

**THE SUPPLY OF DOPING PRODUCTS AND THE POTENTIAL
OF CRIMINAL LAW ENFORCEMENT IN ANTI-DOPING:
AN EXAMINATION OF ITALY'S EXPERIENCE**

Executive Summary

Letizia Paoli

LINC, Leuven Institute of Criminology
K.U. Leuven Faculty of Law
Hooverplein 10-11
B-3000 Leuven - Belgium
Phone: + 32 (0)16 325274
E-mail: Letizia.Paoli@law.kuleuven.be

Alessandro Donati

Libera
Via Nomentana Nuova 25
I-00141 Roma - Italy
Phone: +39 06 87190551
E-mail: alessandro.donati759@alice.it

January 30, 2013

Note to the reader from the World Anti-Doping Agency:

This research study by Letizia Paoli and Alessandro Donati reflects the opinions of the authors alone and does not necessarily reflect the opinions of the World Anti-Doping Agency (WADA). The content and views have not been independently authenticated. No legal liability or other responsibility is accepted by or on behalf of WADA for any errors, omissions, or statements on these pages, or any site to which these pages connect.

EXECUTIVE SUMMARY

Motivation and Aims of the Study

The present study draws its main motivation from the growing dissatisfaction of World Anti-Doping Agency (WADA) and numerous international and national policy-makers with the traditional anti-doping approach. This has developed since the 1960s through the interaction of the International Olympic Committee (IOC), international sports federations, and national governments, and since 2001, WADA, “focus[ing] squarely on the athlete[s]” (WADA, 2010b) and their testing. The 2012 London Olympics again demonstrated the limits of athletes’ testing: despite the 6,000 tests conducted, only two athletes tested positive during the Olympics, whereas seven others were “caught” in the preceding two weeks, which also belong to the official testing period for the games (*Associated Press*, 2012; Niggli, 2013, personal communication).

Today, there is a growing consensus among national and international policy-makers and many scholars (e.g., Bannenberg and Rössner, 2006; Rössner, 2011; Howman, 2011; Houlihan and García, 2012; see also *AFP*, 2011) that a broader approach is needed, including the use of criminal law instruments and, specifically, the repression of “trafficking.” According to the WADA (2010), for example, “it is imperative that additional strategies be combined with testing, research and education to ensure an efficient and effective anti-doping fight.” Testing alone cannot tackle five of the eight core violations listed in the WADA Anti-Doping Code, which constitutes the cornerstone of the current international drug

control regime and is implemented by national governments through the ratification of the 2005 UNESCO International Convention against Doping in Sport.

In this study, we have examined Italy's anti-doping criminal law experience with the two main aims: 1) analyzing the production and distribution (collectively referred to as trade or supply) of doping products—an expression that includes both doping substances and methods and 2) understanding how anti-doping criminal provisions and their enforcement can contribute to improve the fight against doping within and outside the sports world. Since the late 1990s, in fact, Italy has played a pioneering role in the criminal law control of doping, and numerous investigations have shed light in Italy on different facets of the problem of doping and specifically of the supply of doping products.

By implementing a multi-method research design (see below), we have mapped the distribution system of doping products from producers to final users in Italy and built a typology of suppliers, identifying their motivations, *modus operandi* and mutual relationships and assessing their revenues and profits. On the basis of the same and other secondary sources, we have also evaluated the legislative bases, actors and outcomes of Italy's anti-doping criminal law action, identifying a series of challenges that this action faces. To provide necessary context for assessing the supply of doping products, we have also estimated the size and financial dimensions of the Italian market for doping products—to our knowledge our study constitutes the first attempt to estimate these aspects of a national market for doping products.

Research Methods and Definition of Key Concepts

Our data collection has focused on four issue areas: suppliers, their relationships and *modus operandi*, products and markets, and control efforts. The data collection in the four issues areas would not have been possible without intensive collaboration with NAS (acronym of Nuclei Anti-Sofisticazione, even though in the meanwhile the official denomination has become Carabinieri Command for Health Protection)— a separate unit (“comando”), specialized in health issues, of the Arma dei Carabinieri, one of Italy's two military police forces.

Our first source of information has been a database with summary data about the 80 major anti-doping investigations conducted by NAS between 1999 and 2009, which represent the vast majority of the anti-doping criminal investigations conducted in Italy. In a very labor-intensive process, we inserted these data in an Excel spreadsheet, made the quantities of doping products seized in the different investigations comparable, and added, for each product seized, the official price, as established by the Agenzia Italiana per il Farmaco,¹ and, when available, the unofficial internet price. We refer to this database as the “Database on NAS Investigations” or “NAS Investigations Database.”

To achieve a fuller picture of the doping substances seized in Italy, we also collected the seizure data from the websites of the Agenzia delle Dogane (i.e., customs), Guardia di Finanza (i.e., tax police) and Polizia di Stato for the period January 1998 through February 2012. For the same time period, we also conducted an extensive review of all the doping-related news launched by the three main Italian news agencies—*Ansa*, *Agi*, and *Adnkronos*.

In addition to the summaries of the proceedings contained in the database, we analyzed official documents related to 46 different criminal investigations carried out by NAS or other police forces. We have been able to reconstruct the final outcomes for 24 proceedings, primarily thanks to the personal commitment of a particular prosecutor, Dr. Raffaele Guariniello from the Turin Prosecutor’s Office.

The other crucial source of information has been experts. In total, we interviewed 26 NAS officers at the Headquarters and in nine NAS branch offices as well as seven prosecutors, one policy-maker, and one other expert. In some cases, we talked to our interviewees more than one time. We refer to these interviews with the following codes: Int-NAS-1 to 26 for the NAS officers, Int-Proc-1 to 7 for the prosecutors and Int-Oth-1 and 2 for the two others. Together, with the two officers coordinating NAS’s anti-doping activities, we also developed a short questionnaire to collect information on the human and financial resources, priorities and anti-doping activities, which the NAS Headquarters then sent to the all 38 branch offices.

¹ See <http://www.agenziafarmaco.gov.it/it/content/farmaci-autorizzati>.

To fulfill the study objectives, we also collected different types of statistical data, including some that had never been published before. To better assess overall-anti-doping actions, for example, we requested and obtained statistical data on the number of police reports to the Judicial Authority and court verdicts for doping and other related offenses during 2001-2010, which the Italian Statistical Office (Istat) calculated explicitly for this study.

In this study, we have adopted a broader definition of doping than that given by the WADA World Anti-Doping Code, defining doping as the production, distribution and use of the substances and methods prohibited by the Code, whenever these substances and methods are used—not just by athletes, as in the Code—for non-therapeutic purposes.

We also define “trade” broadly, to include producing, importing/exporting, wholesaling, retailing, prescribing, administering, and delivering doping products, including both doping substances and methods. We have purposely chosen the word “trade” rather than the more pejorative word “trafficking,” to avoid exercising any judgment *ex ante* on the legal status of such activity.²

The focus on trade reflects our understanding of doping as a market, and specifically as a semi-illegal market, at least from the point of view of criminal law. Contrary to what happens in the market for traditional illegal drugs, such as heroin and cocaine, the legal status of most doping products varies contextually. A drug may begin its “life” as a legal product at one end of the supply chain and conclude its “life” as an illegal product at the other. In particular, the effective legal status of a supply-side activity varies along the distribution chain and, for the same activity, from country to country. Even within each country, differences depend on the products exchanged, the final uses of the products, the applicable offenses, and the good faith of some suppliers.

² This choice also reflects the words used in Italy’s anti-doping act, which does not speak of trafficking. NAS also speak of the “illegal trade” of doping substances or products and use the expression “trafficking” only with reference to illegal drugs (Int-NAS-26; see chapter 7).

Findings on Italy's Market for Doping Products and Anti-Doping Policy

We summarize below the main findings of our project, organizing them into eight topics: doping products and their harms; our estimates of the numbers of users and the size of the market; the suppliers' main characteristics and types; the distribution chains and market relationships; the role played by organized sports world and organized crime in the supply of doping products; our estimates of the revenues of the overall market for doping products as well as the revenues and profits of the suppliers; the legislation and the institutional actors underpinning Italy's anti-doping policy and the latter's outcomes and related challenges.

Doping Products and their Harms

The Italian market encompasses the full range of the doping substances and methods (i.e., collectively referred to as products) that the IOC, since the late 1960s, and WADA, since 2001, have prohibited in sports. The availability of the substances is proven by the seizures carried out by NAS. During the 11-year period 1999-2009, NAS seized over 7 million packages of doping substances, and we estimate these quantities correspond to over 1,000 kilograms of active ingredients and to 88 million doping doses of these substances.³ With 83% of the doses, anabolic agents constitute the lion's share of the doping substances seized by NAS. The 88 million figure does not include cannabis and cocaine, which fall outside NAS' competences, even though they are on IOC and WADA's prohibited list. Anti-doping investigations also indicate the frequent administration of doping methods and particularly of autologous and heterologous transfusions.

Additionally, Italy' anti-doping investigations corroborate the findings of the international scientific literature about the harmfulness of the use of doping products. In particular, several key investigations originated from the suspicious death of a young athlete or body-builder suspected of using steroids and other doping products, and at least one court ruling proved the causal connection between the abuse of steroids and the death of a female body-builder (e.g., NAS Firenze, 2005; NAS Padova, 2009). Anecdotal evidence also

³ For the units of measure adopted in calculating the doping doses of the different substances, see chapter 2.

suggests that further harms derive from the frequent, often unsupervised, mixing of different products, including illegal drugs and counterfeited doping substances, and the circumstances of use.

Demand

Despite the persistent international policy focus on doping among the few elite athletes taking part in national or international competitions, doping has become a veritable public health issue. If we consider all substances included in the WADA Prohibited List, we conservatively estimate 253,700 users of doping products in Italy. If we exclude cannabis and cocaine, we reach the lower estimate of 218,700 users. Even the lower figure of 218,700 users of doping products is comparable to the number of heroin misusers estimated in Italy (218,425 people based on a prevalence rate of 5.5 per thousand among residents aged 15-64; Dipartimento Politiche Antidroga, 2011: 78). However it is somewhat lower than the estimated number of cocaine users (353,000 people based on a 2010 past-year prevalence rate of 0.9%) and dramatically lower than the estimated number of cannabis users (over 2 million users of cannabis based on a last-year prevalence rate of 5.2%; *ibid.*, 2011: 8).

In particular, we have identified and estimated two major components of the demand for doping products: athletes who constitute 73% of the users (or 69% if cannabis and cocaine are excluded) and body-builders, who account for 27% (or 31% if cannabis and cocaine are excluded). These estimates are based on different data sources. For athletes, we have relied on the rates of positive results on the total tests carried out by Italy's Anti-Doping Commission (CVD)⁴ among recreational athletes, defined as those who take part in sub-national competitions. These rates are about three times higher than the rates on average reported by WADA-accredited Anti-Doping Laboratories (e.g., WADA)⁵ and seven to

⁴ The official Italian name is Commissione per la vigilanza ed il controllo sul doping e per la tutela della salute nelle attività sportive (Commission for the Vigilance and Control on Doping and the Protection of Health in Sports Activities), which is shortened in CVD.

⁵ Moreover, CVD's data refer to positive results whereas WADA (2011a: 1) merely reports "adverse analytical findings", from which the cases of users with a Therapeutic Use Exemption need to be subtracted.

11 times higher than the rates published by CONI with reference to its own anti-doping tests (CONI, [2004], [2005], [2006], [2008], 2012a, b, c, and d; see tables 1 and 2).⁶ As the latter tests focus exclusively on elite athletes, i.e., those who take part in national or international competitions, the gap between CVD's and CONI's rates of positive results can hardly be explained by the characteristics of the respective populations: the elite athletes

⁶ Until autumn 2012, CONI had published the amounts and results of its anti-doping tests only until 2007.

Table 1 Anti-doping tests carried out in Italy by CONI and the National Sports Federations – Years 2003-2011

	2003	2004	2005	2007	2008	2009	2010	2011	Average 2003-2011	Average 2008-2011
Total tests	9,431	9,950	8,791	11,154	10,879	11,252	8,564	7,305	9,666	9,500
Positive results	62	65	52	69	36	38	29	26	47.1	32.3
Percent of positive results on total tests	0.7	0.7	0.6	0.6	0.3	0.3	0.3	0.4	0.5	0.3

Source: our calculations on CONI, [2004], [2005], [2006], [2008], 2012a, b, c, and d.

*Tests analyzed, not carried out.

Table 2 Anti-doping tests carried out in Italy by CVD – Years 2003-2011

	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2003-2011	Average 2008-2011
Total tests	740	1,556	1,875	1,511	1,607	955	1,328	1,115	1,676	1,303	1,374
No. substances detected	n.a	n.a	n.a.	40	52	n.a.	52	97	80	n.a.	76.3*
Positive results	20	42	37	37	46	39	42	53	52	40.9	46.5
Percent of positive results on total tests	2.7	2.7	2.0	2.4	2.9	4.1	3.2	4.8	3.1	3.4	3.8

Source: our calculations on Ministero del Lavoro, della Salute e delle Politiche Sociali (2009), Ministero della Salute (2010a and 2011b) and Ministero della Salute and Istituto Superiore di Sanità (2012: 11).

*Average 2007-2011.

tested by CONI should have more incentives to use doping products than the recreational athletes tested by CVD.

In fact, while CONI's rate averaged 0.3% in the period 2008-2011, CVD's rates averaged 3.8% both within the same time frame and in the last two years for which the data are available, 2010 and 2011. We have applied the latter rates to the Italian Statistical Office's (Istat) estimate of 4,690,000 athletes aged 15 or older (Istat, 2007: 3), reaching thus an estimate of 184,000 athletes using at least one of the doping substances prohibited by WADA. Excluding those testing positive for cannabis or cocaine, we come up with the lower figure of 150,000 doping athletes.

Whereas we have had no means to estimate separately the number of elite and recreational athletes, we have identified about 10,000 "super elite" athletes: i.e. those who participate or have very good chances of participating in international competitions and are therefore most likely to be targeted by CONI's anti-doping tests. Even if they are most frequently tested—CONI carries out on average 10 times more tests than CVD—the super elite constitute a tiny minority of the total number of athletes and even of those who use doping substances or products. Nonetheless, the super elite athletes who have tested positive for doping products, or have been suspected of taking such products but have never been caught, constitute powerful negative role models for the millions of recreational athletes, non-competitive sportspersons and physically inactive people. If they become coaches or officials of sporting organizations, super elite and elite athletes who used doping products during their sporting careers are likely to socialize future generations of promising athletes into accepting such illegal practices.

We emphasize that our estimate of the number of athletes using doping substances is very conservative, as it is based on the results of anti-doping tests of urine samples, which can hardly detect many current doping products, such as growth hormone (GH) and gonadorelin.⁷ As these tests are taken immediately after competitions, we also

⁷ Gonadorelin is otherwise known as peptide gonadotrophin-releasing hormone (GnRH) or luteinizing hormone-releasing hormone (LH-RH) and is suspected of being used on a regular basis by

underestimate the use of other doping substances consumed out of, rather than in, competition. We also have no means to estimate the number of athletes using doping methods as opposed to doping substances, but we suppose that there are not many athletes who exclusively use the former without the latter.

For body-builders, we base our estimate on a screening of a wide sample of Italy's gyms carried out in 2007 by the Ministries of Sports and Social Solidarity and the findings of many NAS investigations that have targeted gyms. On the basis of these data sets, we conclude that 16.25 % of all Italian gyms with body-building equipment have been involved in the distribution of doping substances and that one third of the potential body-builders attending them—about 68,700—use on an occasional or habitual basis doping products, primarily anabolic steroids alone or in combinations with other doping substances (such as stimulants and GH).

We have had no means to estimate the consumption of doping substances among the remaining non-competitive sportspersons and physically inactive people. Despite the lack of clear evidence, we hypothesize that the consumption of doping products among non-competitive sportspeople and those who do not engage in any sport has grown in recent years, as a result of the general medicalization of society and the growing emphasis on performance (e.g., Ehrenberg, 1991; Gasparini, 2004; Hoberman, 2005).

In a preliminary attempt to scope the quantities consumed, we have developed average consumption profiles of 100 hypothetical users of doping substances (69 for athletes and 31 for body-builders reflecting their share of the total 254,000 users of doping products, excluding cannabis and cocaine). For athletes we have developed the profiles, in such a way that the share of the substances consumed corresponds to the percentages of the substances detected by the CVD in 2010 and 2011. For body-builders, we have relied on

many elite athletes to increase testosterone levels. The Cologne anti-doping laboratory validated in 2008 a method for the detection of gonadorelin in urine samples (e.g., Thomas et al., 2009). However, the analysis for GnRH is not automatically included in the standard screening procedures; it is an additional analysis that has to be requested by the federations or the National Anti-Doping Organizations (NADOs), as also happens for EPO and GH. There has been no positive test yet for gonadorelin in Italy (CVD, annual) or in Germany (Geyer, 2013 personal communication).

the data emerging from the anti-doping investigations and in particular from the at least 15 investigations in which Donati has been a consultant at over the years. The body-builders' consumption profiles are also consistent with the dosages described in the international literature (e.g., Parkinson and Evans, 2006). We have had our consumption profiles validated by two Italian experts Dr. Bellotti and Dr. Pacifici, a former and current member of CVD (respectively) with responsibility for anti-doping testing. With these exceptions, our consumption profiles lack external validation: we thus present them as a work in progress, hoping to obtain feedback and suggestions for improving them from other experts worldwide.

On the basis of the 100 profiles, we estimate that on a yearly basis over 371 million doping doses are consumed annually in Italy. Among them, steroids represent the lion's share with 59% of the market, followed by stimulants with 14%. Our calculations also show that body-builders account for a very large share of the market (55%), even if they represent only 31% of the users. Body-builders, in fact, consume steroids and other doping products continuously throughout the year, and some of them take very large dosages, whereas athletes are usually more selective in their choices of doping products and, depending on the products, take them only during training, for a few weeks or months, or just before a competition. Despite their imprecision, these calculations confirm the earlier statement that doping is above all a public health problem and not just a problem of elite sports.

Suppliers

At the risk of some oversimplification, the illegal suppliers of doping products we have singled out from the investigations carried out by NAS and other police forces are mostly male, Italian citizens and, with few exceptions, rarely have criminal records. With the exception of hijackers who steal doping substances from trucks and a few others, most suppliers of doping products also have a legitimate professional position. On the basis of the latter criterion, we have identified ten main types of illegal suppliers of doping products in Italy and grouped them in five main categories (see table 3), providing detailed examples for each type in the report.

Table 3. The types of suppliers of doping products in Italy

Category	Type
Gym	Gym managers or owners and body-building instructors
	Managers or owners of dietary supplement shops
Health care	Pharmacists
	Physicians
	Hospital employees
	Employees, sale representatives of (para-) pharmaceutical companies
(Human) Organized sports world	Staff members of sports teams
	Staff members of sports federations
Horseracing	Veterinary physicians, breeders and drivers
Use	Athletes
	Public and private security personnel engaging in body-building
Other	People with no distinctive profession or occupation

Source: our elaboration on the basis of the NAS investigations analyzed.

Gym

The first category, “gym,” consists of the two types of illegal suppliers who are most heavily represented in the investigations considered: gym managers or owners and body-building instructors, on the one hand, and managers or owners of dietary supplement shops, on the other hand. These work most often as retailers, selling doping products (primarily anabolic steroids but also stimulants) to gym patrons. Some of these individuals, though, are also wholesalers, selling to retailers, who are often other gym managers, instructors, or body-builders.

Health care

The second category, “health care,” consists of four types: pharmacists, physicians, hospital employees and employees or sale representatives of pharmaceutical and para-pharmaceutical companies (including not only manufacturers but also distributors).

Pharmacists usually work as retailers of doping products, but also occasionally as producers of other own doping substances (Tribunale di Bologna, 2004; Capodacqua, 2001 *Repubblica*, 2001) and even more rarely as wholesalers (NAS Brescia, 2011; Int-Pro-4; Ryan, 2011). They may also be involved unwittingly in the sale of performance-enhancing drugs, that is, without being aware of the illegal goals of the purchases. Most frequently, these “non-guilty” pharmacists sell doping drugs on the basis of false or stolen prescriptions or on the basis of prescriptions written by accommodating or corrupt physicians (e.g., Tribunale di Ravenna, 2004: 122, Int-NAS-17 and 19). The line between the deceived and corrupt pharmacist is sometimes difficult to draw, though.

Several NAS investigations point to the role played by physicians in the supply of doping products. The father of Italian “doping physicians” is undoubtedly Prof. Francesco Conconi, a professor of biochemistry at the University of Ferrara since 1967, current head of its Centro di Studi Biomedici applicati allo Sport and rector of the same university from 1998 to 2004.⁸ In the late 1970s, Conconi started providing a variety of doping products to Italian elite athletes, primarily in track and field, cycling, swimming, pentathlon, rowing and ski sports, with the tacit support of CONI (see below). Initially Conconi’s most effective application consisted of blood doping or analogous transfusions. Starting in the early 1990s, he began using erythropoietin (EPO) and increasingly substituted “emo-doping” with “epo-doping.” With his doping “research” funded by CONI (sums corresponding to more than 2 million euro over the years; see Tribunale di Ferrara, 2003), Conconi was able to achieve spectacular results with the athletes working with him: at the 1994 Winter Olympics, Italy sensationally emerged as a powerhouse in long-distance skiing and won 34 medals. It would later be documented that many of these athletes registered hematocrit values of greater than 50%--a strong indication of EPO use and measurements that today would invoke suspension from competition (Bellotti, 1999; Akinde, 2006).

By the early 1990s, Conconi also started to provide systematically his services to elite riders working in private teams, treating a large number of “stars,” such as Marco Pantani,

⁸ See his personal webpage at <http://docente.unife.it/francesco.conconi/curr>.

Claudio Chiappucci and Gianni Bugno, at the same time as he was a member of the IOC's Medical Committee, the President of the Medical Commission of the Unione Cycliste Internationale (UCI) and received large amounts of funding from the IOC— supposedly to develop an EPO test, which he never delivered. At the end of that decade, the Ferrara Prosecutor's Office indicted Conconi and two of his assistants of the crime of sporting fraud. Despite "the seriousness and convergence of all the evidence" (Tribunale di Ferrara, 2003: 46), however, the inefficiency of the Italy judicial system and the defendants' procedural tactics (e.g., Toti, 2003) left the Ferrara judge no other choice but to dismiss the case in 2003 due to the statute of limitations.

The most famous of Conconi's pupils is Michele Ferrari, who split from Conconi in the late 1990s and later specialized in attending to high-level riders, including Lance Armstrong, who was stripped of his record seven Tour de France titles and banned for life from sanctioned Olympic sports by the U.S. Anti-Doping Agency (USADA) in October 2012. As documented in USADA's reasoned decision and confirmed in Tyler Hamilton's book, Ferrari was the mastermind of the doping and training programs followed by Armstrong and some of his team colleagues: "Ferrari was our trainer," Hamilton recalls, "our doctor, our god. (...) Lance mentioned Ferrari constantly, almost annoyingly so. *Michele says we should do this. Michele says we should do that*" (Hamilton and Coyle, 2012: 102).

Several investigations and related proceedings also document the frequent involvement of hospital, health clinic and nursing home employees in the supply of doping products other than the physicians who may also work in these institutions. Low-level health care employees often contribute to the supply of doping products through thefts. At the opposite end, private health clinics may also take part in the supply of doping products, by providing illegal doping methods to elite riders (e.g., Pacifici and Donati, 2011: 45).

The last type of health care professionals playing a role in the supply of doping products consists of employees and sales representatives of pharmaceutical and dietary supplement companies, who sometimes work independently and sometimes on behalf of a company. Employees of drug distributors are also reported to be frequently involved in the

diversion of legitimate drugs with potential doping effects from the storehouses or trucks of their companies—their involvement occurs through either suspicious disappearances or thefts (Int-NAS-9 and 26).

(Human) organized sports world

Two other types, staff members of sports teams and federations compose the third category, which we refer to as the “organized sports world”. The large-scale raids repeatedly conducted by the NAS branch offices at several editions of the Giro d’Italia and in other circumstances, such as the “Oil for Drug” investigation, and the considerable amounts of drugs seized in some of these raids leave no doubt that cycling team staff members were not only aware and tolerant of the illegal doping practices of their athletes but were also actively involved in such practices (e.g., Int-NAS-16, NAS Firenze, 2003).

Suppliers of doping products can be found not only in cycling teams. An investigation of the Turin Judicial Police and Prosecutor’s Office proved widespread illegal doping practices in the football club Juventus Turin from 1994 to 1998, years in which the team won three Italian Championships, the Champions League, the Intercontinental Cup, and Italy’s Cup. The related proceeding documented the abuse of an incredible number of drugs at Italy’s leading football team, which were bought centrally by the team and administered by the sports physician and his assistants, in some cases without obtaining the informed consent of the players. Whereas the offense of doping itself could not be applied because it was established only in 2000, in 2007 the two main defendants, Giraud and Agricola, the manager and chief sports physician of the team, were found guilty by Italy’s Supreme Court, Corte di Cassazione (2007), of sporting fraud for purchasing and administering illegal performance-enhancing substances, such as corticosteroids.

The line between the staff members of sports teams and the officials of sports federations is often thin and blurred; however, we believe that it is an important analytical distinction, as the latter belong to sports ruling bodies. Several proceedings based on NAS investigations report the involvement of sports federation officials in doping practices, both as direct suppliers and as “protectors” (e.g., Donati, 2012).

Horseracing

The fourth category refers to the world of horseracing and includes breeders, veterinarians, and drivers. We discuss these three types of suppliers jointly, as the NAS Investigations Database and other sources do not provide specific information on each. Several investigations, both in Southern and Northern Italy, have shown that numerous veterinary physicians, breeders and drivers exchanged doping products and administered them to horses to “fix” the results of official competitions and thus earn considerable sums of money with legal and illegal bets (e.g., Fazzo and Mensurati, 2002; *Repubblica*, 2008).

Use

The fifth category, which we term “use”, consists of athletes, body-builders, and their close relatives. NAS investigations and media reports indicate that some athletes do not just use doping products to increase their performance but they or their closest family members also engage in the import and distribution of doping substances. Given their frequent trips abroad, elite athletes are in an ideal position to import doping substances. Exploiting differences in the national regulations and enforcement, they also may be able to buy some of these products legally and then to sell amounts in excess of their consumption needs to other people. Most athletes engage in these activities to increase their own sports performance (e.g. *cnn.com*, 2006 and *Corriere della Sera*, 2005). A few athletes, however, also engage in the illicit trade of doping substances to re-sell these drugs to others (e.g., NAS Brescia, 2011).

As much as athletes, body-builders, too, occasionally trade in the same doping products they consume. Since the 1990s, NAS investigations have provided repeated evidence of numerous body-builders operating as user-dealers and, more rarely, as wholesalers. Among them, police officers and private security personnel compose a numerically consistent and particularly worrying subtype, which can be connected to specified set of profession. As we have seen in the previous chapters, body-building is an attractive activity for both sets of professions, which are usually associated, especially at low-levels, with an athletic and imposing physical presence (see Hoberman, 2012). As other

body-builders, a few public and private security staff members practicing body-building sell doping products to finance their own consumption habits and, in some cases, earn extra money. Whereas most of them remain user-dealers, a few expand the scale of their businesses beyond the retail level (e.g., Tribunale di Bologna, 2000; Tribunale di Forlì, 2009; Numa, 2010; Tribunale Ordinario di Torino, 2012).

Other Illegal Suppliers

The final category of illegal suppliers consists of persons with no distinctive profession or occupation. There are many of them and they are, above all, active in the thoroughly illegal segments of the market for doping products, as producers of doping substances in illegal labs, thieves, truck hijackers or operators of specialized websites.

Distribution Chains and Market Relationships

To clarify the (often variable) market position of the different types of suppliers, we have identified the sources and distribution levels of the different doping products, distinguishing between doping substances and methods on the one hand, and among different doping substances, on the other. In the case of doping methods, we conclude that there is hardly a distribution system as these methods are administered using legitimate and often banal medical instruments.

All doping substances, by contrast, entail a distribution system that has a changing number and type of suppliers depending on the substances and quantities traded and the degree of entrepreneurship of the final users. The legal status of the exchanges and transactions also varies. Some substances, above all steroids, are produced exclusively for doping purposes in pharmacies or in illegal labs, in Italy or abroad. A large, but not precisely known, share of the doping substances sold in Italy appear to have been produced by legitimate drug manufacturers located in Italy or abroad and to have been diverted at some stage from the legal distribution chain. As Italian anti-doping investigations prove, the diversion can take place at different levels of the distribution chain. Employees or managers of the Italian or foreign drug manufacturers or their distributors may decide to divert some of the legal production to the illegal market. Drugs may also be stolen from storehouses or

trucks of drug distributors or from hospitals or, more rarely, pharmacies by personnel of these institutions or by external thieves in Italy and abroad. Italian and foreign pharmacists may also purposively divert doping products, but they may also be unaware of the non-therapeutic purposes for which some of their customers buy drugs and sell the latter drugs either on the basis of a prescription written by a corrupt physician or of a false or stolen prescription. In some foreign countries, pharmacists may be allowed by the domestic laws to sell drugs, whose sale and use are instead restricted in Italy.

Given the multiplicity of doping products available and the fact that, within each class, several products are functionally equivalent, users can obtain their products of choice from a variety of retailers representing the final link of alternative distribution chains. Doping products' availability has been tremendously increased by the spread of websites selling steroids and other doping products on the internet, so much so that users can nowadays bypass the whole domestic distribution chain and comfortably order doping products on the internet and have them delivered by mail at home.

Unlike illegal drug traffickers or dealers, the majority of the suppliers of doping products can hide their illegal transactions and their relationships with their “doping partners”—their own suppliers, collaborators, and customers or patients—behind the legitimate roles they play in their businesses, organizations, or professions. The embeddedness of doping-related supply-side activities in legitimate professions, roles, and institutional settings often makes unnecessary the development of separate illegal enterprises to run these activities. The very embeddedness of doping supply-side activities in legitimate professions, roles, and institutions is suggestive of white-collar crime and the related and partially overlapping concepts of occupational, corporate, and organizational crime.

Some illegal suppliers, though, have trouble finding a professional cover to hide the production, import (i.e., smuggling) and wholesale distribution of doping products outside the regular channels or the product diversion from the latter. At the higher levels of the market and especially for steroids, illegal enterprises sometimes develop that are similar to

those operating in illegal drug markets. Like the latter, the former at least in Italy tend to remain small and incorporate illegal relationships and transactions into blood or family relationships to reduce their vulnerability to law enforcement efforts (e.g., Reuter, 1983; 1985; Moore, 1974: 15-31).

Reflecting the white-collar background of most suppliers, the suppliers of doping products in Italy are rarely reported to use violence, except for the truck hijackers. Except for a single, not well-organized attempt, the anti-doping investigations and our respondents also provide no evidence of suppliers of doping products bribing or attempting to bribe public officials. Even if they do not resort to violence or bribes, some suppliers of doping products cheat their “customers” by manufacturing or selling counterfeited products—probably to a larger extent than their counterparts in illegal markets. Particularly in elite sports, different types of suppliers—e.g., physicians, pharmacists, coaches, and sports federation officials—also abuse their positions of authority and the athletes’ and the latter’s parents’ trust by prescribing, selling or administering the athletes doping products and convincing them of the necessity and harmlessness of doping products.

The Role of National Sports Bodies

The most startling peculiarity of Italy’s market for doping products is the protection that officials and staff members of sports authorities, such as CONI and key sports federations, have repeatedly provided to the market servicing elite athletes—in addition to serving as outright suppliers of doping products in a small number of well-documented cases (e.g., Donati, 2012).

As scandals and criminal proceedings indicate, the representatives of national sports bodies, including some very high-ranking officials, exercised their roles as “protectors” quite openly until the late 1990s. A fine line might separate individuals from their institutions, but a request filed in October 2000 by the Prosecutor’s Office of Ferrara in the proceedings against Conconi provides evidence of high-ranking individual involvement so much so that it might be difficult to argue against institutional complicity. After reconstructing the relationships between CONI and Conconi since late 1970s, in fact, Ferrara Prosecutor

Soprani came to the conclusion that Conconi had set up a “criminal organization” (article 416 of the Italian criminal Code, CP; Procura della Repubblica di Ferrara, 2000: 42) together with three CONI Presidents—Franco Carraro (CONI President from 1981 to 1986), Arrigo Gattai (CONI President from 1987 to 1994), Mario Pescante (CONI Secretary General from 1981 to 1994 and CONI President from 1995 to 1998)—and the head of the Research and Documentation Section of the CONI School of Sport, Gianfranco Carabelli. This criminal association had allegedly the purpose of distributing drugs in a dangerous way to public health (article 445 CP) and was active throughout the 1980s (*ibid.*; see also Capodacqua, 2000a). Pescante and Conconi were regarded as the promoters of the criminal organization. As too much time had elapsed between the alleged activities and the prosecution, Soprani had to dismiss the case but insisted that his request “does not diminish the social and criminal non-value of the activities proved” (*ibid.*: 56).⁹

None of the four CONI top officials indicted by the Ferrara Prosecutor’s Office chose to appeal the latter’s charges and, surprisingly, at least for outside observers, the charges did not appear to negatively impact the suspects’ sports manager or political careers. Pescante, for example, became undersecretary for sports, in 2001, less than a year after the prosecutor’s request was filed, and held that position until 2006. “Appointing Pescante to stand guard over sports is a bit like putting a fox in charge of the henhouse”—complained the journalist Travaglio (2005). From 2004 to 2006, Pescante was also the Italian government supervisor for the 2006 Winter Games in Turin. In that capacity, Pescante repeatedly asked, at the IOC’s insistence, for the temporary suspension of the Italian anti-doping law (Tropeano, 2005; Vinton, 2005). His international career did not suffer either: Pescante has been without interruption an IOC member since 1994 and was the first Italian to become an IOC Vice-President in 2009.

The protection granted by Italian sports bodies to elite athletes and those administering doping product to them goes beyond Conconi’s case. Another prominent

⁹ Despite “a multiplicity of circumstantial evidence” (Procura della Repubblica di Ferrara, 2000: 52), the prosecutor found, instead, no conclusive proof of the existence of a criminal organization between Conconi and the CONI top leaders after 1989.

example is the 1998 investigation that led to the temporary closure of CONI's anti-doping laboratory in Rome and the withdrawal of its IOC accreditation. Searches ordered by the Turin Prosecutor Raffaele Guariniello demonstrated that the lab did not carry out proper tests for steroids in 70% of the urine samples of Italy's football league players. Positive tests were covered up and documents were destroyed (Evaluation Team, 2002: 13 and Travaglio, 1998). A Commission of inquiry established by the government concluded that "the number of violations recorded in the mechanisms to ascertain prohibited substances specifically in football was so large as to compromise the whole anti-doping policy pursued by CONI" (*Adnkronos*, 1998).

Since the beginning of the new century, no cases of overt high-level complicity have come to the fore, but the national sports bodies' apparent lack of interest in a thorough fight against doping still emerges from the sports federations' lack of collaboration with the NAS (see below), the continuity of the top management of Italy's organized sports (e.g., Pescante) and outright policy choices. The fact that CONI did not publish the results of its anti-doping tests between 2008 and autumn 2012 and that the rate of its positive results has declined from an already modest 0.6% at the beginning of the current century to an abysmal 0.3% in 2008-11 (see table 1) do not testify to a thorough commitment against doping. In its turn, UNIRE, the public body in charge of regulating horseracing, was almost unanimously considered to be very corrupt and poorly managed (Zunino, 2009), so much so it was re-founded in 2011 under a new name.¹⁰

In the meanwhile, the few elite athletes who find the courage to become whistleblowers keep on being harassed and marginalized, while they are punished for their violations of sports rules. Filippo Simeoni, the only rider who explicitly confessed to having received prescriptions of doping substances by Dr. Ferrari and who became the main witness at the Bologna trial, subsequently found employment only in small cycling teams and was harassed by many elite riders, including Lance Armstrong (Audisio, 2007).

¹⁰ See <http://www.unire.gov.it/index.php/ita/Assi>

The Role of Organized Crime

The analysis of the criminal proceedings and the expert interviews indicate a very limited involvement of Southern Italian mafia groups in the production and distribution of doping products. Among the suppliers considered so far, there is only a specific type that can be traced back to Southern Italian mafia-type organized crime groups: the hijackers stealing doping substances from trucks, who are often associated with Neapolitan camorra groups. Members of some camorra groups also play an important role in the fixing of horse races, which is often achieved by doping the horses. These practices thus confirm WADA's worried analyses that the same underworld people who trade in doping substances also undermine the integrity of sports through illegal betting.

The illicit enterprises set up by some suppliers of doping products and the looser partnerships developed by others even within legitimate institutional contexts meet, at least in Italy, all the requirements of the definitions of organized crime set forward at the international level, above all by the 2000 UN Convention against Transnational Organized Crime (UNGA, 2000). Regardless of the labels chosen, one should not forget the fact that, with the exception of a limited number of underworld characters, most suppliers of doping products have a legitimate professional background, with a non-negligible share of them belonging to the organized sports world.

Revenues and Profits

Judging on the basis of their legal market prices, the doping doses of most doping products are cheaper than those of illegal hard drugs, such as heroin and cocaine. There are only two exceptions: GH, an International Unit (IU) of which costs slightly more than a retail dose (0.25 grams) of heroin (€10.49) and slightly less than a dose (again 0.25 grams) of cocaine (€17.29 see Dipartimento Politiche Antidroga, 2011: 191); and gonadorelin, whose price per dose (€48) even exceeds that of heroin and cocaine. The price per dose of EPO (€3.09 per 200 IU) and most other related substances are similar to those of a hashish joint (€3.73) and are slightly more expensive than a marijuana joint (€2.85). All other doping substances are cheaper than even marijuana or hashish. For example, a 10 mg dose of steroids costs €1.12.

We stress, however, some important caveats in our analysis. Most users do not buy doping products at the official pharmacy prices. They may pay much more than the official price, if the substance is diverted from the storehouse of a drug manufacturer, distributor, health care center or pharmacy or is sold by a pharmacist-cum-illegal-supplier, hoping to obtain an original, high-quality product. Other users, however, may pay much less than the pharmacy price, if they directly buy on the internet a doping substance that is either counterfeited or produced in countries with lenient regulations or lax enforcement.

Using the earlier estimates of the quantities consumed, official pharmacy prices and, for the few substances not officially traded in Italy, their internet prices, we estimate the yearly revenues generated by the Italian market for doping products at about €537 million. Steroids account for about €245 million or 46% of the total revenues, thus less than their share of the quantities consumed (58.9%) due to steroids' relatively low prices. For the opposite reasons, peptide hormones, growth factors and related substances represent a much higher share of the total revenues (41.9% or €225 million) than their share of the quantities consumed (6.4%) due to their high price.

We stress that our estimates are very conservative, as we do not estimate athletes' consumption of the two most expensive doping substances, GH and gonadorelin, as they were never detected in CVD's tests. More generally, our estimates reflect the biases and limits of CVD's testing and, in particular, underestimate the share of other peptide hormones and related substances that are difficult to detect in urine samples but are more expensive than other doping substances. Despite these caveats, the revenues generated by the market for doping products probably remain considerably smaller than the revenues of the illegal drug market. To have a comparison, we estimate the retail revenues of the Italian cocaine market at about €3,685 million.

As only a single illegal lab has been seized in Italy, we have no direct data to assess the profit margins of the producers of producers of doping substances. What we know is that at least until the advent of internet trading, large-scale traffickers and specifically the importers (were able to) generate considerable, but not sensational, revenues. Working as

consultant in a criminal investigation, Donati and Magrì (2001) estimated that two of the largest-scale suppliers of doping substances among gym patrons yearly raised at the turn of the century about 2 billion lire (approximately €1 million) each. At the 2000 prices (UNODCCP, 2001: 213), the same sum could be generated with the sale of less than 30 kilograms of cocaine.

There are also a few people in Italy, however, who are able to make a lot of money with doping products. These are, above all, the physicians “treating” super elite athletes and a large clientele of anonymous clients with doping methods and other performance-enhancing products. According to the ongoing investigation coordinated by the Padua Prosecutor’s Office, for example, Michele Ferrari earned until 2011 at least several million euro yearly (Int-Pro-3; Int-NAS-10).

Anti-Doping Law Enforcement: Legislation and Actors

All law enforcement officers and experts agree that the introduction of wide-ranging anti-doping criminal provisions with Act 376/2000 boosted criminal investigations on doping. We should not lose sight, however, of the fact that NAS and prosecutor’s offices conducted several penetrating investigations even before the adoption of this act, resorting to suitable provisions in the Italian Criminal Code (e.g., article 445 CP, “Administration of drugs in a dangerous way for public health” and article 348 CP, “Illegal exercise of a profession”) and to the offense of sporting fraud, which was introduced with Act 401/1989.

Act 376/2000 establishes three distinct types of doping offenses. The first two concern both athletes and their support personnel for procuring, administering, assuming or even encouraging the use of doping substances or methods, with the aim of improving an athlete’s competitive performance or to modify the results of an anti-doping test (article 9, sections 1 and 2). The third offense is the most innovative, as it tackles illegal suppliers who trade in doping substances outside the official distribution channels (article 9, section 7). Imprisonment from three months to three years and a fine from €2,580 to €51,645 are the sanctions foreseen for the first two offenses; imprisonment from two to six years and a fine from €5,164 to €77,468 are foreseen for the third offense. Given the differences in

sanctions, interception of telephone calls and other communications is allowed only for the third offense.

Act 376/2000 cleverly foresees three aggravating circumstances, in particular if the offender is “a CONI component or employee of a national sports federation” and also provides additional sanctions for them and those practicing a health profession.

Act 376/2000 can also be praised for setting up a 20-member national anti-Doping Commission, CVD, even before the establishment of a National Anti-Doping Organization (NADO) was requested by WADA. CVD is entrusted by Act 376/2000 with the development and update of Italy’s own prohibited list, the organization of anti-doping controls and the maintenance of operative contacts with the European Union and the international bodies. However, CVD’s role has been obscured by CONI, which has managed to remain in charge of anti-doping tests of elite athletes in Italy and to be recognized as Italy’s NADO by WADA—despite the fact that CVD’s testing effectiveness is much higher than CONI’s (see tables 1 and 2). Although CVD has developed in recent years close collaboration with NAS, a representative of which is a CVD member, it has not played a major role in the criminal action against doping. Intelligence sharing between CVD and NAS only began in 2008.

Not surprisingly, two other institutions have played pivotal roles in the anti-doping law enforcement in Italy: NAS and prosecutor’s offices. NAS consists of 38 centers composing a separate unit of the Carabinieri, which is composed of about 1,100 members and operates under the direct authority of the Ministry of Health.

Anti-doping constitutes only one of the NAS’ tasks. According to a survey among the 38 NAS Branch Office directors, only 14% of the local personnel are involved in anti-doping investigations, amounting to 14 full-time equivalents per year. Notwithstanding the limited human resources invested in anti-doping investigations, in eleven years from 2000 to 2011, NAS investigations led to the report of 3,794 suspects and to the arrest of 446 persons for doping-related charges. Over the years, NAS have also been responsible for about 90% of the seizures of doping products carried out in Italy. However, NAS have no exclusive competence in this field, and Italy’s other police forces have also been active.

We estimate the direct personnel costs of NAS anti-doping investigations in about €1,410,000 yearly. Even if we account for overhead at NAS Headquarters and working costs, NAS anti-doping action accounts for about a third of the €5,450,000 invested yearly in testing (for the latter figure, see Italy, 2002: 18 and 23-27 and CONI, 2012; data was confirmed in Int-Oth-2).

Italy's penetrating criminal investigations against state representatives in office in the field of anti-doping (as well as of corruption and organized crime) would have most likely not been possible, if Italy's prosecutors had not been fully independent of the executive branch of government (e.g., Illuminati, 2005: 937-39; Davigo and Sisti, 2012: 41-56). The extreme independence of prosecutors, however, entails not only advantages but also some serious disadvantages, such as the lack of prioritization, coordination and evaluation of prosecutorial action. Despite Italy's adherence to the principle of legality, criminal investigations in anti-doping and other fields end up depending to a considerable degree on the good will and dedication of the individual prosecutors. This is particularly dire in a technical and specialized field such as that of doping, where not all prosecutors are equally aware of the problem and familiar with the special legislation.

Anti-Doping Law Enforcement: Outcomes and Challenges

Together with personnel shortages, the disorganization of prosecutor's offices and courthouses and, in criminal matters, the generous protections granted to defendants by Italian criminal procedural law, prosecutors' (and judges') independence contribute to the very poor performance of the entire Italian judicial system. This problem also manifests itself in the field of anti-doping.

According to data calculated by the Italian Statistical office (Istat) for this report, 313 criminal proceedings were initiated by the prosecutor's offices for the offense of doping foreseen by Act 376/2000 (sometimes in combination with other crimes) between 2001 and 2009, 35 on average per year. For the period 2006-2009, we also know that a total of 683 persons were charged for doping. (We also have data on other offenses applied, such as sporting fraud, but we do not know how many of these cases effectively concern doping).

Even though we lack exact estimates, the number of final verdicts on the basis of Act 376/2000 appears to be much more limited. We identify three main explicative factors to explain this imbalance. First, not many anti-doping criminal proceedings were started before 2004 because CVD published its prohibited list only at the end of 2003 and, as a result, many anti-doping proceedings are still ongoing (in Italy there are three stages of trial, and a criminal proceeding lasts on average four years and nine months; Severino, 2012). Second, many trials end up with a bargaining agreement, which is formally not a conviction and is not recorded by Istat in relation to doping. Third and most seriously, the statute of limitations expires on many proceedings before a final sentence is issued. Taking advantage of the inefficiency of the Italian judicial system and the generous protection granted by Italian procedural code, many defendants—in particular those who can afford good defense lawyers—are able to avoid a conviction in such a way (see also Centamore, [2011]: 61).

Even when they do not end in a final conviction, Italian anti-doping criminal investigations provide the necessary evidence for successful disciplinary proceedings under sports rules. This point is vividly shown by the statistics produced by Ulrich Haas (personal communication, 2012), based on the cases he has reviewed as judge at the Court of Arbitration of Sport (CAS). Accordingly, Italy is virtually the only country initiating proceedings against athletes' support personnel, with over 90% of non-analytical cases reviewed by Haas. During an informal conversation, Haas made an important point: Italian law enforcement agencies are very good in collecting the evidence, as they can conduct criminal investigations on doping matters. They are very slow in processing the cases, so that the statute of limitations runs out on many of them. From the perspective of sports arbitration, however, it is not relevant whether the Italian criminal proceedings end with a conviction or not. Rather it is important that sports federations and CAS receive information. From this point of view, Haas concluded, Italy is very effective.

In addition to the inefficiency of the overall judicial system, we have identified five challenges that hamper anti-doping criminal action in Italy. Four of them are domestic. The first challenge set concerns specific aspects of the Act 376/2000 and related legislation,

which are not worth being summarized here. The second set results from prosecutors' and judges' insufficient knowledge of the problem of doping and anti-doping legislation. As both NAS officers and the prosecutors themselves testify, single prosecutors and judges differ significantly in their awareness of the problem of doping and in their familiarity with the anti-doping legislation (e.g., Int-NAS-10, 16, 25 and 26; Int-Pro-4). Prosecutors and judges have themselves expressed the need to receive training on anti-doping; to start fulfilling this demand, CVD and CSM jointly organized in 2008 and 2012 two specialized training courses of both groups.

Under the current system, prosecutors and judges are largely dependent on NAS officers and/or external consultants for specialized knowledge. NAS themselves may need to resort to consultants given the wide array of doping substances and methods, and the need to reconstruct the effects pursued by the users, the side effects, the therapeutic and doping dosages of each product and different combinations of products in a criminal proceeding. Selecting competent and independent consultants is not an easy matter. Perhaps reflecting these difficulties, consultants' expertise has not yet been fully exploited in many anti-doping proceedings in Italy. Due also to limited funds, many prosecutors tend to engage consultants only for specific aspects and at the end of the investigations carried out by the police, thus losing much precious input that the consultants might have given in earlier phases (Int-Pro-1).

The limited cooperation between law enforcement agencies and sports authorities represents the third factor hampering effective anti-doping action in Italy. Even leaving aside the cases of sports bodies' open protection of doping in elite sports mentioned earlier, several NAS officers (e.g., Int-NAS-9, 25, 26) and prosecutors (e.g., Int-Pro-1 and 3) still lament the persistent lack of collaboration on the part of some sports federation and other sports body officials (see also Centamore, [2011]: 61). Several interviewees (e.g., Int-NAS-16, 25, 26; Int-Pro-3 and 6) also report that they do not trust Italy's current NADO (i.e., CONI) and therefore, have qualms sharing investigation information. The cooperation between NADO and law enforcement agencies would have potential, though, as demonstrated by the

Olympic 50 km race walk champion Alex Schwazer's positive test for EPO in an anti-doping test conducted by WADA shortly before the 2012 London Olympic. In fact, the idea to submit Schwazer to an unexpected pre-Olympic test came from an ongoing criminal investigation coordinated by the Padua Prosecutor's Office.

The last domestic challenge results from CVD's deficient coordination of Italy's anti-doping policy. Since 2008 CVD has progressively established a close pattern of cooperation with NAS, with a high representative of the latter being a formal CVD member (Int-NAS-26). According to several observers (int-Oth-1 and 2), this cooperation has been crucial to improve CVD's testing strategies, leading to an increase of positive results (see table 2). It is less praiseworthy that since its establishment in 2001, CVD has not yet sought contact with other police forces nor has tried to monitor anti-doping criminal action in Italy and its outcomes. CVD is also limited in its capacity to organize anti-doping tests, despite the clear provisions of Act 376/2000. A 2007 agreement between the then Minister of Health, Minister of Youth and Sports Activities and CONI President granted CONI de facto exclusive authority in testing Italy's elite athletes (see Ministero della Salute, 2007). As CONI is officially recognized as Italy's NADO, moreover, CVD is largely cut off from international networks and exchanges.

In addition to the domestic challenges, Italian criminal law action against doping is hampered by the serious difficulties in international police and judicial cooperation. These difficulties result, first of all, from the fact that few other countries in Europe and elsewhere recognize doping as a criminal offense and, if they do so, they only recognize the illegal trade in doping products, but not an athlete's use of performance-enhancing products, as a criminal offense (for a review of the legislation in other countries, see Federal Ministry of the Interior, 2009). Next to the problem resulting from the heterogeneity of national criminal legislation on doping matters, complicated and slow bureaucratic mechanisms further hamper the cooperation between prosecutors in anti-doping and other criminal matters.

The NAS officers with more international experience (int-NAS-11, 16 and 26) are more positive about their cooperation with colleagues in other countries: over the years, trusted personal relationships have developed, which are often based on the recognition of Italian NAS officers' lengthy experience in anti-doping criminal investigations. However, despite the informal ties, police officers are required to go through the official rogatory channels controlled by prosecutors, when they need evidence for a trial.

Generic Conclusions and Lessons for Policy-Making

In the final chapter of the report, we consider the extent to which our findings on Italy can be generalized to other countries by comparing them with the international literature on doping (both academic and grey). Drawing on our findings, the international literature as well as the research on illegal drug policy and crime control, we also propose lessons for the world's anti-doping policy-making, which we here report in a summary form.

Doping Products and their Demand

- *The super elite athletes targeted by CONI, the IOC and WADA represent a tiny minority of total users of doping products or even the total number of athletes using such products. From a public health perspective it hardly makes sense to focus predominantly on super elite athletes, and it would be advisable to broaden the policy focus to include recreational athletes and non-competitive sportspeople.*
- *Doping substances are used for many different purposes, not just to enhance performance and produce a range of effects, including some short-term effects perceived as positive by the users and short-term and long-term adverse effects. These effects are not yet well understood in the literature and more research is needed to anticipate and treat them. On the basis of solid research results, WADA could also better defend its choices of prohibiting certain substances or methods.*
- *Given the similarities and partial overlap between doping substances and legal and illegal psychoactive drugs (such as alcohol, tobacco, heroin, cocaine and other illegal drugs), doping-focused demand-side interventions could and should profit from the best practices*

developed to prevent and reduce the demand for legal and illegal psychoactive drugs and the harms associated with their consumption.

➤ *Many users of doping products seem to be not sufficiently aware of the adverse effects deriving from their consumption patterns. It is thus necessary to provide reliable, evidence-based information about the harms associated with doping products particularly through targeted campaigns directed at potential and current users and, more generally, to develop a harm reduction approach in sports.*

➤ *Heavy users, to be found especially among body-builders and the athletes of specific disciplines, such as weightlifters, disproportionately suffer more harms than other users. It is therefore sensible to develop control and treatment programs specifically focusing on them.*

Supply

➤ *A semi-illegal market for doping products is likely to have developed in all countries in which there is a widespread demand for such products. There is a need to know more about the extent, organization and dynamics of semi-illegal markets for doping products in other countries.*

The academic and grey literature and the numerous scandals periodically involving elite athletes (e.g., USADA, 2012) demonstrate that there is a demand for doping products among elite and recreational athletes and non-competitive sportspeople in other countries as well. It is enough to recall that some tens of millions of individuals are estimated worldwide to have used steroids alone, reflecting an average lifetime prevalence of steroid use of at least 3% in young men (Kanayama et al., 2009). Although the prevalence of other substances is less well researched, it is probable that the users of these substances also add up to a few million users worldwide. You do not have to be trained in economics to suppose that if there is a demand, there is also a supply. Beyond this basic assumption though, the exact configuration of the different national markets for doping products needs to be ascertained through empirical studies.

➤ *Users of doping products can obtain them through a multiplicity of channels linked to different distribution chains, among which the internet has become increasingly relevant.*

Given the large variety of products, their widespread availability and the lessons to be drawn from the “war on drugs,” supply-side interventions in the field of doping must be given realistic objectives, drawing from the realization that no doping-free world is possible.

Our analysis demonstrates that Italian users of doping products often have multiple sources available for products of the same class. In Italy as elsewhere the product availability has been greatly enhanced by the internet. As of April 2012, for example, a Google search for “buy steroid” delivered 13,700,000 hits, up from 4 million hits in 2000 and 5 million hits in 2010-/11 (see also GAO, 2005).

Most academics and a growing number of policy-makers agree that it is not possible to eliminate or even reduce consistently the availability of illegal drugs through supply-oriented policy interventions, which usually mean criminal prosecution, interdiction of the drugs at the border and, in producing countries, eradication (and alternative development). Given the characteristics of the market for doping products, criminal prosecution and interdiction alone are even less likely to be successful in reducing significantly the availability of doping products than they have been in the case of illegal drugs.

Drawing on these realizations, national governments, international sports authorities and organizations should be committed to adopting a mix of policy interventions: in this mix, standard supply-side interventions, such as criminal prosecution and interdiction, are absolutely necessary to signal society’s disapproval of certain behaviors, to identify and punish suppliers (effectively deterring those with a white-collar background) and to promote the development of a market that causes the least possible harm to users, the organized sports world, other stakeholders and society in general. As is well known in the criminological and legal literature and confirmed by the recent USADA’s (2012) decision against Lance Armstrong, the prosecution and sanctioning of key figures, whether under criminal law or sports rules, can also have a powerful symbolic and educational effect. USADA’s decision to strip Lance Armstrong of his seven titles in the Tour de France and ban him for life in sanctioned Olympic sports has for the first time proved irrefutably the real extent of doping in top cycling, backing calls for a thorough reform process.

In anti-doping and other fields, however, policy-makers should not lose sight of the fact that all interventions and particularly criminal prosecution not only have expected benefits but are also likely to cause unintended harms; they should not forget that the ultimate aim of policy must be to minimize the overall harm deriving from the problem itself *and* the policy interventions (McCord, 2003; Greenfield and Paoli, 2012). And as the expected benefits of policy interventions do not always materialize and the unintended harms are hard to predict in advance, the interventions should also be thoroughly evaluated after the first few years of implementation and then on a regular basis afterwards.

➤ *The embeddedness of exchanges of doping products in legitimate relationships and the white-collar background of many suppliers and elite athletes constitute opportunities for controlling doping that have not yet been sufficiently exploited.*

Many, if not most, suppliers of doping products in Italy have legitimate professions and occupations and meet the most stringent legalistic requirements of the definition of white-collar crime (e.g., Gobert and Punch, 2003). The same is certainly true for many elite athletes. The few existing studies touching on the supply of doping products in other countries also confirm the embeddedness of doping exchanges in legitimate relationships (e.g., Striegel et al., 2006; Brissonneau, 2007). As white-collar criminals, both the suppliers of doping products and elite athletes are more vulnerable to the deterrent effects of criminal prosecution than ordinary offenders, because they have much more to lose than the latter.

In doing with suppliers of doping products and elite athletes, it is thus advisable to exploit John Braithwaite (2011)'s approach of "responsive regulation," according to which interventions aimed at securing businesses' compliance need to be combined and reinforced with other sanctioning interventions aimed at deterrence. As Braithwaite (2011: 475) notes, "the paradox of responsive regulation is that by having a capability to escalate to tough enforcement, most regulation can be about collaborative capacity building." Braithwaite proposed to obtain responsive regulation through an "enforcement pyramid" and with a few adaptations, this pyramid could be easily extended to the control of doping

in sports. Consisting of education and prevention, the lowest levels of the pyramid are already present in a large number of countries, at least in law books and policy documents (see, e.g., Anti Doping Denmark et al., [2012]). The higher levels of the pyramid, i.e., a range of increasingly more punitive approaches and sanctions, by and large still need to be developed. The first step, which has already been taken in Italy but not in many other countries, would be to introduce criminal offenses and sanctions specifically targeting suppliers of doping products. Criminal sanctions should by no means be limited to fines or imprisonment. Appropriately, the Italian anti-doping criminal legislation foresees additional sanctions for health practitioners, and for CONI and sports body officials, even though, to our knowledge, an additional sanction has been applied only once (Tribunale di Bologna, 2004).

In addition or in parallel to criminal sanctions, national and international sports authorities could also impose punitive sanctions to target sports federations and teams providing doping products to their athletes or encouraging or tolerating their athletes' doping practices, going beyond the vague provisions currently foreseen by the World Anti-Doping Code. We also emphasize that governments have more leverage in securing anti-doping compliance in elite sports than they do in industries, simply because most national sports federations, with the exception of the football federations and a few others, depend on government funding. As Bette (2006: 169-70) also points out, "a lot could be achieved with money that either you either make available to sports organizations or withdraw in case of observed deviance or lack of cooperation."

➤ *The organized sports world has not always been committed and is, despite the best intentions of WADA's leadership, unable to detect and prosecute suppliers of doping products. Therefore national governments need to intervene directly, through a system of incentives and sanctions, to make sure that the suppliers of doping products are tackled by both cases under sports rules and criminal law proceedings.*

Our analysis demonstrates that top-level officers of CONI and key sports federations have long tolerated and even fostered doping practices of elite athletes in Italy. The foreign cases

briefly discussed in the report show that this tolerance and complicity are not uniquely Italian phenomena.¹¹ As Coakley and Pipe (2009: 218) put it, “it is not possible to effectively control the use of performance-enhancing substances when federations and teams encourage general overconformity to the norms of the sports ethic.” Our analysis of the IOC’s longstanding support of Prof. Conconi also indicates that international sports authorities have long lacked commitment to anti-doping. Other scholars and observers confirm our findings (e.g., Hoberman 2001: 245; Hanstad, Smith and Waddington, 2008: 230).

Even if they are determined, national and international sports ruling bodies often do not have the means to detect and prosecute suppliers. It is enough to recall that although three of the eight doping violations included in the World Anti-Doping Code also address suppliers, WADA (2010) itself admits that the current control regime has “focus[ed] squarely on athletes.”

Driven by growing skepticism towards the IOC’s and international sports federations’ self-regulation, from the 1990s national governments have progressively taken some responsibility for anti-doping. The establishment of WADA in 1999 constitutes the high point of this trend so far. WADA has, in fact, been funded on an equal basis by governments and by the IOC, and its governing bodies, the Council and the Executive Committee, both have equal representation from governments and the IOC. The moment might have come for governments to realize that even WADA, despite the best intentions of WADA’s leadership, cannot tackle the supply of doping products and that they have to take even more direct responsibility for this task. In doing so, governments should be driven not only by the pursuit of effectiveness in doping control but also by the pursuit of fairness to avoid that the blame and sanctions are exclusively placed on athletes. They should also make sure that the few athletes who have the courage to become whistleblowers are protected from the

¹¹ See, e.g., the 2001 Finnish Lahti scandal (Doping Enquiry Taskforce, 2001) and the systematic doping practices by the Austrian cross-country skiing team at the 2006 Turin Olympics (IOC, 2007) as well as the recent USADA legal action against the seven-time winner of the Tour de France, Lance Armstrong (USADA, 2012).

revenge of their trainers, employers and colleagues and are able to continue pursuing their sporting careers.

Policy

➤ *Anti-doping law enforcement is not only cheaper but also more effective than testing in documenting sports rule violations by athletes' support personnel, revealing the mechanisms and actors involved in the supply of doping products and deterring at least some of the latter.*

By comparing NAS and testing costs and estimating that the former are about a third of the latter, we have shown that criminal investigations, even if they are substantial and continuous such as in Italy, are much cheaper than testing. Law enforcement action is not only cheaper but also more effective. Referring to the detection of systematic doping practices in the Austrian ski federation at the 2006 Turin Winter Olympics, Prof. Arne Ljungqvist (2010), WADA Vice-President and the head of the IOC Medical Commission, has stated: "if there had not been the Italian law, the case would have never been detected, as all athletes tested negative. You can draw your own lessons from it."

The few other national law enforcement agencies that have been granted jurisdiction in the field of anti-doping also report positive experiences, with a rapid increase in the number of investigations, suspects and substances seized (for Denmark, see Anti Doping Denmark et al, [2012]: 100-01; for Australia, ASADA, 2012; for Austria, for Austria, Holzer's intervention in Sportausschuss, 2011: 14-16 2011; for Germany, Gräber, 2011 and Mühlbauer's intervention in Sportausschuss, 2011: 16-18; see also Houlihan and García, 2012: 32).

➤ *With their different inspiring logic and powers, anti-doping and law enforcement agencies can profitably support each other in the pursuit of a cleaner sports world.*

CVD's improved testing record and the disproportionate number of non-analytical cases involving athletes and their support personnel that originated from Italian investigations and have been dealt by CAS (Haas, personal communication, 2012) indicate the potential of intelligence and evidence sharing between anti-doping and law enforcement agencies.

Criminal proceedings are slow and, especially in Italy, may not even end up with a conviction. However, law enforcement agencies have investigative methods, such as searches and wiretapping, that are not available to sports ruling bodies. The difference law enforcement methods can make is well illustrated by USADA's recent action against Armstrong. An ongoing investigation on Dr. Michele Ferrari carried out by NAS and coordinated by the Padua Prosecutor's Office provided decisive documental evidence to corroborate the incriminating statements of Armstrong's former team colleagues and other riders (USADA, 2012: 58, 60, 82-86, 99).

Despite their more limited powers, anti-doping bodies have something to offer too: they can provide detailed knowledge on athletes' training routines and possible use of doping products, serve as experts in criminal proceedings to better interpret circumstantial evidence, carry out anti-doping tests to check suspicions collected by law enforcement officers and, last but not least, rapidly impose sanctions, such as a competition ban, that are much more effective against elite athletes and their teams than the prospect of having to pay a fine or even serving time in prison two or three years after the start of an investigation. (It is a limitation, though, that the World Anti-Doping Code does not yet foresee effective sanctions for sports organizations other than teams.) In countries where such the cooperation between anti-doping and law enforcement agencies works better than in Italy, the NADOs highly praise it (e.g., ASADA, 2012: 51; Anti Doping Denmark et al. [2012]: 101).

➤ *Anti-doping criminal law enforcement presupposes an integrated approach with no a priori distinction between the use of doping products in elite sports and other contexts.*

Law enforcement agencies cannot know in advance if a supplier is servicing elite or recreational athletes or noncompetitive sportspeople. To cooperate with law enforcement agencies, national anti-doping organizations and WADA have to be willing—and have the financial and personnel means—to go beyond their current focus on doping in elite sports and address instead the entire spectrum of misuse of doping products for performance or image enhancing purposes and the related channels of supply.

➤ *Criminal investigations are hampered by the lack of harmonized cross-national criminal legislation. Given the cross-national nature of many doping exchanges, comparable offenses and sanctions need to be introduced—and in the meanwhile the already existing equivalent offences need to be identified and exploited—in order to prevent criminal investigations from stopping at the national borders.*

As mentioned earlier, many law enforcement officers in Italy complain about the difficulties of international cooperation. These assessments are echoed by their foreign counterparts. For example, Mathieu Holz (2012), the Interpol officer responsible for anti-doping, complains about “the lack of priority in many states and a not harmonized regulation in the field”—despite the fact that article 8 of the 2005 UNESCO Convention against Doping in Sport (2011) calls on State Parties to “adopt measures against trafficking to athletes” (see also GAO, 2005: 5). The persistent differences in anti-doping legislation, even within the EU, have also been stressed in a number of comparative studies (e.g., Federal Ministry of the Interior, 2009; Parzeller et al., 2009-10; Houlihan and García, 2012).

At the very least, pending a thorough harmonization process, domestic law enforcement officers should be informed about those offenses covered by other countries’ criminal codes and special laws (e.g., customs and drug legislation) that might at least partially correspond to similar domestic legislation.

➤ *To be conducted effectively, criminal investigations require specialized knowledge on the part of the relevant police officers and prosecutors. Various measures can and should be taken to develop such specialized knowledge. Our report documents the fundamental role played by NAS in Italy’s anti-doping investigations. It also shows the key contribution that can be made by the experts appointed to serve as consultants in criminal proceedings. These findings confirm a point also made by Turin prosecutor Guariniello (2011), namely, that “good legislation alone is not enough to combat doping.” To make sure that the anti-doping laws are enforced, Guariniello has proposed some operational guidelines based on his experience in the field: specialization of prosecutors and judges, with the possible establishment of prosecutor’s offices specialized in doping or health-related offenses; the*

involvement of, and close cooperation with, expert witnesses throughout the investigations; the exchange of investigation protocols and experiences acquired between prosecutors' offices and joint training courses for prosecutors and police officers (Guariniello, 2011). The merit of one of these suggestions is proven by the recent German experience. Two specialized anti-doping Prosecutor's Offices have been recently established in two southern German states, namely Bavaria and Baden-Württemberg in 2009 and 2011. The record of the older Bavarian prosecutor's office vividly demonstrates the veritable leaps forward in the criminal prosecution of doping that can be achieved when a specialized team is set up, even in the absence of legislative changes (Gräber, 2011).

General

➤ *We still have insufficient knowledge about many key facts and trends related to doping. In order to develop and implement effective prevention and control policies, it is necessary to set up, under WADA's coordination, national and international monitoring systems of the demand and the supply of doping products and of the concrete outcomes of anti-doping policies.*

Even in a country such as Italy, which has shown over the years an unusual awareness for the problem of doping, many important data still remain uncollected. For example, some NAS officers (Int-NAS-10 and 25) noted that they are occasionally informed of emergency admissions seemingly caused by the abuse of steroids or other products, but that there is no protocol making sure that all suspicious admissions are recorded and reported. Until the present study, no effort had been made to centralize and make comparable the data about the substances seized by Italy's police forces. The problem does not seem to be less pressing in other contexts. To our knowledge, only the Swedish government has so far fully recognized the need for a comprehensive monitoring system on doping (see Government Office of Sweden, 2012).

Concluding Remark

The main policy aim of this research project was to understand how anti-doping criminal provisions and their enforcement can contribute to improve the fight against doping within and outside the sports world. In this respect, our main conclusion is that criminal law enforcement has an unexploited, crucial (though limited) potential role in anti-doping. Therefore, we recommend that all countries should pass appropriate legislation on the basis of a standardized model so as to facilitate international police and judicial cooperation (and in the meanwhile exploit the equivalent offences that already exist in most countries), provide their law enforcement agencies with the technical, institutional, and financial resources necessary to effectively investigate the problem of doping, foster the cooperation between these agencies and anti-doping organizations—and remain aware of the limits and harms of criminal law enforcement.

References

- Adnkronos*. 1998. Commissione Grosso: Doping, 'Federcalcio Corresponsabile'. Online available at: http://www.adnkronos.com/Archivio/AdnAgenzia/1998/10/14/Sport/COMMISSIONE-GROSSO-DOPING-FEDERCALCIO-CORRESPONSABILE_172900.php.
- AFP. *Agence France Presse*. 2011. WADA chief says more must be done in doping fight. November 14. Online available at: <http://www.google.com/hostednews/afp/article/ALeqM5g9YYPqsDJbXuqeugjD3f7IL9q0FQ?docId=CNG.f8a1357252414e391fa429a67d8b9601.4a1>.
- Akinde, M. 2006. Cycling's Winter of Discontent. The Reason Why. *Daily Peloton*. Online available at: <http://www.dailypeloton.com/displayarticle.asp?pk=10163>.
- Anti Doping Denmark, Dopingautoriteit, STAD, Instytut Sportu and CyADA. 2012. Strategy for Stopping Steroids. Online available at: http://www.anty doping.pl/upload/2012/strategy_for_stopping_steroids_report_web.pdf.
- ASADA, Australian Sports Anti-Doping Authority. 2012. *2010:11 Annual Report*. Online available at: http://www.asada.gov.au/publications/annual_reports/asada_annual_report_2010_11/downloads/ASADA_annual_report_2010_11.pdf.
- Associated Press*. 2012. IOC chief lauds efforts to fight doping at London Games. *Boston Globe*. August 13. Online available at: <http://www.bostonglobe.com/sports/2012/08/12/olympic-notebook/6QBoz6j52wezZ0q09ryyCP/story.html>
- Audisio, E. 2007. Ho parlato, mi hanno distrutto ma adesso la svolta è matura. *La Repubblica*. May 9: 58. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/2007/05/09/ho-parlato-mi-hanno-distrutto-ma-adesso.html>.

- Bannenberg, B. and Rössner, D. 2006. Straftat gegen den Wettbewerb. Plädoyer für den Einsatz des Strafrechts bei Dopingverstößen. In J. Weinreich, ed., *Korruption im Sport. Mafiöse Dribblings, Organisiertes Schweigen*, Leipzig: Forum: 214-227.
- Bellotti, P. 1999. Perizia del dottor Pasquale Bellotti e del centro di ematologia dell'ospedale Careggi di Firenze
- Bette, K. 2006. *Doping im Hochleistungssport. Anpassung durch Abweichung*. Frankfurt: Suhrkamp.
- Braithwaite, J. 1985. White Collar Crime, *Annual Review of Sociology*, 11, 1-25.
- . 2011. Fasken Lecture: The Essence of Responsive Regulation. 44 *U.B.C. L. Review*: 475-520.
- Brissonneau, C. 2007. "Le dopage dans le cyclisme professionnel au milieu des années 1990: une reconstruction des valeurs sportives." *Déviance et Société*, 2: 129-148.
- Capodacqua, E. 2000. Accuse choc da Ferrara: il Coni dietro al doping. *La Repubblica*. Online available at: <http://www.repubblica.it/online/sport/pantapro/con/con.html?ref=search>.
- . 2001. Processo al dr. Ferrari E si riapre il caso gH. *La Repubblica*. February 13: 54. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/2001/02/13/processo-al-dr-ferrari-si-riapre-il.html>.
- Centamore, R. 2011. Gutachten Italien. In M. Parzeller, ed., *Rechtsvergleich der strafrechtlichen Normen und der strafprozessualen Verfolgung des Dopings im Leistungs- und Spitzensport in Deutschland, Frankreich, Italien, Schweiz und Spanien*. Bonn: Bundesinstitut für Sportwissenschaft.
- Cnn.com*. 2006. Rumsas receives suspended sentence. Online available at: <http://edition.cnn.com/2006/SPORT/01/26/cycling.rumsas/>.
- Coackley, J. and E. Pipe. 2009. *Sport in Society: Issues and Controversies*. Boston: McGraw Hill.
- CONI, Comitato Olimpico Nazionale Italiano. [2004.] Antidoping - Controlli e positività. Dati statistici 2003. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . [2005.] Antidoping - Controlli e positività. Dati statistici 2003. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . [2006.] Dati statistici controlli 2005. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . [2008.] Ripartizione delle sostanze riscontrate nei campioni - anno 2007. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . 2012a. Relazione annuale sull'attività delle strutture antidoping 2011. Online available at: http://www.coni.it/index.php?dati_statistici.
- . 2012b. Ripartizione delle sostanze riscontrate nei campioni - anno 2008. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . 2012c. Ripartizione delle sostanze riscontrate nei campioni - anno 2009. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>.
- . 2012d. Ripartizione delle sostanze riscontrate nei campioni - anno 2010. Online available at: <http://www.coni.it/attivit%C3%A0-istituzionali/antidoping/dati-statistici.html>
- Corriere della Sera*, Il. 2005. Doping al Tour, arrestato Dario Frigo. Online available at: http://www.corriere.it/Primo_Piano/Sport/2005/07_Luglio/13/frigo.shtml.
- Corte Suprema di Cassazione, Sezione Seconda Penale. 2007. Sentenza sul ricorso proposto dalla Procura Generale presso la Corte d'Appello di Torino e dal difensore dell'imputato A.G. avverso la sentenza emessa dalla Corte d'Appello della stessa città in data 14 dicembre 1985. Sentenza n. Reg. Gen. N. 19255/06.

- Davigo, P. and L. Sisti. 2012. *Processo all'italiana*. Roma: Laterza.
- Dipartimento Politiche Antidroga. 2011. Relazione annuale al Parlamento sull'uso di sostanze stupefacenti e sulle tossicodipendenze in Italia. Dati relativi all'anno 2010 e elaborazioni 2011. Online available at: <http://www.politicheantidroga.it/progetti-e-ricerca/relazioni-al-parlamento/relazione-annuale-2011/presentazione.aspx>
- Donati, A. 2012. *Lo sport del doping. Chi lo subisce, chi lo combatte*. Torino: Edizione Gruppo Abele.
- Donati, A. and L. Magrì. 2001. Stima degli importi complessivi delle cessioni. Rapporto preparato per la Procura della Repubblica di Bologna.
- Dorn, N., M. Levi, D. Artingstall and J. Howell. 2009. Impacts of Financial Crimes and Amenability to Control by the FSA: Proposed Framework for Generating Data in a Comparative Manner. *Social Sciences Research Network*. Online available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1458366.
- Ehrenberg, A. 1991. *Le culte de la performance*. Parijs: Calmann-Lévy.
- Evaluation Team. 2002. Report of the Evaluation Team. In Council of Europe, ed., Italy: Compliance with Commitments Project -- Respect by Italy of the Anti-Doping Convention. Report by Italy and the evaluation team: 31-43. Ref. T-DO (2002) 36. Online available: http://www.coe.int/t/dg4/sport/commitments/antidoping/T-DO_2002_36_EN_eval_Report_Commit_Italy.pdf.
- Fazzo, L. and M. Mensurati. 2002. Un pentito contro Simoni. Doping nel Giro che ha vinto. *La Repubblica*. May 30: 53. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/2002/05/30/un-pentito-contro-simoni-doping-nel-giro.html>.
- Federal Ministry of the Interior. 2009. Survey among EU Member States on the Criminal Liability of Athletes for the Possession of Doping Agents. Results - German initiative - As of July 2008. Unpublished document.
- GAO, U.S. Government Accounting Office. 2005. *Anabolic Steroids Are Easily Purchased Without a Prescription and Present Significant Challenges to Law Enforcement Officials*. GAO-06-243R Anabolic Steroids. Online available at: <http://www.gao.gov/new.items/d06243r.pdf>.
- Gasparini, W. 2004. Le corps performant par le dopage. Notes sociologiques. *Drogues, santé et société*, 3 (1), 57-68.
- Geyer, H. 2012. Personal communication.
- Gobert, J. and M. Punch. 2003. *Rethinking Corporate Crime*. London: Butterworths.
- Government Office of Sweden. 2012. Measures targeting children and young people and reduced cannabis abuse prioritised in the Government's ANDT policy 2012. Online available at: <http://www.sweden.gov.se/sb/d/15471>.
- Gräber, K. 2011. Die bayerische Schwerpunktstaatsanwaltschaft Doping: Ein Erfahrungsbericht. Speech at the international symposium "Sportmedizin und Doping in Europa." Freiburg, September 12-14.
- Greenfield, V. A. and L. Paoli. 2012. 'If Supply-Oriented Drug Policy is Broken, Can "Harm Reduction" Help Fix It?'. *International Journal of Drug Policy*, 23(1): 6-15.
- Guariniello, R. 2011. Anti-Doping Investigations in Italy: Football and the 2006 Turin Olympic Games. Speech at the international symposium "Sportmedizin und Doping in Europa." Freiburg, September 12-14.
- Haas, U. 2012. Personal communication.
- Hamilton, T. and D. Coyle. 2012. *The Secret Race: Inside the Hidden World of the Tour de France: Doping, Cover-ups, and Winning at All Costs*. London: Bantam Press.

- Hanstad, D. V., A. Smith and I. Waddington. 2008. The Establishment of the World Anti-Doping Agency : A Study of the Management of Organizational Change and Unplanned Outcomes. *International Review for the Sociology of Sport*, 43: 227-249.
- Hoberman, J. M. 2001. How Drug Testing Fails. The Politics of Doping Control. In Wilson, W. and E. Derse, eds., *Doping in Elite Sport*. Champaign: Human Kinetics: 241-74.
- . 2005. *Testosterone Dreams: Rejuvenation, Aphrodisia, Doping*. Los Angeles: University of California Press.
- . 2012. Doping, Gambling, and the Decline of the IOC- Mimeo.
- Holz, M. 2012. The Interpol Involvement against the Trafficking of Doping Substances. Paper presented at the Sportsvision 2012. Copenhagen, 19-20 March. Abstract online available at http://www.sportvision2012.eu/files/EU2012_Web/Downloads/BA_Compiled_Final.pdf.
- Houlihan, B. and B. García. 2012. The use of legislation in relation to controlling the production, movement, importation, distribution and supply of performance-enhancing drugs in sport (PEDS). August. Online available at: http://www.wada-ama.org/Documents/World_Anti-Doping_Program/WADP-Legal_Library/National_Legislation/UNESCO-Legislative-Research-Report-FINAL.pdf
- Howman, D. 2011. Current Challenges and Issues of Anti-Doping. Speech held at PCC Conference, New York. December 1. Online available at: http://www.wada-ama.org/Documents/News_Center/Speeches_Presentations/2011/WADA_DHowman_PCC_Current_Challenges_and_Issues_for_Anti-Doping_2011_12_01.pdf.
- Illuminati, G. 2005. Italy. In P. Tak., ed., *Tasks and Powers of the Prosecution Services in the EU Member States*, vol. II: 935-954. Nijmegen: Wolf.
- Istat. 2007. La pratica sportiva in Italia: Anno 2006. Online available at: http://www.coni.it/fileadmin/ops2008/istat_sport_2006_Presentaz_070620.pdf.
- Italy. 2002. Report by Italy. In Council of Europe, ed., Italy: Compliance with Commitments Project -- Respect by Italy of the Anti-Doping Convention. Report by Italy and the evaluation team: 3-30. Ref. T-DO (2002) 36. Online available at: http://www.coe.int/t/dg4/sport/commitments/antidoping/T-DO_2002_36_EN_eval_Report_Commit_Italy.pdf.
- Kanayama, G., K.J. Brower, R.I. Wood, J.I. Hudson and H.G. Pope. 2009. Anabolic-androgenic steroid dependence: an emerging disorder. *Addiction*, 104: 1966–1978.
- Ljungqvist, A. 2010. Der Anti-Doping-Kampf als Aufgabe des IOC. In Werner Blumenthal, ed., *Der Kampf gegen Doping: Die gesellschaftliche Verantwortung von Sport und Politik auf Nationaler und internationaler Ebene*. Sankt Augustin/Berlin: Konrad-Adenauer-Stiftung e.V: 19-36. Online available at: http://www.kas.de/wf/doc/kas_20651-544-1-30.pdf?100929165220.
- McCord, J. 2003. Cures that Harm: Unanticipated Outcomes of Crime Prevention Programs. *Annals of the American Academy of Political and Social Science*, 587, 16-30.
- Ministero della Salute. 2007. Atto di intesa per la lotta al doping tra il Ministro della Salute, il Ministro delle Politiche Giovanili ed Attività Sportive ed il Presidente del CONI. October 16. Online available at: http://www.salute.gov.it/imgs/C_17_pubblicazioni_704_allegato.pdf.
- Moore, M.H. 1974. *The Effective Regulation of an Illicit Market in Heroin*. Lexington, Mass.: Lexington Books.
- NAS Brescia, Comando Carabinieri per la Sanità. Nucleo Antisofisticazioni e Sanità di Brescia. 2011. Informativa finale sull'esito delle indagini effettuate nei confronti di G.N. + altri.

- NAS Firenze, Comando Carabinieri per la Sanità. Nucleo Antisofisticazioni e Sanità di Firenze. 2003. Informativa finale sull'esito delle indagini effettuate: Operazione Quadrifoglio.
- . 2005. Indagine "Oil for drug." Informativa conclusiva sull'esito delle indagini.
- NAS Padova, Comando Carabinieri per la tutela della salute. Nucleo Antisofisticazioni e Sanità di Padova. 2009. Operazione "Flebo": Utilizzo di sostanze dopanti nel ciclismo e nel rugby. Relazione al 2° Master Investigativo Antidoping. Rome, November 3.
- Niggli, O. 2013. Personal communication.
- Numa, M. 2010. Anabolizzanti, poliziotti in manette: Il traffico passava dalle loro mani: 21 agenti denunciati in tutta Italia. *La Stampa*. Online available at: <http://www3.lastampa.it/torino/sezioni/cronaca/articolo/istp/280202/>.
- Pacifici, R. and Donati, A. 2011. Consulenza tecnica nel procedimento penale 5876/08 Procura di Mantova. Mimeo.
- Parzeller, M., C. Prittowitz, H. Bratzke, M. Caldarelli, R. Centamore, M. Lapetra Costa, B. Flaig, H. Heise, D. Kloka, J. Laux, S. Prittowitz, C. Raschka, A. Roebel, C. Rüdiger, C. Wenk, and B. Zedler, 2009/10. Rechtsvergleich der strafrechtlichen Normen und der strafprozessualen Verfolgung des Dopings im Leistungs- und Spitzensport in Deutschland, Italien, Frankreich, Schweiz und Spanien. *BISP-Jahrbuch Forschungsförderung* 2009/10: 315-326.
- Paoli, L., V.A. Greenfield, and P. Reuter. 2009. *The World Heroin Market: Can Supply Be Cut?* New York: Oxford University Press.
- Parkinson, A.B. and N.A. Evans. 2006. Anabolic androgenic steroids: a survey of 500 users. *Medicine and Science in Sports and Exercise*, 38(4): 644–651.
- Pound, R. 2011. Responses to corruption in sport. Speech at Play the Game. Cologne, October 3-6.
- Procura della Repubblica di Ferrara. 2000. Richiesta di archiviazione parziale. Procedimento penale control Pescante Mario + 13 altri. N. 893/99/21 R.G. notizie di reato/Mod. 21.
- Repubblica, La*. 2001. Il giudice: Guandalini cedette farmaci dopanti. April 5: 4 of Bologna section. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/2001/04/05/il-giudice-guandalini-cedette-farmaci-dopanti.html>.
- . 2008. Corse truccate, cavalli dopati - Nuova tegola sull'ippica italiana. Online available at: <http://www.repubblica.it/2008/12/sezioni/sport/ippica-indagine/ippica-indagine/ippica-indagine.html?ref=search>.
- Reuter, P. 1983. *Disorganized Crime: The Economics of the Visible Hand*. Cambridge, Mass.: MIT Press.
- . 1985. *The Organization of Illegal Markets: An Economic Analysis*. Washington, D.C.: National Institute of Justice. *Reuters*. 2007. Pfizer to pay \$35 mln in Genotropin settlements. April 2. Online available at: <http://www.reuters.com/article/2007/04/02/idUSWNAS544720070402>.
- Rössner, D. 2011. Der Sport im Strafrecht und Strafprozessrecht. In: J. Adolphsen, ed., *Sportrecht in der Praxis*. Stuttgart: Kohlhammer: 399-427.
- Ryan, B. 2011. Italian judge set to decide if 32 named in Mantova doping investigation should go on trial. Online available at: <http://www.cyclingnews.com/news/italian-judge-set-to-decide-if-32-named-in-mantova-doping-investigation-should-go-on-trial>.
- Severino, P. 2012. Relazione del guardasigilli sull'amministrazione della Giustizia nell'anno 2011: Anno 2012. Online available at: http://www.giustizia.it/giustizia//it/mg_6_9.wp?contentId=NOL57984.
- Simpson, S.S. 2010-11. Making Sense of White-Collar Crime: Theory and Research. *Ohio State Journal of Criminal Law* 8: 481-502.

- Singler, A. 2011. *Dopingprävention – Anspruch und Wirklichkeit*. Aachen: Shaker.
- Sportausschuss des Deutschen Bundestages. 2011. Wortprotokoll. 34. Sitzung. Online available at: <http://www.jensweinreich.de/wp-content/uploads/2011/10/34-SpA-Protokoll.pdf>
- Striegel, H., P. Simon, S. Frisch, K. Roecker, K. Dietz, H.H. Dickhuth and R. Ulrich. 2006. Anabolic Ergogenic Substance Users in Fitness-Sports: A Distinct Group Supported by the Health Care System. *Drug and Alcohol Dependence*, 81: 11–19.
- Thomas, A., H. Geyer, M. Kamber, W. Schänzer and M. Thevis, 2008. Mass spectrometric determination of gonadotrophin-releasing hormone (GnRH) in human urine for doping control purposes by means of LC–ESI-MS/MS. *Journal of Mass Spectrometry* 43: 908–915.
- Toti, G. 2003. Caso Conconi, indietro tutta. *Corriere della Sera*. March 26: 46. Online available at: http://archivistorico.corriere.it/2003/marzo/26/Caso_Conconi_indietro_tutta_co_0_030326239.shtml.
- Travaglio, M. 1998. Provette sparite, un blitz al Coni. *La Repubblica*. August 21: 46. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/1998/08/21/provette-sparite-un-blitz-al-coni.html>.
- . 2005. Viva Storace – bananas. *L'Unità*. October 6: 12. Online available at: <http://cerca.unita.it/ARCHIVE/xml/175000/171330.xml?key=marco+travaglio&first=1461&orderby=1>.
- Tribunale di Bologna. 2000. Ordinanza di custodia cautelare nei confronti di P.B. + altri.
- . 2004. Sentenza nei confronti di Ferrari Michele + 3. October 1. No. 2997/97 R.G. notizie di reato.
- Tribunale di Ferrara. 2003. Sentenza nei confronti di Conconi Francesco + altri. No. 893/99 RGNG. November 19.
- Tribunale di Forlì. 2009. Ordinanza di custodia cautelare nei confronti di V.M. +altri. No. 3870/07 RGNR.
- Tribunale di Ravenna, 2004. Ordinanza applicative di misure cautelari nei confronti di M.A. + 73. N. 619/2003 21 R.G.N.R.
- Tribunale Ordinario di Torino, Sezione Prima Penale. 2012. Sentenza nei confronti di A.G. + 1. No. 63700 R.G. notizie di reato.
- Tropeano, L. 1985. Olimpiadi: La guerra del doping. *La Stampa*. October 18: 35. Online available at: http://newrassegna.camera.it/chiosco_new/pagweb/immagineFrame.asp?comeFrom=rassegna¤tArticle=8T2K3.
- UNODCCP, United Nations Office for Drug Control and Crime Prevention. 2001. *Global Illicit Drug Trends*. New York: United Nations.
- UNGA, United Nations General Assembly. 2000. *Report of the Ad Hoc Committee on the Elaboration of a Convention against Transnational Organized Crime on the Work of its First to Eleventh Session*. A/55/383. 2 November. Available online at: <http://www.undcp.org/palermo/convmain.html>.<http://www.undcp.org/palermo/convmain.html>.
- USADA, U.S. Anti-Doping Agency. 2012. Report on Proceedings under the World Anti-Doping Code and the Usada Protocol: United States Anti-Doping Agency, Claimant, v. Lance Armstrong, Respondent. Reasoned Decision of the United States Anti-Doping Agency on Disqualification and Ineligibility. Online available at: <http://cyclinginvestigation.usada.org/>
- Vinton, N. 2005. Olympics; I.O.C. Ends Opposition To Italy's Doping Laws. *The New York Times*. October 29. Online available at:

<http://select.nytimes.com/gst/abstract.html?res=F00C16F7355B0C7A8EDDA90994DD404482>.

WADA, World Anti-Doping Agency. 2010. Investigations and Trafficking. Online available at: <http://www.wada-ama.org/en/Anti-Doping-Community/Governments/Investigation--Trafficking/>.

Wright, V. 2010. Deterrence in Criminal Justice: Evaluating Certainty vs. Severity of Punishment. Online available at: <http://www.sentencingproject.org/doc/Deterrence%20Briefing%20.pdf>.

Zunino, C. 2009. Sperperi e illegalità così l'ippica italiana è diventata un debito: *La Repubblica*. November 23: 21. Online available at: <http://ricerca.repubblica.it/repubblica/archivio/repubblica/2009/11/23/sperperi-illegalita-cosi-ippica-italiana-diventata.html>.