

Expanding Expertise: the role of a community in learning what is and what is not yet there

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Introduction

It takes time for both individuals and a field of endeavour to acquire the necessary knowledge and skills. In this chapter, we consider how such expertise develops, is maintained and expands. In the previous chapter, 'Making sense of complex dynamic spaces: The wicked problem of doping control in sport', we presented an overview of global efforts to address the persistent problem of the use of performance enhancing substances and techniques in sport. In this chapter, we focus on the work of anti-doping scientists. We use the Communities of Practice framework presented in the first Section this book to gain deeper insights into this process than we would otherwise.

From small beginnings

Anti-doping science is a small field of endeavour with the number of scientists making it their profession numbering hundreds rather than thousands. These scientists carry out hundreds of thousands of analyses annually to support global efforts to control doping in sport. The analytical methods and results must be legally defensible as they may be, and sometimes are, challenged in court by elite athletes found to have used performance enhancing drugs. Currently, there are 33 laboratories accredited for anti-doping work: 18 in Europe, 1 in Oceania, 6 in Asia, 1 in Africa and 7 in the Americas. Some laboratories were originally set up to conduct testing for an Olympic Games (Los Angeles for the 1984 Olympic Games) and others have been set up to support national testing programs (Sydney in 1990). As a profession, the directors and staff of these laboratories are globally distributed and small in number, making the generation and dissemination of good practice and knowledge in anti-doping science a challenge for all concerned.

We asked a number of directors of accredited anti-doping laboratories how they developed and maintain their knowledge of anti-doping science during research interviews in 2002-2004. Their replies indicated that there was not a course that taught them what they had to know nor were there books that covered the area. Rather, the scientific directors and their staff did draw on extensive previous studies in related fields such as chemistry, biochemistry, pharmaceutical and or medical science, as well as a practical knowledge of the field built up over time. While academic journals provided avenues for reading and publishing research findings in most scientific fields, it was not easy to do so in anti-doping science, as there were relatively few scientists working in the area and very little was published, as until recently there was no journal focusing on this field. Most of the directors we spoke with referred to an annual workshop in Cologne, Germany that played a key role in the development and expansion of their knowledge.

The annual Manfred Donike Workshop on Dope Analyses in Cologne plays a critical role in the development of both anti-doping science and scientists. In the very early days of anti-doping science in the 1980s, the need to access and to share the everyday how-to, as well as research findings led to the organisation of a workshop by the anti-doping laboratory in Cologne. Now restricted to those working or planning to work in WADA-accredited laboratories and invitees with particular knowledge to share with anti-doping scientists, the workshop provides a regular opportunity for experienced anti-doping scientists to hear the outcomes of recent research in

their field and about modifications others have made to aspects of their laboratory work. The workshop also allows newcomers to legitimately participate in the workshop, to meet anti-doping scientists from around the world, to access both existing knowledge and practice of experienced anti-doping scientists and the most recent generated knowledge in anti-doping science.

To better understand the role of the workshop in expanding anti-doping scientific expertise, we went to a number of annual anti-doping science workshops between 2002-2005 and found, as described in the [Appendix](#), a globally distributed community of practice playing a key role in the development of both anti-doping scientists and their knowledge.

Staying on the ball

All professionals are expected to keep abreast with changes in their profession. The combination of routine and research in the accredited laboratories created a dynamic context for the work. One director commented that this environment provided ‘a continuum of cases to challenge the established knowledge and foster new [research and development] work’. Finding the time to keep up with the latest advances was not always easy. Another director noted that there were ‘free time constraints due to the everyday heavy routine work’. A third director stressed the importance of this community when they commented that it was not ‘a field where you can work alone.’ Capturing many aspects of the nature of the field, this director commented:

You have to keep up internationally or you'll fall behind. That is why we must attend ... workshops in Cologne every year where you can get your new knowledge but also you meet the other persons that are interested in this field and you can discuss it with them. I think it's more worth talking with the persons and discussing your problems and their problems ... [having] good contacts with other laboratories around the world. So that is how we are keeping up. ...

Looking through the CoP lens

The Community of Practice framework provides a useful lens with which to review the role of the Cologne workshop in developing and expanding the expertise of these scientists.

Over the years, regular workshop attendance has enabled anti-doping scientists to engage with the practice of anti-doping science and to identify common knowledge needs, to coalesce into a community which has a deep insight into their shared practice, which shares their knowledge and shortcomings, and which engages in addressing ‘sticky’ problems. By restricting attendance at the workshop to scientists working in accredited laboratories, the workshop is a secure and safe space that allows members of this community of practice to focus on core issues, to identify gaps in the community’s existing knowledge and to take stewardship of existing knowledge seriously through constantly seeking ways to improve their current practice. In this space, the members of the anti-doping scientific community build their sense of identity as they ‘talk the talk’ of both the scientific and practical aspects of dope testing in both the formal and frequent informal interactions, as they ask questions and pose ‘what-ifs’, as they disseminate ideas, concepts and other information about their day-to-day work. Importantly, as well as helping anti-doping scientists to keep up with their field by reporting and exchanging information about their practice and research, this time together reaffirms and builds a sense of meaning for their efforts. Each year, individuals leave the workshop with a strengthened sense of identity, of the meaningfulness of their work and with new knowledge and ideas that can be integrated successfully into their routine or research practice of anti-doping science.

The regular attendance at the workshop of scientists from accredited laboratories and presence of those in the process of setting up a WADA-accredited laboratory demonstrates the importance placed on the workshop by this community. Those already in the field want to maintain their own knowledge and to advance anti-doping scientific practice of their own laboratory through ensuring that their knowledge and practice are up-to-date. Newcomers come to learn and meet others doing the work. The meeting strengthens relationships between members of the community and provides those active in and at the core of the community to engage intensively and in a relaxed atmosphere with their community. The Cologne workshop is a major means by which this multi-voiced community of practice sharpens the cutting edge of their field, facilitating both the individual and collective learning of what is and 'what [is] not yet there; (Engeström 1991, p. 270) for anti-doping science.

References

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Appendix – A story

Early on the last Saturday morning in late February, 2002, I gazed out the window of the Qantas 747, spellbound as it landed on a snow-covered runway at Frankfurt, Germany. My journey from a Sydney summer continued by high-speed train to Cologne, passing through countryside white under a leaden grey sky. As this was the first end-of-winter annual anti-doping science workshop I had attended, I wondered why scientists from warmer climes regularly braved the European winter weather to attend the workshop.

The answer to my question began to evolve the next evening as I registered for the workshop at the Trainer Academy of the Sportschule and took in the relaxed atmosphere as attendees warmly exchanged greetings. By 6:30, everyone had moved to the dining room where Professor Schanzer, Director of the Cologne laboratory, greeted everyone saying simply, 'Welcome friends' and invited them to enjoy their meal. The noise level rose as the conversation flowed. People moved from table to table, greeting old friends and noting new faces. The atmosphere was warm, comfortable with the term 'family' used by two different scientists to refer to the atmosphere of this annual gathering. It was also enthusiastic.

The workshop's format was 'tried and true' and did not differ markedly from year to year. The programme provided plenty of opportunities for information exchanges and relationship development as the schedule would keep participants together day and night from the Sunday night through to the Friday. At 8:30 on Monday morning the participants gathered in the lecture

hall for a short formal welcome to them, as representatives from the world's anti-doping laboratories from universities and government. Professor Schanzer then addressed housekeeping issues, and, as had become tradition, provided the first of the week's daily weather reports. The workshop then began in earnest with four days of talks organised in sessions of three or four presentations on a particular aspect of anti-doping science, including peptide hormones, biochemical and immunological methods, steroid analyses, profiling steroids, new and improved analytical techniques, detections of non-steroidal doping agents, organisation of doping control, and nutritional supplements. Each session was chaired by an experienced anti-doping scientist who took questions from attendees and facilitated discussion after each presentation. Poster presentations were displayed in the corridor taken by attendees as they walked from the lecture theatre to the coffee break area. The lengthy morning/afternoon coffee and lunch breaks ensured that participants had time to discuss the research outcomes with the researchers and with each other. These breaks also enabled participants to swap 'war stories', that is, stories about problems that they had experienced and solved, or problems they were still experiencing. Attendees found the workshop space safe and secure enough to discuss both successes and shortcomings.

My repeat observations of the workshops made it quite clear that anti-doping scientific research was multifaceted, cumulative and communal. The yearly presentations by various researchers into steroid analyses, new and improved analytical techniques, the detection of non-steroidal doping agents and steroid profiling, reflected the progressive accumulation, refinement and application of new knowledge in these areas. Similarly, though to a lesser degree, there had been persistent interest in peptide hormones, biochemical and immunological methods and issues relating to the organisation of doping control. The questions, comments and discussions made it quite clear that the ultimate goal of the research was the development and improvement of valid, reliable, efficient, legally defensible analyses for use by accredited anti-doping laboratories to test athletes' urine and blood.

The weeklong workshop plays a critical role in the stewardship of the practice that is at the heart of this anti-doping scientific community, and, in nurturing its members. The intensity of the week was palpable as, to a large extent, workshop attendees lived, worked and socialised together for the duration of the workshop. Workshop attendees were accommodated close to the venue at either the Trainer Academy or one of two nearby hotels. A formal dinner, a visit to the opera or symphony, and the annual general meeting of the World Association of Anti-doping Scientists (WAADS) were scheduled for three of the four weekday evenings. The final morning provided attendees with the opportunity for an extended visit to the doping control laboratory in Cologne.

The workshop welcomes the contributions of newcomers to anti-doping science. Many of the scientific talks and posters were presented by younger scientists carrying out research in accredited laboratories. During the workshop, these young scientists from all around the globe had opportunities to interact with experienced anti-doping scientists, to discuss their work and to better understand the nature of anti-doping science. In the final session of the workshops, Marie Theres Donike, widow of the late Professor Manfred Donike, the workshop's founder, presented an award to the young scientist whose contribution at the workshop had been the most outstanding.

The workshop also provides a regular opportunity for the scientific directors of the laboratories to be together in the same place for a reasonable length of time and to talk about their work and its goal to address the problems of doping in sport. The atmosphere affirms and supports the highly pressurised work of these anti-doping scientists. Restricted to scientists working in anti-doping laboratories and a few other invitees whose knowledge may be of use to the group, the workshop's organisation provides ample opportunities for the directors and other scientists from anti-doping laboratories to engage in the casual discussions that facilitate comfortable inter-

personal relationships as well as to better their formal and informal knowledge of what works and what does not work in their field. Each director and scientist leaves the workshop with ideas for future research in their laboratory and about adjustments to their own laboratory's practice – a 'take-home' that is worth the challenges of travelling to Europe in winter.