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# An Approach to Doping of the Future – Doping and Anti-Doping in Elite Sports

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## ABSTRACT

*The paper opens with a sociological perspective on the doping phenomenon found in elite sports. Elite sports and its inherent logic of comparisons are consequently followed by permanent aspired enhancement that may lead to doping. Constitutive of these scientific findings, an overview of an anti-doping best practice model for young athletes is presented. Finally, the genesis of doping and the presented best practice model are correlated with each other.*

*The Journal of Health, Environment, & Education, 2016; 8, 22–26. doi: 10.18455/08004*

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## Introduction

Gene doping seems to be a promise and gives the impression of a push-the-button technology for the future. Primarily an intent to identify innovative strategies to treat human diseases, the development of substances and procedures are target-oriented and supposed to manipulate gene activity in a favorable manner. In the area of doping technology, gene doping thus appears as a promising design of ultimate illegal enhancement. The potentials for sports seem(ed) to be obvious the World Anti-Doping Agency (WADA) listed gene doping already 10 years ago as a prohibited method in the World Anti-Doping Code. Like conventional doping, gene doping is a risky technology, which regularly hits the boundaries of simplification (Lames, 2002). Simplification here refers to the simplification of two complex subjects, on one hand the complexity of the human body, on the other hand the complexity of general success in sports (Körner, 2014a).

More than perhaps in any other part of modern society, the idea of “pushing the boundaries” is as obvious and concrete as in modern elite sports as well as in grassroots sports: In competitive sports the boundaries of today regularly turn into the mediocrity of tomorrow. When performances are measured, comparisons are the results. Human enhancement is a logical consequence. Elite sports set this logic of comparisons and enhancement in series (Körner, 2014a). Besides, the idea of fair-play has to be contrasted with the comparative „citius, altius, fortius“ (Körner, 2014b) it is a type of irony that there is a separation of sportsmanship finding

itself between doping-promoting expectations for top performances and a doping-prohibiting fairness-moral, a double bind which leads to a decoupling of speech, decision and action and a state of organized hypocrisy (Brunsson, 1989).

Of course there is a fascination by modern sport-ing heroes regardless of the question, how one can cope with the multiple expectations those different images represent. As a matter of fact, on the hand it is about consuming and on the other hand about deviance, if one thinks of doping offenses. Society thus has to face the question: What will be the future essence of sports?

## Push-the-Button Technology

We do not know how modern sports will look like in the future – based on its current dimensions, trends are only vaguely predictable – but apparently gene doping gives the impression of a push-the-button technology which, according to “the law of increasing penetrance of residuals” (Marquard, 1986, p. 15), proposes to answer the last questions of human performance enhancement within the microcosm of genes. At the latest by referring to the genetically doped athlete, it is not only about the problem of court-proof reviewability or about questions of fairness, health and naturalness – it is about the big picture, the whole human being, and advances as far as the delicate zone of central questions about human species. Gene doping challenges, with a radicality that has been unknown so far, the entire occidental semantic of the human being, its nature and dignity.

For the de-differentiation of the naturally-grown and the man-made, which is celebrated in liberal circles and strictly rejected by critics, modern elite sports in the time of gene technology offer a trend-setting experimental field.

In the sense of a reflexive and modest claim of an “order with foresight” (Luhmann, 2003, p. 57) the contribution argues that doping in elite sports is, and will be, highly functional and as such structurally expectable (Körner, 2014a, 2013; Körner & Schardien, 2012). Especially gene doping provokes new discussions about ban, control and their rationale in sports. The borderline between doped and not-doped, by which today’s elite sports are naturally supercoded, is a boundary of meaning: the meaning of natural and artificial boundaries (van Hilvoorde, Vos, & de Wert, 2007).

### **Technology Assessment of Doping**

Enhancement is the biggest attempt and ambition in elite sports, therefore seems technology an efficiency assistance to enhance sports performance (Körner, 2014a). However, some technologies and methods are prohibited and sanctioned, as doping. Like in other fields of behavioral regulation, the ban of doping produces conformity and deviance. Social observers, and likewise we as spectators, do not only consume sports but deviance as well by scandalizing and moral sizing the convicted athlete – the so-called doping sinner. In contrast to comparatively invincible social structures, athletes of flesh, mind and blood can be visited, controlled, blamed, sanctioned and condemned. In modern society, scientific and technological progresses lead to a type of decision making which Calabresi & Bobbitt (1978) denoted as tragic choices: The tragedy is situated in the fact that decision for and against technology can be considered as a risk (Körner, 2014a).

In theoretical distance to moral judgement and public scandalization, this contribution questions the doping of the next society following the scientific paradigm of technology assessment (TA).

In response to uncertainty and insecurity as typical values of modern societies, TA comes into play (Grunwald, 2010). By the means of prospective analysis, TA aims to deliver a theoretically and empirically viable basis for orientation, management and control. However, the knowledge generated by TA is always the result of a current operation, importing future as present future. The future presence remains unknown and is “nothing outside the present” (Grunwald, 2010, p. 145) – right down to the last decimal place of risk calculations. Like other social systems, elite sports rejuvenate by the recursion of its operations, guided by rather time resistant structures. In other words: in the system of

elite sports happens what happens – on a horizon of structure which can be estimated (Körner, 2014a).

### **Polycontextuality and Internet**

As mentioned before, gene doping could be understood as innovative solution of immanent elite sports enhancement expectations, or to say it once again with Niklas Luhmann as functional illegality (1976). Doping (and thus equally gene doping) is presently negotiated as the crisis of modern sports – by developing a dynamic of communication that is typical for crisis (Körner, 2014b). Society is hooked on the needle of communication and doping is its dope. In this respect doping is not just a remarkable solution within elite sports, but for society as well. It can be placed within the context of poly-contextual social reproduction, meaning that science, pedagogy, law, media and so on thereby create their own future: science just doesn’t stop to produce scientific sentences about doping, biochemistry just doesn’t stop to analyze blood and urine samples, ethics just don’t stop to choose the good ethics among all ethics and to measure sports up to these ethics, and also the media just don’t stop their work in the face of a detected doping case – just as pedagogy doesn’t stop its full of good faith work on the yet to become responsible athletes (Körner, 2014a).

The obvious fact is that doping today no longer needs instructions through professionals like doctors or pharmacists. The World Wide Web offers optimal conditions for social interaction and the accessibility of information: as a functional alternative to face-to-face, using as an informational and/or interactional tool (Papacharissi & Rubin, 2000). The alleged anonymous seclusion in social networks enabled the ability for scientific, political and public control of an extent deprived reception, discussion, assessment and appropriation of alleged or actual doping practices: traditional symmetry rolls between laypeople and experts are resolving. Doping is taking place on the backstage of sports, legitimated by a well-rehearsed underground moral. The internet opens up a structurally advantageous room for that kind of interaction: As the assumed anonymous seclusion of social networks allows for a self-directed assimilation, discussion and acquisition of real or putative performance enhancing methods largely beyond scientific, political and public control. Traditional role asymmetries between layperson and experts are getting blurred (Körner, 2014a).

The produced knowledge about the effects of doping specifies the knowledge about its use within the doping context. This is a risky constellation for the management of doping and anti-doping in elite sports of the future society.

Based on the comprehensive scientific findings concerning the genesis of doping and its social premises, the development of theory based prevention strategies became one of the principal objectives. As means of realization, the implementation of a best practice model for teachers and sports coaches was developed in order to sensitize and empower students and young athletes when confronted with the topic of doping and especially gene doping.

### **An Anti-Doping Best Practice Model**

#### **Action Program Gene Technology In Competitive Sport (AGICS) – improvement of young athletes' competence in decision making**

One of our institute's main topics in research is to analyze the genesis of doping and its social constellation in order to develop theory based prevention strategies. The aim of the prevention strategies is to strengthen the decision making of the target group. One of our current research projects is named "*Action Program Gene Technology in Competitive Sport (AGICS) – improvement of young athletes' competence in decision making.*" AGICS and its predecessor AGIL ("Aktionsprogramm Gentechnologie im Leistungssport") are a 3-stage project funded by the German Federal Ministry for Education and Research (2012–2013; 2015–2016). The first stage meant to analyze the scientific state of the art of bio-medical, juridical, ethical and social scientific perspectives on the use and potential of gene-technological enhancement strategies in elite sports. The second stage included the scientific knowledge transfer, elaborated on the first stage, in order to empower students, teachers, athletes, coaches and officials. Therefore theory based workshops were held at elite schools of sport (including the publication of an e-book with the workshop curriculum for schools). Additionally, two symposia with scientific experts as invited speakers were held in Cologne (2013/2015), the most recent of which was funded by the Fritz Thyssen Foundation. The third and final step is the English translation of the originally German contents and the subsequent internationalization of the project. A website with German English content is available online.

A team of jurists, natural scientists and pedagogues (ethics) developed school teaching material in workshops and applied them in teaching sessions, at special schools for young athletes, which are financially supported by the "The German Olympic Sports Confederation" (Körner, Steinmann, & Symanzik, 2015).

### **The School Teaching – Based Upon Three Pillars**

1. **Natural Sciences:** Status quo concerning research of gene doping and testing methods in sports. Gene therapy is in a rapid progress. Those newly developed methods tend to be abused for enhancement and doping. Consequently gene doping is listed in the Anti-Doping Code by the World Anti Doping Agency (WADA) since 2003. Natural scientists must develop new documented proof for the international doping control system.
2. **Ethics:** Argumentation pro and contra gene doping. The target group is instructed to reflect systematically on norms, values, rules and the codes of society and high performance sports in detail. What should athletes, respectively coaches, on their own do in order to enhance performance? What shouldn't they do? Which parameters can be named to make a difference between a good and a bad choice? Are participants of the sport system allowed to do everything that is technically possible and should it be done? An argument in terms of protection of healthy life (Vamos & Rootman, 2013) as well as the protection of the idea of sports along with many other relevant subjects is encouraged.
3. **Law:** Juridical consequences for athletes, trainers and further involved actors. The consumption of substances and the use of methods for an enhanced performance that are listed by WADA are forbidden by law. The consequences for delinquent athletes are manifold. They might impact the athlete's career, civil life, or both.

Considering 1), 2) and 3) the workshop participants are lead to get into a well-grounded discussion. At the end of the discourse, the students are supposed to have had an inside view of the sports system on one hand, and arguments against doping based upon ethical, juridical and medical issues on the other hand, which empowers them to form a factual opinion. At the end of the school teaching day, it is thus warranted to support a pro gene doping position – given that the arguments are plausible and convincing – or a contra doping position – given that the arguments are plausible and convincing as well

### **Results**

When put into practice with German students, we finally asked young athletes (n = 381) to judge: Would you, as an athlete, use gene doping?

- Eighty-seven percent (87%) of all participants expressed a negative attitude;
- only 1% a positive one;
- at least 8% did not come to a clear judgement
- and 4% did not answer at all.

**Table 1.** Results of the survey, after school teaching (2013)

Negative	Positive	Undecided	Missing
87%	1%	8%	4%

Among the German students we measured, included to the contents of the school teaching, three main topics in the thread of argument pro and contra gene doping while multiple answers were possible (n = 13 schools):

- Ethics,
  - Medicine and
  - Law.
- Forty-eight percent (48%) of all sampled students referred to the field of ethics in their argument against gene doping: mainly they addressed fairness and the principle of equal opportunities in their arguments, but also the debate of *nativeness contra artificiality and the origin sense of sports*.
  - Thirty-five percent (35%) referred to medicine (possible/ anticipated side effects of the consumption): mainly the anticipated *side effects*, that may affect health were named. Furthermore, gene doping was referred as being part of *gene therapy*.
  - Nine percent (9%) referred to the doping control system by the WADA. Fourteen percent (14%) named the national *legal framework* as well as the so called “Sports Law” (*Court of Arbitration for Sport, CAS*).

**Table 2.** Results of the survey, after school teaching (2013)

Ethics	Medicine	Law
48%	35%	23%

The internet platform in the German language online where one can find detailed information is: <http://www.gentechnologie-im-sport.de>, an English

translation is available on <http://www.gene-doping.com>. An E-Book with the curriculum is published in German (2016, 2<sup>nd</sup> ed., Gendoping – Doping der Zukunft?) and in English (2016, Gene Doping – the Future of Doping?).

## Conclusion

Gene doping seems to be a push-the-button technology solution fulfilling immanent elite sports enhancement expectations that pushes the boundaries to a next level of enhancement - as well as the limits of societal respect. Related to this issue is the future essence of elite sports and how will athletes decide and judge the enhancement through gene doping. Therefore it seems of essence to empower and sensitize young athletes for the future by means of enlightenment and prevention. By referring the evaluation results of AGICS to the introductive sociological perspective on the doping phenomenon, it becomes clear why the workshop participants would argue differently, the line of argument is equivalent to the complexity of doping.

## References

- Brunsson, N. (1989). *The Organization of Hypocrisy: Talk, Decisions, and Actions in Organizations*. Chichester: John Wiley & Sons Inc.
- Calabresi, G. & Bobbitt, N. (1978) *Tragic Choices*. New York: W. W. Norton & Company.
- Grunwald, A. (2010). *Technikfolgenabschätzung – eine Einführung [Technology Assessment – an Introduction]* (2nd edition). Berlin: edition Sigma.
- Körner, S., Steinmann, A. & Symanzik, T. (2015). Status quo – Safeguarding youth in German sport. *International Journal of Physical Education*, 4, 22–33.
- Körner, S. (2014a). Technology Assessment of Elite Sports. A Systems Theoretical Approach to Doping of the Next Society. *Athens Journal of Sports*, 1(3), 163–172.
- Körner, S. (2014b). Das Doping der nächsten Gesellschaft. Zur Technologiefolgenabschätzung des Spitzensports [The Doping of the Next Society. On Technology Assessment]. In A. Dresen, L. Form & R. Brand (Ed.), *Handbuch Dopingforschung [Doping Research Guide]* (pp. 331–347). Schorndorf: Hofmann.
- Körner, S. (2013). Gedopt / Nicht-gedopt. Doping als Eigenwert des modernen Spitzensports [Doped/Not Doped. Doping as Intrinsic Value of

- Modern Competitive Sports]. In E. Meinberg & S. Körner (Ed.), *Doping – kulturwissenschaftlich betrachtet [Doping – a Cultural Study]* (pp. 63–78) (Reihe Brennpunkte der Sportwissenschaft). St. Augustin: Academia.
- Körner, S. & Schardien, S. (Ed.). (2012). *Höher – schneller – weiter. Gentechnologisches Enhancement im Spitzensport. Ethische, rechtliche und soziale Perspektivierungen. [Higher – Faster – Further. Gene Technological Enhancement in Competitive Sports. Ethical, Juridical and Societal Perspectives]* Paderborn: Mentis.
- Lames, M. (2002). Leistungsentwicklung in der Leichtathletik – ist Doping als leistungsfördernder Effekt identifizierbar? [Performance Development in Athletics – Is Doping Identifiable as Performance Enhancing Effect] *dvs-Informationen* 17/4, 15–22.
- Luhmann, N. (2003). *Soziologie des Risikos. [Sociology of Risk]* Berlin, New York: VS.
- Luhmann, N. (1976). *Funktionen und Folgen formaler Organisationen [Functions and Implications of Formal Organizations]* (4th edition). Berlin: Duncker und Humblot.
- Marquard, O. (1986). *Apologie des Zufälligen [In Defense of the Accidental]*. Stuttgart: Reclam.
- Papacharissi, Z. & Rubin, A.M. (2000). Predictors of Internet Use. *Journal of Broadcasting & Electronic Media*, 44(2), 175–196.
- Vamos, S. & Rootman, I. (2013). Health Literacy as a Lens for Understanding Non-communicable Diseases and Health Promotion. In D. McQueen (Ed.), *Global Handbook on Noncommunicable Diseases and Health Promotion* (pp. 169–187). New York, Heidelberg, Dordrecht, London: Springer.
- van Hilvoorde, I., Vos, R. & de Wert, G. (2007). “Flopping, Klappin and Gene Doping: Dichotomies between ‘Natural’ and ‘Artificial’ in Elite Sport”. *Social Studies of Science*, 37, 173–200.

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