Day, D. (2015). *Geoff Dyson: Experience, the 'coaching eye' and learning 'on the job'.* Manchester Metropolitan University Centre for Research into Coaching biannual International conference in conjunction with *Sports Coaching Review*, Crewe, Cheshire, 9/10 September.

The individual lives of coaches over the last two hundred years have been dictated by the social, political, and economic conditions of the era in which they worked but the history of coaching suggests that contemporary elite coaches fundamentally operate in ways that would be familiar to their predecessors. In his *Code of Health and Longevity* (1807) Sinclair observed that trainers, who normally emerged from within the activity and used their previous experiences to inform their training advice, were always encouraged to experiment and he concluded that this process created new knowledge. A reliance on experience and intuition, an immediate insight made in the absence of a conscious reasoning process, often led to training innovations, the creation of new ideas, concepts and methods.[1] Socialization, trial-and-error or practice, provided a body of craft knowledge, a 'feel' for coaching founded on tacit knowledge.[2] While Nonaka and Taeuchi suggest it is possible to convert some tacit knowledge into explicit knowledge,[3] most tacit knowledge is difficult, if not impossible, to codify and can never be made explicit or taught by reading manuals or listening to lectures; it must be learnt through experience.[4] As Polanyi pointed out, tacit knowledge involves the training of perception in such a way that the individual 'discovers by an effort of his own something that we could not tell him. And he knows it then in his turn but cannot tell it'.[5]

In all historical periods, successful coaches have articulated the belief that they had a 'coaching eye', an innate intuition about how to improve their athletes. Writing in 1913, Sam Mussabini, described by some as the 'father of coaching', declared, for example, that the 'discerning eye of the trainer' could assess the effectiveness of his regime through observing the athlete's 'general bearing, appearance and spirits, and the way he does his work.'[6] Half a century later, another athletics coach, Geoff Dyson, also described as the 'father of modern British athletics coaching', [7] commented that it was his own 'coaching eye' that made him such an accomplished coach.[8] This paper explores Dyson's coaching biography, particularly his approach to the use of science, within the framework of John Dewey's learning theory and concludes that leading coaches have never been averse to experimentation, and that it was their 'feel' for coaching, developed over many years of thoughtful and reflective engagement, that set them apart from other coaches.

'Experience' and 'reflection'

I intend to start with a little bit of theory since I know that some of my colleagues struggle to come to terms with using narrative without theory as a research method. For John Dewey, learning through doing is essential in enabling people to abandon their habits and think creatively.[9] People learn from their experiences and by reflecting on those experiences since reflective thinking, an active, careful and persistent reconsideration of beliefs and knowledge, leads to inquiry through a scientific method, a process of experimentation that results in the formulating and testing of theory.[10] Reflection is a rational and purposeful act and the reflective process, which mediates experience and knowledge, is triggered by professional issues or problems.[11] From Dewey's perspective, then, coaching involves a ‘continuing reconstruction of experience', the rethinking and re-examining of concepts and experiences in order to deal with the demands of the present,[12] and, in that respect, coaches are active participants in their learning, operating in a cyclical, transactional manner with their environments.[13]

A substantial volume of contemporary research into coach learning lends weight to this perspective since it consistently highlights the importance of coach experience, reflection and informal self-directed learning as significant factors leading to coach effectiveness. Coaches learn by reflecting on their practical coaching experiences and a large proportion of coaching knowledge and practice has come from observation and personal interpretations of previous experiences.[14] My apologies to

anyone sitting the audience whose research has covered these perspectives but time and space prevent me from covering the majority of that body of work. I shall confine myself to one or two examples. In their review of literature for Sports Coach UK, Cushion et al (2010: ii, iii, vi) noted that informal learning through coaching experience and engaging with other coaches remained the dominant mode of learning. In particular, 'expert' coaching practitioners favoured self-directed learning and reflection had been consistently identified as a means to support experiential learning.[15] Subsequently, Winchester et al. (2013: 415) suggested that knowledge, skills, attitudes, and insights are developed from a coach's daily experiences, in sport, work and at home, and through their exposure to the coaching environment (Nelson, Cushion, and Potrac 2006). Evans and Light (2007: 1) observed that learning is often unarticulated as abstract knowledge operating at a non-conscious level. They refer back to Dewey's argument that experience is central to learning and that immediate reflection upon experience is required to enhance and shape that learning. Reflection provides a means of linking concrete experience and abstract learning, and learning through experience must form part of learning as an ongoing and continuous process.[16]

For Jarvis (2006, 2007) learning is a lifelong activity, having the potential to occur within every social situation, and coaches learn by extracting information from their social situations and transforming it into knowledge and/or skills. Every transformation results in a changed person who has become more experienced. Jarvis uses the term 'biography' to capture the concept of who coaches are at a specific moment in time, based on their accumulation of experiences, knowledge, and skills. While 'maintenance learning' allows the coach to deal with known, reoccurring situations, 'innovative learning', which includes reflection and requires more time, contributes to progress by bringing change, renewal, and problem reformulation.[17]

Given that people attribute meaning to their lives by the stories they tell, Lemyre, Trudel and Bush (2007, 194) suggested that researchers studying coaching experiences use a narrative approach since asking coaches to tell their stories exposes the sociocultural context and the expectations and norms of the community.[18] Jones, Armour and Potrac (2003) demonstrate how one contemporary coach was influenced by his own experience as a player and I would argue that the historical study of coaching figures could similarly inform our understanding of coaching. Gilbert and Jackson (2004) noted that great coaches are active learners who engage in constant reflection and they cited the example of John Wooden who embarked on a course of intensive self-study at the end of each season, initiated by continued reflection on his coaching strengths and weaknesses. The rest of this paper explores other great coaches' approaches and, given that time is short, does so with particular reference to their interaction with science.

Coaching experience, active learning and experimental science.

Even though contemporary sport has seen the institutionalization of science, coaches had developed strategies of effective training long before the incorporation of science proved or disproved its effectiveness.[19] Athletics coach Arthur Lydiard once said 'Coaches already know what works, and the scientist's job is to tell them why it works!',[20] comments which reflect a disconnection between elite coaches and scientific researchers that had its roots in the nineteenth century.[21] As the *British Medical Journal* observed in 1873,

> The absence of any scientific work on exercise and training for the guidance of athletes is to us no matter of surprise. Experience has built up a system of training which, although in some respects … open to improvement by the application of scientific knowledge, is on the whole probably much more correct than would be the programme recommended by the whole body of our savants in the Council.[22]

Almost a century later, when Bob Janousek, the first foreign coach of a British Olympic sport, was appointed by the Amateur Rowing Association, he observed that traditional British professional coaches were not 'that hot on theory and sciences and all that stuff but they've got something … they have a feel … coaching is a mixture of art and science'.[23] Elite coaches invariably found their own path through the tensions between coaching and science. Frank Dick, director of coaching for UK Athletics between 1979 and 1994, was consistently critical of the way that science was imposed on to coaches.

> There is no attempt to apply the sciences to sport, sport has been obliged to apply and adapt themselves to the sciences, that was a mistake. Science in my knowledge has never led sport and it shouldn't. In fact I believe in the very words of Sir Winston Churchill when he said, 'scientists should be on tap not on top'.[24]

This attitude did not prevent Dick producing *Sports Training Principles* in 1980 in which he presented an adapted overview of periodization, the training method used widely in Eastern Europe. Although he felt he had enough scientific 'know-how' to do his job effectively, he was always conscious that something was lacking so he monitored research emerging from Eastern Bloc researchers such as Matveyev and Harre, and,

> ...that was it, I could see the whole … there was a connection between everything you did from the moment you started training until you finished your competitions in the summer and then that caused me to look a lot deeper at the whole notion of adaptation because I began to understand the cycles very well and the notion that you adapted during recovery not during activity.

Geoff Dyson

Years earlier, another athletics coach had adopted a similar approach. Geoff Dyson was the leading British athletics coach in the immediate post-war period, continuing to influence the sport until his resignation in 1961. He was born on 22 June 1914 in Camberwell, London, ran away from home in 1930,[25] and on 2 March 1931, he falsified his age to enlist, subsequently becoming a teacher in regimental schools.[26] In 1933, he requisitioned a high hurdle, which he trained with every day until achieving his army colours in 1936. Dyson later commented that 'choosing a technical event like hurdling and having no coach made me begin to examine the how and why of athletics.'[27]

F.A.M. Webster recruited Dyson to the first Loughborough Summer School in 1934, where he met some of the most prominent foreign coaches, including Valste, Hoff, and Mikkola, as well as many British trainers. When Webster was in the process of establishing the School of Athletics, Games and Physical Education at Loughborough College, he invited Dyson to join his staff as chief instructor for athletics in 1938. Webster described him as an excellent lecturer and a 'very good demonstrator' in both running and field events, while Dyson later referred to this as a time when he 'learnt so much about the coach's art.'[28]

Dyson was recalled from the reserves to serve in the war in 1939,[29] becoming a Major in charge of Physical Training,[30] which allowed him to continue coaching athletics and helped refine his coaching ability. In 1945, he returned to Loughborough where he began to apply principles of engineering and mechanics to the movements and actions of athletics.[31] At that point, the AAA was appointing their first national coach and Dyson was offered the job, beginning his duties in 1947.[32] He took charge of the AAA coaching courses, coordinated the work of the AAA honorary coaches throughout Britain, and acting as chief coach at the annual Loughborough Summer School.[33] One commentator noted, 'there is no greater enthusiast or keener student of athletics…Continental experts who have seen him at work have said that he is undoubtedly among the finest athletic coaches in Europe'.[34] Dyson's

first six weeks were spent at Oxford University where his 'ebullient almost aggressive personality collided with the traditional Oxford approach,'[35] although one positive outcome was his discovery of sprinter Maureen Gardner who he switched to the 80m hurdles. Within eighteen months, she had equalled the World Record and achieved an Olympic silver medal,[36] following which Dyson and Gardner were married.[37]

Gardner's success highlighted the benefits of Dyson's thorough and methodological coaching and training programme[38] and reinforced his talent for spotting athletic potential. He had two priorities here, 'first, to start them from scratch (it's easier!) and, second, to tackle events which the British have previously neglected.' Dyson directed John Disley, a middle distance runner, to the steeplechase and coached him to a bronze medal at the 1952 Helsinki Games. Dyson turned the 6ft 7in. Savidge into a shot putter who achieved 55ft 2in., making him the first British man to throw over 50ft. Dyson commented that 'even when you have international colours for sprinting you may still be in the wrong event!' and believed it was his 'coaching eye', the ability to differentiate between a 'fundamental movement, a mere idiosyncrasy and a fault,' that made him such an accomplished coach.[39]

As well as his 'coach's eye', Dyson's coaching success stemmed from his belief that to be successful required not only a coordinated effort from the coach and the athlete but also the incorporation of science and international expertise and he was conscious that he needed to understand foreign techniques and methods.[40] In 1950, he visited Sweden and the general consensus was that the coaching scheme had benefitted greatly,[41] although these initiatives, as with most aspects of British coaching in this period, relied on the personal drive of coaches rather than any efforts by the NGB.[42]

Dyson gradually refined his knowledge of human movement and engineering and this developed into a vital aspect of his coaching work. He incorporated the use of slow motion 'loop' films and encouraged his athletes to purchase 'peepscopes' so that they could take his analysis away with them and study it. He believed that once the athlete had the ability to identify their own mistakes they were more likely to successfully alter their action. Dyson would plot the films frame by frame onto a graph so that he could establish the athlete's acceleration and deceleration or the angle of release in throws.[43] He also used a wooden doll, nicknamed 'His Nibs' by the athletes, to demonstrate in real time the correct position athletes needed to adopt during a particular movement, which helped eradicate errors as soon as they occurred. Dyson believed that a coach could analyze the technique of an athlete with almost mathematical precision and he began to collaborate with universities, in particular Loughborough and Leeds, in order to understand more about motion, muscle control, and its relationship to respiration. Academics also monitored American techniques which they would then report back to Dyson,[44] a dialogue between British coaches and universities that was unusual during the 1950s.

The writing of basic instructional booklets and pamphlets was an expected duty of the AAA national coaches, but these texts evolved over time into informative in-depth and influential publications. Arguably the most important was Dyson's *The Mechanics of Athletics*, first published in 1962, which was translated into French, Italian, Spanish and Japanese and ran to eight editions,[45] allowing the dissemination of his scientific principles to a much wider audience. Disley noted that Dyson devoted his life to making coaching a science and that he was acutely aware of the benefits that the application of scientific principles could offer sport, although Dyson believed that it was the application of those principles that ensured success. He commented that 'because athletes learn their skills through kinaesthetic sensations', descriptive rather than mechanical explanations were often more beneficial for the athletes as 'too much analysis bears paralysis!'[46] If the coach could successfully correct faults and inspire confidence using these methods then 'herein lies the art, as opposed to the science, of coaching athletics.' Even though Dyson's book was predominately a

'biomechanics' text, he constantly reinforced his view that coaches needed to adopt an integrated multi-science approach.[47] For him,

> In his study of athletic performance the modern coach stands at the crossroads of several sciences. Thus, to the physiologist, athletic performance is a phenomenon of cells, humours, tissues and nutrient fluids obeying organic laws. The psychologist sees the athlete as a consciousness and a personality, while to the physicist he suggests a machine unique in its organisation, adaptiveness and complexity. To the imaginative coach the borders of these and other specialities are seen to overlap; the techniques of one science become meaningful and illuminating in others.[48]

If the coach could successfully correct faults and inspire confidence using these methods then 'herein lies the art, as opposed to the science, of coaching athletics'.

Conclusion

Dyson was not alone in adopting these approaches and both Harry Koskie, in the late 1940s, and, more particularly, Bert Kinnear, in the 1950s and 60s followed the same path in swimming, searching out and using science in the light of their own experiences and reflections. While contemporary elite coaches still fundamentally operate in similar ways by continuing to rely on their experience and their 'coach's eye', the environment within which these activities now takes place would be unrecognizable to Dyson, Koskie and Kinnear. Given their personal reputations for adopting a 'scientific' approach to their work, they would probably approve of the incorporation of sports science into coaching, now an integral part of the modern elite environment, although they might insist on retaining control. Whether or not they would be equally impressed by the drive for standardization through professionalization and the centrality of formal certification, a process that could well have blunted the innovative nature of their own work, can only be speculated.[49]

The notion of a formal education for coaches is nothing new. Sidney Abrahams argued in 1912 that 'a successful coach must be developed like a successful athlete…for the born coach in the strictest sense can hardly be said to exist'.[50] A year before the 1948 Games, one author proposed the establishment of a 'College for Coaches' to offer three-year courses covering first aid, psychology, massage and the 'modern methods of coaching',[51] while a year after the Games teachers were calling for the introduction of a Teaching Certificate in Athletics.[52] However, formal education has significant limitations. Jones et al. (2004) found that practical experiences were more important than coach certification programmes in developing a coach[53] while Jones and Allison (2014, 119) pointed out that the notion of given competencies holding good across coaching organisations and clubs of different sizes, operating at different levels with different histories and objectives, tended to contradict coaches' own experiences.[54] Nash and Spoule (2012) demonstrated the limited impact of coach education and qualifications on actual coaching practice[55] and Piggott (2012) suggests that, where courses were governed by prescriptive and rigid rationalities, coaches found them useless.[56]

I find it somewhat strange that we fail to embrace fully the lessons of the past, as exemplified in the life courses of men like Dyson, and the large body of contemporary research that highlights the key role of Dewey's notion of the centrality of experience and reflection by continuing to argue for formal coach education structured around courses and certification. Even researchers who have identified the importance of experience and reflection continue to assume that coaches need to be formally educated. Cushion, Armour and Jones, (2003, 225) suggest that, although experience plays a central role in impacting upon coaches' practice, the preparation of the practitioner cannot be left to experience alone.[57] Evans and Light (2007, 1) take it as a given that contemporary coaches can no longer rely solely on 'learning the trade' through experience. Others have criticized experience or 'craft knowledge' on the grounds that it leads to the development of 'tacit' knowledge that often

'operates at a non-conscious level as instinct or intuition and is based upon 'weak' problem solving methods such as trial and error'.[58] I am not so sure that this is necessarily the case and have reached the conclusion that part of the problem is an underlying assumption that everyone can be taught to be a coach. Gilbert and Jackson (2004) asked the question 'is an effective coaching style a personality trait or a learned behavioural characteristic?' and perhaps we should extend that to coaching more generally and the answer might be that actually not everyone can become a coach.

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