation’; and third, in directing our attention to the normative roles, behaviours and routines that constitute a ‘repertoire of practice’ in a given coaching community (Cushion and Denstone 2011).

Since the publication of these original insights (Lave and Wenger 1991), the concept of CoP has been applied widely in studies on social learning. However, according to Amin and Roberts (2008), these applications have become ‘formulaic’, ‘homogenous’ and ‘instrumentalist’ in nature (recognisable criticisms in the coaching literature) with a good deal of the original value being lost. In order to sharpen the analytical precision in the use of CoP, Amin and Roberts (2008) reviewed over 300 publications where the concept had been explicitly applied and discovered various different modes of ‘knowing in action’. After comparing the similarities and differences across contexts, they developed a typology of four distinct varieties of CoP: *craft/task-based*; *professional*; *epistemic/creative*; and *virtual*. Of the four types, a coaching CoP would most likely fall under the craft/task-based category, which has the following characteristics: knowledge is kinaesthetic, tacit and embodied; social interactions are largely face-to-face in an apprenticeship-based community that operates on the basis of interpersonal trust and the performance of shared tasks; community is hierarchically managed and open to new members; innovation is slow and incremental (Amin and Roberts 2008, 357).

These rich and fertile sociological concepts that have emanated from Lave and Wenger's work, qualified by the precision of Amin and Roberts' typology, are undoubtedly useful to those interested in understanding how coaches learn in certain social situations (Cushion and Denstone 2011). However, this is not how most scholars have understood CoP. The *real* problem with CoP is therefore not so much about the concept itself – it is perfectly useful as a sociological theory – but can be traced back to a fundamental confusion between facts and values, or description and prescription².

As noted above, the concept of CoP was intended to *describe* the initiation into, and maintenance of, knowledge communities. In developing the concept, Lave and Wenger (1991) drew on primary anthropological studies and ethnographic research, and were influenced by a range of sociologists (notably Bourdieu and Foucault), anthropologists and sociologists of science (Wenger 1998, 280-284). As such, it should be clear that CoP originated as a descriptive model *of* craft-based knowledge communities; yet, in almost all cases where CoP is used in sports coaching literature, it is as a prescriptive model *for* coach education (cf. Nelson and Cushion 2006; Cassidy et al. 2006; Lemyre et al. 2007; Roberts 2010).

To gain a deeper understanding of this problem and its consequences, it is instructive to draw out some points of resemblance between the craft-based CoP and its better-known analogue, the paradigm (Kuhn 1996)³. Like a craft-based CoP, a paradigm describes a community of practitioners who have undergone similar education and professional initiation; who have absorbed the same literature and drawn similar lessons from it; and who share common goals, including the training of their successors (Kuhn 1996, 177). The 'shared repertoire' of a paradigm incorporates common problems, stories, exemplars and tacit knowledge, all of which enable the practice of 'normal

science’: a ‘puzzle-solving’ activity or ‘mopping-up’ operation, which is engaged in largely uncritically by the members of the community (ibid, 24-36).

Paradigms, then, can be characterised as irrational because they cannot be criticised from within or without. That is to say, members fail to identify problems or conflicting ideas which are effectively invisible to them, whilst external critics are commonly dismissed as cranks (Popper, 1970). For these reasons, far from being ideal situations for learning, paradigms may be better characterised as ideal environments for the transmission of dogma (which, it may be argued, is a form of learning). By extension, and depending on how power relations are configured (Cushion and Denstone 2011, 97), craft-based CoP may actually be a rather accurate description of coach learning, which, as we have seen, can often be irrational and dogmatic (Cushion et al. 2010, 69). So, just as paradigms and normal science make for poor prescriptive models for scientists⁴ and science education (Watkins 1970; Fuller 2006; Bailey 2006), so craft-based CoP make for poor prescriptive models for coach education.

A final weakness of this mode of argument – where descriptive and prescriptive models are confused – is its inherent conservatism (unless one likes conservatism, of course). To argue that a particular mode of education – say, social learning – *is* currently favoured by participants and *ought* therefore be prescribed to future generations (cf. Nelson et al. 2012) is tantamount to admitting that there are no better alternatives to coach education than those of which coaches are already aware. This conservative style of reasoning – i.e. reasoning that runs ‘what is, is good’ – ignores the possibility that we can find new and better norms for ourselves (Popper 1966a, 71). Just because ‘most coaches like course x’ it does not follow that ‘course x’ is the best possible method of coach learning available⁵. Moreover, by ascribing authority to ‘evidence’ (in the form of coach feedback, for example), policy makers avoid taking

responsibility for what are inescapably moral decisions with moral consequences (Popper 1966a, 73).

If the problems associated with application of CoP introduced in this section are taken to be valid, a new and explicitly normative solution to the problem of coach learning needs to be offered. It is the purpose of the next section to offer such a solution, one that is based on a logically robust epistemological theory of the ideal social conditions for the growth of knowledge. Contrary to Lyle's (2007, 29) call for evidence-based models, it is presented unashamedly as an 'argument for' better coach education rather than 'evidence of' what works⁶.

Part 2: The Open Society

In 1943, following five years of intense and impassioned study, an unknown Viennese philosopher living in exile in New Zealand finished a two-volume book attacking some of the greatest thinkers in Western intellectual history. The main purpose of the book, which its author called his 'war effort', was to trace the roots of totalitarian thought from its incarnations in Nazi Germany and communist Russia, back through two millennia of intellectual tradition, from Plato and Aristotle to Hegel and Marx. Despite a hostile reception from some corners of academia, *The Open Society and its Enemies* has since become recognised as one of the most powerful and decisive contributions to liberal thought (Magee 1975; Jarvie and Pralong 2003). The book's author, Karl Popper, was later to be knighted (in 1965) and elected a Fellow of the Royal Society (in 1976) and is now widely regarded as one of the greatest philosophers of the last century⁷.

Critical rationalism

Like Plato and Marx, Popper based his political philosophy on his theory of knowledge.

For Popper, the best society is one that is best at solving its problems, especially the problem of how to minimise avoidable suffering (Magee, 1975, 74). To this end, a society in which knowledge can grow without impediment would be best at solving its problems, as a wider range of theories could be offered as solutions. It is therefore useful to outline Popper's theory of knowledge before considering the Open Society (OS) as the OS is nothing more than an attempt to delineate the social conditions most conducive to the growth of knowledge (Shearmur 1996, 89).

Popper's epistemological theory of critical rationalism, like most of his theories, was born from criticism: in this case, his criticism of the related theories of positivism and induction (Popper 1972). Broadly speaking, positivists claimed that knowledge is the product of accurate objective observations that are aggregated, via a process of induction, to general explanatory theories. Popper objected, arguing that all observation is guided by theory; that deductive logic is the only valid mode of inference; and that all knowledge is tentative, never certain (see Miller 1994, 1-13, for a concise review). In Popper's view then, knowledge consists of fallible theories that are tested against experience and held tentatively until more severe criticism can be mobilised. This theory of critical rationalism, where knowledge grows via a process of *conjecture and refutation*, is both an attitude and a logical theory of the growth of knowledge. As an attitude, it can be summarised in the following sentence:

'I may be wrong and you may be right, and by an effort, we may get nearer to the truth' (Popper 1994, xii).

A critical rationalist is therefore an optimist and believes in the value of criticism, in tolerance, and in the value of learning from mistakes. This attitude may also be expressed logically in the following four-stage schema, or method:

$$P_1 \rightarrow TS \rightarrow EE \rightarrow P_{2,3,4}$$

To explain by way of example, a scientist begins with an initial problem (P_1) to which she conjectures various imaginative, tentative solutions (TS). The solutions – which, incidentally, may come from anywhere – are subjected to criticism in order to eliminate errors (EE), leaving the scientist with a series of new problems ($P_{2,3,4}$) different from the initial problem she faced (which would either have been solved or changed in light of the investigation). This is, of course, an ideal-type example and Popper knew very well, albeit reluctantly, that this is often not how scientists operate in reality (Popper 1970). However, unlike Kuhn (1996), Popper was not trying to describe the everyday operation of scientific communities, but rather prescribe a logically robust theory of how scientists should conduct themselves and their studies⁸. In this respect then, critical rationalism, as an *attitude* and a *method*, provides knowledge communities and institutions with clear guidelines for conduct.

Open and closed as ideal types

Popper's vision of science as the institutionalisation of critical rationalism, developed in the mid-1930s (Popper 1934), formed the basis of his model for the OS ten years later (Popper 1966a, 74). The book can best be understood as a philosophical interpretation of political history; as an attempt to understand the struggle to move from closed, tribal societies to more open, individual and rational societies (Jarvie 2003, 72).

Characteristically, the OS emerged from Popper's criticism of the damaging consequences of alternative schemes, especially Plato's totalitarian *Republic* and Marx's classless society (Bailey 2000, 132-133). To this end, Popper's aim was not to present an accurate historical picture of different political arrangements, but to offer a fruitful

set of concepts that would enable more effective criticism, and hence reform, of social institutions (Jarvie 2003, 71).

With this in mind, Popper's concepts of open and closed are best characterised as Weberian ideal types: built of empirical materials, but not 'empirical averages', and possessing an 'artificial simplicity' not to be found in concrete reality (Weber 2001, 149). Ideal types, in this sense, exist for the purpose of thought and are to be judged as fruitful or barren, not true or false (Jarvie 2003, 71). Moreover, due to the crucial Popperian principle of fallibilism, the OS 'has to serve as a special kind of ideal that is self-consciously imperfect; an imperfect society that is always open to improvement' (Soros 1998, 85). But what kind of characteristics would this ideal society exhibit? And what kinds of values and attitudes should its members hold?

We have already seen that the OS is Popper's attempt to delineate the optimal social conditions for the growth of knowledge, since a knowledgeable society is good at solving its problems. In a typically adroit interview given in 1972, Popper offered two basic characteristics of an OS: first, free debate, especially about the wisdom or otherwise of governmental decisions, should be possible and should exert political influence; and second, institutions should exist for the protection of freedom and the protection of the poor and weak (Popper 2012, 277). More recent scholarship has expanded on the social conditions characteristic of an OS, including but not limited to: a participatory and multicultural democracy; a free market economy (containing a mechanism for its own regulation); free education; institutions that protect free speech and public discussion; and institutions that promote tolerance, experimentation, individualism, fallibilism and skepticism (Soros 1998; Bailey 2000; Sassower 2006). In short, an OS is 'a social setting that fosters a critical and creative spirit, encouraging the

free flow of ideas' (Bailey 2000, 129), the simple and limited goal of which is the promotion and protection of the autonomy of its citizens (Soros 1998, 209).

Table 1. Characteristics of closed and open societies

	Closed Society		Open Society
Goals	Maintaining social control, Protecting the status quo		Protection of individual autonomy
Institutions	Authoritarian/Exclusive Sacrosanct Conservative/Petrified Centrally (state) controlled	→	Pluralistic/Multicultural Fallible (contain mechanisms for correcting their own mistakes) Protect public discussion
Institutional attitudes	Tribalism Dogmatism Allegiance to authority Irrationalism	‘Culture clash’ →	Individualism Fallibilism/Skepticism Pluralism Tolerance
Knowledge generation	Kuhnian ‘Normal Science’ within incommensurable paradigms	→	Critical rationalism $P_1 \rightarrow TS \rightarrow EE \rightarrow P_{2,3,4}$

Adapted from Popper (1966a & b), Soros (1998), Bailey (2000) and Sassower (2006).

The closed society, by contrast, is the mirror opposite: a negative ideal type. Operating more like a Kuhnian paradigm, the closed society is dogmatic and conservative, tribal and superstitious; its institutions are sacrosanct, serving the interests of the ruling authority, censoring free speech and actively suppressing critical discussion. The closed society is ruled by taboos – social norms that are protected from critical questioning – and, to this extent, promotes irrationalism (Popper equates the rational attitude with the readiness to engage in critical discussion).

As summarised in table 1 (above), open and closed ideal types present us with signposts for institutional reform (Jarvie 2003, 71). They represent vectors showing us what to move away from, and what to move towards. However, to repeat an earlier point, there can be no absolutely open society; achieving openness is a matter of degree (Jarvie 2003; Bailey 2000, 131). Considering the degree to which our NGBs and coach education institutions are open or closed might therefore be instructive in providing a clearer direction for the reform that many scholars believe to be necessary, but have yet to articulate in any real detail.

A normative model for coach education

As was shown in part 1, the (very) limited sociological research has thus far situated coach education more towards the closed end of the continuum in both formal and informal domains (Lemyre et al. 2007; Cushion et al. 2010; Piggott 2012). In order to reform certain institutions responsible for coach education, it is therefore important to first understand how closed societies (or institutions) become more open. As indicated in table 1 (above), Popper's contention was that the origins of this long and gradual struggle can be partially explained by 'culture clash': an intercultural exchange in which opposing ideas and values come into competition, leaving their proponents with a wider and deeper understanding of the world as a result⁹ (Vincent 2006, 172; Popper 1998, 144). Tolerance is therefore a necessary but insufficient condition for culture clash: one needs not only to tolerate the views of others, but also be prepared to change one's views if proved wrong. Fruitful forms of culture clash occur, then, where two parties holding opposing views engage in critical discussion, fully prepared to modify their views in light of opposing arguments (Popper 1994). It is important to point out here that such institutional attitudes are not to be mistaken with subjective mental states. As Jarvie (2003, 74) explains, 'a scientist may have a subjective attitude of conviction, of being correct; yet the same scientist could, as part of an institution, implement an attitude of scepticism and the demand for the testing of their own work'. By instilling the institutional attitude of critical rationalism, organisations can therefore encourage productive forms of culture clash.

In addition to these fundamental requirements, and having considered the basic characteristics of an OS (see table 1), it is now possible to sketch a normative model for coach education. Table 2 (below) lists some of the relevant characteristics of

the OS with respect to education, next to which some specific recommendations for reform are made. It is intended to be merely suggestive and is in no way exhaustive.

Table 2. Reforming coach education in line with the Open Society

OS characteristics	Specific reforms
Multicultural and participatory democracy (Soros 1998, 209)	Anyone, not just qualified coaches and members, should be able to access coach education resources and contribute to their development.
Free competition of theories, pluralism (Bailey 2000, 132)	NGBs should allow for the publication of a range of alternative coach education materials, demonstrating that there is no single best method.
Protection of public discussion (Popper 1966b, 322)	Formal coach education courses should be revised so as to make public debate a key feature. Web 2.0 technologies (specifically social networking, wikis and blogs) should also be exploited to ensure public discussion is a feature of informal learning.
Free education (Bailey 2000, 156)	NGBs and NSOs should make coach education free at the point of access wherever possible.
Promotion of individualism, fallibilism, experimentation and skepticism (Sassower 2006, 121)	NGBs and NSOs should revise coach education materials regularly in light of criticism and new ideas. Publication model should be inexpensive and electronic where possible (i.e. based on web 2.0 technologies).

First, in order to move towards the OS, it is of primary importance that *all* members of the community can participate. At present, certainly in the UK, coaches can rarely access learning resources unless they are signed-up members of associations, or ‘licensed’ coaches (a new fashion), which often entails holding formal qualifications. Since only 50% of the 1.1 million coaches in the UK hold recognised coaching qualifications, with female coaches sorely underrepresented (sports coach UK 2011), there is much work to be done here.

In a related sense, if wider and easier access to resources were achieved, it would enable a greater range of ideas about coaching to be offered up for debate. And, with a wider range of participants in a discussion, more varied criticism and greater competition between ideas is likely. Such public discussion needs to be protected, however, and NGBs and NSOs can play a central role in this respect. By way of illustration, one way of promoting and protecting public discussion is the use of web 2.0

technologies. They present organisations with a set of online educational tools that are relatively simple to use and virtually free to access. Wikis, for example, can be created using free, open source software, and are, in many ways, pure manifestations of the OS. With a wiki-based site, the users create and edit content. There is no central authority with editorial control (and therefore no censorship) and complete freedom for users to create resources that can then be used and rated, edited and discussed freely by the whole community (cf. Tapscott and Williams 2008). Copyright and intellectual property concerns are solved by *Creative Commons* licensing, which can be calibrated to meet the organisation's needs.

It is worth noting at this point that such recommendations are far from radical. The exponential growth of open educational resources (OER) in universities – starting with MIT and their phenomenally successful *OpenCourseWare* – illustrates the appetite for free and open access learning. The emergence of so-called MOOCs, such as *Udacity* and *The Kahn Academy*, are also beginning to demonstrate that degree-level courses can be effectively delivered online, free at the point of use (Leckart and Cheshire 2012). Indeed, according to a recent four-year coach tracking study conducted in the UK with over 400 coaches, the cost, timing and travel involved in accessing coach education are major barriers to uptake. The report notes that the use of online platforms to enhance communication, provide free advice and support certification programmes is currently underexplored (sport coach UK 2012, 13-15).

The greatest benefit of the OER model and concurrent use of web 2.0 platforms is that they are *free*. Making educational materials free is currently a novel concept in coach education. Virtually all NGBs and NSOs in the UK charge annual subscription fees (often on top of the costs of accreditation) for access to magazines, journals and websites, as do most officially endorsed commercial providers. This model is highly

exclusive and entirely unnecessary given the technologies now available in online publishing (the recent *Finch Report* signals a similar move in academic publishing). The situation with formal qualifications is slightly different: certification courses certainly incur running costs – mainly for tutors and facilities – but course fees could still be reduced if expensive resource packs (manuals, DVDs), which are rarely impactful anyway (Piggott 2012), were exchanged for OER (this was a major theme emerging in the recent study by Nelson et al. 2012).

To be clear, the recommendation here is not for *replacing* formal education with informal, open access (online) learning, but rather for an increased ‘layering’ of education options for coaches. Popper believed that theories (e.g. from pedagogy, participant development, technical and tactical mastery, decision making etc.), once published, occupy a world of objective knowledge, or what he called ‘world 3’ (Popper 1981). An important characteristic of world 3 is that the theories (or cultural items) that exist there become more objective (read: ‘truthlike’ or trustworthy) through a process of inter-subjective criticism (Popper 1966b, 221). Put simply, the more of world 3 we have access to, and the more of it we are able to criticise (or see criticised by others), the faster we learn and the better we solve problems. To be sure, a vital element of coach education (especially for certification) has to be conducted face-to-face in practical settings, but it can be supplemented at many levels by opening up coaches’ access to world 3. This could be through mentoring or CPD programmes involving external analysts; through university-based OER or the publication of NGB magazines; through social networks and blogging; or through the use of wiki-based sites and YouTube. There is a great deal of potential for NGBs and NSOs to do more to facilitate such access in future.

The final reform outlined in table 2 (above) is the most pervasive and therefore least practical and hardest to implement. It hinges on the ability of organisations to promote values and attitudes – namely individualism, fallibilism, skepticism and experimentation – that foster a fast-moving and reflexive culture of creativity, risk-taking and a willingness to make mistakes and learn from errors (Sassower 2006, 113). Such breezy exhortations could easily be dismissed if not for the huge success of companies such as *Google* who base their corporate culture on a similar set of values (Auletta 2009). In a coach education setting, such a change would signal an end to the expensive publication of coaching manuals and periodical technical ‘statements’ (revised once every decade or so) to be replaced by a more flexible and temporary set of ideas and position statements. A concurrent change to the delivery style of formal education would also be expected. Instead of presenting a ‘gold standard’ model coach, which all participants are expected to replicate, courses would be based around exploring a range coaching methods and judging each according to its effectiveness in different circumstances (also see Chesterfield et al. 2010, 311).

To summarise, this model, with its roots in the normative theories of critical rationalism and the OS, represents an attempt to delineate *the ideal conditions for the growth of knowledge*¹⁰. Assuming that increasing knowledge is one of the main aims of all coach education programmes (cf. Nash et al. 2012), NGBs and NSOs are encouraged to consider these largely practical recommendations when revising policies and practices in future. One final qualifying point needs to be made. These recommendations are made in full recognition of the difficulty of reforming institutional policies and practices. It may well be the case that ‘normal’ activity in sports organisations, like in Kuhn’s scientific communities, is highly conservative: governed by incommensurable paradigms that become petrified through an absence of criticism.

The limited sociological research in the field tends to point in this direction, though counterexamples certainly exist. However, in generating his normative theories of science and society, Popper did not ignore the reality of social and political institutions (such as NGBs), but ‘appreciated the extent to which an appeal must first be made, first and foremost, to those who compose these institutions and appeal to them personally to remain virtuous’ (Sassower 2006, 25).

Conclusion: an agenda for policy reform and sociological research

This paper began with a cautious assessment of the recent literature on coach education. Since this field is relatively young, it is unreasonable to expect to find a well-developed sociological understanding of how coaches learn and how educational processes operate. The arguments in the literature for reforming coach education in line with CoP were criticised on the basis that CoP was developed as a *descriptive* rather than *prescriptive* model. Moreover, if, like Lawson (2009) and Amin and Roberts (2008), one takes certain kinds of CoP and paradigms to be synonymous, CoP is perhaps more accurately conceived as a *negative* ideal type for coach education (as argued by Bailey 2006, for example, in the case of science education).

Drawing instead on the explicitly normative model of the OS, the practical recommendations made in the literature for the development of virtual networks (Nash and Sproule 2011), open forums (Cassidy et al. 2006) and cooperative sharing episodes (Côté 2006) can be fleshed out, justified and explained with greater clarity and confidence. As illustrated in the previous section, the ideal types of open and closed can be fruitful in providing direction (if not detail) for institutional reform. Popperian theory does not, however, provide a laundry-list of exact prescriptions of what to do in this or that situation. It has, rather, more of a formal and categorical character. To the question

‘what shall I do now?’ the Popperian response is often ‘apply the principle and you will know’ (Sassower 2006, 30). For those looking for more detailed suggestions concerning the content of programmes, Abraham and Collins’ (2011) offering of mental models for coaches and the criteria for identifying expertise developed by Nash et al. (2012) both provide convincing, but as yet untested, normative models to scaffold coach education.

One significant problem remains, however, before progress can be made: the lack of understanding of where on the closed-open continuum NGBs and NSOs currently lie. The OS provides a map and compass, but we have no clear idea of our starting location. Descriptive sociological studies are beginning to emerge (e.g. Chesterfield et al. 2010), but more are needed to help researchers better understand our coach education organisations and institutions, especially the extent to which they can be characterised as open or closed. In addition to this important work, more critical sociological studies – of the sort recently undertaken by Taylor and Garratt (2010) and Piggott (2012) – will be needed to reveal, and therefore challenge, the kinds of deeply engrained cultural practices that are likely to inhibit progress towards the OS. Studies of formal, non-formal and informal educational experiences in different cultures, across different sports, and at different levels would be immensely useful (coaching research in the UK, for example, tends to be expert-focussed and soccer-centric). Critical ethnographic studies of NGBs and NSOs of different sizes and historical backgrounds would also be necessary. Only with the regular conduct of such research will we be able to chart the journey towards the OS in the future; a journey that will be ‘long, gradual and always in danger of setback’ (Popper 1972, 16).

¹ The UK Coaching Certificate (UKCC) is a new framework for the endorsement of formal coach education (or certification) programmes. The UKCC is designed to standardise coach education across sports – thus allowing the accreditation of prior learning – and delineate ‘coaching population roles’ that recognise the aspirations of coaches who work

with different populations to become ‘master coaches’ (i.e. a coach may become a master children’s coach or a master elite adult coach).

- ² In philosophical circles, this problem is known as Hume’s Law, after the eighteenth century Scottish philosopher, David Hume, who first exposed the logical sleight of hand involved in inferring and ‘ought’ from an ‘is’ (Putman 2004, 14). In his *Treatise of Human Nature* (book 3, part 1, section 1), Hume questions arguments that suddenly deduce matters of value from matters of fact (the classic example is: ‘God *is* our creator; we *ought* to obey Him’), and warns us to treat such arguments with caution. There is, in short, no principle of logic that allows one to leap from a *descriptive* statement to a *prescriptive* statement.
- ³ This similarity has recently been noticed by Lawson, who contends that ‘the special forms of social organisation called communities of practice by Wenger, may also be called paradigms or epistemic communities; the upshot is the same’ (Lawson 2009, 99).
- ⁴ Interestingly, unlike Wenger, Kuhn is aware of the criticism that his paradigm concept runs afoul of the description/prescription problem. However, even in the most recent editions of his famous text, *The Structure of Scientific Revolutions*, Kuhn still struggles to explain this away, falling back on the notion that, in some ‘special situations’, descriptive and normative statements may be ‘inextricably mixed’ (Kuhn 1996, 207-208). The reader is left to decipher what this might mean.
- ⁵ John Stuart Mill called this ‘the tyranny of the majority’: a tyranny where society issues its own mandates; a tyranny ‘more formidable than many kinds of political oppression’. According to Mill ‘there needs to be protection against the tyranny of prevailing opinion and feeling; against the tendency for society to impose... its own ideas and practices as rules of conduct on those who dissent from them’ since such a regime ‘feters’ the development of individuality and ‘compels all characters to fashion themselves upon the model of its own’ (Mill 1991, 9).
- ⁶ It should be added that, under the critical rationalist theory of knowledge accepted here, no amount of evidence could ever justify, or relieve a policy maker of the burden of making, a moral decision. Rather, evidence is only useful in helping us recognize the errors in our decisions *after* they have been made (e.g. unwanted unintended consequences, unexpected expense, physical or psychological harm). On this view, the notion of ‘evidence-based policy’ reflects a fundamental misunderstanding of the nature of knowledge and of political decision-making.
- ⁷ In 2005, the BBC Radio 4 programme, *In Our Time*, ran a national poll to find the greatest philosopher in history. Popper was voted tenth overall and second among twentieth century philosophers, behind his Viennese contemporary, Ludwig Wittgenstein.
- ⁸ Magee (1975, 9) provides three examples of Nobel Prize winning scientists who have paid an explicit debt to Popper and to his influence on their work.

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- ⁹ This was the case on the Aegean coast around the 6th century BC as Thales, the first teacher to encourage his students to criticise his ideas, founded the first critical school of philosophy – the Milesian school – an important precursor to the ancient Greek enlightenment. Popper’s presidential address to the Aristotelian society in 1958, *Back to the Pre-Socratics*, provides a vivid explanation of this process (Popper 1972, 183-206).
- ¹⁰ For a book-length version this argument, as applied to education in general, see Richard Bailey’s *Education in the Open Society* (Bailey 2000).

References

- Abraham, A. and D. Collins. 2011. Taking the next step: ways forward for coaching science. *Quest* 63: 366-384.
- Amin, A. and J. Roberts. 2008. Knowing in action: beyond communities of practice. *Research Policy* 37: 353-369.
- Auletta, K. 2009. *Googled: the end of the world as we know it*. London: Virgin Books.
- Bailey, R. 2000. *Education in the open society: Karl Popper and schooling*. Hampshire: Ashgate.
- Bailey, R. 2006. Science, normal science and science education – Thomas Kuhn and education. *Learning for Democracy* 2: 7-20.
- Cassidy, T. and L. Kidman. 2010. Initiating a national coaching curriculum: a paradigm shift? *Physical Education and Sport Pedagogy* 15: 307-322.
- Cassidy, T., P. Potrac and A. McKenzie. 2006. Evaluating and reflecting upon a coach education initiative: the CoDe of rugby. *The Sport Psychologist* 20: 145-161.
- Chesterfield, G., P. Potrac and R. Jones. 2010. 'Studentship' and 'impression management' in an advanced soccer coach education award. *Sport, Education and Society* 15: 299-314.
- Côté, J. 2006. The development of coaching knowledge. *International Journal of Sports Science and Coaching* 1: 217-222.
- Côté, J. and W. Gilbert. 2009. An integrative definition of coaching effectiveness and expertise. *International Journal of Sports Science and Coaching* 4: 307-323.
- Cox, A. 2005. What are communities of practice? A comparative review of four seminal works. *Journal of Information Science* 31: 527-540.
- Culver, D. and P. Trudel. 2006. Cultivating coaches' communities of practice: developing the potential for learning through interactions, in Jones, R. Ed. 2006. *The sports coach as educator*. London: Routledge. 97-112.
- Culver, D. and P. Trudel. 2008. Clarifying the concept of communities of practice in sport. *International Journal of Sports Science & Coaching* 3: 1-10.
- Cushion, C. 2008. Clarifying the concept of communities of practice in sport: a commentary. *International Journal of Sports Science and Coaching* 3: 15-17.

- Cushion, C. and R. Jones. 2006. Power, discourse, and symbolic violence in professional youth soccer: the case of Albion football club. *Sociology of Sport Journal* 23: 142-161.
- Cushion, C., L. Nelson, K. Armour, J. Lyle, R. Jones, R. Sandford and C. O'Callaghan. 2010. Coach learning and development: a review of literature. Leeds: sports coach UK.
- Cushion, C. and G. Denstone. 2011. Etienne Wenger: coaching and communities of practice. In *The sociology of sports coaching*, eds. R. Jones, P. Potrac, C. Cushion and L. Tore Ronglan, 94-107. London: Routledge.
- Department of Culture Media and Sport (DCMS). 2008. *Playing to win: a new era for sport*. London: DCMS.
- Erickson, K., M. Bruner, D. MacDonald and J. Côté. 2008. Gaining insight into actual and preferred sources of coaching knowledge. *International Journal of Sports Science and Coaching* 3: 527-538.
- Fuller, S. 2006. *Popper vs. Kuhn: the struggle for the soul of science*. Cambridge: Icon Books.
- Gilbert, W., J. Côté and C. Mallett. 2006. Developmental paths and activities of successful sports coaches. *International Journal of Sports Science and Coaching* 1: 69-76.
- Green, M. and B. Houlihan. 2006. Governmentality, modernization, and the "disciplining" of national sports organizations: athletics in Australia and the United Kingdom. *Sociology of Sport Journal* 23: 47-71.
- Jarvie, I. 2003. Popper's ideal types: open and closed, abstract and concrete societies. In *Popper's open society after 50 years*, eds. I. Jarvie and S. Pralong, 71-82. London: Routledge.
- Jarvie, I. and S. Pralong. 2003. Introduction. In *Popper's open society after 50 years*, eds. I. Jarvie and S. Pralong, 3-16. London: Routledge.
- Kuhn, T. 1996. *The structure of scientific revolutions*. 3rd ed. Chicago: Chicago University Press.
- Lave, J. and E. Wenger. 1991. *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lawson, H. 2009. Paradigms, exemplars and social change. *Sport, Education & Society* 14: 97-119.

- Leckart, S. and T. Cheshire. 2012. University just flipped. Wired Magazine, May, Feature section, UK edition.
- Lemyre, F., P. Trudel and N. Durand-Bush. 2007. How youth-sport coaches learn to coach. *The Sport Psychologist* 21: 191-209.
- Lyle, J. 2007. A review of the research evidence for the impact of coach education. *International Journal of Coaching Science* 1: 17-34.
- Lyle, J. C. Mallett, P. Trudel and S. Rynne. 2009. Formal vs. informal coach education. *International Journal of Sports Science and Coaching* 4: 359-364.
- Magee, B. 1975. *Popper*. Glasgow: Fontana/Collins.
- Mallett, C., P. Trudel, J. Lyle and S. Rynne. 2009. Formal vs. informal coach education. *International Journal of Sports Science and Coaching* 4: 325-334.
- McCullick, B., D. Belcher and P. Schempp. 2005. What works in coaching and sport instructor certification programs? The participants' view. *Physical Education and Sport Pedagogy* 10: 121-137.
- Mesquita, I., S. Isidro and A. Rosado. 2010. Portuguese coaches' perceptions of and preferences for knowledge sources related to their professional background. *Journal of Sports Science and Medicine* 9: 480-489.
- Mill, J. S. 1991. *On liberty and other essays*. Oxford: Oxford University Press.
- Miller, D. 1994. *Critical rationalism: a restatement and defence*. Chicago: Open Court.
- Nash, C., R. Martindale, D. Collins, and A. Martindale. 2012. Parameterising expertise in coaching: past, present and future. *Journal of Sports Sciences* 30: 985-994.
- Nash, C. and J. Sproule. 2009. Career development of expert coaches. *International Journal of Sports Science and Coaching* 4: 121-138.
- Nash, C. and J. Sproule. 2011. Insights into experiences: reflections of an expert and novice coach. *International Journal of Sports Science and Coaching* 6: 149-161.
- Nelson, L. and C. Cushion. 2006. Reflection in coach education: the case of the national governing body coaching certificate. *The Sport Psychologist* 20: 174-183.
- Nelson, L., C. Cushion, and P. Potrac. 2006. Formal, non-formal and informal coach learning: a holistic conceptualisation. *International Journal of Sports Science and Coaching* 1: 247-259.
- Nelson, L., C. Cushion, and P. Potrac. 2012. Enhancing the provision of coach education: the recommendations of UK coaching practitioners. *Physical Education and Sport Pedagogy* DOI:10.1080/17408989.2011.649725.

- Owen-Pugh, V. 2008. Clarifying the concept of communities of practice in sport: a commentary. *International Journal of Sports Science and Coaching* 3: 23-27.
- Piggott, D. 2012. Coaches' experiences of formal coach education: a critical sociological investigation. *Sport, Education and Society* 17: 535-554.
- Popper, K. 1934. *Logik der forschung*. Springer: Vienna.
- Popper, K. 1966a. *The open society and its enemies: volume I: the spell of Plato*. 5th ed. London: Routledge and Keegan Paul.
- Popper, K. 1966b. *The open society and its enemies: volume II: the high tide of prophesy: Hegel, Marx, and the aftermath*. 5th ed. London: Routledge and Keegan Paul.
- Popper, K. 1970. Normal science and its dangers. In *Criticism and the growth of knowledge*, eds. I. Lakatos and A. Musgrave, 51-58. Cambridge: Cambridge University Press.
- Popper, K. 1972. *Conjectures and refutations: the growth of scientific knowledge*. 4th ed. London: Routledge and Keegan Paul.
- Popper, K. 1981. *Objective knowledge: an evolutionary approach*. Oxford: Oxford University Press.
- Popper, K. 1994. *The myth of the framework: in defence of science and rationality*. London: Routledge.
- Popper, K. 1998. *The world of Parminedes: essays on the presocratic enlightenment*. London: Routledge.
- Popper, K. 2012. On reason and the open society: a conversation. In *After the open society: selected social and political writings*, eds. J. Shearmur and P. N. Turner, 275-287. London: Routledge.
- Putnam, H. 2004. *The collapse of the fact/value dichotomy and other essays*. London: Harvard University Press.
- Roberts, S. 2010. What can coach education programmes learn from teachers? Model-based instruction in a UK national governing body award course. *International Journal of Sports Science and Coaching* 5: 109-116.
- Rynne, S. 2008. Clarifying the concept of communities of practice in sport: a commentary. *International Journal of Sports Science and Coaching* 3: 11-14.
- Sassower, R. 2006. *Popper's legacy: rethinking politics, economics and science*. Stocksfield: Acumen.
- Shearmur, J. 1996. *The political thought of Karl Popper*. London: Routledge.

- Soros, G. 1998. *The crisis of global capitalism: open society endangered*. London: Little Brown Company.
- Sports coach UK. 2008. *The UK coaching framework: executive summary*. Leeds: sports coach UK.
- Sports coach UK. 2011. *Sports coaching in the UK 3*. Leeds: sports coach UK.
- Sports coach UK. 2012. *Coach tracking study: a four-year study of coaching in the UK*. Leeds: sports coach UK.
- Sport England. 2008. *Sport England strategy 2008-2011*. London: Sport England.
- Stephenson, B. and S. Jowett. 2009. Factors that influence the development of English youth soccer coaches. *International Journal of Coaching Science* 3: 3-16.
- Tapscott, D. and A. Williams. 2008. *Wikinomics: how mass collaboration changes everything*. London: Atlantic Books.
- Taylor, B. and D. Garratt. 2010. The professionalisation of sports coaching: relations of power, resistance and compliance. *Sport, Education & Society* 15: 121-139.
- Trudel, P., D. Culver, and P. Werthner. 2013. Looking at coach development from the coach-learner's perspective: considerations for administrators. In *Handbook of sports coaching*, eds. P. Potrac, W. Gilbert, and J. Denison, 375-387. London: Routledge.
- Trudel, P., and W. Gilbert. 2004. Communities of practice as an approach to foster ice hockey coach development. In *Safety in ice hockey*, vol. 4, eds. D. Pearsall and A. Ashare, 167-179. West Conshohoken, PA: ASTM International.
- Vargas-Tonsing, T. 2007. Coaches' preferences for continuing coaching education. *International Journal of Sports Science and Coaching* 2: 25-35.
- Vincent, A. 2006. Popper and nationalism. In *Karl Popper: a centenary assessment*, vol. 1, eds. I. Jarvie, K. Milford and D. Miller, 157-176. Aldershot: Ashgate.
- Watkins, J. 1970. Against 'normal science'. In *Criticism and the growth of knowledge*, eds. I. Lakatos and A. Musgrave, 25-38. Cambridge: Cambridge University Press.
- Weber, M. 2001. *The protestant ethic and the spirit of capitalism*. London: Routledge.
- Wenger, E. 1998. *Communities of practice: learning, meaning and identity*. Cambridge: Cambridge University Press.
- Wenger, E., R. McDermott and W. Snyder. 2002. *Cultivating communities of practice: a guide to managing knowledge*. Boston: Harvard Business School Press.

Werthner, P. and P. Trudel. 2006. A new theoretical perspective for understanding how coaches learn how to coach. *The Sport Psychologist* 20: 198-212.

Werthner, P., D. Culver, and P. Trudel. 2012. An examination of a large-scale coach education program from a constructivist perspective. In *Sport psychology insights*, ed. R. Schinke, 337-355. Nova Hauppauge, NY: Nova Science.