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La prévention du
DOPAGE
dans le sport



INSUFFISANCES ET DÉFIS

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Prevention of

DOPING

in sport

SHORTCOMINGS AND CHALLENGES

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INTRODUCTION

How can doping prevention be described? How can we evaluate the dynamism of stakeholders, the scope of their activities and the effectiveness of their work? What are the strengths and weaknesses of the current structure? How can we identify room for improvement?

There are many documents in which institutions can reiterate the axiological principles of their work. Affirming these values is undoubtedly important when it comes to description but cannot shed light on what has actually been achieved or the problems encountered. The latter are to be found in annual reports listing actions carried out, sometimes accompanied by an appraisal of weaknesses. But such compilations do not suffice to paint a proper picture of the complexity of the current state of doping prevention: firstly because this summation fails to reflect stakeholder interaction and the blind spots of prevention, and secondly because an annual report is by its very nature a justification made to a third party, thus militating against self-criticism.

We also find some academic studies covering realities on the ground, specific features of a culture, gender analysis, representations of doping, and stakeholder resistance to educational activities. But as far as we are aware, there is no work attempting to bring together and collate this research.

Thus a description of doping prevention policies that focuses on the connections between objectives, constraints and stakeholder realities has yet to be written. It would enable us to grasp the strengths and weaknesses of prevention and identify room for improvement. Mindful of the fact that social science can assist in this task, UNESCO is trying to use this type of approach to understand the situation and provide guidelines for improving prevention. This study will accordingly be divided into two parts: one on analysis of prevention and the other on the consequent proposals.

There are several social science models for bringing together a variety of practices with similar objectives. Following on from what our group¹ has been studying for over ten years, in the first part of this study we set out to analyse three levels, which are covered in the first three sections. The first concerns the debate around the objectives of prevention and the axiological points of reference used in it. The second relates to epistemic aspects and looks at the establishment of systems for spreading values. The third focuses on ontological considerations by studying actual practices, realities on the ground and stakeholder constraints.

¹ Social Science and Doping Group, CERSM, Université Paris Ouest Nanterre (sciences-sociales-dopage.u-paris10.fr).

Dividing doping prevention into an “objectives” phase, a “means” phase and an “instantiation” phase is not so very far removed from stakeholders’ schemata. But a sociological approach is more useful if it focuses on the connections between these levels, which will form the subject of another section. Our general hypothesis is that analysis of the relationships between these levels will reveal some of the actual challenges in preventing doping and at the same time help to identify means of making progress. In other words, we shall endeavour to demonstrate that an approach separating policymaking from public action creates a number of blind spots. Various studies stress the fact that policy instruments are political acts in their own right.² Others emphasize that this separation may give rise to distortions between the decisions taken and their implementation.

It is therefore through axiological, epistemic and ontological aspects that we intend to identify the problems of prevention and the means of overcoming them. The second part of this report will employ rarely used social science models to make sense of doping. By explaining these models, showing their heuristic value and considering their utility for prevention, we hope to provide assistance to stakeholders in their task.

2 See, for example, C. Hood, 1986, *The Tools of Government*, Chatham N.J., Chatham House; M. Callon, P. Lascoumes and Y. Barthe, 2001, *Agir dans un monde incertain*, Paris, Editions du Seuil; B. Latour, 2002, *La Fabrique du droit. Une ethnographie du Conseil d’État*, Paris, La Découverte; F. Chateauraynaud, 2004, Invention argumentative et débat public – regard sociologique sur l’origine des bons arguments, *Cahiers d’Économie politique*, Vol. 47, No. 2, pp. 191-213; P. Lascoumes and P. Le Galès, 2005, *Gouverner par les instruments*, Paris, Presses de Sciences Po; A. Desrosières, 1993, *La politique des grands nombres. Histoire de la raison statistique*, Paris, La Découverte; F. Chateauraynaud, 2011, *Argumenter dans un champ de forces. Essai de balistique sociologique*, Paris, Éditions Pétra.

PART 1

Analysis

PREVENTION: PRINCIPLES AND VALUES

Asserting the importance of prevention to combat doping is a commonplace. From international federations to WADA and the NADOs, from the IOC, governments and their dependent institutions to UNESCO, everybody agrees on the need to inform and educate athletes. Yet this consensus is not self-evident. Early laws on doping in the 1960s did not always contain a strand on prevention,³ and it was not until the late 1970s and particularly the 1980s that systems originating jointly with the sports movement and national governments took over from private initiatives. What is the situation today? Do all institutions share the same values, objectives and outlook? And which values exactly?

To answer these questions, we can look at the justification processes that lead stakeholders to insist on their values. As Boltanski and Thévenot have shown, the principles to which stakeholders are attached are reflected quite naturally in their disputes.⁴ With this in mind, we have focused on various forms of contention (court cases, scandals, etc.) and studied how they allow the protagonists to express their conceptions of sport, justice, cheating,⁵ etc. As it happens, the fight against doping is often at the centre of criticism. The latter is usually prompted by a failure, by an inability to show up a particular athlete⁶ or by a controversial measure. In addition to these specific complaints, there are critical charges that dismiss the whole enterprise of combating doping. These are sometimes voiced by the athletes themselves.⁷ In the public sphere, there may be attacks on sport itself, such as those coming from the movement for sports criticism,⁸ pamphlets that liken anti-doping principles to a “fundamentalist ideology”⁹ and philosophical essays questioning the legitimacy of the fight against doping: this is the case for Missa with his six arguments “challenging the relevance and effectiveness of current anti-doping policy”.¹⁰ On a different note, Andy Miah, a professor of bioethics and cyberculture, believes that the reality of gene doping has to be recognized and its consequences assessed.¹¹ One of these consequences is that people who combat doping are declared to be unqualified and ill-placed to understand the implications of these technologies of the future; he thinks that “it is not acceptable for the world of sport

3 Unlike health issues, the history of doping prevention has been very little explored. Information can, however, be found in research on the history of doping and, more recently, on standardization of anti-doping policies: B. Houlihan, 2003, *Dying to Win: Doping in Sport and the Development of Anti-doping Policy*, 2nd edn, Strasbourg, Council of Europe Publishing; P. Laure, 2004, *Histoire du dopage et des pratiques dopantes : Les alchimistes de la performance*, Paris, Vuibert, pp. 121-212; J. Demeslay, 2013, *L'institution mondiale du dopage. Sociologie d'un processus d'harmonisation*, Paris, Éditions Pétra.

4 L. Boltanski and L. Thévenot, 1991, *De la justification*, Paris, Gallimard.

5 P. Duret and P. Trabal, 2001, *Le sport et ses affaires : une sociologie de la justice de l'épreuve sportive*, Paris, Métailié.

6 WADA, 2012, *Lack of Effectiveness of Testing Programmes*, report to WADA Executive Committee.

7 “Many of the U23 athletes had negative opinions and reactions to WADA,” says the introduction to a WADA-funded research report (B.J. Gilley, 2010, *Under 23 cyclists' openness to doping: understanding the causes of doping behavior among American junior road cyclists with professional aspirations*, WADA report (funded in 2009)). The author then explains how he had problems investigating when he said that his research was funded by WADA. http://extranet.wada-ama.org/Global/Gilley_Final_Report_2008.pdf

8 See, for example, J.M. Brohm, 1992, *Les meutes sportives*, Paris, L'Harmattan.

9 B. de Lignières and E. Saint-Martin, 1999, *Vive le dopage ? Enquête sur un alibi*, Paris, Flammarion.

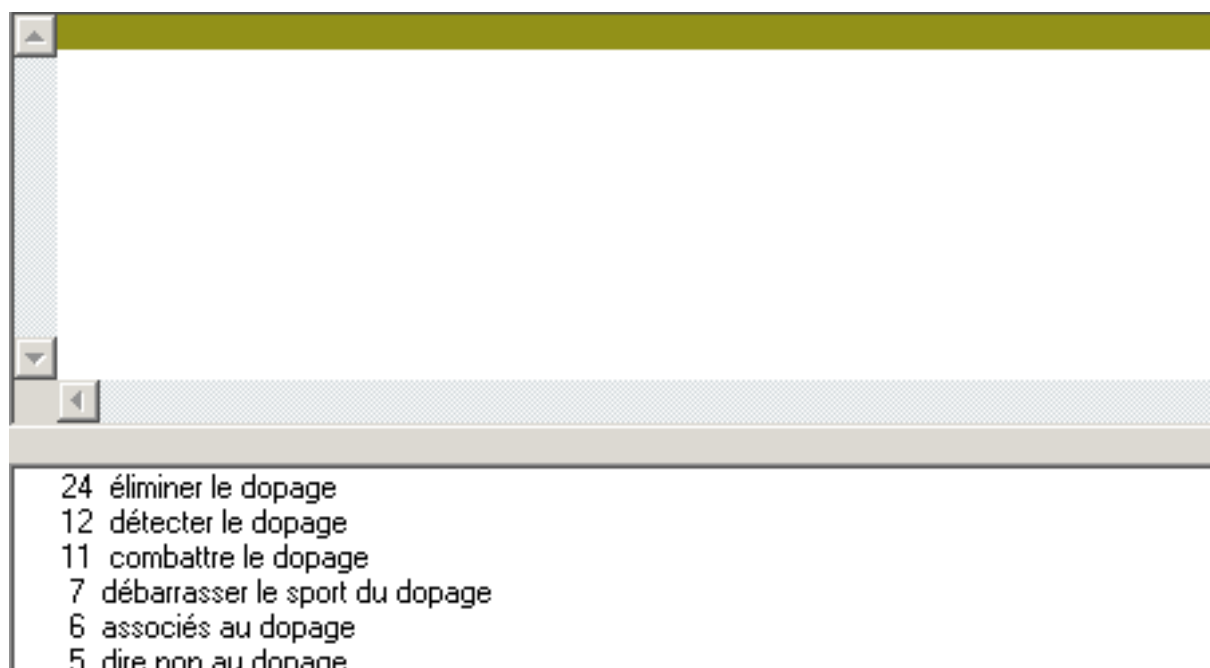
10 J.N. Missa, Dopage, médecine d'amélioration et avenir du sport, in J.N. Missa and P. Nouvel (eds), 2011, *Philosophie du dopage*, Paris, Presses Universitaires de France, pp. 35-83.

11 The following quotations come from a press interview (“Is 'Gene Doping' Wrong?”, Project Syndicate, 19 September 2005). The author develops his argument further in his well-known book: A. Miah, 2004, *Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport*, London, Routledge.

to impose a moral view about the role of enhancement technology on nations that wish to participate in the Olympics, without implementing an extensive and ongoing consultative process to accompany its policy decision". He goes on to suggest that the genetically modified athletes of the future should not be described as "mutants", since this would make them victims of the same kind of prejudice as that relating to "race, gender and disability".

These authors hold conflicting opinions, but they do not cancel each other out, and it is surprising that anti-doping institutions have remained silent in the face of such comments, not bothering to offer counter-arguments. Does combating doping not entail taking criticism in the public sphere seriously and asserting the principles and legitimacy of the fight against doping?

As to the question of the values and purpose of doping prevention, we have put together a corpus¹² containing a range of texts from several international institutions closely involved in the anti-doping campaign (WADA, UNESCO, the Council of Europe, the IOC and WHO), which we have explored using text analysis software.¹³ When gathering all the different ways of describing doping, we looked for the verbs coming before this term. Despite the "noise" inevitably produced by this type of query, we can see the type of action to be taken, since the references are mainly to "eliminating doping", "combating", "eradicating", "rejecting", "reducing", "condemning" and "abolishing" it. Other verb forms describe doping practices (such as "resorting to doping") and forms of doping regulation (defining it, regulating it, etc.).



Source: Screenshot taken with Prospero software: doping action verbs

This initial approach shows that the "fight" against doping can take a variety of forms, for, while some authors want to "abolish" doping, others have more modest ambitions, wishing merely to "reduce" it. However, it may be assumed that policies to limit doping will not be quite the same as

¹² The corpus is described in Annex 1.

¹³ The program used was Prospero (www.prosperologie.org). For further information on the principles of this software, see F. Chateauraynaud, 2003, *Prospéro : une technologie littéraire pour les sciences humaines*, Paris, CNRS Éditions.

policies to eradicate it.¹⁴ In the former case, it might be supposed that exceeding a set limit would be penalized according to departure from the norm in the same way as fines for “minor” speeding in some countries. In the latter case, exemplary penalties would prevent any repeat of the offence and deter all athletes with similar inclinations.

However, as far as prevention is concerned, the implications of this difference are clearly not the same. Throughout this report we shall use the term “prevention”, which we believe to be the most neutral and generic, to refer, once again, to a set of objectives. Warning, informing, training, raising awareness and educating are the main verbs associated with prevention. But are all stakeholders in agreement on these activities? Exploration of our corpus¹⁵ shows that the forms taken by such actions are not consistent across institutions.¹⁶

Liste des Auteur(s), qui utilisent le plus PREVENTION®	Liste des Auteur(s), qui utilisent le plus SENSIBILISATION®	Liste des Auteur(s), qui utilisent le plus EDUCATION®
1452 OMS 233 UNESCO 132 Collectif d'Usage 92 AMA-WADA® 51 CIO 23 Conseil de l'Europe	464 AMA-WADA® 127 UNESCO 40 OMS 10 Conseil de l'Europe 0 CIO	913 UNESCO 82 AMA-WADA® 34 Conseil de l'Europe 22 CIO 16 OMS 15 Collectif d'Usage

Source: Screenshot taken with Prospero software: list of authors most often using the concepts of prevention, awareness-raising and education.

But how do these three main activities interconnect? Search for statements in which first two and then all three of these activities appear, we obtained the following screen:

53 /EF=EDUCATION@ /T=5 /EF=SENSIBILISATION@
46 /COM=éducat /T=5 /COM=sensibi
34 /COM=sensibili /T=10 /EF=EDUCATION@
33 /EF=SENSIBILISATION@ /T=5 /EF=EDUCATION@
14 /EF=PREVENTION@ /T=10 /EF=EDUCATION@
8 /EF=PREVENTION@ /T=3 /EF=SENSIBILISATION@
1 /EF=PREVENTION@ /T=3 /EF=SENSIBILISATION@ /T=3 /EF=EDUCATION@
1 /EF=SENSIBILISATION@ /T=3 /EF=EDUCATION@ /T=3 /EF=PREVENTION@
0 /EF=PREVENTION@ /T=3 /EF=EDUCATION@ /T=3 /EF=SENSIBILISATION@
0 /EF=SENSIBILISATION@ /T=3 /EF=PREVENTION@ /T=3 /EF=EDUCATION@
0 /EF=EDUCATION@ /T=3 /EF=SENSIBILISATION@ /T=3 /EF=PREVENTION@

8 sensibilisation et d' éducation
6 sensibilisation et d' éducation
4 sensibilisation et l' éducation
2 Sensibilisation et éducation
1 sensibilisation , éducation
1 sensibilisation , d' éducation
1 sensibilisation , l' éducation
1 sensibilisation et de l' éducation
1 sensibilisation antidopage et d' éducation
1 sensibilisation à l' importance de l' éducation
1 sensibilisation lors du Symposium sur l' éducation
1 sensibilisation pour le renforcement de l' éducation
1 sensibilisation des médias des régions où l' éducation
1 sensibilisation l' AMA est convaincue que l' éducation
1 Sensibiliser les sportifs Dans le domaine de l' éducation
1 sensibilisation aux risques du dopage et les messages éducatifs
1 Sensibiliser le monde Les symposiums de l' AMA sur l' éducation
1 sensibilisation ; la détermination de groupes cibles pour les programmes éducatifs

Source: Screenshot taken with Prospero software: objects of awareness-raising

14 This view has already been noted in B. Houlihan, *Dying to Win: Doping in Sport and the Development of Anti-doping Policy*, op. cit.

15 See Annex 1 for its make-up.

16 The figures appearing in the following table are to be read as follows: for uniform distribution of “prevention” across all authors, all the values would be 100; with a score of 233, UNESCO thus uses the concept of “prevention” more than twice as often (in comparison with uniform distribution), while, with 51, the IOC uses it half as much. The calculation takes account of unequal contributions to the corpus in terms of volume.

Education is often associated with awareness in the same sentence, as is prevention with education. It may be asked how these concepts interconnect.

In terms of the regional anti-doping organisations, the RADO projects continued to ensure that a lot of the countries in the region – the 45 that Mr Koehler had mentioned that were involved in one of the RADOs operational in the region – were provided with valuable resources and capacity and materials so that they at least had an education project whilst providing the capacity and instruments to raise people's awareness.¹⁷

WADA believes that a long-term solution to preventing doping is through effective values-based education programs that can foster anti-doping behaviors and create a strong anti-doping culture.¹⁸

Sometimes awareness-raising appears to be the first stage of a more ambitious education project, as suggested by the latter quotation. At other times, as in the quotation preceding it, the education project is aimed at awareness-raising. Every so often, reference is made to “raising awareness on the importance of education”.¹⁹

The fight against doping would seem to require long-term work with athletes. A consensus appears to be emerging that an athlete is a person who needs protecting; it is thus necessary to mobilize a range of disciplines to grasp the “reasons” behind problematic behaviours (once the latter have been confirmed), identify the risks of doping and consider the consequences in terms of both health and disciplinary, or even criminal, sanctions.

This outlook is based on a certain conception of doping, and thus determines the ways in which the latter is to be combated. All the institutions whose texts we have studied talk about a “bane”, and some authors²⁰ had already found terms such as “endemic disease”, “insidious infection”, “corrupting evil” and “cancer of the stadiums”. The “epidemic” metaphor thus quickly became established and is still used when the subject of doping comes up. While its treatment belongs to the whole range of medical fields (from epidemiology to endocrinology to psychiatry), its regulatory aspects are a matter for legal experts. All these approaches have one thing in common: they individualize doping. Academic and lay uses of law create symbolic effects providing a guarantee of objectivity, quality and therefore credibility to those using it. As we have written elsewhere,²¹ law regarded as the science of government is intended to offer politicians a certain number of tools, models for action and rationalizations.²² The legal characterization of doping clearly shows the effects of “going through law”, i.e. what the law does to social problems that are referred to it. Being concerned with victims and perpetrators, the law focuses on the individual. This is also the case for medicine. The concept of medicalization of society alludes to the fact that the medical model, strongly influenced by psychology, now dominates the definition and treatment of a number of contemporary public issues.²³ By studying various cases of deviance – alcoholism, mental illness, child abuse, drug use – Conrad and Schneider have shown how description of these conditions or practices has changed over time from moral or criminal condemnation to a medical register. Badness has become sickness.²⁴ Medicine has thus become normative for more and more areas of personal life, which are defined and evaluated in health terms.

17 Minutes of WADA Foundation Board meeting of 9 May 2010.

18 Quotation heading the “Education and awareness” page on the WADA website (accessed 25 October 2013).

19 Minutes of WADA Foundation Board meeting of 20 November 2011.

20 See, for example, C. Louveau et al., 1995, *Dopage et performance sportive : analyse d'une pratique prohibée*, Paris, INSEP.

21 O. Le Noé and P. Trabal, 2008, Sportifs et produits dopants : prise, emprise, déprise, *Drogues, santé et société*, Vol. 7, No. 1, pp. 191-236. Some of the analysis in this section comes from this paper.

22 L. Israël, G. Sacriste, A. Vauchez and L. Willemez (eds), 2005, *Sur la portée sociale du droit. Usages et légitimité du registre juridique*, Paris, Presses Universitaires de France.

23 P. Adam and C. Herzlich, 1994, *Sociologie de la maladie et de la médecine*, Paris, Nathan.

24 P. Conrad and J.W. Schneider, 1985 (1980), *Deviance and Medicalization: From Badness to Sickness*, Columbus, Merrill Publishing Company.

The professionals want to tell society what is good for the individual regarding certain aspects of life. Thus, because of their curative approach, doctors are individualizing our understanding of doping and also making it part of this general trend towards medicalization of society.

Another striking aspect of this conception of doping is the idea of a switch. An athlete is doped from the very first use, which is critical. To understand this idea of a switch into doping, it must be seen as resulting from the spread of a medical outlook imported from substance abuse.²⁵ It seems that this cognitive turning point occurred in the first half of the 1990s. Thus the WHO Programme on Substance Abuse includes “drug use and sport” among its concerns.²⁶ Attempts have been made to introduce the idea of temporal discontinuity in relation to overcoming an obstacle; this is one of the purposes of the “doping behaviour” concept developed by Laure.²⁷ But the idea of a switch is obvious when numerous authors invoke concepts such as risk factors, which are defined as follows by a WADA-funded report:

*Risk factors are the events or variables which might facilitate the occurrence of a disorder or an unwanted, non-functional, aberrant and antisocial behavior.*²⁸

One recurring goal in the corpus, and in all the “social science” research funded by WADA, is a description of behaviours likely to lead to doping and methods of changing them.

We also find the idea that problematic behaviour leading to doping is the result of a rational decision.

*A study suggests accountability to team mates is a deterrent to athletes doping.*²⁹

This conception arises from the individualization of doping: because a decision is involved, we can investigate its legal and health consequences. But it is undoubtedly because doctors and jurists are behind the definition and public construct of doping that they have conceived of it as mainly a matter for the individual.

These conceptions are certainly mutually consistent, but they do not stand up to first-hand accounts of doping practices. As has been shown by a number of studies that focus on understanding experience through personal stories,

25 According to Barrie Houlihan, anti-doping policy is patterned on drug policy: B. Houlihan, 2003, *Dying to Win: Doping in Sport and the Development of Anti-doping Policy*, op. cit., p. 105.

26 World Health Organization (WHO), 1993, *Programme on Substance Abuse. Drug use and sport: Current issues and implications for public health*. (WHO/PSA/93.3)

27 By defining it as “a behaviour involving substance use to contend with a real impediment, or one perceived as such, by the user or his or her entourage, for performance purposes” (P. Laure, 2000, Du concept de conduite dopante, in F. Siri (ed.), *La fièvre du dopage*, Paris, Autrement, p. 157 (Mutations, 197)), the author is also trying to broaden this definition of use of doping substances to the whole of society (activities that are religious, professional, sexual, etc.).

28 G. Vajjala, 2008, *Risk Factors within Doping Behavior Related to Personality Structure and Social Environment of the Athletes*, WADA report (funded in 2007).

29 <https://www.wada-ama.org/en/media/news/2013-10/study-suggests-accountability-to-team-mates-is-a-deterrent-to-athletes-doping>

athletes are sometimes affected by constraints relating to a group, a trainer or a performance commitment.³⁰ Although decisions to dope – and, more probably, decisions not to dope – undoubtedly exist, use is often associated with adjustment to certain situations or with imperatives that are not necessarily spelt out.³¹ Organizing doping prevention solely with respect to decisions taken by athletes on the basis of their calculations would mean missing a lot of targets.

Another important value shared by anti-doping institutions arises directly from the history of anti-doping: it is necessary to work together. Following a number of cases revealing shortcomings in the various systems of regulation, a process of standardization was set afoot with the advent of WADA. Laid down as an absolute value, visible networking and partnership is a serious concern. We thus find numerous examples of the value placed on teamwork in our “institutional” corpus on policies for prevention.³²

But strangely enough this topic is absent from another corpus: the social science research funded by WADA.³³ In other words, without making any judgments at this stage of our analysis as to its actual nature, networking seems to be mainly an element for show and one that does not call for any questioning of how it works. Yet in our surveys, when the subject of working in partnership came up, the network’s limitations, coordination between its members, problems in reaching agreement, and the forms of teamwork, together with many other factors, raised numerous questions that could lead to improvements in prevention of doping.

30 This is apparent from athletes’ accounts in analysis of personal testimony. See, for example, V. Lentillon-Kaestner and C. Brissonneau, 2009, Appropriation progressive de la culture du dopage dans le cyclisme, *Déviante et Société*, Vol. 33, No. 4, pp. 519-541; C. Brissonneau, O. Aubel and F. Ohl, 2008, *L’épreuve du dopage. Sociologie du cyclisme professionnel*, Paris, Presses Universitaires de France; C. Brissonneau et al., 2009, *Carrière sportive et socialisation secondaire en cyclisme sur route : les cas de la Belgique, la France et la Suisse*, WADA/University of Lausanne (research funded by WADA in 2007); S. Buisine, 2010, « *Faire le métier* » de cycliste, Saarbrücken, Éditions Universitaires Européennes; O. Le Noé and P. Trabal, *Sportifs et produits dopants : prise, emprise, déprise*, op. cit. It is also apparent in many athletes’ autobiographies. An analysis of the latter is to be found in Buisine, op. cit.

31 This is found in a very interesting WADA-funded study that led Piffaretti to question athletes who had tested positive. It considers the cases of certain athletes subject to various constraints: M. Piffaretti, 2011, *Psychological determinants of doping behaviour through the testimony of sanctioned athletes*, WADA/University of Lausanne.

32 This category is present in over half the texts.

33 See Annex 2.

DESCRIBING THE SYSTEMS

The diversity of systems makes it particularly complicated to describe them. How is it possible to describe all the relations between athletes, tools, officials responsible for prevention work, and information websites? This question, which may seem of methodological concern to academia alone, is actually central to the organization of prevention, since the descriptive model for this galaxy of systems is not unrelated to the schema chosen to organize them. The one most conducive to doping prevention work draws on an epidemiological approach and a stance based on social marketing.³⁴

Our desire to grasp what prevention stakeholders are doing has led us to prefer their approach in the first instance. As Marchioli has pointed out,³⁵ social marketing uses “marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify or abandon a behaviour for the benefit of individuals, groups, or society as a whole”. The author cites a seminal text by Kotler³⁶ and Gallopel’s study of the discipline’s ability to offer practitioners a framework of action for solving social problems and changing behaviours,³⁷ in order to discuss new models for persuading targets.

Doping prevention stakeholders use this approach to explore target audiences through the marketing concept of “segmentation” and the four dimensions known to marketing specialists as the 4Ps: product (in the case of social marketing, this is the idea that the public must be brought to accept), price (here the price of changing habits), place (where prevention must take place) and promotion (communication methods used).

THE STAKEHOLDER MODEL

i) Segmentation

Doping prevention can thus be described in terms of the debate on segmentation. Close links to the epidemiological tradition mean that the concepts of primary, secondary and tertiary prevention are often employed.

34 We find one such invitation to harness social marketing in a 2010 WADA-funded report by J. Batterham (research funded in 2009). The report refers to a publication whose principal author is none other than the former President of WADA, Richard Pound: N. O’Reilly and J. Madill, 2007, *The World Anti-Doping Agency: The Role of Social Marketing*, *Journal of Nonprofit and Public Sector Marketing*, Vol.17, No. 1, p.11. R. Pound wrote several papers on social marketing prior to assuming office at WADA.

35 A. Marchioli, 2006, Marketing social et efficacité des campagnes de prévention de santé publique : apports et implications des récents modèles de la communication persuasive, *Market Management*, Vol. 6, No.1, pp. 17-36.

36 P. Kotler, N. Roberto and N. Lee, 2002, *Social Marketing: Improving the Quality of Life*, Thousand Oaks CA, Sage Publications.

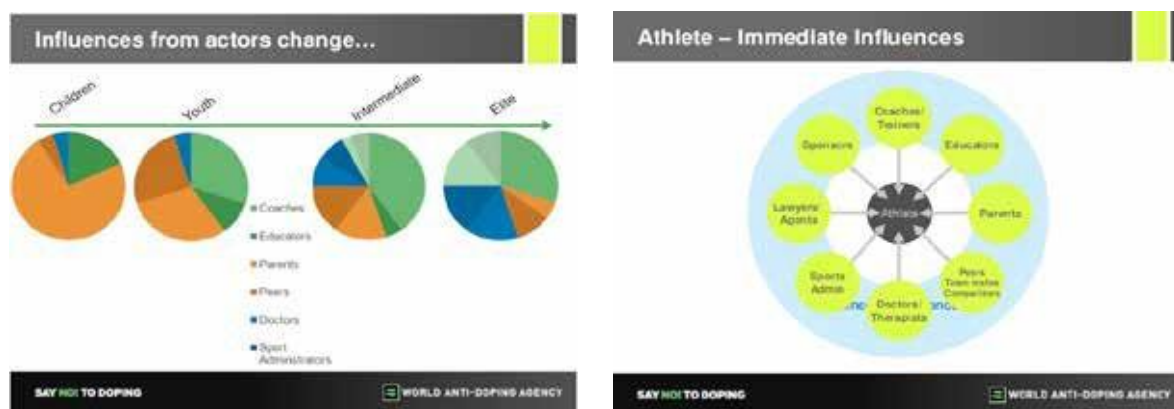
37 K. Gallopel, 2003, Le marketing social : un outil au service de la prévention des comportements tabagiques des jeunes français, in Groupe d’expertise collectif tabac (ed.), *Prévention et prise en charge du tabagisme chez les étudiants*, Paris, Éditions INSERM, pp. 181-194.

The screenshot shows the WADA online library interface. At the top left is the WADA logo and the text 'AGENCE MONDIALE ANTIDOPAGE franc jeu'. The main heading is 'Bibliothèque en ligne'. A search bar with a 'Recherche' button is at the top right. Below the heading, there are links for 'FAQ | Glossaire'. The main content area is titled 'Bienvenue à la bibliothèque en ligne de l'AMA'. It features a book cover image on the left and descriptive text on the right. The text explains that the library was created to make information and education tools more accessible to partners. A search dropdown menu is open on the right, showing a list of target audiences: 'Public cible', 'Sportifs' (with sub-categories: soumis aux contrôles, élite, jeunesse), 'Entraîneurs' (with sub-categories: de sportifs soumis aux contrôles, de sportifs niveau élite, de jeunes sportifs, de sportifs récréatifs), 'Administrateurs', 'Médecins', and 'Élèves' (with sub-categories: Secondaire (de 12 à 16 ans), Primaire (de 6 à 11 ans)).

Figure: WADA target segmentation (screenshot from 10 Oct. 2013)

The above figure shows the segmentation suggested by WADA. The categorization is open to debate: Are age groups relevant?³⁸ Have some categories been overlooked? What tools should be used for very young elites (such as gymnasts)? Is this segmentation universal, i.e. relevant to all countries and all cultures?

Because the proponents of these approaches grant that the target audience cannot be confined to athletes, they suggest extending prevention to their entourages. The need to take account of “psycho-social factors” has led them to catalogue all interactions in order to catalogue all target audiences.



Source: Slides from Rob Koehler's presentation "Prevention & the Athlete Entourage"

38 See on this point P. Garnier, 1995, *Ce dont les enfants sont capables. Marcher XVIII^e, travailler XIX^e, nager XX^e*, Paris, Métalié. The author questions the age groups, setting a reading in terms of general properties (whose scope may be criticized) against an order theory approach.

This reading³⁹ raises a number of problems that ought to be explored. For one thing, a large number of “influences” seem to be missing: the athlete’s friends, brothers and sisters and above all the context and situations in which he or she operates. For another, reducing the extent of influence on an athlete to a measuring exercise means failing to recognize what is a social relationship. It seems, in these approaches, that influence is being conflated with time spent with an athlete. Yet the sociological literature on socialization⁴⁰ shows that brief exchanges can be critical in the construction of identity, in social practices and in relationships (professional, sporting, gendered, etc.), while longer ones do not have the same influence.

ii) Product

Debates about “product”, to use marketing terminology, tend to be axiological: “clean sport”, “say no to doping”. This is unproblematic, and yet it is repeated like a slogan constituting a “product”. But is anyone asking for “dirty” sport? Or saying yes to doping? Beyond of a book with a polemical title,⁴¹ there are many people who agree on the benefit of doping-free sport. Is it really necessary to persuade people of this by invoking health and ethics? We cannot be certain. Athletes are concerned about improving their performance, winning against opponents who may be doping, recovering from fatigue, etc. and not about the relevance of clean sport. Why not try to convince a firefighter of the benefits of a fire-free existence? Pressing for a state of the world on which everyone can agree, but not asking how it might be achieved, makes one wonder about the nature of the product. The value of the social marketing model is perhaps open to question.

iii) Price

The “price” of change is minimized. In WADA campaigns it is enough to “just say no”. While the idea of reducing the cost (of change in this instance) is a classic marketing strategy, there are two problems. Firstly, it suggests that a change of attitude is not so very important and thus tends to devalue the proposed change. Secondly, and this conflicts with the previous point, we have already noted an invitation to change “culture”:

*“WADA believes that a long-term solution to preventing doping is through effective values-based education programs that can foster anti-doping behaviors and create a strong anti-doping culture.”*⁴²

There seems to be some ambivalence about what is expected of athletes, since they are being asked not just to refuse doping but also to assimilate values.

iv) Place

The question of how to approach athletes – “place” in marketing terminology – has to include thinking about intermediaries able to “reach” the target audience. Prevention stakeholders have had a series of discussions about the roles that these people might play, about athletes and about the messages to be

39 Slides from Rob Koehler’s presentation “Prevention & the Athlete Entourage”, Tunis, 17 February, 2012.

40 See, for example, C. Bidart, 1991, L’amitié, les amis, leur histoire. Représentations et récits, *Sociétés contemporaines*, Vol. 5, No. 1, pp. 21-42. In a very different context (job-hunting), Granovetter shows the strength of weak ties: M.S. Granovetter, 1973, The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No. 6, pp. 1360-1380.

41 B. de Lignières and E. Saint-Martin, 1999, Vive le dopage : enquête sur un alibi, op. cit. It is surprising that anti-doping stakeholders have not seen fit to respond to this book. Nor are there any counter-arguments for other works critical of the anti-doping movement. It might be assumed that prevention also has to take the “fight” to opposing positions through argument.

42 Quotation taken from “Education and Awareness” page on WADA website (accessed 25 October 2013), cf. Footnote 18, page 11.

conveyed. These people would be family and friends, trainers and teachers thought able to hold athletes' attention, as this is a real challenge – to which we shall return. However, there is a perceived need to train these intermediaries or, failing this, to train qualified staff to engage with the target audience.

There are a number of training schemes for this purpose. But, as in many fields, supervision is a source of tensions. Who decides on the content? How and where should training be organized? Who should be responsible for it? How is it to be assessed? Sociology can analyse these discussions in terms of legitimacy of expertise (how and where the list of people with the relevant knowledge of doping prevention is decided⁴³), certification processes (the kind of certification to be given to trainers),⁴⁴ training content (which knowledge and scientific disciplines are most useful) and tensions between candidate institutions.⁴⁵ Unfortunately, little work has been done on this subject.

But beyond the need for a better understanding of the tensions generated by these issues, we may also question the main vehicle proposed by WADA: sporting events. Its outreach model depends on competitions to spread the messages. This necessitates staff and therefore financial resources, and the latter requirement usually generates other tensions, since resources are limited. Even if institutions are striving for maximum transparency, it is hard to disarm criticism entirely: Is one project a higher priority than another? Do we not unwittingly tend to judge "investments of form",⁴⁶ i.e. candidates' ability to adjust to donor requirements, rather than the intrinsic nature of the case?

Because the WADA model is single-format, it may be thought inherently to stifle options for innovation: might it not be possible to shift sites of intervention, devise other forms of prevention or develop ways of meeting athletes and their entourages that take account of the whole range of cultures and local constraints? Obviously the answer to these questions is yes. But will it then be possible for the proponents of these new forms of anti-doping action to meet the requirements of funding application formats and assessment standards? As long as this question remains unanswered, it is likely to produce forms of self-censorship detrimental to the fight against doping.

v) Promotion

"Promotion", the marketing specialists' last means of action, has led a number of institutions to develop and distribute prevention tools. From simple flyers to materials such as CD-ROMs, DVDs and games (snakes and ladders, card games, etc.) to websites and promotional gadgets, the range of tools for conveying the message is certainly wide.

43 On this point, see O. Le Noé and P. Trabal, 2009, La construction d'une expertise : le cas de la prévention du dopage, in P. Terral and J.-L. Darréon (eds), *Les savoirs de l'intervention en sport : entre sciences et pratiques ?* Toulouse, Presses Universitaires du Mirail, pp. 137-153 (Sciences de la société, 77).

44 A good starting point here is the sociology of professionalization. A number of traditions, from Parsons' functionalism (T. Parsons, 1951, *The Social System*, Cambridge MA, Harvard University Press) to interactionism as proposed by Hughes, for example (E.C. Hughes, 1971, *The Sociological Eye: Selected Papers*, New Brunswick, Transaction Books), even extending to constructivist and socio-cognitivist approaches (see the "Travail et cognition" special issue of *Sociologie du travail*, 1994, Vol. 36, No. 4), could be used to describe the work of "preventologists".

45 Notwithstanding the political show of real partnership between states and the sports movement, it is conceivable that when it is a matter of deciding locally on the person to be selected for prevention work, tensions between NOCs, NADOs and rival government departments may be particularly high. This will depend on the number of candidate entities for such work and the division of powers in each country.

46 L. Thévenot, Les investissements de forme, in L. Thévenot (ed.), 1986, *Conventions économiques*. Paris, Presses Universitaires de France, pp. 21-71 (Cahiers du Centre d'Étude de l'Emploi).

In the course of our investigations⁴⁷ we found a number of quite lively debates. Some pitted supporters of “physical” tools, which were deemed easier to carry and consult, against their critics, who were concerned that the information they contained might be out of date, since anti-doping rules were subject to change. Another dividing line related to means of action; here there were some who advocated scrapping messages highlighting the dangers of doping. They were considered weak, and even counterproductive in the case of adolescents attracted by risk-taking. Some doctors have also condemned the categorical wording of these tools, particularly quizzes. The form – a question with just one right answer – is felt to close down debate when it would be better to open it up.⁴⁸ Lastly, a number of tools merely provide information about the anti-doping campaign.⁴⁹

Some institutions have brought together various tools and made them available in kits. A sociological reading suggests that this reflects a desire to ensure control and monopoly of tools. For a while, WADA policy was to group together proposals by country in the form of a clearing house.

Figure: Collection of available tools shown on WADA website (screenshot from 14 November 2008). Each country was able to submit the tools produced by various institutions.

Digital Library print

Spain

	Title	Los valores del deporte en la educación – libro del profesor / libro del alumno
	Target Group(s)	Teachers
	Brief Description	
	Language(s)	Spanish
	Organization	Consejo Superior de Deportes
	Contact Details	C/ Martin Fierro s/n 28040 Madrid, Spain http://www.csd.mec.es/ http://deporteyeducacion.info/udvde/
	Title	Guía del Deportista
	Target Group(s)	Athletes
	Brief Description	Athletes Guide 2005
	Language(s)	Spanish
	Organization	Consejo Superior de Deportes

Europe

- > Belgium
- > Cyprus
- > Czech Republic
- > Republic of Croatia
- > Denmark
- > Estonia
- > Finland
- > France
- > Germany
- > Greece
- > Ireland
- > The Netherlands
- > Norway
- > Portugal
- > Romania
- > Spain

How should we interpret the fact that this approach has been dropped in favour of “integrative” proposals,⁵⁰ i.e. entailing certification and supervised aggregation of messages and their forms?

47 We studied 101 French-language prevention tools when surveying users and examined a number of them with the help of experts: P. Trabal (ed.), 2008, *Recensement et évaluation des outils de prévention du dopage et des conduites dopantes*, Paris, Ministère de la Santé, de la Jeunesse et des Sports / Université Paris X Nanterre, 202 pp.

48 See Julie Demeslay’s analysis of the WADA quiz (J. Demeslay, 2013, *L’institution mondiale du dopage*, op. cit., pp. 444-452).

49 We have evaluated some of these criticisms from anti-doping specialists in text analysis of a corpus of tools (O. Le Noé and P. Trabal, 2009, op. cit.).

50 The figure below shows the outreach model.



Figure: Available WADA tools on WADA website (screenshot from 14 November 2013)

There may be arguments for greater coherence and clarity. However, we cannot rule out the risk that is associated with any tendency towards centralization: remoteness from the local constraints that crop up in real-life situations.

Limitations of the model

This attempt to describe the whole range of prevention mechanisms with the help of the model preferred by the stakeholders – social marketing – indicates the extent of the work achieved but also its limitations. Some of the latter have been identified by anti-doping officials, who have added two further facets to their work. Firstly, there soon emerged the need to consider action against drug trafficking. This work comes under both prevention (pre-empting use) and enforcement (prosecuting the individuals involved). We have no further survey information of significance to add to the Paoli and Donati report.⁵¹ Secondly, we find attempts to involve the pharmaceutical industry in prevention. This takes the shape of requests for collaboration to provide information that can be used for detection.⁵² More recently there have also been closer ties with manufacturers of food supplements to establish labels guaranteeing that products are safe with regard to doping tests. A number of governments have taken this approach, using a system arising from what is, as far as we are aware, a private initiative.⁵³ Such approaches still have to be standardized and athletes informed how to identify these labels.

These activities lie outside prevention on the social-marketing model, which provides the structure for most policies. But it is possible to question the benefit of this approach, the target segmentation process and strategies to centralize systems and methods of intervention in the name of standardization.⁵⁴ The idea of “governance by instruments”, to use the concept of Lascoumes and Le Galès,⁵⁵ according to whom technical choices cannot be divorced from policy choices, is particularly appropriate here. We must now consider how these choices connect with realities on the ground.

51 L. Paoli and A. Donati, 2013, *The Supply of Doping Products and the Potential of Criminal Law Enforcement in Anti-Doping: An Examination of Italy's Experience*, WADA report.

52 It seems that this work paid off very early on for detecting NESP (Amgen) and CERA (Roche).

53 Wall Protect, now Sport Protect.

54 See Julie Demeslay, op. cit.: “Doping prevention thus tends to take on a universal dimension. It would seem to rest on an internalization of knowledge and skills that goes beyond the field of sport. Prevention work at the global level has to take account of the skills of the various communities concerned” (p. 437). Referring to the minutes of the WADA Ethics and Education Committee meeting of 21 and 22 October 2005, she tells us that “mention was made of the fact that ‘African athletes have limited literacy skills’, requiring a person to be on hand to read the WADA Doping Quiz questions to athletes” (ibid.).

55 P. Lascoumes and P. Le Gales, 2005, *Gouverner par les instruments*, op. cit.

REALITIES ON THE GROUND

Doping prevention cannot be examined and understood without taking account of the realities on the ground. However, behind this truism lies one crucial fact: there are virtually no detailed descriptions of prevention measures. We may therefore question the reasons for this situation, which suggests a certain degree of indifference.

BETWEEN ACCOUNTS AND DESCRIPTIONS

The institutions responsible for doping prevention have shown little interest in studying the situation on the ground. Of course, it might be objected that they do insist on accounts of activities completed. We thus have evaluations enabling donors to monitor what is happening on the ground and aggregate overall experience whilst identifying any challenges in order to look for solutions.⁵⁶ Thus UNESCO asks recipients of assistance from the Fund for the Elimination of Doping in Sport to specify “achievements”, “target groups” and “challenges or lessons learnt” and to “submit all relevant documentation (project documents, meeting reports, publications, CD Roms, news clippings, photographs, videos etc.)”.⁵⁷

There are several sociological traditions relating to accounts. The one known as “ethnomethodology”⁵⁸ focuses on how members of a group produce accounts through which they describe or explain a situation, thereby helping to create it. Another tradition looks at the ways in which people submit to explanatory constraints and construct a judgment. In their two different ways, these approaches urge us to pay serious attention to the ways of recounting experience and to recognize the constraints influencing these accounts. As far as we are aware, there have been no systematic studies of the corpus of accounts.

Consequently, it seems that the only knowledge that institutions can have of the reality on the ground is based solely on their own records in formats that they themselves have defined. This leads to a risk that we might call the risk of reification, which consists in considering the “real” solely through indicators (number of activities, type of target, number of athletes reached, etc.), which take the place of what is actually happening.⁵⁹

Of course, institutions can fall back on some representatives on the ground. A NADO or RADO officer, a doctor, or a representative of the sports movement who has been involved in outreach and is personally acquainted with people in WADA or UNESCO can produce an account complementing verbatim records in evaluations of training activities. But the status of these accounts, mixing asymmetries (applicant/paymaster roles cannot be entirely disregarded), personal concerns (the same love of a sport, for example) and political considerations (reference to the internal problems of a department, office, etc.), means that it is impossible to make a sound judgment of the situation on the ground.

56 See the following research contribution funded by WADA in 2009 WADA: B. Houlihan and S. Melville, 2011, *Improving and Proving: A handbook for the evaluation of anti-doping education programmes*.

57 http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SHS/pdf/evaluation_report.pdf (accessed September 2014).

58 H. Garfinkel, 1967, *Studies in Ethnomethodology*, Englewood Cliffs NJ, Prentice-Hall.

59 According to B. Houlihan, “One of the unavoidable dangers of using performance indicators is that frequently they are designed to measure outputs rather than outcomes” (B. Houlihan, 2003, *Dying to Win: Doping in Sport and the Development of Anti-doping Policy*, op. cit., p. 103).

MEDIA CONSTRAINTS

If we look at the fight against doping through the mirror of the press we struck by the lack of interest in prevention work “in action”.⁶⁰ The problem of interesting journalists in debate about prevention affects both heads of institutions⁶¹ and campaigners trying to publicize local work.⁶² From a press corpus on the fight against doping put together for the purpose of sociological analysis,⁶³ it seems that articles usually contain a critical element, which may take any one of three forms.

Firstly, there are statements highlighting the ineffectiveness of action against doping given the extent of doping practices. For want of a statistical basis (as with any assessment of deviant practices, there is the vexed question of how the figures are reached), the viewpoint is built on a list of cases, preferably paradigmatic. Secondly, the critical attack may draw on confessions of “reformed dopers”, who readily reveal ways of getting round tests. Inasmuch as the prevention work from which they might have benefited is never mentioned, the argument that anti-doping action is ineffective is strengthened. Thirdly, the press sometimes invites experts (including sociologists), who highlight the root causes of doping, about which anti-doping action can do nothing; the hypocrisy of the sports movement is also occasionally emphasized, together with the inevitability of doping in an activity oriented to exceeding limits or even to excess. Thus we find some articles on samplers’ work if a report in a case is challenged, on biochemical analysis techniques if there is a leak, and on margins of error if an athlete is very close to testing positive.

The day-to-day work of anti-doping stakeholders – whether they are outreach programme organizers, tool designers or campaigners attending sports events to spread the prevention message – does not seem to interest journalists. This state of affairs is doubtless due to media constraints making it necessary first and foremost to sell information that will attract the public’s attention. But it may also be the case that the near-total lack of any descriptions of the reality on the ground beyond the media spotlight hampers the chances of publicizing unspectacular doings in a field characterized by sporting spectacle.

OTHER CONCERNS

It is regrettable that sociologists themselves seldom undertake research into this social reality. The subject has a tradition of describing work in itself, and there is plenty of literature when it comes to studying what post-office workers, cooks or airline pilots do. But the work of doping prevention stakeholders has not yet been covered. When sociologists do investigate doping, they are more inclined to analyse its social significance. More specifically, some of these researchers are working on the historical aspects of doping. There is work on the history of

60 This sociological term alludes to the title of a book by Bruno Latour (1987, *Science in Action*, Milton Keynes, Open University Press) that helped to introduce a new paradigm to the sociology of science. Distancing himself from scientific values as such and how they were represented through reputation-based indicators or bibliometric systems, the author set out to consider how scientific statements were constructed by carrying out surveys in laboratories themselves (these are sometimes referred to as “water cooler” surveys). This approach could be adapted for “local games hall” surveys.

61 At the fourth Conference of Parties at UNESCO (Paris, 19 and 20 September 2013), a number of voices were raised concerning the difficulty of getting the media to publish information on doping prevention work.

62 First-hand accounts from various campaigners during our survey (P. Trabal (ed.), 2010, *Les dispositifs antidopage à l'épreuve de la critique*, MILDT-INSERM / Université Paris Ouest Nanterre, 196 pp.).

63 This is confined to a French-language press corpus, and we have found no equivalent work in other languages: P. Trabal, 2009, *Agir contre le dopage. Critiques et ajustements de la lutte antidopage*, in F. Cantelli, M. Roca i Escoda, J. Stavo-Debaugue and L. Pattaroni (eds), *Sensibilités pragmatiques. Enquête sur l'action publique*, Brussels, Peter Lang, pp. 145-161.

doping substances (focusing on differences between sports),⁶⁴ doping systems and their regulations⁶⁵ and sometimes emblematic tropes of state doping.⁶⁶

We also find work on the relationship between sport and society, which, under this broad label, can include highly critical approaches, such as those construing sport as a form of alienation,⁶⁷ attempts to broaden the issues in sports doping,⁶⁸ investigations of the links between the political and economic fields,⁶⁹ approaches aimed at understanding how far doping can be considered “cultural” from either an anthropological approach or sociological traditions seeking to understand habituses and identities,⁷⁰ and research into deviance.⁷¹

Studies of doping regulation methods and implementation of anti-doping policies tend to concern the relevance of a regulation and the legitimacy of the fight against doping,⁷² approaching the subject either through ethics,⁷³ moral sociology⁷⁴ or the sociology of public action to analyse anti-doping policies in themselves. But whether we take the literature on the political construction of the doping issue and how it is handled by the public authorities,⁷⁵ or the many different stakeholders involved and the extent of their involvement,⁷⁶ there are few pieces of research dealing with what the people in charge of doping prevention actually do in real-life situations.

Note may here be taken of a thought-provoking paper on the attitudes of doctors when faced with some patients' requests for substances.⁷⁷ We ourselves have carried out some surveys in the field. They are too few in number to be able to make any authoritative pronouncements on these realities but perhaps enough to support the need to continue along this path. The complaints voiced in some surveys with regard to problems of mobilizing a target group, using prevention tools that are “too out of touch” with people's expectations and communicating with the “higher-ups” who organize prevention do indeed suggest that this lack of research should be rectified.

64 I. Waddington, 2000, *Sport, Health and Drugs: A Critical Sociological Perspective*, London, E & FN Spon.

65 See P. Laure, 1995, *Le dopage*, Paris, Presses Universitaires de France, and O. Le Noé, 2000, Comment le dopage devient l'affaire des seuls sportifs, in F. Siri (ed.), *La fièvre du dopage*, Paris, Autrement, pp. 77-92 (Mutations, 197).

66 A. Singler and G. Treutlein, 2000, *Doping im Spitzensport: Sportwissenschaftliche Analysen zur nationalen und internationalen Leistungsentwicklung*, Aachen, Meyer & Meyer.

67 See, for example, J.M. Brohm, 1987, La iatrogénèse sportive. Contre-productivité et effets pathogènes de la compétition sportive intensive, in J.-P. de Mondenard (ed.), *Drogues et dopages, sports et santé : Quel corps ?* Paris, Editions Chiron, pp. 19-50.

68 The idea being to prove that the reasoning behind these practices is prevalent in society as a whole, as suggested by Patrick Laure: P. Laure, 2004, *Histoire du dopage et des conduites dopantes : Les alchimistes de la performance*, Paris, Vuibert.

69 J. Defrance, 2000, La politique de l'apolitisme. Sur l'autonomisation du champ sportif, *Politix*, Vol. 50, No. 2, pp. 13-28; G. Vigarello, 1999, Le sport dopé, *Esprit*, No. 1, pp. 75-91; A.M. Waser, 1998, De la règle du jeu au jeu avec la règle : le dopage dans le sport de haut niveau, in CNRS, *Dopage et pratiques sportives – Expertise collective*, pp. 20-39.

70 C. Pociello, 1983, *Le Rugby ou la guerre des styles*, Paris, Métailié.

71 C. Brissonneau, 2007, Le dopage dans le cyclisme professionnel au milieu des années 1990 : une reconstruction des valeurs sportives, *Déviance et Société*, Vol. 31, No. 2, pp. 129-148; J. Coakley, 2001, Deviance in sports: is it out of control?, in J. Coakley, *Sports in Society: Issues and Controversies*, New York, McGraw-Hill, pp. 35-47; G. Lüschen, 2000, Doping in sport as deviant behaviour and its social control, in J. Coakley and E. Dunning (eds), *Handbook of Sports Studies*, London, Sage, pp. 461-476.

72 J. Coakley, 2001, Deviance in sports: is it out of control?, op. cit.; P. Irlinger, 2000, Les fondements éthiques de la lutte contre le dopage, in P. Laure (ed.), *Dopage et société*, Paris, Ellipses, pp. 44-51.

73 P. Laure, 2002, *L'éthique du dopage*, Paris, Ellipses.

74 P. Duret and P. Trabal, 2001, *Le sport et ses affaires : une sociologie de la justice de l'épreuve sportive*, op. cit.

75 B. Houlihan, 1997, *Sport, Policy and Politics: A Comparative Analysis*, London, Routledge; O. Le Noé, 2000, Comment le dopage devient l'affaire des seuls sportifs, op. cit.

76 J. Hoberman and V. Møller (eds), 2004, *Doping and Public Policy*, Odense, University Press of Southern Denmark; J.-L. Chappellet, 2001, Le système olympique et les pouvoirs publics face au dopage et à la corruption : partenariat ou confrontation ?, in J.-C. Basson (ed.) *Sport et ordre public*, Paris, La Documentation française, pp. 215-234.

77 J.-Y. Trépos, and G. Trépos, 2002, Les médecins du sport face au dopage, *Psychotropes*, Vol. 8, No. 3, pp. 69-87.

THE PROBLEM OF CORRELATION

With the model we are using, we began by identifying aspects relating to axiology (principles and values of prevention), epistemology (mechanisms for monitoring prevention) and ontology (to study the entities springing up on the ground). This initial description catalogued some of the challenges for stakeholders. To consider how to overcome them, it is necessary to understand them better, and our analysis now leads us to examine their nature. Our basic assumption is that they arise out of tensions in the correlation between these three levels of analysis.

BETWEEN KEY PRINCIPLES AND THEIR APPLICATION

Conflicts of values arising out of the systems put in place are not specific to doping but, in a field focused on exemplary conduct, are attended by considerable tensions.

These are apparent in ethical issues, for example. They come into play with the general problem of privacy raised by the Anti-Doping Administration and Management System (ADAMS) as well as numerous cases of doping, where the confidentiality of certain data is at the heart of the argument. We also find these tensions in research into doping. Whether we are talking about social science, which, outside North America, is usually unconcerned with ethical considerations,⁷⁸ or, more commonly, work in experimental science, there are systems for managing conflicts of values.⁷⁹

But there are tensions inherent in discussion of prevention itself. It might be thought that debates on the relative importance of the ethical and health arguments have no “concrete” implications beyond power games. The infighting that accompanied the establishment of WADA in 1999⁸⁰ may continue not only at a local level in interactions between a NOC representative and a NADO representative but also in design of a prevention tool or in an outreach activity. In our surveys of prevention tools we found quite heated exchanges between a supporter of the ethical argument and a doctor (“There’s no point in scaring young people, but they respond to fair competition”) and also a very firm attitude by a hospital consultant at a ministry meeting, in which he called for epidemiological studies: “If we cannot provide scientific evidence of a health risk, doctors might as well relinquish the fight against doping.” This demand for scientific evidence comes up regularly and raises two potentially antithetical constraints, each of which is supported by a key principle: firstly, the need to establish, on specific points for the purposes of scientific ethics, the precise role played by doping practices in relation to health and, secondly, the requirement not to disclose too widely findings that do not support the fight against

78 C. Thoër and F. Millerand, 2012, Enjeux éthiques de la recherche sur les forums Internet portant sur l'utilisation des médicaments à des fins non médicales, *Revue Internationale de communication sociale et publique*, No. 7, pp. 1-22: <http://journals.openedition.org/communiquer/1085>

79 Attachment to ethical systems varies; depending on the country, there may or may not be legislation translating ethical issues into researchers' rules of conduct or referring them to committees with varying degrees of authority. The importance that WADA attaches to ethics, which is reflected by requests for approval by a committee, constitutes a further value, which is obviously legitimate but which conflicts with another principle requiring all research teams worldwide to meet such requests.

80 See J. Demeslay and P. Trabal, 2007, De quelques contraintes du processus d'harmonisation des politiques antidopage, *Terrains & travaux*, Vol. 12, No. 1, pp. 138-162; J. Demeslay, *L'institution mondiale du dopage. Sociologie d'un processus d'harmonisation*, op. cit.

doping. Faced with these competing demands, stakeholders must find answers if they are to hold potentially conflicting values.⁸¹

Another aspect of these value-related tensions concerns the justice system. The problems raised extend well beyond the courts to the heart of prevention work. They include first and foremost the question of sanctions, particularly those for no-shows. Like the impunity of athletes regarding whom everything, apart from anti-doping tests, points to their being doped, legal rulings in sports cases often involve competing principles. This is the case for criticisms of “pee justice”, to use Professor Escande’s term.⁸² The former president of the French National Anti-Doping Committee is here condemning the fact that the quest for certainty and the presumption of innocence are limited owing to the inefficacy of urine tests that cannot always be used to prove doping, whereas a simple medical examination would be enough to ascertain whether a doping substance had been taken. Between practices that can cause bodily harm to athletes, the desire to organize fair competitions, and the constraints of a judicial system requiring evidence, conflicts of values spring up as soon as it is a matter of providing evidence that a substance has been taken and ensuring a ruling consistent with due process in a time-frame that will not compromise the fairness of sports events.

THE CHALLENGE ON THE GROUND

These considerations relating to the justice system occasionally obtrude on prevention work.⁸³ But the key question is really what the athletes at whom these education programmes are aimed are thinking and doing.

Among the research funded by WADA, some has actually taken the field itself as its subject, and it is here worth noting the ways in which systems – the research system in this case – attempt to understand such environments. With the “WADA social science research” corpus⁸⁴ we have undertaken a number of tests to discover how researchers try to describe the situation on the ground and how they employ tools to understand it; in fact, the latter are generally bound up with the disciplines that use them and which at the same time determine which subjects are relevant.

To discover the disciplines used, we began by looking for those appearing directly in the corpus.

81 On this particular point, one classic device is to invoke scientific caution. This is what Professor Toussaint is doing in the press when he states, “At present, our ten years of hindsight are not yet enough. This is still the medium-term.” (*Libération*, 3 September 2013).

82 J.P. Escande, 2003, *Des cobayes, des médailles, des ministres : contre une course à l'expérimentation humaine*, Chevilly-Larue, Max Milo.

83 We have had some evidence of the questions raised by secondary school students who draw parallels between the impunity of athletes suspected of using sophisticated doping and the heavy penalties for simply using cannabis.

84 Described in Annex 2.

Discipline	Occurrences
psychology	41
Philosophy	12
sociology	4
pharmacology	3
philosophy	3
Anthropology	2
biochemistry	1
genetics	1
anthropology	0
biology	0
Educational Sciences	0
ethnology	0
forensic Science	0
kinanthropology	0

Discipline	Occurrences
psychology	14
sociology	4
Philosophy	2
pharmacology	2
Anthropology	2
philosophy	1
biochemistry	1
genetics	1
anthropology	0
biology	0
Educational Sciences	0
ethnology	0
forensic Science	0
kinanthropology	0
legal Sciences	0
neurobiology	0
psychiatry	0

Source: Screenshots taken with Prospero software: disciplines mentioned in the corpus of social science research reports funded by WADA.

These screenshots show various scientific disciplines, indicating first the number of occurrences and then the number of texts in which they are to be found. We confirmed the over-representation of psychology by looking for concepts characteristic of the different subject traditions.⁸⁵

Psychology lexicon (748 occurrences)

Lexicon	Occurrences
behaviour	418
motivation	126
perception	64
motivational climate	55
affect	54
psychology	41
achievement goal	40
anxiety	38
motivations	29
amotivation	28

Physiology lexicon (175 occurrences)

Lexicon	Occurrences
protein	28
hormone	26
blood pressure	23
fat	15
oxygen	9
cell	8
heart rate	5
hormones	5
sweating	5
circulation	4

Source: Screenshot taken with Prospero software: presence of lexicons reflecting psychology and physiology respectively in the corpus of WADA-funded social science research reports.

Sociology lexicon (148 occurrences)

Lexicon	Occurrences
social norms	27
society	25
legitimacy	23
social environment	22
adverse effects	10
social networks	6
deviance	5
middle class	3
social norm	3
social role	3

Psychoanalysis lexicon (29 occurrences)

Lexicon	Occurrences
unconscious	8
enjoyment	7
denial	7
sexuality	5
libido	2

Source: Screenshot taken with Prospero software: presence of lexicons reflecting sociology and psychoanalysis respectively in the corpus of WADA-funded social science research reports.

⁸⁵ This method of identifying a discipline through its lexicon is the subject of the following paper: C. Collinet, P. Terral, P. Trabal and M. Delalandre, 2013, Forms and Modes of Apprehending Interdisciplinarity: A Socio-Computer Analysis of Sports Sciences, *Bulletin of Sociological Methodology / Bulletin de Méthodologie Sociologique*, Vol. 119, No. 1, pp. 61-78.

These figures suggest that the “social science research” funded by WADA is therefore influenced by psychology (and some social psychology that shares part of its lexicon), which supports our hypothesis that the social marketing model (which draws substantially on this discipline) is predominant.⁸⁶

Looking at the methods used by researchers, we find that the most common is the questionnaire. This is confirmed by the data analysis tools, which are virtually all statistical.⁸⁷

To understand the actual situation, researchers thus record “the social aspect”, taken mainly to mean “social factors”, with the help of questionnaires analysed using the statistical methods pertaining to them and of interviews to complement this analysis.⁸⁸ The key question is how to interpret the data from these various measurement methods. Some people have recommended standardizing them:

Attempt to make results comparable with those already published by standardising the reporting of outcome measures (Jones et al. 2007) and by selecting outcomes and scales that have been previously validated and accepted (Gates et al. 2006).⁸⁹

Standardization of measurement methods would be useful for comparison purposes, but the priority seems nevertheless to lie in evaluating what they record. A more critical outlook is to be found in some more unsettling conclusions.

In spite of the widespread opinion of doping pernicious effect on health, the opinion of athletes has an essential distinction from common beliefs. Sports-oriented students consider that doping does not impact on health negatively if it is used in a reasonable way.⁹⁰

The author supports his statements with a verbatim account from the field:

Weightlifter 1: *Well, it is absurd when Furosemiduin has been enrolled in the banned substances' list. (All group members: yes, yes). It is a usual diuretic. Even pregnant women use it. And you should to be dismissed for that. Also, if you have high levels of caffeine. You could even be banned because of certain food.*

Soccer player: *Often athletes themselves do not know what they are taking. In my sport, team sport, it is difficult. Often I have been given vitamins, but I cannot imagine what kind of vitamins I took.⁹¹*

The reality of doping, like the effectiveness of a prevention measure, is hard to gauge, since it cannot be entirely separated from the systems used to understand it. If anti-doping institutions

86 It is also surprising how much importance is attached to social science research. Placed separately from “scientific research” in the WADA structure, it is thus confined to investigating issues relating to education and awareness. Political sociology, moral sociology and the sociology of science, which all have things to teach us about doping, are thus devalued. We believe that to make the fight against doping more effective it is necessary to restructure research policy.

87 A “statistical reasoning” category covering entities such as “variables”, “mean”, “percentage”, “correlation” and all the much more specific terms (ANOVA, χ^2) showed 1299 occurrences, putting it third among the corpus's largest categories.

88 On the other hand, we found virtually no token of formal text analysis tools (content analysis, discourse analysis, text analysis software).

89 S. Backhouse et al., 2009, *Prevention through Education: A Review of Current International Social Science Literature*, WADA/Carnegie Research Institute (Leeds Metropolitan University) report, p. 21.

90 D. Bondarev, 2011, *Doping Prevalence Among University Students In Ukraine: A Study of Knowledge, Attitudes and Behavior*, WADA/Sevastopol National Technical University report, p.4.

91 Ibid., p. 19.

seek to give structure to their instruments, they can be badly damaged if an unforeseen practice emerges. It can not only rock their convictions about the state of what they are trying to understand but also upset their belief in their own systems. In a survey of athletes we recorded the following strange testimony:

- [Concerning use of a doping substance] Were you afraid?

- *No, I saw the protocol on the WADA website; you have to stop taking EPO 4 or 5 days beforehand.*

- *On which website?*

- *The World Anti-Doping Agency's. It has the whole validation protocol for the urine test. You read it and study it so as not to get caught; it's brilliant. It's actually the Agency that gives you all the answers. [...] It's a good idea to give people information, but there are things you can't tell them. When X says that EPO is brilliant and will still be working three weeks later, it benefits athletes who understand and stop a week beforehand. They take it for three months and know that it will still be working for a month. [...]. That doesn't help the fight against doping; it helps the practice of doping.⁹²*

This proliferation of ontologies and situations that systems find it hard to record is badly damaging the latter; it encourages us to call into question our understanding of the reality of doping and our tools for making judgments.

This was the case when a Danish study led its authors to send samples containing recombinant erythropoietin to WADA-accredited laboratories. The paper based on this research led by Carsten Lundby⁹³ cast doubt on the organization and reliability of EPO tests, since the laboratory results were not only disparate but also bore little relation to what was expected for the EPO injections received by the subjects. WADA regularly tests the laboratories that it accredits under a quality control system using a standardized and well-documented protocol. Without going into detail concerning this study, which garnered relatively little attention in the press, we may note that the investigation conducted by the Lundby team produced surprise findings because it did not follow the assessment methods laid down by the Agency. In other words, institutions' assessment may be affected by the forms they take. In terms of prevention it therefore seems that the methods of assessment used are undoubtedly consistent in themselves but have formats that do not necessarily correlate with the reality on the ground.

Critical thinking, evaluations and future outlook

Are these diplomatic reflexes? Or is it a question of drawing attention to the work accomplished, particularly when the latter is frequently devalued in public. We may nevertheless be surprised at the propensity of anti-doping stakeholders to congratulate themselves publicly on the excellence of their actions and thus question the existence of critical and reflective thinking about what has actually been done to date.

As a conclusion to the first part of this study, which has sought to review the state of prevention, a statement highlighting certain neglected aspects and issues might be thought surprising; it is simply intended to improve the effectiveness of anti-doping action. It can also be read as a means of offsetting a lack of self-criticism – in the public arena at any rate. It may be argued that the communication problems with the media and the criticisms challenging “effectiveness of anti-doping action” whenever there is a scandal are the result of the anti-doping community's habit

92 See P. Trabal et al., 2006, *Dopage et temporalités*, MILDT-INSEEM / Université de Paris X Nanterre research report, pp. 107-108.

93 C. Lundby, N.J. Achman-Andersen, J.J. Thomsen, A.M. Norgaard and P. Robach, 2008, Testing for recombinant human erythropoietin in urine: problems associated with current anti-doping testing, *J. Appl Physiol*, Vol. 105, No. 2, pp. 417-419.

of denying the (persisting) weaknesses in its work. Perhaps it is a communications policy dictating that problems must not be publicized. The fact remains that in a field that seeks to combat secret practices covered by a code of silence, and given the forms of hypocrisy of which heads of institutions supposed to be taking action against doping are regularly accused, any concealment of problems, any stumbling blocks or breakdowns may seem like a lack of determination to combat doping effectively.

It might be objected that failure to advertise any difficulties encountered is just a communications problem that does not tell us anything about anti-doping stakeholders' capacity for thought; the existence of evaluations for every activity might be considered evidence in support of this explanation.

This interest in evaluation must be conceded, but the question of evaluation points to complex issues that extend beyond the anti-doping sphere. In the field of theory, they concern philosophical issues relating to how a judgment is constructed. In sociology, they are considered in terms of the correlation between more or less stable points of reference (shared descriptive languages, shareholder networks, etc.) and actual experience in the real world.⁹⁴

For action against doping, evaluations would seem to be largely self-referential. As described above, evaluations of awareness-raising are based on data sheets completed by the organizers and are not covered by any intelligible analysis in the public sphere. Prevention tools are usually evaluated without consulting their target audiences.⁹⁵ Testing laboratories are accredited and assessed by WADA, and when tests are requested outside identified procedures they damage these laboratories, as shown by the Lundby paper. Signatories' compliance with the World Anti-Doping Code is evaluated under UNESCO supervision but is complemented by the states parties themselves, and the reporting is highly (too?) satisfactory.

We believe that evaluation of anti-doping action is focused on system consistency and suffers from a failure to confront what is actually going on. Standardization is the goal, and undoubtedly much progress has been made in this field despite the difficulties.⁹⁶ But matching this coherent whole with real life does not appear to be a key concern of anti-doping policy-makers. This being so, the proliferation of ontologies, scandals, experiments and criticisms is tending to disrupt strategic plans, upset assumptions and undermine the effectiveness of global anti-doping policy.

I am very pleased to report on a year in which WADA and its global partners faced many challenges, made great progress on several fronts, and shared multiple successes in our joint mission to promote clean sport. It's no exaggeration to say that 2012 highlighted the very best in clean sport and the worst in cheating, as WADA carried out the responsibilities mandated by the World Anti-Doping Code.⁹⁷

Is it possible both to accept that cheating exists and to extol success in the battle against cheats? Sociology has a concept that helps to understand this paradox. Murray Edelman has developed the idea of "symbolic politics" to describe the multiplication of proactive statements by policy-makers when the effectiveness of their policies is under fire. This process, according to the author, goes hand in hand with a temptation to instrumentalize certain problems or cases, which is usually condemned in the public arena.⁹⁸ This model, which is often

94 See, for example, O. Bessy and F. Chateauraynaud, 1995, *Experts et faussaires. Pour une sociologie de la perception*, Paris, Métailié.

95 In one of our investigations, an attempt to bring athletes together with prevention specialists caused quite a commotion.

96 See J. Demeslay, 2013, L'institution mondiale du dopage. Sociologie d'un processus d'harmonisation, op. cit.

97 Message from the Chairman, *WADA 2012 Annual Report*, p. 3.

98 M. Edelman, 1964, *The Symbolic Uses of Politics*, Urbana, University of Illinois Press; M. Edelman, 1971, *Politics as a Symbolic Action*, Chicago, Chicago University Press.

used to analyse public policy,⁹⁹ sometimes in amended form,¹⁰⁰ can be applied to the fight against doping. The public debate about gene doping, the polemics concerning the Lance Armstrong case, and neglected criticism of the effectiveness of anti-doping systems naturally come to mind. One possible answer is to examine the choices made, shift the emphasis and innovate.

99 J.G. Padioleau, 1977, La lutte contre le tabagisme : action politique et régulation étatique de la vie quotidienne, *Revue française de science politique*, Vol. 27, No. 6, pp. 932-59.

100 L. Berlivet, 1997, Naissance d'une politique symbolique : l'institutionnalisation des « grandes campagnes » d'éducation pour la santé, *Quaderni*, No. 33, *L'État communicant, des formes de la communication gouvernementale*, pp. 99-117.

PART 2

Outlook

EXAMINING MODES OF PUBLIC ACTION

RELATIONSHIP TO TIME

The fight against doping has its own history. This is also true of all the major health issues, but, unlike the fight against obesity, or AIDS control, the history of action against doping has never really been written (there is little research), much less recognized (stakeholders seldom refer to it, except in cases with a lot of media coverage that point to breakdowns¹⁰¹). The reasons for this neglect ought to be studied and, above all, historical research undertaken to fill this gap. It is surprising – although this perhaps connects with what we have just said – that the history of doping has been the subject of extensive work. As Patrick Mignon has shown,¹⁰² the idea that “there has always been doping” has been argued at length and is supported by a multitude of examples. This statement engenders a form of fatalism, since it creates the impression that there is nothing we can do about it, without this inference being consciously accepted by historians of doping, however. We cannot be satisfied with a trope of this sort, encouraging apathy, firstly because, with this attitude, there is no reason why we should do anything about child labour, global health inequalities or massacres of civilian populations, which “have always existed”, and, secondly, because stakeholders are taking action, with varying degrees of success, to combat doping.

As Julie Demeslay has shown,¹⁰³ prevention policies are based on collective memory, which is characterized by the idea of development over time. When stakeholders are asked about the progress of their work, their replies take three forms: “We’re making progress” / “We’re not getting anywhere” / “We’re going backwards”. The concern to keep moving forwards is coupled with the idea of building up a series of systems and agreements. While it undoubtedly indicates a desire to combat doping, this concern for ever wider consensus and ever greater standardization has led to inflexibility of these agreements, setting them in stone and preventing any backtracking.

In other words, the anti-doping community is relying on a one-way interpretation of the fight against doping. Social science research can help to provide a history of the fight against doping by studying avenues that have been explored and then abandoned, in order to provide a better understanding of mistakes that have been made. But it can also contribute to the realization that a different relationship to time is possible and even desirable if prevention is to be improved.

The latter approach suggests that the history of the fight against doping, like that of any public action, does not follow a straight line. Standardization is one example of this, since it is only possible if institutions with their own expertise, customs and experience agree to give them up – at least in part – to adopt a common position. This may of course create the impression of regression, but to the extent that people know that it is part of a process and a history, the change is perceived as another stage. This

101 As in the Festina, Puerto and Armstrong cases.

102 P. Mignon, 2002, *Le dopage : état des lieux sociologique*, Paris, CESAMES.

103 J. Demeslay, 2013, *L'institution mondiale du dopage. Sociologie d'un processus d'harmonisation*, op. cit.

enables them to be critical about earlier choices. It could be argued that the lack of critical thinking mentioned previously arises from a view that admission of a problem may be interpreted as a desire to backtrack, despite the fact that fresh scrutiny of earlier decisions, even if “set in stone”, may constitute progress.

EXAMINING NETWORKS AND PARTNERSHIPS

As the previous multiplicity of regulations had created areas of legal uncertainty and thus led to strained relations between institutions, the process of standardization accompanying the establishment and development of WADA was generally welcomed. It took considerable energy and much self-sacrifice to eventually produce a global anti-doping institution that is constantly congratulating itself on its unity and coherence. Although the work of the anti-doping community is often devalued in the public sphere, it is not our intention to dispute this enormous effort. But our desire to achieve progress has led us to consider how this partnership could be improved.

In various forms, the concept of a network has been the subject of extensive work in the field of sociology. It would be possible to make do with a mapping of all the links to show how far they stretch, but this should not be confused with the strength of the network. Anti-doping institutions often laud their work by listing all the entities that have signed the World Anti-Doping Code. Each ratification of the UNESCO Convention seems to be a boundary that is being pushed further back, a group of people recruited for the cause – another victory in the fight against doping. But the strength of an army or a religious idea does not depend solely on the number of countries occupied or the number of people converted. History tells us that it is actually the actions of the conquered peoples that matter. To put this in sociological terms, we cannot overlook the nature of the links that make up the network. An extensive network would seem to be a form of power, but this power is based on the strength of its weakest link.

Actor-network theory¹⁰⁴ focuses on how networks are constructed, how they work and how they break down. Such work can inform analysis of the fight against doping and offers some lines of reflection.

Firstly, we may examine the composition of the global anti-doping network and the forms of partnership that seem most prevalent. We may thus think of states, NADOs, the IOC, international federations, etc. But network analysis encourages us to consider the structure of these entities. What does a state or federation actually do when it takes action against doping? It mobilizes a number of stakeholders that network. Describing the anti-doping network therefore means concentrating on the organizational structures of states, which vary from country to country, and the delegation chains used to convert a commitment (ratification of the Convention) into a series of systems and orders (including “assignment” orders) resulting in preventive action. Better prevention means analysing the weakest links. All the entities linked together in the network should accordingly be catalogued. WADA focuses on putting together networks of entities structured around the Code and relies on the soundness of local networks (obviously it cannot interfere in the specifics of a country’s or federation’s policy organizations). Government networks are organized in various ways, and may also change (in several countries, powers have been transferred from a ministry to an independent entity or vice versa), having both weak and strong links.

104 The abbreviation ANT is sometimes used. See J. Law and W.E. Bijker (eds), 1992, *Shaping Technology / Building Society: Studies in Sociotechnical Change*, Cambridge MA, MIT Press; J. Law and J. Hassard (eds), 1989, *Actor Network Theory and After*, Oxford, Blackwell/Sociological Review; M. Akrich, M. Callon and B. Latour (eds), 2006, *Sociologie de la traduction : textes fondateurs*, Paris, Presse des Mines (Sciences sociales).

The same kind of simplified outline could be used for the sports movement, although, for historical reasons, the inner circle of partners would probably be more homogeneous. It enables us to examine WADA's conception of the extent and strength of the network. In our corpus, we found the presence of numerous stakeholders, of government delegations, anti-doping officials in federations, samplers, escorts, laboratory managers, prevention coordinators, trainers, etc. Others appeared only in surveys: sample transporters, the people who adjust the spectrometers, etc. Are they significant for study of the fight against doping? If we believe that a network is only as strong as its weakest link, can we afford to forgo a better understanding of all the network's elements?

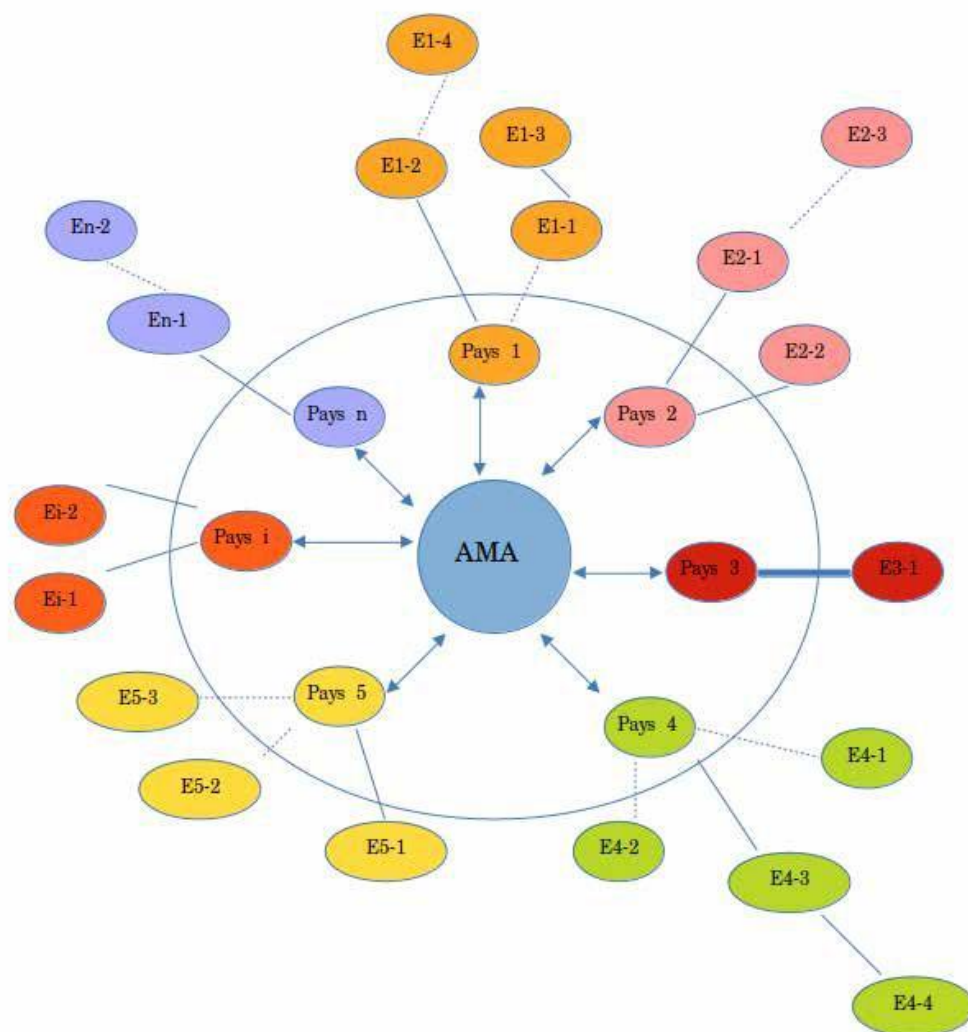


Figure: Simplified presentation of the links in an anti-doping network

Secondly, the nature of the links should be examined. Relations between WADA, the various states and the sports movement were rather fraught in 1999 and at the first international conferences but calmed down once the possibility of amending the Code was officially acknowledged. Actor-network theory talks about a quest for symmetry. The links between the states and the various actors that they may enlist are more complex. The same is true of methods of delegation within the sports movement. Our surveys – incomplete to date – suggest that a top-down mode predominates.

As for governments, a sovereign state generally requires its agents to promote health, sets the agenda and allocates the duties associated with the commitments that it has made (by ratifying the Convention, for example). It provides a certain number of resources with which its employees and providers must manage. But the latter seldom have the authority to report problems freely. Of course there is a box for this in activity assessments, but the people who complete it have no idea of the use to which the comments may be put. Can it be admitted that the stand had only a few visitors? Can it be regretted in public that information days never allow “the grassroots” to express their opinions? Is it possible to criticize the prevention tools lauded by one’s own institution despite the fact that they are completely out of touch with the target audience? Can it be acknowledged that some campaigners have talked about being “more disgusted with the anti-doping campaign than with dopers”? Can people say that they are tired of giving their time and money for unreimbursed travel amidst management indifference? It is certain that the people on the ground who gave us these testimonies¹⁰⁵ refrain from doing so, other than off the record, whatever the institutions (government or sports) to which they belong.

The diagram above illustrates this asymmetry; the various entities can communicate with WADA only through their chains of management. If there is a difference of opinion with WADA, or a change of personnel, the work of a whole string of stakeholders vanishes from the network. Appeals to an “anti-doping community” covering all stakeholders thus come up against links that are too weak. How can we get beyond this?

Two lines of approach might here be explored. The first would be once again to give WADA a federating rather than a unifying role. Instead of bringing together all initiatives, tools and models for action under a single roof and seeking the maximum amount of consistency, we might want to consider action to promote real-life experience and accounts of it, action that comes up with innovations and brings them forward for debate, and which establishes a doping prevention forum or even a community. Rather than expecting someone to read the WADA quiz to African athletes with reading difficulties,¹⁰⁶ African organizers should be encouraged to think up ways of getting educational messages across.¹⁰⁷ The second line of approach would be to more systematically bring together entities with the same brief in order to hear what they have to say and encourage them to exchange experience, problems and ways of surmounting them.

The lack of symmetry is at its height in the links between the anti-doping community and one key stakeholder: the athlete. As far as we are aware, athletes are rarely involved in the fight against doping, and, when they are, it is in the shape of a series of requirements that prevent any form of association. Of course, athletes are represented in WADA as in other bodies. We have some evidence on this subject from athletes.¹⁰⁸ But are they automatically consulted for preparation of a prevention activity, a tool, a prevention policy, or legislation?

¹⁰⁵ These testimonies were gathered during our surveys and also through informal discussions during international symposia. The verbatim accounts from which it is drawn come from campaigners from a number of countries and different entities connected with the sports movement. It would certainly be worth substantiating through more systematic surveys.

¹⁰⁶ See the minutes of the WADA Ethics and Education Committee meeting of 21 and 22 October 2005 (already cited in Footnote 54, page 19).

¹⁰⁷ For AIDS, pre-prepared messages were very quickly abandoned in favour of plays containing codes that made sense to various ethnic groups (in Africa, for example).

¹⁰⁸ And what they say is almost always the same.

On this point, and thus beyond the issue of prevention, we have a set of questions to ask in response to the debates that have been preoccupying the anti-doping community: Should the daytime testing period be longer? Should ADAMS be made more flexible? Should doping practices be penalized? Should TUE applications be simplified? With each of these questions, athletes may hesitate between a position stressing the restrictive nature of the system and a position emphasizing the value of being able to compete in fairer competitions and thus indulge their love of the sport without having to mix with cheats. Should athletes not be consulted as well?

Do the institutions that champion sport and bear the sovereign duties and powers of the state have greater legitimacy than the people they are supposed to serve? This classic question of political philosophy seems never to have been asked in all its radicalism. It has been swept aside by insisting that athletes are people who have to be protected, a claim that deprives them of any authority to decide for themselves. Apart from discussions on how to define athletes, whose status varies between doping victim and doping perpetrator in arguments that have now become fairly routine, we can hardly escape the conclusion that they play a very minor role in the worldwide anti-doping network. Can we continue to extol the network's strength and scope while dismissing a key player? Certainly not. There is a string of difficulties to be resolved, particularly regarding athletes' representation. It is hard to imagine that the federations can play this role, since they represent not the athletes but rather their sports, in order to promote their growth.¹⁰⁹ In professional sport, athletes' representation could involve union mediation, but this is a complex issue. The question should be tackled with a view to achieving genuine athlete involvement in discussions. Why not start a form of public debate, following the example of various movements in the major democracies, which might take the shape of an expression of interest in participating in discussions on the fight against doping? A cheaper option would be to make greater use of the experience of athletes and their families for prevention work.

COMMUNICATION AND THE ATTITUDE TO CRITICISM AND CRISIS

The benefit of working on network quality, i.e. improving the network and the strength of links, goes hand in hand with improving communication.

WADA's current strategy of centralizing and standardizing all prevention work has a number of risks. Not only does it entail missing out on resources (entities which, for reasons that have nothing to do with WADA, cannot exchange information with each other), but it also provides ammunition for critics. The outcasts from the anti-doping community can side with all the anti-doping critics. To those who criticize the hypocrisy of the anti-doping campaign, its ineffectiveness, lack of legitimacy, apathy and lack of ambition, are added those who think they have something to contribute but feel devalued. The latter may then voice their discontent and feed internal criticism,¹¹⁰ which carries more weight, since it is based on a detailed knowledge of the system not usually shared by the public following the argument, provided, however, that the injustice can be separated from the person exposing it.¹¹¹ In these circumstances, disarming this type of criticism means providing an explanation, which necessitates a technical description (usually hard to use effectively in the public sphere) unless an attempt is made to discredit the accusation, which may prove risky.

109 By way of example, we read on the UCI website that "the Union Cycliste Internationale is committed to leading the worldwide development of our sport at all levels" and on the FIFA website: "FIFA's mission: Develop the game, touch the world, build a better future." Taking the example of a smaller federation, there is the FISA (World Rowing Federation) website: "FISA sets the rules and regulations for the practice of the sport, in all its forms [...] and [...] oversees sanctioned World Rowing events."

110 P Trabal, 2009, *Agir contre le dopage. Critiques et ajustements de la lutte antidopage*, op. cit.

111 L. Boltanski, Y. Darré and M.-A. Schiltz, 1984, *La dénonciation, Actes de la recherche en sciences sociales*, Vol. 51, pp. 3-40.

To avoid polemic, it seems better to remain with controversy. This distinction between controversy and polemic, which the sociologists of risk have made various attempts to clarify, helps us to conceive the difference between a register in which players share “a common space, to compare arguments and methods of defining, measuring and interpreting phenomena”¹¹² and a register that enlists the media and forums in which “revelations and exposures” abound.¹¹³ Another position would therefore be to accept these many different voices and organize a space where criticism can be expressed. With this approach WADA would have a more diverse but stronger network, able to respond to outside criticism by mobilizing the gamut of its internal resources. This will not weaken the institution. On the contrary, it strengthens it, since it can then show that it is able to listen and demonstrate some modesty. To simplify the argument being made here, statements stressing the “excellence” of anti-doping action by emphasizing the size of the network and a whole string of “significant results” might be replaced by an attitude of “it’s complicated, we’re not perfect, but together we’re all trying to do better together”.

REVISITING THE PARADIGM

In Part 1 we noted the extent to which the fight against doping was thought of in terms of a paradigm combining an epidemiological rationale and individualist action. The prevention that results is influenced by the social marketing model. Primary, secondary and tertiary prevention, target audiences, behaviour change, attitude change, changing conceptions, penalties: as we shall see below, the entire lexicon could be replaced by concepts from the sociology of risk: situation, vigilance, prevention point, risk perception, reasoning, vision of the future.

But in order to understand the possibilities of paradigm shift, it is necessary to describe a different paradigm.

112 F. Chateauraynaud and D. Torny, 1999, *Les Sombres précurseurs : une sociologie pragmatique de l’alerte et du risque*, Paris, Éditions de l’École des Hautes Études en Sciences Sociales, p. 80.

113 Ibid.

ENLISTING OTHER PARADIGMS

Over the past fifteen years or so the sociology of risk has reinvented itself in depth. We believe that these changes enable us to approach the prevention of doping from a different angle.

BREAKING WITH PURE INDIVIDUALIZATION

The traditional model is based on the idea of a process beginning with a scientific discovery and then leading experts, often in epidemiology or more broadly in medicine, to publicize the existence of a risk and call on the public authorities to take action. The work of “agenda-building”, i.e. the summoning of resources, has been described at length in political sociology.¹¹⁴ When the answer to a problem involves prevention it is then necessary to raise awareness and provide the public with the information it needs to desist from any “risky” practices. The challenges are then analysed in terms of “conceptions of risk”, sometimes called “risk perception”, about which people have to be “educated”.

The health crises of the 1980s onwards led to voicing of criticisms that began to question this model. Taking forms of condemnation as a subject for sociology, a number of researchers identified distrust of politicians and forms of expertise.¹¹⁵ Another tradition¹¹⁶ suggests that social actors should be given a set of competences¹¹⁷ and in particular a capacity to be mindful of risk. The public then becomes a potential source of warning that raises the question of forms of vigilance.¹¹⁸ Study focuses on the ability of actors to identify series and on forms of memory and summation¹¹⁹ that can then verify risks, issue warnings and endeavour to draw attention to what is perceived as dangerous.¹²⁰ In these circumstances, prevention would be less a matter of spreading a message designed to change behaviour and more a matter of learning to act with due care and attention, which should be an integral part of stakeholders’ daily experience.

Let us look at the consequences of this change from the point of view of doping prevention. This new outlook means working on the forms of risk to which stakeholders might be alert. Regarding instantiation of risk, the two-pronged approach on which the fight against doping is based offers two types of answer. Firstly, the health argument means showing that doping is dangerous. One of the major difficulties, well-known to prevention stakeholders, consists in the fact that young athletes are generally impervious to forecasts about their health. The possibility of disease ten years later

114 R. Cobb and C. Elder, 1972, *Participation in American Politics: The Dynamics of Agenda-Building*, Boston, Allyn and Bacon; P. Garraud, 1990, Politiques nationales : l’élaboration de l’agenda, *L’année sociologique*, pp. 17-41; P. Hassenteufel, 2010, Les processus de mise sur agenda : sélection et construction des problèmes publics, *Informations sociales*, Vol. 157, No. 1, pp. 50-58.

115 This process dates back further, since we can find its origins in early postmodernist critics and supporters of the Frankfurt School (H. Marcuse, 1991 (1964), Introduction to the Second Edition, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*, London, Routledge; J. Habermas, 1968, *Technik und Wissenschaft als „Ideologie“*, Frankfurt am Main, Suhrkamp.

116 Based on the work of Garfinkel, 1967, *Studies in Ethnomethodology*, op. cit.

117 L. Thévenot and L. Boltanski, 1999, The Sociology of Critical Capacity, *European Journal of Social Theory*, Vol. 2, No. 3, pp. 359-377.

118 R. Duval, 1991, *Temps et Vigilance*, Paris, Vrin.

119 F. Chateauraynaud and D. Tomy, 1999, *Les sombres précurseurs*, op. cit., p. 89.

120 F. Chateauraynaud, *Argumenter dans un champ de forces. Essai de balistique sociologique*, Paris, Éditions Pétra.

is not an effective incentive. The sociology of risk encourages us to believe that vigilance as collective. In other words, rather than acquiescing in a precautionary system to prevent a process,¹²¹ family and friends may be taught to prefer due care and attention entailing “practical organization of presence and monitoring through which unforeseen events can be identified and turned into alerts”.¹²² This outlook, translated to road safety, another issue where prevention is critical, means inviting discussion of whatever raises doubts in a member of the family. Rather than continually recalling the existence of a danger and the possible penalty, passengers (children and spouses, for example) are encouraged to discuss how the driver’s conduct deviates from his or her environment.¹²³ Work might be done on learning to act with due care and attention, following the example of what has been done in the field of substance abuse, and forms of discussion might be debated.

In addition, more thought might be given to the appeal to ethical values, taking into account the collective aspect of argument. In the current state of doping prevention, there seems to be only one form of the “sports” argument: dopers are cheats who are damaging the sport. The idea is thus to stigmatize them and ban them from competing, in various ways. Athletes thus suffer a double penalty: not only are they publicly disgraced, but they are also no longer able to indulge their love of sport. Whether or not we accept the idea that an argument is an opportunity for an exchange of views or the heuristic value of the concept of “influence of an argument”¹²⁴ whereby it is the fate of the argument that is the key issue, we are bound to acknowledge that the title of “cheat” immediately tends to close down debate rather than opening it up. It results in a denial of some athletes’ specific experiences, the uncertainties that they may be facing in real-life situations, and the reasons for the regulations. Hammering home the slogan that “dopers are cheats” means failing to institute discussion with a young person who has tried cannabis, for example, without having been punished for it. It means not taking account of doubts about a food supplement and, beyond this, forbidding any questions about the boundaries of a rule by ruling out any outside food that might border on illicit practice. It means foregoing discussion about what constitutes a collectively decided rule and therefore missing an opportunity for education in citizenship. These two aspects can also be linked by encouraging athletes to think about their visions of the future. Their responsibility in the future of sport, the possibility of engaging in it without being suspected of cheating, anticipating the views of others, and possible diseases are all subjects that can be tackled by linking the questions of risk and ethics. In other words, it is a matter not of relieving cheats of the responsibility for their actions but of stimulating joint reflection on the need to share common rules and abide by them.

In every instance the above proposals represent a paradigm shift inasmuch as they break with the behavioural approach in order to reflect on prevention as a collective cognitive activity entailing debate. The contribution of sociology is thus to shift the emphasis away from an approach based on individualization of doping, which turns the public into a mere receptacle for prevention messages.

PREVENTION POINTS

We have undertaken research into the timing of doping that opens up new avenues of prevention.¹²⁵ The study concerned the time frame in which athletes had experienced at least

121 As suggested by the precautionary principle, or, in a more domestic sphere, by “shutting the door to be on the safe side” (see F. Chateauraynaud and D. Torny, 1999, *Les sombres précurseurs*, op. cit., p. 77).

122 Ibid.

123 F. Chateauraynaud and P. Trabal (eds), 2005, *Conducteurs ordinaires et extraordinaires aux prises avec les dispositifs publics*, INRETS (PREDIT) / DOXA report (<http://www.gspr-ehess.com/documents/Route-2005.pdf>).

124 F. Chateauraynaud, 2011, *Argumenter dans un champ de forces. Essai de balistique sociologique*, op. cit.

125 The section of text below takes up part of the following report: P. Trabal et al., 2006, *Dopage et temporalité*, MILDT-INSERM / Université Paris X Nanterre research report, 284 pages (available online) and a paper derived from it: O. Le Noé and P. Trabal, 2008, *Sportifs et produits dopants : prise, emprise, déprise*, op. cit.

one doping practice. To this end we analysed a corpus of interviews and accounts, looking systematically¹²⁶ for temporal qualifiers in order to detect in each doping practice consideration of precedents, tropes of change, future prospects, interpretive work, conditions for continuing, stopping or curbing the practice, forms of vigilance, and presumed responsiveness to anti-doping campaigns.

There then emerged the challenge of a prevention that would be fine-tuned not on the basis of a target audience, usually defined by a particular age bracket or level, but with respect to periods in an athlete's life: recovery from injury, entry into a body largely closed to the outside, travel, athletes' parties, moments of doubt about performance, uncertainties about products whose origin or composition is unknown, etc. We believe that each of these stages, which many athletes will experience, raise questions requiring appropriate prevention.

However, account must also be taken of the many other questions that athletes and their families ask themselves.

¹²⁶ Using Prospero software (prosperologie.org).

SHIFTS

In our surveys we were frequently told about the difficulties experienced by field workers in stirring a target audience to action, let alone getting it interested. When a place and specific date is picked for an event, the people do not always come. When the planned event takes place in conjunction with a sporting event, the stand is not usually the main attraction, and the challenge is to show that it is worth making a “detour” to visit the prevention event. For work in schools, it is sometimes hard to break free from the authority of the institution. These recurring problems ultimately come down to a lack of synchronization between the time when prevention takes place and the concerns of stakeholders at that particular moment.

It would therefore be advisable to come up with mechanisms able to function when athletes and their entourages need information, when they are asking questions or when they are having doubts. This takes us back to the problem of fitting in with the relevant environments at the relevant times.

REMOTE INFORMATION AND EDUCATION

Improving prevention undoubtedly entails movement, not of the “target audience” to a place and at a time determined by prevention specialists but, on the contrary, towards the athlete. When athletes are unsure whether to use a substance that may or may not be illicit as far as they know, when parents are wondering about the packet of medicine found in their child’s sports bag, or when there are anxieties about a state of health potentially attributable to “something or other”, that is when a prevention expert’s opinion is required. At those times there are usually no stands manned by anti-doping specialists in the vicinity. In addition, many of these questions relate to types of privacy that lead the persons concerned to prefer anonymity. Moving to provide relevant information and customized education has become a necessity, which does not conflict with more traditional activities.

This can and has been done through telephone services. As the WADA-funded study led by Jean Bilard has demonstrated,¹²⁷ examination of calls to a toll-free number¹²⁸ showed the existence of needs relating to health concerns (43%) and a desire not to break anti-doping law (26%). This scheme met the specifications listed above and contributed to field knowledge. It is nevertheless a fact that the number of calls has been declining constantly. In a country such as France, prevention stakeholders will probably have to turn to other media.

Use of smartphones should undoubtedly be considered. Studies have shown not only very high “penetration rates”, particularly among young people, but also an increasing variety of uses. These objects are often seen as a way of “keeping in contact” and “having pocket access to everything” to the point where they may be treated as an extension of their owners, a sort of artificial limb that both smooths the way for them

127 J. Bilard, 2007, *Les facteurs psychologiques et sociaux de risque et de protection vis-à-vis du dopage. Recherche à partir d'appelants d'un service national d'aide téléphonique « Écoute dopage »*, WADA report (funded in 2007).

128 This was a scheme set up in 1998 allowing French citizens to call a number anonymously and free of charge to talk to psychologists and doctors specializing in doping.

when and where they want and allows them to be who they are.¹²⁹ “It’s mine and no-one else’s and so I can do what I want, when I want, with it.”¹³⁰ If smartphones are being used to seek help and find information, doping prevention activities should be developed for them. Apart from simple visits to websites of anti-doping institutions and checking of the latter’s news in Twitter format, it is necessary to anticipate specific questions. Is the drug that I found in my son’s sports bag, for which I only have the brand name, a doping substance or not? Can I use this food supplement without risk of testing positive? Has anyone else already had serious acne problems with this substance? By paying serious attention to such questions and providing the answers, doping prevention could make significant headway.

ELECTRONIC DIALOGUE

Athletes and their families also express their opinions on Internet forums. This is not simply another medium for asking questions, usually from home. The value of this type of material for prevention is manifold. Firstly, it would seem possible to process large data series derived from ecological material, i.e. material that has not been directly affected by researchers’ artefacts, since the social actors are able to express freely, in arenas that they themselves have defined, their experiences of doping - or their doubts and vague desires concerning use of these substances and methods. Secondly, progress can be made in research into the effects and uses of substances and methods on the basis of the experience swapped in these forums. A brief perusal of a few threads is enough to be persuaded – not without some surprise for someone unaccustomed to this type of research – of Internet users’ spontaneity in giving accounts, anonymously of course, of their bodies and the sufferings and satisfactions that they bring, including in a degree of intimacy more characteristic of private relationships. Lastly, Internet users’ messages refer to a number of determinants that help us understand their relationship to doping. Whether we are talking about sporting failure, a desire to get on, questions about the dangers, “reasons” for starting or stopping a course of treatment, “warnings” or even criticisms, these accounts often contain a varied set of indicators that can be used to grasp the degree of rationality and the effect of constraints in construction of their judgements.

In terms of prevention, we could start by specifically thinking about participating in such investigations to confirm what has to be done. A few doctors sometimes become involved, and their experience is constructive in varying degrees.¹³¹ Work on e-health shows the extent to which relations between medical professionals and patients have been altered by the introduction of new information technologies and how doctors are being forced to change some of their practices.¹³² There exist research communities¹³³ that prevention officers would gain by approaching on these issues in order to understand the best way of becoming involved in electronic discussions.

129 Personalization of ringtones make it possible to know not only which phone is ringing but whom one is answering. Cf. <http://tempsreel.nouvelobs.com/medias/20110720.OBS7328/serie-d-ete-mon-smartphone-moi-et-ma-communaute.html>

130 See the Orange Exposure 2012-2013 SOFRES survey covering three countries (France, United Kingdom and Spain). Some information is provided here: http://www.francemobiles.com/actualites/id/201212051354330418/le_smartphone_est_l_ecran_prefere_des_adolescents.html

131 See, for example, the following exchange with Internet users taking substances who do not accept the doctors’ judgment. <http://www.atoute.org/dcforum/DCForumID5/3123.html>

132 G. Eysenbach, 2008, Medicine 2.0: Social Networking, Collaboration, Participation, Apomediation, and Openness, *Journal of Medical Internet Research*, Vol 10, No. 3, e22; A. Casilli, P. Pailler and P. Tubaro, 2013, Online networks of eating-disorder websites: why censoring pro-ana might be a bad idea, *Perspectives in Public Health*, Vol. 133, No. 2, pp. 94-95; A. Casilli., 2009, Le stéthoscope et la souris : savoirs médicaux et imaginaires numériques du corps, *Esprit*, No. 3, pp. 175-188.

133 See, for example, <http://blogsgrms.com/internetsante/> or the *Journal of Medical Internet Research* (<http://www.jmir.org/>).

Moreover, this type of data can contribute to a better understanding of doping practices. Not only does it provide information about use and poly-use and what it means for athletes,¹³⁴ but it seems possible to identify markets and perhaps new substances.

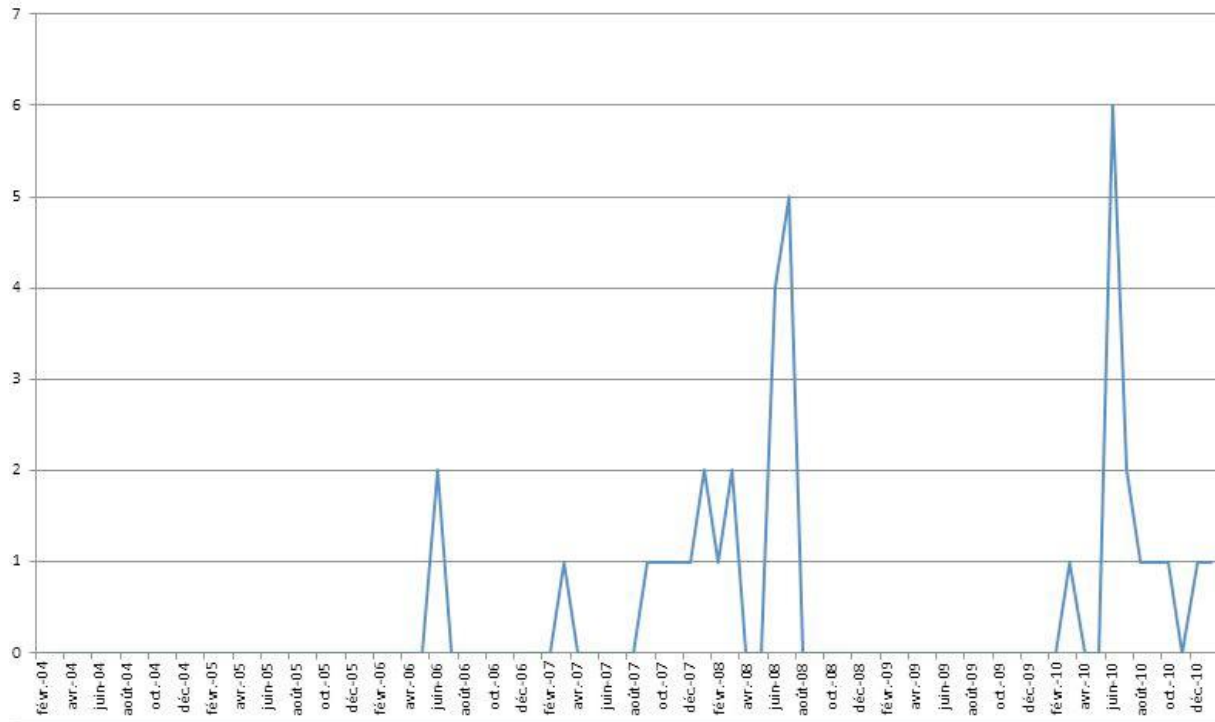


Figure: Connections between clenbuterol and the "market principles" category over time.

The above graph cannot really be interpreted on its own,¹³⁵ but it does show how discussion of a given substance (clenbuterol in this case) relates to the price of substances.

Lastly, a perusal of these exchanges can reveal "amateur preventologists". Internet users are very keen to condemn the doping practices described in these discussion threads, sometimes heavy-handedly, sometimes pertinently. They try to provide advice but also acknowledge that they need information. We could help these people, who lack resources but are genuine allies of doping prevention. They are in touch with what is happening on the ground, usually themselves alive to the ethical and health problems caused by doping, and are able to talk to and have the ear of people who are hesitating about using certain substances. Like "citizen sensors", to whom the new sociology of risk is paying close attention,¹³⁶ a "citizens for anti-doping education" initiative might be developed,

¹³⁴ In this respect, study of this material could help to meet the concerns expressed in research funded by WADA: "Clearly, it is difficult to accurately assess the prevalence of doping in sport, not only because of the sensitive nature of the subject, but also because of methodological issues in previous research. Most studies of banned substance use in athletes have dealt only with anabolic steroids, while those studies among the general population have not made distinctions between performance enhancing and recreational drugs. Consequently, the effects of continuing advances in doping products and techniques have not been captured by such studies. Additionally, while these studies go some way to revealing the extent of the problem of drugs in sport, they have a major weakness. Namely, they lack adequate theoretical basis or rationale and provide little information regarding the motivating factors that influence an athlete's decision to engage in doping behaviour" (Moran et al., 2008, *The Development and Validation of a Doping Attitudes and Behaviour Scale*, Report to World Anti-Doping Agency & The Irish Sports Council, p. 3). But we believe that the possibility of understanding the arguments makes it possible to go beyond simple behavioural decision research.

¹³⁵ P. Trabal, 2013, E se os esportistas que se dopam quisessem «fazer direito»? *Movimento* (Porto Alegre), Vol. 19, No. 4, pp. 11-43.

¹³⁶ To resist measurement methods minimizing the real risks, members of the public are organizing to understand the actual hazards and establish a type of research unit focused on action. See <http://www.cityyencapturers.net/> and <http://thingstream.io>

making it possible to understand which arguments carry weight with possible substance users, test the impact of anti-doping arguments and identify resource gaps in current prevention systems.

PUTTING SOCIAL ASPECTS AT THE HEART OF PREVENTION

Whether in the case of telephone conversations, advice-giving or discussions on online forums or even social media,¹³⁷ the striking point about these methods of prevention, apart from the communication technologies, is a twofold shift: a shift towards the environments and a shift towards the timing of the people to be protected, aimed at moving away from asymmetric exchange and an individualized approach to doping in order to conceive of prevention as a social activity, involving discussion with athletes and their families.

¹³⁷ These media ought to be studied. One WADA-funded study does report on them (J. Batterham, *Harnessing Social Media To Combat Doping Amongst Young Athletes*, op. cit.) but is strongly influenced by social marketing.

CONCLUSIONS

In conclusion, we propose to recapitulate all the areas for progress identified in the course of our study and the lines of approach that we have suggested.

Our work has pointed to room for improvement in relation to the situation at present. This would consist in:

- answering fundamental criticisms of the legitimacy of the fight against doping with the recognition that they sometimes come from well-known intellectuals. Their statements cannot be disproved without taking account of their arguments;
- specifying the goals of anti-doping action, and particularly prevention, by discussing priorities for the various types of work. However, to this end it would seem necessary to clarify how prevention work is to be divided up;
- questioning the conceptions of doping that underlie anti-doping approaches. This means publicizing other paradigms and research into the history and sociology of the fight against doping;
- examining the actual working of networks and collaboration between the different anti-doping partners. To this end less emphasis might be placed on the value of teamwork, which seems to be taken for granted and celebration of which may conceal problems with implementation;
- considering whether it is necessary to think about prevention using the social marketing paradigm. Our analysis has shown that such approaches are not always appropriate and may also have blind spots. We have further noted that the use of such models would benefit from discussion of segmentation in terms of age brackets and levels because of the boundary issues raised by these classifications. It would also be advisable to clarify both the call for a behavioural approach and the intention of changing a culture;
- studying and questioning the training process for prevention coordinators. This entails examining content and the basis of legitimacy to determine what prevention actually means. To date, it seems that this question has been addressed solely in terms of power relations;
- reflecting on the pressures on applicants for funding of prevention activities. To be more specific, it might be asked whether we are not assessing the ability to fit in with incidental formats, with the attendant question of how much room is left for innovation;
- organizing genuine consultation on prevention tools. This concerns not only content but also form: the quiz (in its various guises) may tend to close down debate by requiring the “right answers”;
- considering the relevance of a federating as opposed to a unifying approach for tools and reconsidering the value of a local approach. WADA’s proposal that its outreach model should be “translated” seems based on a questionable idea of culture;

- proposing forms of prevention evaluation for discussion whilst taking account of realities on the ground. This means restructuring social science research in partnership with academia,¹³⁸ taking as its priorities the generation of knowledge concerning what is “actually” happening and reflection on the artefacts produced by measurement methods;
- systematically cataloguing the problems and grievances of prevention officers in their daily work. These should then be analysed and practical answers found to help these officers;
- discussing conflicts of values in prevention stakeholders’ work and, more broadly, the work of everyone involved in anti-doping action;
- systematically covering any circumstances that may damage the fight against doping in order to analyse and reflect on shortcomings;
- breaking with symbolic politics. This would mean finding other methods of communication that would be equal to the complexity of the task whilst emphasizing the constraints.

Over and above this set of proposals, which arise out of the problems identified during our analysis, various pieces of sociological research suggest new lines of approach.

Firstly, we should examine how anti-doping officials view the development of the policies being implemented. We have seen a propensity to create irreversibility (the idea being to “set in stone” whatever is thought important) and at the same time stifle experimentation. It seems that the latter might make it possible to change attitudes, shift the emphasis and innovate, with a requirement for reversibility.

A consideration of organizational structures might lead us to examine the workings of the various networks. Whereas officials are mainly concerned with the extent of these networks, we would urge closer analysis of the nature and strength of the links holding them together. Network mapping shows a minor role for athletes and their families. They are not entirely absent from organization charts, but they appear in the form of representation of a number of athletes supporting a cause without being able to demand consultation or claim a mandate from athletes in general. This question of representation extends beyond doping issues and ought to be addressed more broadly. It would nevertheless be possible to bring together a cyber group of all those wanting to be involved in anti-doping decisions. This could include the athletes who feel concerned, together with their families. We suggest that they should be invited to make their views heard, and even involved in decisions concerning not only issues of privacy protection in localization stages and testing processes but also evaluation of prevention tools and consideration of problems in penetrating certain environments.

Secondly, it would undoubtedly be relevant to examine the room left for expression of internal criticism. The desire to standardize is not fundamentally in contradiction to acceptance of a plurality of points of view unless the intention is to unify everything. To take a musical analogy, harmonization does not prevent polyphony. By wanting to control everything, you run the risk of not being able to contain the airing of dissent. While standardization is necessary for doping tests, it can be relaxed for prevention. Without organizing systems in which a variety of judgments can co-exist in the shape of “controversy” there is a risk of polemic that could spill over into the public arena.

The sociology of risk invites us to break with approaches based on individualization alone in order to take account of the collective dimension. It would benefit from being reflected in

¹³⁸ For this purpose, a network of social science research units might be organized, responsible for analysing research policy on these issues and advising the anti-doping community.

attitudes: athletes are not simply persons to be protected; they can be endowed with a moral faculty, the ability to act with due care and attention, and a set of skills enabling them to express and understand constraints, argue and discuss. Consideration should here be given to various ways of encouraging debate and dialogue and to inhibiting anything that tends to restrict discussion.

By abandoning a behavioural approach we would be able to pay serious attention to athletes' experiences at particular times. By studying the latter, we could organize training to coincide with specific moments (moving from one organization to another, return from injury, etc.).

Recognition of how athletes and their families live means using new communication technologies. Online discussions might be followed in order to be receptive to the questions of athletes and their families and endeavour to reply and for content analysis to provide a better understanding of doping. Assistance could be given to the anti-doping campaigners on these forums and on social media, who could also be relied upon to exchange views with Internet users who are wondering about doping.

We believe that all these lines of approach would be worth exploring as to their value and weaknesses. To this end, anti-doping research, political and ethical debate, the experience of anti-doping stakeholders and its study, first-hand accounts, and the arguments of athletes and their families ought to be brought together in a single system. In the form of an online monitoring centre, this would make it possible to keep track of attempts at halting doping, to swap experience and points of view and to analyse the whole in order to identify further room for improvement.

In conclusion, we hope that our analysis and lines of approach will be of interest to anti-doping stakeholders. Irrespective of how the various proposals are received, we wish to emphasize the ability and readiness of sociology to "change the parameters" and humbly suggest some experimentation to assist those who, for the sake of the fight against doping, are ready to do some soul-searching.

ANNEXES

ANNEX 1

We have put together a corpus based on the work of five international institutions, to which we have added the early discussions at the symposium in Uriage-les-Bains (1963) in order to study the references at that seminal moment in the fight against doping.

The table below gives an initial idea of how the corpus has been put together.

	Number of texts	Number of pages
IOC	176	1470
UNESCO	57	598
WADA	54	2909
Council of Europe	35	185
WHO	3	16
Uriage	2	68

The historical distribution of the corpus is shown in the diagram below.

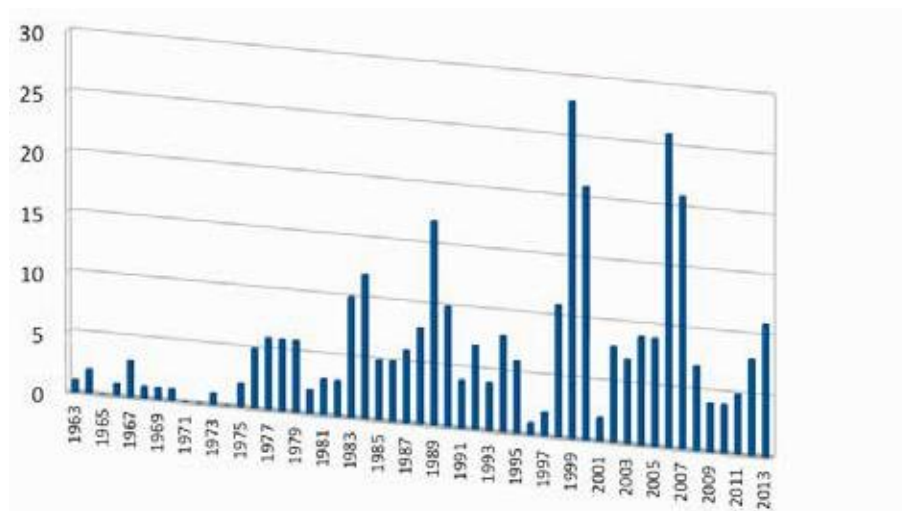


Figure: Number of texts/Year

- The WADA corpus consists of the Foundation Board minutes and the *Play True* magazine.
- The IOC corpus comprises *Olympic Review* articles that refer to doping.
- The UNESCO corpus brings together texts on the role of the fight against doping (information brochures, the International Convention, the Conferences of Parties, as well as summaries of projects financed by the Fund for the Elimination of Doping in Sport, and MINEPS follow-up meetings).
- The Council of Europe corpus is put together from items available on the institution's website: the 1989 Anti-Doping Convention, the Additional Protocol and other reference texts.

- The WHO corpus is confined to three texts, mainly concerning declarations. We decided not to include some long reports that did mention doping but in relation to other health problems that would have added “noise” to our analysis.
- We have included two texts covering the proceedings of the Uriage-les-Bains symposium.

For our analysis of prevention we grouped terms together using the synonym proximity principle in Prospero software.¹³⁹ By way of example:

1999 EDUCATION@	804 SENSIBILISATION@	235 PREVENTION@
... 1262 éducation	... 384 sensibilisation	202 prévention
... 261 Education	... 207 programme de sensibilisation	12 éducation préventive
... 173 programmes d'éducation	... 53 modèle de sensibilisation	9 activités de prévention
... 49 programme d'éducation	... 38 activités de sensibilisation	4 médecine préventive
... 43 activités d'éducation	... 27 Programme de sensibilisation	2 pratiques de la prévention
... 28 programmes éducatifs	... 23 équipe de sensibilisation	2 moyen de prévention
... 23 programme éducatif	... 17 campagne de sensibilisation	1 Moyens préventifs
... 21 systèmes éducatifs	... 11 campagnes de sensibilisation	1 aspect préventif
... 17 activités éducatives	... 6 équipes de sensibilisation	1 mesure préventive
... 13 projets d'éducation	... 6 Modèle de sensibilisation	1 mission de prévention
... 10 mallettes éducatives	... 5 programme national de sensibilisation	
... 10 matériels éducatifs	... 5 Centres de sensibilisation	
... 8 stratégie d'éducation	... 4 missions de sensibilisation	
... 7 EDUCATION	... 4 efforts de sensibilisation	
... 7 campagnes d'éducation	... 2 campagne nationale de sensibilisation	
... 6 initiatives éducatives	... 2 centres de sensibilisation	
... 5 projets éducatifs	... 2 travail de sensibilisation	
... 4 stratégies d'éducation	... 2 Centre de sensibilisation	
... 4 efforts d'éducation	... 2 opérations de sensibilisation	
... 4 ressources éducatives	... 1 processus extensif de sensibilisation	
... 4 outil éducatif	... 1 travail important de sensibilisation	
	... 1 développement de la sensibilisation	
	... 1 projets de sensibilisation	

Source: Screenshot taken with Prospero software: using the concepts of “education” (EDUCATION), “awareness” (SENSIBILISATION) and “prevention” (PREVENTION).

As each text is linked to an author and a date, it has been possible to differentiate uses for various combinations. By way of example:

Liste des Auteur(s), qui utilisent le plus SENSIBILISATION@	
464 AMA-WADA@	Sélection du filtrage
127 UNESCO	Auteur
40 OMS	Règle d'interprétation de la mesure des écarts :
10 Conseil de l'Europe	En théorie il faut se caler sur la valeur 100
0 CIO	Les éléments qui sont très supérieurs à 100 présentent une augmentation significative (notamment > 200).
	Les éléments très inférieurs à 100 présentent une chute significative (notamment < 50).
	Fermeture

Source: Screenshot taken with Prospero software: list of authors most often using the concept of “awareness”

Lastly, the software distinguishes different types of word in a language (entities, qualifiers, verbs, markers). We then looked for linkage. For example, the wording used on page 9 refers to all forms containing a verb group followed by an embodiment of doping (“doping”, “doping substances”, “substance use”, etc.).

ANNEX 2

We have put together a second corpus using reports and summaries from the “Social Science Research: Funded Research Projects” page of the WADA website as at 30 October 2013.

The corpus can be described in terms of the countries sponsoring the projects:¹⁴⁰

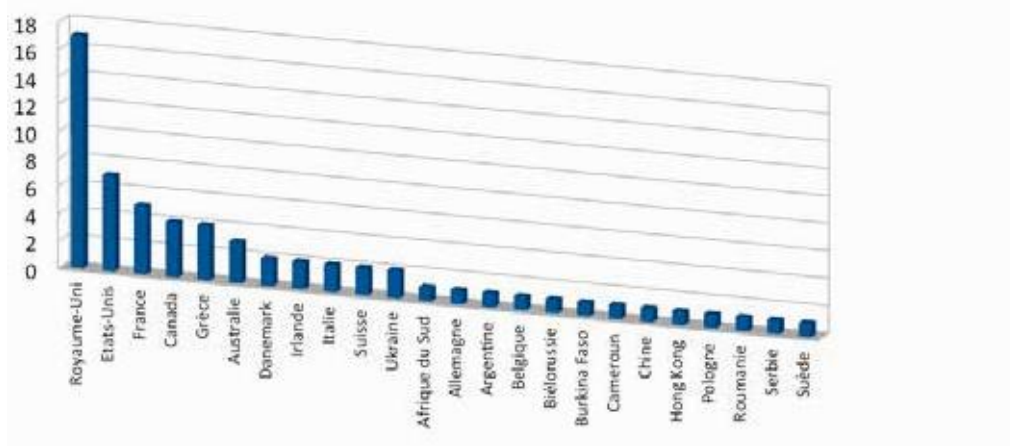


Figure: Distribution by country of texts included under the heading of WADA-funded social science research reports on WADA's website (accessed 14 November 2013).

It is difficult to work on several languages at the same time with text analysis software. Comparison would have been quite complicated owing to the large number of texts in English, compared with French or Spanish. Our research on this corpus led us to work with texts in English only (we used the English summary for reports written in other languages).

To identify disciplines we used a selection employed in a piece of research in the sociology of science.¹⁴¹ The following terms were searched:

psychology, philosophy, sociology, pharmacology, philosophy, anthropology, biochemistry, genetics, anthropology, biology, educational sciences, ethnology, forensic science, kin anthropology, legal sciences, neurobiology, psychiatry, psychosociology, toxicology, etc.

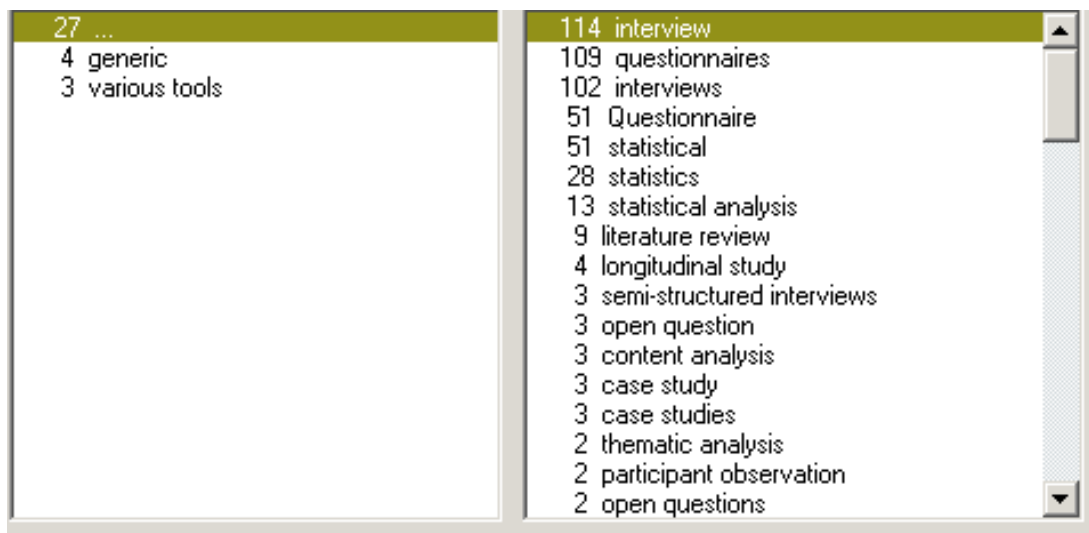
¹⁴⁰ The graph covers projects, whereas the corpus relates to texts. The two do not coincide, since a single project can give rise to several texts. We would further suggest that WADA require authors to date final reports so that they can be classified by year of publication.

¹⁴¹ C. Collinet, P. Terral, P. Trabal and M. Delalandre, 2013, Forms and Modes of Apprehending Interdisciplinarity: A Socio-Computer Analysis of Sports Sciences, op. cit.

A metonymic logic led us to identify disciplines from their lexicon. Thus, for the “sociological language” category, we asked the software to find 184 terms, including:

social norms, society, legitimacy, social environment, adverse effects, social networks, deviance, middle class, social norm, social role, socialization, social order, social origins, social recognition, social roles, social control, capital, division of labour, domination, interactionism, rational choice theory, genders, rationality, social activity, social relations, social barriers, social class, cultural values, middle classes, upper class, popular culture, rural gentry, aristocracy, social scales, structures of power, nature/culture, positions of power, a-theorism, bureaucracy, bureaucratic organization, collective action, constructionism, constructivism, determinism, deviances, falsificationism, functionalism, genetic structuralism, habitus, ideal type, individualism, legitimation, rational choice theory.

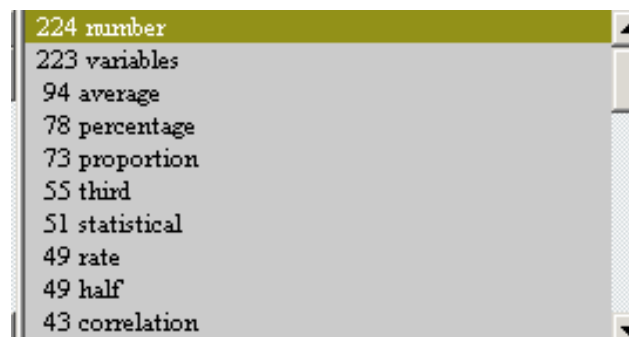
The methods were identified by means of a selection that included the following terms:



Count	Method
27	...
4	generic
3	various tools
114	interview
109	questionnaires
102	interviews
51	Questionnaire
51	statistical
28	statistics
13	statistical analysis
9	literature review
4	longitudinal study
3	semi-structured interviews
3	open question
3	content analysis
3	case study
3	case studies
2	thematic analysis
2	participant observation
2	open questions

Source: Screenshot taken with Prospero software: main embodiments of the selection of investigation methods in the corpus of WADA-funded social science research reports.

Lastly, to determine the form in which evidence should be taken, we used a metonymic logic to put together a “statistical reasoning” category:



Count	Term
224	number
223	variables
94	average
78	percentage
73	proportion
55	third
51	statistical
49	rate
49	half
43	correlation

Source: Screenshot taken with Prospero software: main embodiments of the “statistical reasoning” category in the corpus of WADA-funded social science research reports.

BIBLIOGRAPHY

- Adam, P. and Herzlich, C. 1994. *Sociologie de la maladie et de la médecine*. Paris, Nathan.
- Akrich, M., Callon, M. and Latour, B. (eds). 2006. *Sociologie de la traduction : textes fondateurs*. Paris, Presse des Mines. (Sciences sociales)
- Backhouse, S. et al. 2009. *Prevention through Education: A Review of Current International Social Science Literature*. WADA/Carnegie Research Institute (Leeds Metropolitan University) report.
- Batterham, J. 2010. *Harnessing social media to combat doping amongst young athletes*. WADA/EdComs report.
- Berlivet, L. 1997. Naissance d'une politique symbolique : l'institutionnalisation des « grandes campagnes » d'éducation pour la santé. *Quaderni*, No. 33, *L'État communicant, des formes de la communication gouvernementale*, pp. 99-117.
- Bessy, O. and Chateauraynaud, F. 1995. *Experts et faussaires. Pour une sociologie de la perception*. Paris, Métailié.
- Bidart, C. 1991, L'amitié, les amis, leur histoire. Représentations et récits. *Sociétés contemporaines*. Vol. 5, No. 1, pp. 21-42.
- Bilard, J. 2007. *Les facteurs psychologiques et sociaux de risque et de protection vis-à-vis du dopage. Recherche à partir d'appelants d'un service national d'aide téléphonique « Écoute dopage »*. WADA/University of Montpellier report.
- Boltanski, L., Darré Y. and Schiltz, M.-A. 1984. La dénonciation. *Actes de la recherche en sciences sociales*, Vol. 51, pp. 3-40.
- Boltanski, L. and Thévenot L. 1991. *De la justification*. Paris, Gallimard.
- Bondarev, D. 2011. *Doping Prevalence among University Students in Ukraine: A Study of Knowledge, Attitudes and Behavior*. WADA/Sevastopol National Technical University report.
- Brissonneau, C. 2007. Le dopage dans le cyclisme professionnel au milieu des années 1990 : une reconstruction des valeurs sportives. *Déviance et Société*, Vol. 31, No. 2, pp. 129-148.
- Brissonneau, C., Aubel, O. and Ohl, F. 2008. *L'épreuve du dopage. Sociologie du cyclisme professionnel*. Paris, Presses Universitaires de France.
- Brissonneau, C. et al. 2009. *Carrière sportive et socialisation secondaire en cyclisme sur route : les cas de la Belgique, la France et la Suisse*. WADA/University of Lausanne report.
- Brohm, J.M. 1987. La iatrogénèse sportive. Contre-productivité et effets pathogènes de la compétition sportive intensive. J.-P. de Mondenard (ed.), *Drogues et dopages, sports et santé : Quel corps ?* Paris, Editions Chiron, pp. 19-50.
- Brohm, J.M. 1992. *Les meutes sportives*. Paris, L'Harmattan.
- Buisine, S. 2010. « *Faire le métier* » de cycliste. Saarbrücken, Éditions Universitaires Européennes.
- Callon, M., Lascoumes, P. and Barthe, Y. 2001. *Agir dans un monde incertain*. Paris, Éditions du Seuil.
- Casilli, A. 2009. Le stéthoscope et la souris : savoirs médicaux et imaginaires numériques du corps, *Esprit*, No. 3, pp. 175-188.
- Casilli, A., Pailler, P. and Tubaro, P. 2013. Online networks of eating-disorder websites: why censoring pro-ana might be a bad idea. *Perspectives in Public Health*, Vol. 133, No. 2, pp. 94-95.
- Chappelet, J.-L. 2001. Le système olympique et les pouvoirs publics face au dopage et à la corruption : partenariat ou confrontation ? J.-C. Basson (ed.), *Sport et ordre public*. Paris, La Documentation française, pp. 215-234.
- Chateauraynaud, F. 2003. *Prospéro : une technologie littéraire pour les sciences humaines*. Paris, CNRS Éditions.
- Chateauraynaud, F. 2011. *Argumenter dans un champ de forces. Essai de balistique sociologique*. Paris, Éditions Pétra.
- Chateauraynaud, F. and Torny, D. 1999. *Les Sombres précurseurs : une sociologie pragmatique de l'alerte et du risque*. Paris, Éditions de l'École des Hautes Études en Sciences Sociales.
- Chateauraynaud, F. and Trabal, P. (eds). 2005. *Conducteurs ordinaires et extraordinaires aux prises avec les dispositifs publics*. INRETS (PREDIT) / DOXA report. (<http://www.gspr-ehess.com/documents/Route-2005.pdf>).
- Chateauraynaud, F. 2004. Invention argumentative et débat public – regard sociologique sur l'origine des bons arguments. *Cahiers d'Économie politique*, Vol. 47, No. 2, pp. 191-213.
- Cicourel, A.V., Conein, B., Filippi, G., Heath, C., Hutchins, E., Jacopin, E., Joseph, I., Latour, B., Luff, P., Theureau, J. and Vellard D. 1994. Travail et cognition. *Sociologie du travail*, Vol. 36, No. 4.

- Coakley, J. 2001. Deviance in sports: is it out of control? J. Coakley, *Sports in Society: Issues and Controversies*. New York, McGraw-Hill, pp. 35-47.
- Cobb R. and Elder C. 1972. *Participation in American Politics: The Dynamics of Agenda-Building*. Boston, Allyn and Bacon.
- Collinet, C., Terral, P., Trabal, P. and Delalandre, M. 2013. Forms and Modes of Apprehending Interdisciplinarity: A Socio-Computer Analysis of Sports Sciences. *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique*, Vol. 119, No. 1, pp.61-78.
- Conrad, P. and Schneider J.W. 1985 (1980). *Deviance and Medicalization: From Badness to Sickness*. Columbus, Merrill Publishing Company.
- De Lignières, B. and Saint-Martin E. 1999. *Vive le dopage ? Enquête sur un alibi*. Paris, Flammarion.
- Defrance, J. 2000. La politique de l'apolitisme. Sur l'autonomisation du champ sportif. *Politix*, Vol. 50, No. 2, pp. 13-28.
- Demeslay, J. 2013. *L'institution mondiale du dopage. Sociologie d'un processus d'harmonisation*. Paris, Pétra Éditions.
- Demeslay, J. and Trabal, P. 2007. De quelques contraintes du processus d'harmonisation des politiques antidopage. *Terrains & travaux*, Vol. 12, No. 1, pp. 138-162.
- Desrosières A. 1993. *La politique des grands nombres. Histoire de la raison statistique*. Paris, La Découverte.
- Duret, P. and Trabal, P. 2001. *Le sport et ses affaires : une sociologie de la justice de l'épreuve sportive*. Paris, Métailié.
- Duval, R. 1991. *Tempset Vigilance*. Paris, Vrin.
- Edelman, M. 1964. *The Symbolic Uses of Politics*. Urbana, University of Illinois Press.
- Edelman, M. 1971. *Politics as a Symbolic Action*. Chicago, Chicago University Press.
- Escande, J.P. 2003. *Des cobayes, des médailles, des ministres : contre une course à l'expérimentation humaine*. Chevilly-Larue, Max Milo.
- Eysenbach, G. 2008. Medicine 2.0: Social Networking, Collaboration, Participation, Apomediation, and Openness. *Journal of Medical Internet Research*, Vol. 10, No. 3, e22.
- Gallopel, K. 2003. Le marketing social : un outil au service de la prévention des comportements tabagiques des jeunes français. Groupe d'expertise collectif tabac (ed.), *Prévention et prise en charge du tabagisme chez les étudiants*. Paris, Éditions INSERM, pp. 181-194.
- Garfinkel, H. 1967. *Studies in Ethnomethodology*. Englewood Cliffs NJ, Prentice-Hall.
- Garnier, P. 1995. *Ce dont les enfants sont capables. Marcher XVIIIe, travailler XIXème, nager XXe*. Paris, Métailié.
- Garraud, P. 1990. Politiques nationales : l'élaboration de l'agenda. *L'année sociologique*, pp. 17-41.
- Gilley, B.J. 2010. *Under 23 cyclists' openness to doping: understanding the causes of doping behavior among American junior road cyclists with professional aspirations*. WADA report/University of Vermont.
- Granovetter, M.S. 1973. The Strength of Weak Ties. *American Journal of Sociology*, Vol. 78, No. 6, pp. 1360-1380.
- Habermas, J. 1968. *Technik und Wissenschaft als „Ideologie“*. Frankfurt am Main, Suhrkamp.
- Hassenteufel, P. 2010. Les processus de mise sur agenda : sélection et construction des problèmes publics, *Informations sociales*, Vol. 157, No. 1, pp. 50-58.
- Hoberman, J. and Møller, V. (eds). 2004. *Doping and Public Policy*. Odense, University Press of Southern Denmark.
- Hood C. 1986. *The Tools of Government*. Chatham N.J., Chatham House.
- Houlihan, B. 1997. *Sport, Policy and Politics: A Comparative Analysis*. London, Routledge.
- Houlihan, B. 2003. *Dying to Win: Doping in Sport and the Development of Anti-doping Policy*, 2nd edn, Strasbourg, Council of Europe Publishing.
- Houlihan, B. and Melville, S. 2011. *Improving and Proving: A handbook for the evaluation of anti-doping education programmes*. WADA/Loughborough University report.
- Hughes, E.C. 1971. *The Sociological Eye: Selected Papers*. New Brunswick, Transaction Books.
- Irlinger, P. 2000. Les fondements éthiques de la lutte contre le dopage. P. Laure (ed.), *Dopage et société*. Paris, Ellipses, pp. 44-51.
- Israël, L., Sacriste, G., Vauchez, A. and Willemez L. (eds). 2005. *Sur la portée sociale du droit. Usages et légitimité du registre juridique*. Paris, Presses Universitaires de France.
- Koehler, R. 2012. Prevention & the Athlete Entourage, ANA international anti-doping conference. Tunis, 17 February 2012.

- Kotler, P., Roberto, N. and Lee, N. 2002. *Social Marketing: Improving the Quality of Life*. Thousand Oaks CA, Sage Publications.
- Lascoumes, P. and Le Galès, P. 2005. *Gouverner par les instruments*. Paris, Presses de Sciences Po.
- Latour, B. 1987. *Science in Action*. Milton Keynes, Open University Press.
- Latour, B., 2002. *La Fabrique du droit. Une ethnographie du Conseil d'État*. Paris, La Découverte.
- Laure, P. 1995. *Le dopage*. Paris, Presses Universitaires de France.
- Laure, P. 2002. *L'éthique du dopage*. Paris, Ellipses.
- Laure, P. 2004. *Histoire du dopage et des conduites dopantes : Les alchimistes de la performance*. Paris, Vuibert.
- Laure, P. 2000. Du concept de conduite dopante. F. Siri (ed.), *La fièvre du dopage*. Paris, Autrement. (Mutations, 197)
- Law, J. and Hassard, J. (eds). 1989. *Actor Network Theory and After*. Oxford, Blackwell/Sociological Review.
- Law, J. and Bijker, W.E. (eds). 1992. *Shaping Technology / Building Society: Studies in Sociotechnical Change*. Cambridge MA, MIT Press.
- Le Noé, O. and Trabal, P. 2008. Sportifs et produits dopants : prise, emprise, déprise. *Drogues, santé et société*, Vol. 7, No. 1, pp. 191-236.
- Le Noé, O. and Trabal, P. 2009. La construction d'une expertise : le cas de la prévention du dopage. P. Terral and J.-L. Darréon (eds), *Les savoirs de l'intervention en sport : entre sciences et pratiques ?* Toulouse, Presses Universitaires du Mirail, pp. 137-153. (Sciences de la société, 77)
- Le Noé, O. 2000. Comment le dopage devint l'affaire des seuls sportifs. F. Siri (ed.), *La fièvre du dopage*. Paris, Autrement, 197, pp. 77-92. (Mutations, 197)
- Lentillon-Kaestner, V. and Brissonneau, B. 2009. Appropriation progressive de la culture du dopage dans le cyclisme. *Déviante et Société*, Vol. 33, No. 4, pp. 519-541.
- Louveau, C. et al. 1995. *Dopage et performance sportive : analyse d'une pratique prohibée*. Paris, INSEP Publications.
- Lundby, C., Achman-Andersen, N.J., Thomsen, J.J., Norgaard, A.M. and Robach, P. 2008. Testing for recombinant human erythropoietin in urine: problems associated with current anti-doping testing. *J. Appl Physiol*, Vol. 105, No. 2, pp. 417-419.
- Lüschen, G. 2000. Doping in sport as deviant behaviour and its social control. J. Coakley and E. Dunning (eds), *Handbook of Sports Studies*. London, Sage, pp. 461-476.
- Marchioli, A. 2006. Marketing social et efficacité des campagnes de prévention de santé publique : apports et implications des récents modèles de la communication persuasive. *Market Management*, Vol. 6, No. 1, pp. 17-36.
- Marcuse, H. 1991 (1964). Introduction to the Second Edition. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. London, Routledge.
- Miah, A. 2004. *Genetically Modified Athletes : Biomedical Ethics, Gene Doping and Sport*. London, Routledge.
- Mignon, P. 2002. *Le dopage : état des lieux sociologique*. Paris, CESAMES.
- Missa, J.N. 2011. Dopage, médecine d'amélioration et avenir du sport. J.N. Missa and P. Nouvel (eds), *Philosophie du dopage*. Paris, Presses Universitaires de France, pp. 35-83.
- Moran et al., 2008. *The Development and Validation of a Doping Attitudes and Behaviour Scale*. WADA/The Irish Sports Council report.
- O'Reilly, N. and Madill, J. 2007. The World Anti-Doping Agency: The Role of Social Marketing. *Journal of Nonprofit and Public Sector Marketing*, Vol.17, No. 1.
- Padioleau, J.G. 1977. La lutte contre le tabagisme : action politique et régulation étatique de la vie quotidienne. *Revue française de science politique*, Vol. 27, No. 6, pp. 932-59.
- Paoli, L. and Donati, A. 2013. *The Supply of Doping Products and the Potential of Criminal Law Enforcement in Anti-Doping: An Examination of Italy's Experience*. WADA report.
- Parsons, T. 1951. *The Social System*. Cambridge, MA, Harvard University Press.
- Piffaretti, M. 2011. *Psychological determinants of doping behaviour through the testimony of sanctioned athletes*. WADA/University of Lausanne.
- Pociello, C. 1983. *Le Rugby ou la guerre des styles*. Paris, Métailié.

- Singler, A. and Treutlein, G. 2000. *Doping im Spitzensport: Sportwissenschaftliche Analysen zur nationalen und internationalen Leistungsentwicklung*. Aachen, Meyer & Meyer.
- Thévenot, L. 1986. Les investissements de forme. L. Thévenot (ed.), *Conventions économiques*. Paris, Presses Universitaires de France, pp. 21-71. (Cahiers du Centre d'Étude de l'Emploi)
- Thévenot, L. and Boltanski, L. 1999. The Sociology of Critical Capacity, *European Journal of Social Theory*, Vol. 2, No. 3, pp. 359-377.
- Thoër, C. and Millerand, F. 2012. Enjeux éthiques de la recherche sur les forums Internet portant sur l'utilisation des médicaments à des fins non médicales. *Revue Internationale de communication sociale et publique*, No. 7, pp. 1-22: <http://journals.openedition.org/communiquer/1085>
- Trabal, P. 2013. E se os esportistas que se dopam quisessem «fazer direito»? *Movimento* (Porto Alegre), Vol. 19, No. 4, pp. 11-43.
- Trabal, P. et al. 2006. *Dopage et temporalités*. MILDT-INSERM / Université de Paris X Nanterre research report.
- Trabal, P. (ed.). 2008. *Recensement et évaluation des outils de prévention du dopage et des conduites dopantes*. Paris, Ministère de la Santé, de la Jeunesse et des Sports / Université Paris X Nanterre.
- Trabal, P. (ed.). 2010. *Les dispositifs antidopage à l'épreuve de la critique*, MILDT-INSERM / Université Paris Ouest Nanterre.
- Trabal, P. 2009. Agir contre le dopage. Critiques et ajustements de la lutte antidopage. F. Cantelli, M. Roca i Escoda, J. Stavo-Debaugue and L. Pattaroni (eds), *Sensibilités pragmatiques. Enquête sur l'action publique*. Brussels, Peter Lang, pp. 145-161.
- Trépos, J.-Y. and Trépos, G. 2002. Les médecins du sport face au dopage. *Psychotropes*, Vol. 8, No. 3, pp. 69-87.
- Vajjala, G. 2008. *Risk Factors within Doping Behavior Related to Personality Structure and Social Environment of the Athletes*, WADA report/National Anti-Doping Agency of Romania.
- Vigarello, G. 1999. Le sport dopé. *Esprit*, No. 1, pp. 75-91.
- Waddington, I. 2000. *Sport, Health and Drugs: A Sociological Perspective*. London, E & FN Spon.
- WADA. 2012. *Lack of Effectiveness of Testing Programs*. Report to WADA Executive Committee.
- Waser, A.M. 1998. De la règle du jeu au jeu avec la règle : le dopage dans le sport de haut niveau. CNRS, *Dopage et pratiques sportives – Expertise collective*. pp. 20-39.
- World Health Organization (WHO). 1993. *Programme on Substance Abuse. Drug use and sport : Current issues and implications for public health*. WHO/PSA/93.3, 49 pages.