



CRITICAL ANALYSIS OF THE ARGUMENTS IN FAVOUR OF DOPING IN SPORT

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Abstract:

The debate concerning the use of performance-enhancing technologies constitutes one of the most controversial issues in contemporary philosophy of sport. While the dominant body of literature primarily emphasizes the detrimental effects of doping on athletes' health, the fairness of competition, and the preservation of the spirit of sport, several philosophers have advanced arguments in favour of its legalization under specific conditions. The aim of the present article is to critically discuss two representative articles by Claudio Tamburrini, addressing, respectively, the relationship between hypoxic air machines and doping, and the justification of sanctions imposed on athletes for anti-doping rule violations. The study is based on a philosophical analysis of arguments as its methodological approach and employs Sigmund Loland's three ideal-typical approaches to technologies of athletic preparation as its theoretical framework. Tamburrini's arguments are first presented in detail and subsequently critically examined in relation to the concepts of justice, equality of opportunity, autonomy, and the spirit of sport. The analysis shows that, despite their philosophical originality and their contribution to the contemporary debate on doping, Tamburrini's arguments fail to provide sufficient ethical justification for the acceptance of doping in competitive sport. More specifically, they rely on assumptions that are not adequately justified and ultimately lead to problematic conclusions regarding the nature, purpose and internal values of sport.

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1. Introduction

Doping has long constituted one of the most significant ethical issues in contemporary sport. The use of performance-enhancing substances and methods concerns not only sports medicine and bioethics but also the philosophy of sport, as it raises fundamental questions regarding justice, equality of opportunity, athletes' autonomy, and the very meaning of sporting activity. The majority of philosophical approaches regard doping as a practice that violates the spirit of sport and undermines fair competition. At the same time, however, a substantial body of literature has emerged challenging anti-doping policy and arguing that certain performance-enhancing technologies should be permitted.

Among the leading proponents of this perspective is Claudio Tamburrini. In his articles *Hypoxic Air Machines. Commentary* (2005) and *Are Doping Sanctions Justified? A Moral Relativistic View* (2006), Tamburrini develops an argument in favour of the acceptance of doping based on the concepts of genetic luck, equality of opportunity, and athletes' autonomy. These two articles are closely connected, as the latter extends the line of reasoning developed in the former and seeks to challenge the philosophical foundations of anti-doping sanctions.

The purpose of the present article is to present and critically discuss these two works. First, Tamburrini's arguments are systematically presented. Subsequently, Tamburrini's philosophical assumptions are critically examined through the theoretical framework proposed by Sigmund Loland (2002), together with the relevant literature in the philosophy of sport.

2. Theoretical Framework

The philosophical investigation of doping presupposes an understanding of the concept of technology in sport and the manner in which performance-enhancing technologies may be ethically evaluated. Doping should not be regarded as an isolated biomedical phenomenon but rather as part of a broader spectrum of technologies employed to enhance human performance. For Sigmund Loland (2002), technologies of athletic preparation form part of a broader theory of technology in sport. According to Ellul (1964), technology may be understood as the systematic application of scientific knowledge, techniques, tools, and methods for the achievement of specific practical objectives and the modification or enhancement of human capabilities. Within the sporting context, technology encompasses not only equipment and training methods but also biomedical interventions designed to improve athletic performance. Loland's argument will be presented below.

Doping is defined as the commission of one or more anti-doping rule violations, including the use or attempted use of prohibited substances or methods, the presence of

prohibited substances in an athlete's sample, evasion of sample collection, tampering with doping control procedures, possession, trafficking, or administration of prohibited substances or methods (World Anti-Doping Agency [WADA], 2021). Consequently, doping constitutes a complex system of technological, scientific, and organisational practices that extends [well] beyond the narrow concept of pharmacological intervention. Loland (2002) provides an appropriate [theoretical] framework for evaluating such technologies. He distinguishes three ideal-typical approaches to athletic preparation, each of which reflects a different understanding of the relationship between technology and sport.

The first is the non-theory of athletic preparation. According to this perspective, any means capable of improving athletic performance is considered acceptable, regardless of its nature or ethical implications. No meaningful distinction is drawn between training, technological equipment, genetic technology, or doping. The exclusive objective is the achievement of maximum possible performance and the external goods associated with victory.

The second is the thin theory of athletic preparation. This approach acknowledges that sport is governed by certain values but considers equality of opportunity to be its central [normative] principle. Progress, the transcendence of natural limitations, and equal access to performance-enhancing technologies constitute its fundamental principles. Provided that all athletes have equal access to such technologies, their use may be regarded as compatible with [fairness and] justice [in sport].

The third is the thick theory of athletic preparation. According to this view, sport is understood as a social practice characterised by its own internal values, rules, and goods. Athletic performance is evaluated not solely in terms of the outcome achieved but also in relation to the manner in which that outcome is attained. Sport is [intrinsically] connected with human development, the cultivation of [moral] virtues, and respect for the [constitutive] rules that define the spirit of sport. From this perspective, technology is assessed not merely as an instrument for improving performance but also according to its compatibility with the fundamental values [and purposes] of sporting practice.

Loland's ideas are of particular importance to the present study because they allow Claudio Tamburrini's arguments [concerning performance enhancement and the ethical legitimacy of doping] to be evaluated.

3. The Analogy Between Hypoxic Air Machines and Erythropoietin

In his article *Hypoxic Air Machines. Commentary* (Tamburrini, 2005), Claudio Tamburrini examines the use of hypoxic air machines in sport and questions whether they differ in any morally significant way from prohibited methods of doping. The starting point of his argument is that the distinction between permissible and prohibited performance-enhancing technologies is not always grounded in consistent ethical or scientific criteria. Rather, he maintains that many of the distinctions adopted by sporting authorities are arbitrary and lack adequate justification.

Hypoxic air machines are training technologies that simulate high-altitude conditions by reducing the concentration of oxygen in the air. This physiological stimulus promotes the production of red blood cells, thereby improving oxygen transport to the muscles and enhancing aerobic performance. These devices are not included on the World Anti-Doping Agency's list of prohibited methods and are widely used by elite athletes as legitimate training aids.

According to Tamburrini (2005), the acceptance of hypoxic air machines creates an important philosophical problem. If these devices produce biological adaptations similar to those achieved through erythropoietin (EPO) administration or other forms of blood doping, why should one technology be regarded as ethically acceptable while the other is prohibited? Both practices pursue the same objective—namely, the enhancement of athletic performance through increased oxygen transport. Consequently, Tamburrini argues that the different moral evaluation assigned to these methods requires a far stronger philosophical justification than is typically provided.

Tamburrini (2005) connects this discussion to the concept of genetic luck. Athletic performance, he argues, is influenced to a considerable extent by characteristics for which athletes bear no responsibility, such as their genetic endowment and physiological constitution. If these natural differences are accepted as part of athletic competition, he considers it inconsistent to prohibit technologies capable of reducing the inequalities created by genetic luck.

To reinforce this position, Tamburrini (2005) refers to the well-known case of the Finnish cross-country skier Eero Mäntyranta, who possessed a rare genetic mutation resulting in increased production of red blood cells and unusually high haemoglobin levels. This inherited biological advantage significantly enhanced his endurance capacity **and** contributed to his remarkable athletic success. Tamburrini (2005) asks why an advantage attributable entirely to genetic luck is regarded as entirely legitimate, whereas a technology capable of producing a comparable outcome for other athletes who are less genetically gifted is considered unfair or contrary to the spirit of sport.

Based on this example, Tamburrini (2005) concludes that performance-enhancing technologies may serve as means of balancing natural inequalities. If sport already accepts substantial differences arising from genetic luck, then there appears to be no sufficient moral reason to exclude technologies that reduce those inequalities and enable less naturally gifted athletes to compete under conditions that are at least in principle more equitable.

A further argument of Tamburrini's (2005) concerns athlete autonomy. He maintains that athletes should have the right to choose freely which performance-enhancing technologies they wish to employ, provided that these technologies do not cause serious harm to their health. According to his view, continuing advances in biomedical science make it increasingly plausible that technologies capable of significantly improving performance while presenting minimal health risks may eventually become available. This weakens the argument from the protection of athletes' health as a principal justification for the categorical prohibition of doping.

Overall, Tamburrini (2005) advances three principal claims. First, there is no substantial moral difference between hypoxic air machines and certain forms of blood doping. Second, performance-enhancing technologies can function as means of compensating for genetic inequality. Third, athletes' freedom of choice, together with scientific and technological progress, provides sufficient grounds for reconsidering the current prohibition of doping in competitive sport.

4. The Argument from Moral Relativism

In his article *Are Doping Sanctions Justified? A Moral Relativistic View*, Claudio Tamburrini (2006) shifts his focus from the [ethical] evaluation of specific performance-enhancing technologies to the philosophical justification of sanctions imposed for anti-doping rule violations. His central claim is that current anti-doping sanctions are not the inevitable consequence of universal moral principles but rather reflect cultural and historical conceptions of what is considered legitimate in sport. Consequently, their ethical legitimacy should not be regarded as self-evident.

Tamburrini (2006) adopts a moral relativist perspective, according to which evaluative judgements acquire meaning only within the cultural and social contexts in which they are formed. From this standpoint, anti-doping rules do not represent timeless or objective moral values but rather social conventions that may [legitimately] differ across societies and historical periods. Since these rules are the products of human decisions, they are also open to revision whenever the conditions or values of sport evolve.

Within this framework, Tamburrini (2006) argues that the prohibition of doping cannot be adequately justified by appealing to the principle of justice. Competitive sport already encompasses significant inequalities arising from genetic luck, financial means, access to better coaches, training facilities, sports science, and medical support. These inequalities are accepted without significant challenge as legitimate features of elite sport. By contrast, particular performance-enhancing technologies are prohibited even though they may reduce some of these disparities. According to Tamburrini (2006), therefore, equality is invoked selectively rather than consistently.

To clarify this point further, Tamburrini (2006) argues that the sanctions imposed by the World Anti-Doping Agency (WADA) are largely standardised and fail to take into account the diverse social, cultural, and economic circumstances under which athletes compete. For example, athletes from developing countries may face significantly greater disadvantages in terms of nutrition, access to training facilities, [sports medicine and scientific support] than European athletes do. Yet both groups are subject to identical sanctions for anti-doping rule violations. Tamburrini considers this unfair. From Tamburrini's (2006) perspective, such uniformity raises important questions concerning substantive justice and the moral legitimacy of anti-doping policy.

Emphasis is also placed on the principle of athlete autonomy. Tamburrini (2006) argues that elite athletes are competent and responsible adults who are capable of assessing the risks associated with high-performance sport. Just as they [voluntarily]

accept the risks associated with intensive training, injuries, and surgical interventions intended to restore athletic performance, they should likewise be free to decide whether to use performance-enhancing substances or methods, provided that such decisions are made consciously. From this perspective, anti-doping sanctions represent an unjustified restriction on personal freedom and athletes' ability to make decisions about their own bodies.

Tamburrini (2006) further contends that the absolute prohibition of doping may generate consequences contrary to those it seeks to prevent. By driving the use of prohibited substances underground, prohibition reduces medical supervision and may ultimately increase health risks for athletes. Conversely, a system of controlled use under medical supervision, he argues, could more effectively protect both athletes' health and transparency in sporting competition.

The common denominator of Tamburrini's two articles is the conviction that technological progress, athlete autonomy, and compensation for genetic luck are important factors that should be taken into account when shaping our understanding of doping. Taken together, these arguments challenge the traditional moral foundations of anti-doping policy and call for a fundamental reconsideration of the ethical principles upon which the prohibition of doping is based.

5. Critical Evaluation of the Arguments

Claudio Tamburrini's arguments constitute one of the most significant attempts to defend doping in contemporary sport. The two articles examined develop a coherent position in favour of the use of performance-enhancing technologies, based primarily on the concept of equality of opportunity, the redress of inequalities caused by genetic luck, and athletes' autonomy. Although these arguments are of considerable philosophical interest, they cannot be regarded as [sufficiently] convincing as a justification for doping in competitive sport.

A central element of Tamburrini's argument is the claim that hypoxic air machines and doping produce similar physiological effects and, therefore, that there is no substantial moral difference between them. This position, however, presents important weaknesses.

The fact that two different technologies may lead to similar physiological adaptations does not [necessarily] imply that they are morally equivalent. The ethical evaluation of a technology does not depend exclusively on the outcome it produces, but also on the manner in which that outcome is achieved, its compatibility with the rules governing sport, and the extent to which it respects the values governing sporting practice.

Hypoxic air machines simulate conditions that may naturally occur during altitude training. By contrast, many forms of doping involve the introduction of exogenous substances or the use of interventions that directly alter the body's physiology, bypassing the limitations imposed by natural adaptation through training.

Consequently, similarity with respect to the final [physiological] outcome is not sufficient to establish the moral equivalence of the two practices.

Furthermore, another objection that may be raised concerns the health risks associated with erythropoietin. Since erythropoietin may cause [significant] adverse effects on athletes' health, the principle of fairness cannot [reasonably] be given priority over the protection of health. This objection is largely grounded in utilitarianism, according to which the overall benefit resulting from an action must outweigh the total harm that it produces.

Regarding Tamburrini's second article, in our view his position should not be examined solely from a factual perspective—that is, whether doping actually functions as a “simple” and “harmless” means that allows athletes to continue their effort. It should also be examined as a thought experiment. More specifically, one may ask whether, if a genuinely “simple” and “harmless” form of doping were to become available in the future, producing no adverse effects while allowing athletes to continue their effort, such a technology ought to be accepted.

Before considering this hypothetical scenario, however, it is first necessary to examine whether doping actually functions as such a harmless means. One could argue that research suggests the opposite (e.g. Bird et al., 2016; Vorona & Nieschlag, 2018). We may therefore proceed to the thought experiment. Loland (2002) would answer this question in the negative. He would argue that such a technology would not be under the athlete's [direct] control [in the same way as athletic effort] and would therefore violate the spirit of sport.

Tamburrini's second argument is borrowed from Morgan (2006, as cited in Tamburrini, 2006) and concerns the sanctions imposed by the World Anti-Doping Agency (WADA), which are standardised and applied uniformly to all athletes without taking into account, for example, the different social and cultural backgrounds from which they come. In my view, this argument put forward by Tamburrini raises an excellent question that would prompt every reader to think twice. I could not agree more with Tamburrini's (2006) statement that “*sanctions for violations of the doping ban should be determined in relation to the particular context within which the offender has been brought up as an athlete and to the specific sporting and cultural pressures exerted on him or her by society and the athlete's sporting community*” (p. 199). Nevertheless, Tamburrini's argument may [ultimately] lead to two fundamentally opposing positions. On the one hand, differentiating sanctions may justify imposing a more severe penalty whenever the circumstances warrant such an outcome. On the other hand, the same principle of differentiation may support the mitigation or even the abolition of the sanction. This issue deserves further reflection.

In *Les Misérables*, Victor Hugo raises the question of whether Jean Valjean's act of taking a loaf of bread without paying because he was hungry should truly be regarded as theft. In this case, adjusting the penalty to the circumstances operates in favour of the offender, suggesting that the penalty should be mitigated. Conversely, one may intuitively argue that when an individual enjoys favourable social and economic circumstances, the commission of the same offence becomes [morally] more

reprehensible, and consequently the penalty ought to be the most severe possible. This principle is also reflected in systems of criminal justice, where there is no single fixed punishment for each offence, but rather a range and different types of sanctions that allow courts to take the specific circumstances of each case into account. To the best of my understanding, however, Tamburrini (2006) does not make sufficiently clear whether his moral relativism concerns the sanction itself or the very existence of the anti-doping offence.

6. Additional Counterarguments

The present study sought to analyse and critically discuss two of Claudio Tamburrini's most important articles concerning the legitimization of doping in sport. The analysis showed that the author develops a coherent philosophical argument in favour of revising contemporary anti-doping policy, based primarily on the concepts of genetic luck, equality of opportunity, athlete autonomy, and technological progress. Despite the coherence of his argumentation, the preceding critical analysis shows that several of his basic assumptions are insufficient to provide an ethical justification for the acceptance of doping in competitive sport.

Perhaps the most important conclusion emerging from the present analysis is that the disagreement surrounding doping does not concern exclusively the effects of prohibited substances or the effectiveness of anti-doping policy. Rather, it reflects a deeper philosophical disagreement about the nature of sport [itself] and the values that it ought to serve. At this point, Sigmund Loland's (2002) theoretical framework proves particularly useful, as it allows Tamburrini's positions to be interpreted through the three ideal-typical approaches to technologies of athletic preparation.

Tamburrini's argument appears to fall primarily within Loland's (2002) thin theory of athletic preparation. According to this approach, technology may [legitimately] be employed to mitigate natural inequalities, provided that all athletes enjoy equal access to it. Within this logic, genetic luck is regarded as a form of injustice that may be balanced through technological intervention, while the use of performance-enhancing technologies is considered compatible with the pursuit of equality of opportunity.

The present study argues, however, that this approach is insufficient to interpret the nature of sport adequately. Loland's (2002) thick theory of athletic preparation offers a more comprehensive framework for evaluation, since it understands sport not merely as a process aimed at achieving the highest possible level of performance, but also as a social practice characterised by its own internal values. These include personal effort, respect for the rules, the integrity of competition, and the cultivation of virtue. From this perspective, the [ethical] evaluation of a technology depends not only on its capacity to enhance performance or reduce natural inequalities, but also on the extent to which it preserves the character and meaning of sporting practice.

Tamburrini's appeal to counteracting genetic luck is [therefore] insufficient to justify the acceptance of doping. Natural differences among athletes constitute an

inherent feature of every form of athletic competition and do not imply that every technology that seeks to eliminate such differences is automatically morally acceptable.

Overall, the present study concludes that the philosophical significance of Tamburrini's articles lies not so much in their providing an adequate justification for the legitimization of doping, but rather in their ability to raise important questions concerning technology, equality, autonomy, and justice in sport. The systematic examination of these questions through Loland's (2002) theoretical framework demonstrates that the [ethical] evaluation of performance-enhancing technologies cannot be confined solely to their effectiveness or to the principle of equality of opportunity. On the contrary, it requires a broader conception of sport as a social practice, in which human effort, the integrity of competition, and respect for the internal goods of sport constitute indispensable conditions for preserving its meaning.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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