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**On fatal chemistry and sexed human boundaries:
Negotiating steroid risks in high-performance sport in
Finland (1950-1976)**

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ABSTRACT

In this paper, I politicize the understanding of “risky steroids” in relation to Finnish high-performance sport in the period between 1950 and the mid-1970s. I combine a material feminist acknowledgement of the action of steroids, activities surrounding steroid use, and the questioning of fixed ontology with an understanding of politics as a politicization of that ontology. I suggest that complex genderings were involved in the process by which, in the mid-1970s, anabolic steroids were deemed to be extremely risky to the health of athletes, while simultaneously, women’s use of other steroids in the form of contraceptives was widely approved. Utilizing Finnish archive and published material, such as medical and sports journals and newspapers, I argue that the problems with anabolic steroids were centered, not only on their health risks or questionable performance enhancement properties, but also on their sex-transforming and other physical effects that blurred the very boundaries of the term “human.” Therefore, accounts of steroid risks were not simply scientific, objective accounts of their health risks. Rather, the risks associated with anabolic steroid use amounted to a “political object” that facilitated a “coming to terms” with the problem of transforming bodies themselves.

KEYWORDS

anabolic steroids; contraceptives; gender; hormones; sex, sport; steroids

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INTRODUCTION

A significant proportion of the literature that deals with the risks of steroid use, both in the history of sport and in the history of hormone replacement therapy, whether for treatment of the menopause or contraception, risks are assumed to concern the health of women or men. For example, in sports studies, the health risks associated with anabolic steroids, as well as the training systems that have promoted their use, have been fiercely criticized (e.g. Franke & Berendonk, 1997; Hoberman, 2001). The distinguished American sports scholar John Hoberman (2001, p. 2, pp. v-vi) attributed the death of a German heptathlete in 1987 to what he calls "fatal chemistry" and "promiscuous polypharmacy," including the use of steroids. Hoberman saw the development of the World Anti-Doping Agency in 2000 as a sign that the authorities were taking these medical risks seriously. However, this view of the development of the anti-doping regime has been contested and problematized from many perspectives (e.g. Beamish & Ritchie, 2006; Dixon, 2008; Henne, 2014). Crucially, the question of steroids in sport—the focus of this paper—has almost invariably been connected to the study of "doping."

In this paper I am inspired by feminist studies that problematize how hormone treatment risks have been understood in gendered ways (e.g. Marks, 2010; Oudshoorn, 2003). Further, I draw inspiration from feminist sports studies that have focused on gendered understandings of bodies in sport, for example how, during the twentieth century, women's sport in particular has been seen as problematic because training may masculinize women and threaten their perceived heterosexuality (e.g. Lenskyj, 1986). Feminist sports scholars have also suggested that bodily transformations that accompany the use of (anabolic) steroids, particularly the masculinization of women's bodies, have been an important motivation for anti-doping campaigning and the ways in which doping is presented in the public arena (e.g. Lock, 2003; Magdalinski, 2009).

In this study, I add to these considerations by connecting insights from feminist studies on the history of the (contraceptive) pill and sports studies on anabolic steroids, in order to make sense of Finnish public and medical discussions about their use in high-performance sport. As research material for this paper, I use archives and published material, concentrating on Finnish sports media from the beginning of the 1950s up until the mid-1970s. During this period, discussion about steroid use in sport also started to appear internationally (Beamish & Ritchie, 2006, p. 38), and by the mid-1970s steroids became prohibited as performance-enhancing substances. This period is interesting because it involves a profound change in how steroids were understood in the context of sport—from vitamin-like, useful phenomena to risky substances that must be prohibited.

This history of steroids in Finland has not been previously studied from a feminist perspective, even though literature on doping does exist. Neither have I seen international studies that discuss the pill in relation to performance enhancement in sport. This is most likely because steroids and other hormonal substances in sport have been approached through the discussion of those substances that became defined as doping (e.g. Beamish & Ritchie, 2006; Henne, 2014; Hoberman, 2001, 2005; Hunt, 2011; Lock, 2003; Magdalinski, 2009; Wiederkehr, 2010). Adding to this body of research, discrepancies in public conceptualizations of anabolic steroids and the pill, and in how sports physicians, in particular discussed them and their potential risks, pushed me to find a way to combine insights from feminist histories of the pill and feminist sports studies on the body. Drawing from previous feminist scholarship that problematizes the gendered assessments of risks of hormone technologies (Oudshoorn, 2003), I suggest that a politicizing of the understanding of "risk" in relation to steroids in sport is needed. In other words, rather than understanding steroid risks merely as calculated estimates concerning those chemical effects of pharmaceuticals in bodies that result in adverse health effects, I explore steroid risks from a material feminist perspective, appropriating philosopher-physicist Karen Barad's (2007) notion of *phenomenon*, and proposing that "risky steroids" can be seen as a "gendered phenomenon."

While Barad is known for the argument that feminists should better account for the materialization of matter, such as the physiological aspects of bodies (Barad 2007; for debates concerning Barad, see Irni, 2013), I turn this question around and appropriate her concept for more social scientific purposes. I suggest instead that risky steroids should not be understood merely as a question of material substances that may have adverse, material effects on bodies, but as a *material-discursive* phenomenon, in which a variety of materialities and relationalities come together to enable a certain understanding of risk (Barad, 2007; see also Irni, 2017). Despite being influenced by material feminisms and the common habit of understanding poststructuralisms and material feminisms as mutually exclusive (for a problematization of such readings, see Irni, 2013), this project is not intended as a sharp break from Foucauldian, feminist science studies or poststructuralist feminist readings. Rather, it is both influenced and inspired by them (e.g. Fausto-Sterling, 2000; Oudshoorn, 1994, 2003; Roberts, 2007; Satzinger, 2012; Sengoopta, 2006). Reading the material feminist notion of phenomena in relation to feminist problematizations of the gendered understandings of risk and the politicization of ontology (Oksala, 2012; Pulkkinen, 2011), I argue that steroid risks, fully emerging as a public concern in Finland in the first half of the 1970s, were not, strictly, a medical issue, but comprised a gendered "political object."

In order to analyze how steroids and their effects on bodies became a public concern, published material is most relevant. For this analysis, I have systematically studied *Suomen Urheilulehti* (SU, translates as *Finnish Sports Magazine*) for the chosen period. SU was aimed at a middle class, conservative audience (the left-wing TUL magazine that I have also studied for the period concentrated on class struggle, and I did not find articles discussing steroids). The magazine includes a wide range of articles and columns, consisting of reports from

sports events and articles about developments in coaching and sports medicine, including writings by medical professionals and translated pieces from international news agencies such as *Agence France-Presse* (AFP, a French news agency). In this sense, this material not only describes Finnish discussions, but also more widely discussed themes within the international sports scene.

Another major source of sports publicity material for this paper includes the archives of professor of physiology and sports physician Kaarlo Hartiala (1919–2009) from the Archives of Urho Kekkonen. Hartiala was one of the major figures who promoted the development of sports medicine in Finland and later became one of the fiercest critics of anabolic steroids. Hartiala's archive is mainly comprised of newspaper clips from 1970 onwards, focusing on his public discussion of anabolic steroids and other medical sports issues. My analysis has also benefited from reading articles and interviews of Finnish sports physicians in Finnish medical journals (including *Duodecim* and *Suomen Lääkärilehti*); the Finnish working-class sports journal *TUL*; and the Archives of the Finnish Olympic Committee from the Sports Archive of Finland. I also received several documents from the International Olympic Committee (IOC) archives in Lausanne, and conducted searches in the newspapers *Helsingin Sanomat* and *Ilta-Sanomat* at the Archives of Päivälehti.

I continue by first explaining the theoretical and methodological approach of this paper. Proceeding, I discuss the emergence of steroids as risky substances and how the question of sex was conceptualized in sport at the time. Subsequently, I assess responses to the bodily changes induced by steroids in the bodies of male athletes. Finally, I attend to the discrepancies in how anabolic steroids and the pill were viewed, in particular by medical professionals.¹

POLITICIZING RISKY STEROIDS

In sports studies, the analysis of *politics* related to international high-performance sport and steroids concentrates on the discussion of how Cold War relations affected Western attitudes towards Performance-Enhancing Technologies (PETs) and the development of their regulation (Beamish & Ritchie, 2006; Hoberman, 2005; Hunt, 2011; Wiederkehr, 2010). This paper is instead inspired by feminist notions of politics as “seeing the contingency of things” (Pulkkinen, 2011, p. 37) and the “politicisation of ontology” (Oksala, 2012, p. 291). Despite their differences, both are committed to combining an anti-foundationalist notion of ontology with the notion of politics, and therefore critical political analysis questions stable ontologies by seeing them as formed by practices. Even if both of these perspectives see agency as human practices and conceptualizations, I see the politicization of ontology as compatible with feminist science studies and material feminist thinking inspired by, among others, Barad. From this perspective, risky anabolic steroids could be seen as a phenomenon, indicating the idea that “objects” (in this case, risky steroids as a “political object”) are not pre-existing, fixed entities. Instead, they materialize within particular technoscientific, material-discursive practices that Barad, drawing from Donna Haraway and Michel Foucault, calls “apparatuses” (Barad, 2007, pp. 200–206; see also Irni, 2010, pp. 84–94). Here, the politicization of ontology is expanded to include accounts of the very

“material” effects of the substances themselves on bodies, not by questioning their materiality, but instead by showing that they are not merely material, but rather material-discursive.

A material feminist approach acknowledges that steroids are part of acting apparatuses. A lengthy discussion about agency—one that has caused debate between “poststructuralist” approaches on the one hand, and “new materialist” or “material feminist” approaches on the other (see e.g. Alaimo & Hekman, 2008; Kirby, 2011)—goes beyond the scope of this paper. Here I only note that I do not consider the acts of steroids as similar to conscious, deliberate human agency, but rather as enactments (Barad, 2007, p. 214) that are part of the “ongoing reconfiguring of the world” (Barad, 2007, p. 206). Instead of independent molecules, steroid actions are non-independent “parts” of apparatuses that include various non-human and human materialities, interpretations, and actions. The point is to acknowledge that the ways in which steroids work in bodies are not fully controllable by any of the human actors in question—neither athletes, coaches, sports authorities, nor physicians.

In the case of anabolic steroids, the amounts used differed from those recommended by physicians, and bodily responses were thus unpredictable—an example of “the world kicking back” (Barad, 2007, p. 215). The material feminist reading proposed in this paper is not merely intended to conduct a “suspicious reading” (see Felski, 2015) as a critique of science, but rather to focus on steroids and their capacity to transform bodies, examining how steroid effects in this sense were part of questioning boundaries, such as female/male and human/nonhuman. My point is not to question the riskiness of steroid products to health per se, but rather to suggest that the understanding of “risky steroids” gained by the mid-1970s comprised a complex and affect-laden phenomenon that stretched beyond bodily matters strictly related to athletes’ health, and that this phenomenon very much involved the question of (re-)drawing the boundaries of the “human.”

THE EMERGENCE OF STEROIDS AS RISKY SUBSTANCES

When anabolic steroids first appeared in the public sports scene at the beginning of the 1950s, they were understood as strengthening substances, much like vitamins and other nutrients. The use of hormones gained international attention after the 1952 Olympic Games in Helsinki (Beamish & Ritchie, 2006, p. 38). In Finland, in the early 1950s, even if some moral condemnation of stimulants and rumors about their use existed (“Kaupungilla puhutaan,” 1948), exceptional success in competition was explained via narratives of motivation and class difference rather than by technoscientific performance enhancement (“Mikä on,” 1950). Improved results were also explained by state investment in sport, especially in the Soviet Union—a narrative followed closely in Finland. In this sense, even totalitarian regimes gained some admiration in SU (e.g. Tähystäjä, 1949). The proposed ways of improving performance also included adequate nutrition and a sufficient amount of sleep, as well as “developing the mental power of our athletes” (Y.A.T., 1949, p. 7).²

In the beginning of the 1950s, hormones appeared to sports physicians as natural as vitamins. Both were seen as new and exciting substances, the use of which, however, required medical assistance. At that time, the potentially suspicious substances most concerning sports physicians were classed as “stimulants,” and hormones did not belong to that class of substance. For example, in an article published in SU, a sports physician strongly disapproved of the use of stimulants such as pervitin and ephedrine. These substances—constituents of asthma and cough medicines (ephedrine is still used for therapeutic purposes, while pervitin is metamphetamine, and no longer in use except illicitly)—were already established as dangerous “nerve toxins.” The physician’s reaction to hormones was, however, more positive:

“Vitamins and hormones, in case of real deficiency, are, in the medical sense, essential nutritional substances for the human body, just as insulin is essential for a diabetic. Thus, they cannot be considered stimulants” (“Urheilulääkäri vastaa,” 1951, p. 4).

Another similarly positive view of hormones is found in a discussion of the Danish Medical Association’s account of the winning Danish rowing team’s use of the hormone product Androstin, at the European Championships in Milan in the summer of 1950:

The use of Androstin, as well as vitamin preparations, depends on the general health, which is significantly influenced by the nourishment available. If there is a shortage of certain vitamins and minerals, these can be replaced without harmful or otherwise reprehensible consequences. (“Urheilulääkäri vastaa,” 1951, p. 4)

Steroids, in other words, were seen in an inherently positive light: as substances—like nutrients—that could enhance the vitality of bodies. The change in how steroids came to be seen in the subsequent twenty years was dramatic, as by the mid-1970s they had turned into risky and illicit “doping” substances.

Public discussion and concern about steroids in Finland increased towards the end of the 1960s. Even though the side effects of anabolic steroids, such as their negative effects on the liver, were mentioned in a Finnish medical journal in 1965 (Eisalo, 1965), in the sports publicity analyzed here, concern did not arise until the close of the decade. By 1970, anabolic steroids had become a threat, although it was not yet clear what the danger actually was. At this point, understanding of the specific enactments of steroids in sport had not yet stabilized, and thus they only posed a non-specific threat. For example, in an AFP article published in SU “irreversible reactions” and a “dangerous imbalance” of the body were mentioned (Huger, 1970, p. 4). However, a consensus had not yet emerged about what the specific risks were or whether anabolic steroids were even risky or not. Despite this non-specific threat of danger, the article concludes: “Whatever the nature of the danger, it still exists” (Huger, 1970, p. 4).

In Finnish sports publicity, the nature of the danger became specified and the sense of danger strengthened when Kaarlo Hartiala—a physiology professor and well-known sports enthusiast, developer, and proponent of Finnish sports medicine—became convinced that anabolic steroids were, in fact, dangerous. After the Second International Congress for Olympic Physicians, in 1974 in Warwick, in which he participated, Hartiala stated:

Because the dangers caused by synthetic hormones are significant, the International Federation of Olympic Physicians, along with the international medical committee of the IOC, has taken a very strong stand on hormones as well—their use must be stopped! (Koskinen, 1974, p. 21).

Later that year the newspaper *Turun Sanomat* published parts of Hartiala's talk at the national celebration of the Finnish National Sports Association, entitling the piece "—disorders,—damage,—cancer. Artificial hormones—a risk in sports." Hartiala worried about the "unnatural situation" in which:

our own hormones operate in hundredths of milligrams, and the daily dose for artificial preparations when treating long-term degenerative diseases is 10 mg, whereas their use among athletes has increased to 200 milligrams and even beyond ("—häiriöitä, —vaurioita," 1974, p. 7).

He also explained that he "raised this topic with such emphasis bearing in mind the yet unknown special risks that the use of such substances may cause to women, future bearers of children" ("—häiriöitä, —vaurioita," 1974, p. 7).

In 1976, according to Hartiala, "hormones have become a topical and severe problem" (Hartiala, 1976, p. 4). Their risks had been specified as the following, stated in his talk at an international seminar for coaches organized in Finland and repeated or reinterpreted in several newspapers the next day:

The side effects affect the liver, causing jaundice; moreover, water accumulation is caused, high blood pressure, decrease of sexual performance ability, and the forming of spermatozoon, rash, in women increase of hair growth, [and] menstruation disturbances (Hartiala, 1976, pp. 5–6).

Hartiala continues, citing disturbances in growth in young people and "even three liver cancers related to the use of anabolic steroids," as well as neurological changes, including "severe psychological disturbances" (Hartiala, 1976, p. 6).

By this time, anabolic steroids had been prohibited and classed as doping by the International Amateur Athletics Federation (IAAF, after 2001 known as the International Association of Athletics Federations) and the IOC. In Finnish sports publicity, even if all Finnish sports physicians were not convinced of the seriousness of the health risks of anabolic steroids (see e.g. Pekka Peltokallio's statements in Siitonen, 1977), in particular through Hartiala's warnings toward and after the mid-

1970s, this prohibition appears as, first and foremost, a medical necessity protecting athletes' health. However, not all of the adverse effects Hartiala mentions, nor those circulated in the press, were strictly related to health. Rather, some were related to the visual transformation of sex characteristics or other visual aspects of the users' bodies. The magazine *Suur-Seura* even told its readers in 1977 that a new human race had developed: "Among weightlifters, a whole new race of people has emerged, one that has crushed existing records—and that is today only very slightly reminiscent of ordinary people" (Siitonen, 1977, p. 9). I suggest that the phenomenon of risky steroids cannot be fully understood without, and is constituted by, concerns about the transformations of bodies and the contestation of the contours of what was understood as "human life." In the following sections, I will examine more closely these aspects of the emerging phenomenon of risky steroids.

ON THE "ODD CHANGING AND MIXING OF SEXES"

The notion of "sex hormones," used to refer to certain substances belonging to a chemical group named steroids, is contested, which is highlighted in the context of sport. Utilizing Anne Fausto-Sterling's (2000) formulations, it is useful to "break out of the sex hormone straightjacket," and see these hormones as only "one of a number of components" that affect the characteristics of bodies understood as sex characteristics (pp. 193–194). At the cellular level, these hormones have wide-ranging effects, because they "govern the processes of cell growth, cell differentiation, cell physiology, and programmed cell death" (Fausto-Sterling, 2000, p. 193). From this perspective, the notion of "sex hormones" is rather misleading, since these are "powerful growth hormones affecting most, if not all, of the body's organ systems" (Fausto-Sterling, 2000, p. 193). It is upon these broader, anabolic (constructive-metabolic) capabilities that their utilization in performance enhancement is based.

Different performance-enhancing substances used over the years have varied considerably in terms of whether their use can be suspected or deduced from the look of the athlete's body. For example, neither stimulants of the nervous system nor the hormone erythropoietin (which became popular after the period currently under study) change visible bodily characteristics in the same way as anabolic steroids and androgens (the so-called male hormones). Anabolic steroids and androgens could induce transformations in bodily characteristics that compromised the reading of a body as "female." In addition to increasing muscularity and strength, the use of androgens could result in the development of a lower voice and an increase in facial hair—effects developing in puberty for men and currently medically utilized in masculinizing transgender hormone treatment. In the middle of the period under study, anabolic steroids seemed more suitable for women than "ordinary androgens." An article published in a Finnish medical journal in 1967 explained the difference between these steroids:

Powerful virilizing qualities restrict the use of the ordinary androgens on women. Instead the so-called anabolic steroids, where the androgen effect has been reduced to 1/50–1/500 of the equivalent effect of

androgens but where the anabolic effect is yet preserved unaltered, are predicted to have quite substantial usage among women athletes. (Mustala, 1967, p. 691)

The physician acknowledges, however, that "androgenic side effects" have not completely disappeared, including menstrual disturbances and lowering of the voice (Mustala, 1967, p. 691). Crucially, in the case of women, the concern about the adverse effects of anabolic steroids blended into a longer-lived concern among sports authorities: the question of whether sport necessarily masculinizes women and compromises their heterosexuality (e.g. Lenskyj, 1986; Magdalinski, 2009).

At the turn of the 1950s, SU promoted a concern about sex unrelated to either medicine or technology, but rather oriented towards the need to support contemporary family values by situating athletes as role models. For example, in the publicity for the 1948 Summer Olympic Games in London, a SU journalist celebrated the Dutch athlete Fanny Blankers-Koen, who was dubbed the "Best of the Games" among both women and men. Blankers-Koen won four gold medals, but this was only part of her success:

Dutch Fanny is at the same time an excellent poster woman for women's athletics, as she herself is the best demonstration of the fact that a woman can be a top athlete and still a model female citizen. She is a married mother of two who manages her entire household alone, alongside athletics. ("Radan varrelta," 1948, p. 5)

In addition, the writer contrasts Blankers-Koen to "certain odd characters" in women's athletics "who were not women, but rather men, to which they changed after an operation" ("Radan varrelta," 1948, p. 5). As a result of this, according to the writer, the suitability of athletics for women ended up in a "strange light." After stating this, the text continues: "It is good that real women such as Fanny Blankers-Koen are simultaneously high-performance athletes. As role models, they disperse the haze and maybe also drive away unhealthy individuals from athletics" ("Radan varrelta," 1948, p. 5).

In the 1960s, sex increasingly became a technological issue in high-performance sport. Systematic sex tests to affirm that all competing women were in fact female commenced in the international arena, and the use of steroids as PETs became more visible. Moreover, public discussion about hormones proliferated when the contraceptive pill came onto the market in Finland in 1962. In broader society, sex was under negotiation, due to a rise in public discussion around sex roles, fuelled by the Finnish sex-role movement, including demands for women's right to abortion, the extension of public day-care, the sharing of housework between women and men, and access to better contraceptives (Bergman, 2002, pp. 134–138).

The trouble with sex in sport was reiterated quite explicitly in both the Finnish and international press. In December 1967, while awaiting the next year's Grenoble Winter Olympics, SU published an article that discussed "one of the world's best

female skiers,” Erika Schinegger, who, “it seems, has been removed from the Austrian Olympic team because her female sex cannot be fully guaranteed” (Melchior, 1967, p. 23). The article tells the readers that “(t)he separation of the sexes in sport has become an ever more important and central problem” (Melchior, 1967, p. 23). Moreover, there is a “justified reason” for “strict medical control in this regard,” because “in the world of top-level competitive sports, there are undeniable examples of odd changing and mixing of the sexes” (Melchior, 1967, p. 23).

Part of the challenge related to sex was fuelled by the development of molecular biology and gene technologies, which inspired a twist in the understanding of the “truth” of sex. By 1968, the truth of female sex was understood to reside in chromosomes and to be determinable by the number of chromatin corpuscles that exist only in X-chromosomes, rather than sex residing, for example, in genitalia (Thiébaud, 1968, p. 4; for accounts of sex tests, see e.g. Amy-Chinn, 2012; Pieper, 2014; Ritchie, 2003; Wackwitz, 2003). Sports scholars Rob Beamish and Ian Ritchie (2006) suggest that, even if fair play and scientific objectivity were the stated aims of implementing sex tests, “generalised misogyny,” and subscription to compulsory heterosexuality fuelled their implementation (pp. 43–44).

One crucial way of voicing this trouble concentrated on the muscularity and athletic capability of those who had competed as women. As noted by a report given to the International Olympic Committee Medical Commission in 1968 in relation to the initiation of the infamous sex tests:

“There is no point in caveling [*sic*] about the reasons for this problem. The main press, and, unfortunately, very often the scandal papers, have extensively echoed these so-called women constructed like market porters and collecting records”

(Thiébaud, 1968, p. 1). When sex tests were implemented in the second half of 1960s, first by the IAAF and then by the IOC, a test for anabolic steroids was not yet available. Sex tests were administered to “return the Games, and a world quickly spinning out of orbit, to the ‘normal world’ of 1950s America” (Beamish & Ritchie, 2006, p. 45). Despite this attempt, the trouble with deviant bodies continued, now also including men’s bodies.

ON MAMMOTHS, ROBOTS, AND MIRACLE SUBSTANCES

The bodily changes induced by steroids in bodies categorized as male were frequently described in nonhuman terms. For example, at the end of the 1960s, SU published an article that described the Swedish discus thrower Ricky Bruch as a “mammoth,” noting that “[t]he Finnish discus-throwing men admired Bruch’s muscles” and informed its readers that “Bruch is a known user of the miracle substance Dianabol” (“Jos pyrkii huipulle,” 1969, p. 6). In this article steroids were seen as miraculous, and the resulting muscles were admired by the athletes, although this was seldom the case for women. This article illustrates that, in that time, the use of anabolic steroids—Dianabol included—was publicly known, but not

yet condemned. A Finnish thrower interviewed for SU depicted their use as necessary for staying in the game ("Jos pyrkii huipulle," 1969). However, the risks of their use soon began to emerge. An SU writer paid attention to public discussions that questioned whether Bruch "would retain his mammoth features even after having stopped using it [Dianabol]" ("Jos pyrkii huipulle," 1969, p. 6). In the press, the effects on appearance were discussed among other side effects, rather than concentrating solely on issues of health. The Finnish athletes SU interviewed believed that the dangers of steroids had been exaggerated. Their understanding was that steroids primarily enhanced the capabilities of the body, and that by using steroids athletes were able to "do everything more than normal, both to eat and to train" ("Jos pyrkii huipulle," 1969, p. 6).

In October 1969, an article in SU depicted the issue of steroids as a "vicious circle" and as "a downright startling phase in modern sports" ("Noidankehä," 1969, p. 4), also invoking the question: "where are the limits of human possibilities?" (Huger, 1970, p. 4). An SU journalist speculated that, in the München Olympics three years later, there might not be "clean" athletes, but "some kind of robots incited by hormone medications to massive exertions!" ("Noidankehä," 1969, p. 4). An article by AFP published in SU in Finnish suggested that the Finnish weightlifter Kaarlo Kangasniemi "was the first to go beyond the boundaries of sanity" because "[i]n one year, he increased his body mass by 49 kilos" (Huger, 1970, p. 4).

Characterizations of athletes as robots, as moving "beyond the boundaries of sanity," and as animal-like—such as the "mammoth" Ricky Bruch—all describe the ways in which steroids transformed bodies beyond Western understanding of the human. The anabolic steroid Dianabol was even portrayed as a "miracle substance" because of its effects on athlete bodies ("Semmoisia muskeleita," 1968, p. 4). I suggest that the phenomenon of risky steroids is constituted by the effects of these steroidal compounds on bodies and this boundary-making between the human—in the need to fit into sex and gender norms—and the non-human. When talk about anabolic steroid dangers proliferated during the early 1970s, women's use of the contraceptive pill—also consisting of steroids, albeit made up of different compounds—in sport seemed to be widely accepted. I suggest that, without a broader view toward the use of steroids that also accounts for the use of steroids to control menstruation, the understanding of the phenomenon of steroid risks in sport remains incomplete.

STEROIDS AND MENSTRUATION

The use of female sex hormones is mainly based on adjusting the menstrual cycle in situations where menstruation would cause difficulties for the person in question. Such use can be defended based on medical evidence. These difficulties are quite individualised and do not cause a problem for the majority of female athletes. (Hartiala, 1976, pp. 4–5)

The use of steroids—the ones referred to above as "female sex hormones"—for controlling and modifying menstruation seemed to be a relatively simple health-

related issue, thus a problem neither in terms of danger for the women themselves, nor in terms of fair play. This was despite the fact that these steroids were also deliberately used with the aim of increasing athletic performance. Sports physician Pekka Peltokallio's 1969 article on sport and medicine in SU noted that "[i]t has been demonstrated that a woman is at her best competitive state during the week after her period, but there are also women who achieve their best results precisely during their periods" (Peltokallio, 1969, p. 17). Sports physician and German professor of sports medicine Manfred Steinbach confirmed in 1972 that it was customary to modify menstruation before competition:

A border case is the shifting of menstrual periods among top athletes through hormone treatment. When viewed from a narrow perspective, this intervening in the biological cycle should be considered doping. However, taking into account the broader picture—which we are in the habit of doing—health-related factors should be given priority. It is certain that shifting menstruation due to upcoming competitions is very common. (Steinbach, 1972, p. 35)

Interestingly, these examples characterize the use of steroids positively, as a question related to "health," rather than a health risk per se. Neither was it considered problematic to use them for performance-enhancing purposes. Physician Pentti Holma's presentation to women coaches in 1972, also published in SU, mentioned that some side effects may, however, occur:

Nowadays, there are good possibilities for shifting menstrual periods, and it is also easy to achieve in practice. If one decides to do this, they should remember that it is wise to "practice" the adjustment of one's period well in advance, as the hormone treatments often used can also lead to more difficult symptoms than those caused by menstruation itself. Such symptoms include nausea, headache, fatigue, weight gain, depression, etc. (Holma, 1972, p. 5)

The serious side effects of the pill—the steroid product also used for controlling menstruation in sport—had been largely acknowledged within medicine during the previous decade. In 1966, four years after the pill came onto the market in Finland, one physician told a Finnish medical journal that he felt "an instinctive reluctance to accept a birth control method in which a young, healthy woman takes a tablet containing two steroids with very active biological effects, each day, for years on end" (Brunila, 1966, p. 1307).

In a previous article, drawing from feminist scholars such as Oudshoorn (2003) and Marks (2010), I have proposed the notion of "relationality of risks" (Irni, 2017). This means that talk about the risks of pharmaceuticals—the evaluation of whether they have risks that are worth taking, and for whom—is always imbued within gendered concerns, rather than a direct result of objective calculations. In the discussion of the pill, this was demonstrated by Finnish physicians seeing the pill as dangerous when talking about Finnish women, whereas in terms of women in so-called developing countries, the pill seemed extremely useful for fighting population

growth (Irni, 2014). It was only after a change to abortion law in 1970, resulting in a rise in the number of legal abortions obtained, that Finnish physicians accepted the pill (Warpenius, 1997). Before this time, the pill had primarily been accepted only as part of a family planning policy for supporting married women and “healthy” families (Helén & Yesilova, 2003; Meskus, 2003).

Thus, in the beginning of the 1970s concerns about the risks of anabolic steroids began to proliferate in Finnish media at the same time as physicians’ attitudes towards contraceptive pills became more positive. As demonstrated by the sports physicians’ comments, contraceptives in sport were not seen as a serious health risk. Yet, as the historian Lara Marks (2010) pointed out in her work on the contraceptive pill, in the late 1960s and early 1970s, medical studies suggested that the pill could have quite serious adverse effects, such as pulmonary embolism and cerebral thrombosis. In 1968, it was suggested that the risk consisted of, depending on age, the death of 1.5-3.9 women per 100,000 healthy women. The risk of death from using the pill seemed reasonable, as it was compared to risks involved in pregnancy and delivery complications, abortion, cancer, and motor accidents. Later formulations of the pill with lower doses of estrogen reduced the risk, but it did not disappear (Marks, 2010, pp. 145–148, p. 154).

The relationality of the risks of the pill have been highly gendered, as also illustrated by Nelly Oudshoorn’s (2003) study of the attempts to develop “the male pill.” In contrast to the development of contraceptives for women, the development of a hormonal contraceptive for men became “a quest for zero risk,” particularly to male sexuality, understood in terms of factors such as potency and sex drive, with which contraception was not to interfere (Oudshoorn, 2003, pp. 109–110). However, the complaints of women, such as experiences of headaches and loss of sex drive, were dismissed and explained as “psychosomatic” (Marks, 2010, p. 209).

In the public discussion about steroids in sport, it is striking how much more serious and risky anabolic steroids were considered to be, compared to the use of the pill. The possibly lethal risks for women involved in the use of the pill seem to have been downplayed or not discussed at all, while the risks of anabolic steroids were taken very seriously, at least by some of the influential sports physicians, such as Kaarlo Hartiala.

ON THE PHENOMENON OF RISKY STEROIDS AS A POLITICAL OBJECT

In this paper I have been interested in the ways in which hormone technologies in sport came to boost the very vitality of bodies and seemed to produce new gendered life forms that exceeded that which was regarded as human. In this sense, steroids not only questioned the regulation of fairness or substances risky to health, but were also part of naturalcultural intra-actions. The “mutating, complex plasticities” of nature (Kirby, 2011, p. 84), hard training, and the transformation of bodies enabled by steroids all became part of the negotiation of what human life may consist. The trouble with anabolic steroids was not only that they offered questionable performance enhancements and health risks, but also that gendered life—the very boundaries of the human—became, in new ways, precarious (see also

Magdalinski, 2009). Therefore, I argue that accounts of steroid risk were not simply scientific, objective accounts of their health risks, but a political object, helping to come to terms with the bodily transformations experienced during this period.

One significant difference of the steroid products used at the time (progesterone or combined estrogen and progestogen) to modify the menstrual cycle in comparison to anabolic steroids was that contraceptives did not interfere with those sex characteristics that were available for public visual inspection. Due to the increasingly common presence of television, visibility in sport became all the more important during the 1960s and 1970s. It was estimated that competitions on the last day of the 1964 Winter Olympics were seen by 400–500 million TV viewers (Turnari, 1964). Concerning the 1972 Summer Olympics, SU estimated that at least three million Finns saw the 10,000-metre race on television, while the Finnish triple win in the 10 kilometre race in the 1936 Berlin Olympics was mainly heard on the radio and actually seen by as few as several hundred Finns (Sirmeikkö, 1972).

On the one hand, the development of technology enabled sports enthusiasts to better evaluate the appearances of the athletes—something that was certainly the case for both women and men, although in different ways. While women were mostly admired because of their femininity (e.g. Suontausta, 1976) and the confusion and mixing of the sexes had been of particular concern, men's bodily changes, even if they sometimes seemed to go beyond the boundaries of human bodies, could also be admired. On the other hand, however, advancing technology threatened to decrease daily physical activity, and high-performance sport was supposed to offer models for the public and entice the population to exercise. Hartiala, for whom the health of the nation was important, was suspicious of new technology that seemed to impede everyday exercise. Hartiala's comments illustrate how the contemporary question of the danger of anabolic steroids concerned not only the risk of cancer—which, so far, was based on one study that concerned three non-athletes in England—but also included a broader question of the health of the nation, including the reproduction of citizens and the ways in which high-performance sport needed to facilitate the health of the nation and the cultivation of bodies. Hartiala commented on the issue of steroids before the Olympic Congress in the autumn of 1973 in Varna, and the newspaper *Helsingin Sanomat* reported: "The use of hormones has inflated the muscles of athletes to unnatural proportions. According to Hartiala, these musclemen are not suitable examples of a healthy lifestyle" (Sylvänen, 1973, p. 38).

Steroid risks were not merely about statistical calculation related to medicine or health per se. As a phenomenon, risky steroids were not only material in the sense of substances that could inflict various adverse effects (or expected performance enhancement) in bodies, as they are mostly understood in mainstream literature on sport. Rather, they were material-discursive—a *political object* constituted and enabled by the gendered ways in which human life in the context of sport emerged in the 1960s and early 1970s. Immersed in the phenomenon of "risky steroids" were both the gendered relationality of health risks and the ways in which anabolic steroids transformed bodies and placed the boundaries of the binary-sexed human—including the human/non-human boundary—in question.

Inspired by earlier feminist studies, in this paper I have politicized this concern about steroid health risks. On the one hand, even at the time, the riskiness of steroids was negotiated and contested among sports physicians and other actors in the sports scene. The physiology professor Kaarlo Hartiala, to whose statements I have referred above, belonged to a group of those who strongly disapproved of their use. On the other hand, even if the concern about athlete health was certainly sincere and also substantiated, it is important to see the gendered relationalities and contradictions involved in how some products were deemed risky and their banning was required, while at the same time other products with at least as serious adverse effects were not seen as very risky at all.

I suggest that opening up the gendered matters and concerns involved in the process by which anabolic steroids emerged as risky addresses broader concerns about accounts of the riskiness of pharmaceutical products and how they may involve gendered/sexed relationalities. Because they also affected men's bodies (unlike the pill that was designed for women) and because they transformed the visual markers of bodies and sexes, as well as potentially interfering with reproductive capacities, anabolic steroids seemed to pose more serious risks that demanded a total ban of the use of these products in sport. Judging by the research material analyzed here, while the use of steroids in the form of contraceptive pills also involved potentially lethal risks to the health of women athletes—among other less serious adverse effects—and a potential to increase athletic performance, their banning in sport was not suggested. In the early 1970s, contraceptives were more widely approved in Finland (having been on the market since 1962), both for contraceptive and performance-enhancing purposes. Anabolic steroids, however, appeared dangerous, demanding regulation and banning, as well as the moral condemnation of physicians who facilitated their use. In this sense, "risky steroids" comprised a political object: rather than merely confronting adverse health effects, the discussion of risk involved gendered relationalities and boundary-making that amounted to controlling the trouble posed by anabolic steroids to the sexed and gendered boundaries of the human.

ENDNOTES

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