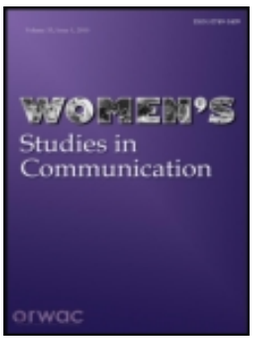

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The Discursive Emergence of Gendered Physiological Discrimination in Sex Verification Testing

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Athletic female bodies challenge ideals of femininity, a tendency exacerbated by factors relating to gender expression, race, and nationality. In this article, the authors trace the discourse of sex verification testing in elite athletics. The study finds that most of the athletes historically suspected of not being "truly" female over the course of the tests somehow differed from White, Western assumptions about femininity. By highlighting discontinuities in the testing over the years, the authors illuminate the constructed and raced nature of sex verification tests and mark the emergence of a specific type of bodily discipline. Offering the concept of "gendered physiological discrimination" to explain how the testing enables discrimination based on internal bodily processes, the authors explore why physiological markers such as hormones and chromosomes need not be considered markers of biological sex. Although physiological discrimination intersects with sexism, patriarchy, racism, and imperialism, it is a new field of power that primarily discriminates against "non-normative" bodily processes.

Keywords athletes, discourse tracing, gender verification testing, gendered physiological discrimination, intersex, sports

> "You know, the ancient Greeks kept women out of their athletic games. They wouldn't even let them on the sidelines. I'm not so sure but they were right."
> —Avery Brundage, President of the International Olympic Committee 1952–1972 (qtd. in Butterfield, 1948, p. 120)

Since the inclusion of women into athletic competition, sporting organizations have divided events by sex. This division rests on the assumption that women could never sufficiently compete with men and are always less competitive athletes. From this

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assumption, international athletic organizations have required elite female athletes to prove alternately that they are *female enough* and/or sufficiently not male in order to compete. Some scholars have referred to this as a ''glass ceiling'' for female athletic performance (Heggie, 2010), as governing sports organizations do not require male athletes to undergo such testing. In this way, ''[t]he regulation of [sex] grants power to sports governing bodies to make decisions about what bodies should look like, and what standards those bodies must conform to, to participate in sanctioned events'' (Sullivan, 2011, p. 401). This regulation is constituted through a shifting apparatus often called ''gender verification testing'' that we will refer to as ''sex verification testing.''[1] Sex verification testing requires significant study because it presents complex problems, rife with uncertainty, controversy, and competing values, that intersect issues of nationality, race, sexuality, and ability. However, in tracing the genealogy of sex verification testing, we find that these intersections do not fully encapsulate *what* is being disciplined per se. Thus, we offer the phrase ''gendered physiological discrimination'' as a way to describe the disciplining of bodies based on hormones, chromosomes, and other internal bodily processes. Gendered physiological discrimination intersects with both sex and gender to discipline bodies through sex verification testing.

In order to illustrate this claim, we begin by framing discussions about sex, sports, and medical knowledge of internal body composition. Next, we explain our methodological approach. We then trace the genealogy of sex verification testing in elite sports.[2] In the discussion section that follows, we show how the tracing of sex verification testing reveals a disciplinary regime that functions to produce physiological discrimination and reifies inequitable systems of disciplinary power. Differentiating gendered physiological discrimination from closely intertwined forms of sexism in general and forms of discrimination against intersex people in particular, we argue that differentiating between internal bodily processes and biological sex is an activist achievement. Finally, we end with a discussion of other possible applications of the broader concept of *physiological discrimination* in critical and feminist studies.

Sex, Sex Testing, and Modern Athletics

Sex and Modern Athletics

Modern testing relies on a series of intertwined assumptions: the gender binary of woman/man, the sex binary of female/male, and the mapping of the first onto the second. Although early feminist activists first used a binary differentiation between men and women to make inequality visible, later feminists troubled the essentialist implications of this move. Such binary divisions implicitly rely on a slippage between sex and gender. Showing that gender expression need not map onto biological sex became an important accomplishment for feminists (Halberstam, 1991). Subsequent feminist arguments about gender expression (Butler, 1990; Buzzanell, 1995; Buzuvis, 2012; Glazer, 2011–2012; Halberstam, 1991; West & Fenstermaker, 1995) revealed the oppressive and restrictive nature of dualistic thinking and suggested that instead scholars should trouble gender, demolish existing gender categories, and expand gender options beyond a continuum. Feminist scholars have also shown that sex needs to be troubled in similar ways (Butler, 1990; Buzuvis, 2013; Cavanagh & Sykes, 2006; Dreger, 2010; Jack, 2012). Despite a wide array of bodies and sex

organs, individuals are disciplined to fit into either male or female categories. In this way, sex is really a gendered cultural process that cannot be isolated from social and discursive processes (Butler, 1990). The mapping of gender onto sex not only gives credence to essentialist assumptions but also assumes the legitimacy of a sex binary in the first place.

Despite efforts to trouble the sex binary, elite sports continues to divide athletes into male and female categories. As Cavanagh and Sykes (2006) explain, if "male and female bodies are not natural... the IOC [International Olympic Committee] is faced with the problematic of having to police (through medical and visual technologies) a categorical [sex] binary that cannot be shown to exist" (p. 77). In other words, "Nature doesn't actually have a line between the sexes. If we want a line, we have to draw it *on* nature" (Dreger, 2010, p. 23, emphasis in original). Throughout the last century, sex verification testing has been a primary mechanism for drawing this line on nature, by disciplining bodies into conformity with one of two designations: male or female. For this reason, scholars have argued that sex verification testing offers an ideal case to analyze and trouble this binary construction (Wackwitz, 2003; Sloop, 2012). For instance, Wackwitz (2003) explains how "governing bodies of sports wield oppressive power that serves to create and reinforce a system of difference based upon hierarchy and grounded in oppression" (p. 558). As tests have become more "sophisticated," bodies that do not fit neatly into either category (such as intersex athletes and trans athletes) are rendered unnatural, disordered, and unfair. Such athletes face systematic discrimination because they do not fit within the biological essentialism enforced through the binary of sex (Looy & Bouma, 2005).

Although sex verification policies affect both intersex athletes and trans athletes, we focus primarily on intersex athletes in this study. Under the Stockholm Consensus, MTF (male to female) trans athletes are allowed to compete after meeting strict regulations. However, this document "does not refer to intersex athletes, let alone develop criteria for their inclusion in Olympic sport" (Cavanagh & Sykes, 2006, p. 88). In fact, in modern sports, organizational policies have never allowed intersex athletes to compete *as intersex athletes*. Instead, resting on the assumption that male athletes would have an advantage, trans athletes must be declared "female" (not male) in order to compete. However, we focus on "intersex" athletes in order to argue that sex verification testing actually has little to do with sex; it upsets not only a strict delineation between male and female but even commonly accepted ideas of "sex" itself. So-called intersex athletes face not only sexual discrimination but also—and mostly—*physiological* discrimination, as we will show. Sex verification testing and its relation to intersex athletes presents a case that reveals how internal bodily compositions can be interpreted in discriminatory ways.

Sex and Medical Testing

A basic understanding of the history of medical testing in relation to sex is necessary in order to see the slippages that sex testing in elite sports both draws from and reinstitutes. As many scholars argue, physiological markers such as hormones and chromosomes need not—and perhaps should not—be considered markers of biological sex (Fausto-Sterling, 2000; Harrison & Hood-Williams, 2002; Oudshoorn, 1994). Aesthetic, cultural, and social constraints played a major role in the way scientists have come to understand and represent hormones and chromosomes as gendered

and map them unnecessarily onto biological sex (Laqueur, 1990; Fausto-Sterling, 2000; Harrison & Hood-Williams, 2002; Oudshoorn, 1994).

So-called "sex" hormones "are not just found in nature" (Oudshoorn, 1994, p. 137), but rather have been constructed as sexual through a complex history of scientific testing, standardization, and marketing (Fausto-Sterling, 2000; Oudshoorn, 1994). For example, although steroid hormones are divided into sex and non-sex categories, Fausto-Sterling (2000) argues that they could just as easily have been considered growth hormones, affecting many tissues including (but not limited to) reproductive organs. Steroid hormones have been considered a marker of sex differences for decades—despite their inaccuracy as indictors—because the tendency to link hormones to the binary is pervasive (Fausto-Sterling, 2000; Harrison & Hood-Williams, 2002). Although there is a relationship between hormones and biological sex, hormones do not clearly mark a body as female or male. Initially, when scientists discovered hormones, they believed females and males had unique hormones: estrogens and androgens (Fausto-Sterling, 2000; Oudshoorn, 1994). This belief, even when challenged and eventually discarded, provided the underlying assumption that hormones somehow mark sexual difference. As Fausto-Sterling explains (2000), the wide-reaching effects of steroid hormones on non-sexual parts of the body began to be associated with "feminizing" or "masculinizing" processes since the hormones *themselves* were considered markers of sex.

Chromosomes also occupy an ambiguous position in relation to biological sex. Although males typically have an XY chromosomal pattern and females often have an XX chromosomal pattern, Harrison and Hood-Williams (2002) explain that this is not always the case. That is, chromosomes do not necessarily map onto the assumed sex. Harrison and Hood-Williams interrogate this misalignment even further: If chromosomes can misalign with the perceived sex of the patient, how can chromosomes be considered a marker of sex? The authors point out that if scientists can describe XX males "as unusual men [then] *they must already know what it is to be a man before they can confirm it*" (p. 122, emphasis in original). As in the history of hormones, chromosome discovery and testing intertwined with sociocultural factors that led chromosomes to become markers of sex (Richardson, 2012).

Chromosomes and hormones have been equated with sex through discourse, not necessity. However, testing methods often rely on one or the other to "prove" biological sex. Sex verification testing illuminates the socially constructed nature of this biology and begs theory and analysis to show how this kind of discipline, developed through increasingly sophisticated technology, exceeds biological sex. Sex verification tests force athletes to conform to one pole or the other—male or female—even when it becomes increasingly difficult to maintain the assumption that hormones or chromosomes are indicative of an athlete's actual sex, or, indeed, that sex is purely biological.

The search for increasingly complex ways of proving athletes are or are not female enough symbolically and materially discriminates against bodily difference that is equivalent to neither biological sex nor gender expression. After performing a discourse tracing of modern sex verification testing, we argue that such testing in elite sport reveals the emergence of a new mode of discipline that we term "gendered physiological discrimination." Although this form of physiological discrimination intersects with sexism, patriarchy, racism and imperialism, it operates within a new field of power that primarily discriminates against "non-normative" bodily processes.

Sex Verification Testing, Problem-Based Research, and Discourse Tracing

For this study, we considered sex verification testing as problem-based research. As Tracy (2007) describes, this kind of research helps to "answer the 'who cares' question, generate novel theoretical insights, and provide a window for practical change" (p. 106). Problem-based research—being entrenched in actual situations—provides a means to grapple with difficult moral problems. Sex verification testing creates a morally problematic and politically charged system rife with inconsistencies and discriminatory policies. Hence, sex verification testing provides an ideal case for problem-based research, as well as social justice–driven critical epistemologies. We approached the problems with sex verification testing by examining the ways in which the tests and the policies regarding testing unfolded historically and discursively. Accounting for the historical embeddedness (Ashcraft & Prasad, 2013) of policies in sports is necessary because policy shifts reflect cultural discourses that then help to constitute how policies are (re)formed in the present. As Campbell (1998) explains, "we know that discourse arises out of prior discourse, that rhetoric emerges out of prior rhetoric" (p. 111). Therefore, accounting for the historical constructions of gender verification is essential for understanding the current iterations of the practice.

To capture the intricate lacing of historical moments and policy construction, we used an approach inspired by LeGreco and Tracy's (2009) discourse tracing. Drawing from Foucault, the authors describe discourse tracing as a method for analyzing power relations and making visible processes that might otherwise have remained opaque. It accounts for discursive practices at micro, meso, and macro levels. Through the investigative process, we came to focus particularly on macro discourses. In a manner similar to Foucault's (1984) genealogical method, we "cultivate the details and accidents" (p. 80) of recent athletic history, noting particularly "its jolts, its surprises" (p. 80) and the way such events constitute the emergence of sex verification testing as a disciplinary regime.

Discourse tracing as a method unfolds in four phases: research design, data management, analysis, and evaluation (LeGreco & Tracy, 2009). Research design begins by defining and outlining a case and examining relevant literature. The next phase, data management, requires scholars to organize data chronologically in order to begin developing a history of the case. In the third phase, this historical development is collected into a narrative case study and structured questions are applied. Finally, in the evaluation phase, researchers draw out theoretical and practical conclusions from the case. The organization that follows reflects these phases, as we present the historical case first and then offer discussion and conclusions that emerge from the discourse tracing.

To begin the analysis, we first recognized ruptures in the discursive organization of gender, sports, and fairness. Next, we collected a number of academic articles about the history of gender verification, as well as popular press articles detailing individual cases. We also collected policies from the International Olympic Committee (IOC), the International Association of Athletics Federations (IAAF), the American Olympic Committee, and the Interstate Athletic Conference. We organized these data chronologically, clipping pieces from articles and policies and placing them in order. At this stage, a complicated narrative began to emerge. Researching and writing about the history of testing for "women" in sports is challenging because it is a sensitive subject characterized by conflicting stories and

containing indeterminable information. Yet these gaps, disjunctures, and inconsistencies are what allowed us to perform an "examination of descent" to find "the faulty calculations that gave birth" to sex verification testing (Foucault, 1984, p. 81). Generating a loose narrative helped us form focused questions used to analyze the completed case:

1. Who is subjected to gender verification testing?
2. Who is not subjected to gender verification testing?
3. What kind of gender verification test was employed for each case?
4. Which athletic policies about gender verification testing were applied or developed?
5. What nations do tested athletes represent?
6. What was the historical context for each gender verification test?
7. What was the political context for each gender verification test?
8. How have gender verification tests changed over time?

Answering these questions allowed us to analyze the historical case and narrative in order to reach some conclusions about gender verification testing in elite sports.

The emergent case and analysis are complicated, at once embodied and disembodied, personal and public, and intersecting with sexuality, nationality, race, and ability (Heggie, 2010). We interweave individual cases with academic articles and books, popular press writings, and policy pieces to trace the development of sex verification testing. We recount individual athletes' stories with caution and sensitivity, lest our academic gaze compound the exploitation of their bodies (Hoad, 2010; Munro, 2010). We do not wish to consume their bodies as they have been consumed relentlessly in the media and on the international stage. It is in the pursuit of greater equality that we discuss these deeply personal yet still political affairs and with recognition that the stories of individuals have become a part of the historical discourse of sports and gender and are woven into policy development (Hoad, 2010; Munro, 2010).

Discourse tracing is a method that serves as a unique tool for considering complex problems. Since historical accounts are often focused on continuity (Foucault, 1984), such accounts frequently lack the nuances that discourse tracing enables through its genealogical bent. This method pays particular attention both to "the singularity of events" and "to their recurrence" (p. 76), revealing more political shifts and tensions than an ordinary historical case. Discourse tracing moves beyond questions about a phenomenon (What is testing? How is testing conducted?) to questions about the ways in which politically charged discourse (re)creates and transforms testing over time (LeGreco & Tracy, 2009).

Tracing the Discourse of Gender Verification Testing in Elite Sports

Although the earliest known sports sex testing took place in the seventh or eighth century BCE at the Olympic Games in Greece (Wackwitz, 2003; Mouratidis, 1984), we situate our investigation from the 1920s to the present. In this time frame, two early cases of gender ambiguity first brought the concept to modern athletics. English shot-putter Mark Weston and Czechoslovakian runner Zdenek Koubkova-both competed as women before transitioning (from Mary Edith Louise and Zdenka, respectively) and ending their world-champion careers. Because the

sex/gender of these athletes troubled normative classifications, athletic organizations later used them to justify systematic testing for all female athletes.

The Emerging "Necessity" for Sex Verification Testing

The 1936 Berlin Olympics saw the birth of modern anxiety regarding sex and gender in athletics.[3] The public began to struggle with the question: "Is some sort of testing necessary?" In perhaps the most enigmatic case, German high jumper Dora Ratjen broke the world record before being accused (by the previous record holder) of being a male imposter. Accounts of this case differ drastically. Some claimed that the Nazis forced Hermann/Heinrich (Ratjen), a member of the Hitler Youth, to compete as a woman (Fausto-Sterling, 2000; Saner, 2008; Schultz, 2011). A competitor's claim supported the theory that Ratjen "was forced to do it" (Berg, 2009). In other accounts, Ratjen revealed *his* "true" identity to journalists in self-confession (Sullivan, 2011). A final version claimed that German police questioned the validity of Ratjen's ID card and forced *her* to undergo a medical exam, which declared her male though she always thought herself to be female (Berg, 2009; Stopera, 2009; Heggie, 2010). Reportedly, Dora's father spoke to the police during the investigation, explaining,

> I was not standing at my wife's bedside during delivery, rather I was in the kitchen at the time. When the child was born the midwife called over to me, "Heini, it's a boy!" But five minutes later she said to me, "It is a girl, after all." (as cited in Berg, 2009, p. 1)

In the end, although officials cleared him/her of fraud charges, they erased Ratjen's world record and banned him/her from further competition (Stopera, 2009). Although Ratjen is never cleanly defined as man or woman, male or female, (s)he was frequently cited as exemplifying the need for testing.

A second politically charged case in the 1936 Olympic Games involved U.S. American track athlete Helen Stephens and Polish track athlete Stella Walsh. Members of the media frequently spoke about both Stephens' and Walsh's unusually masculine appearances (i.e., "Stella the Fella"), but only Stephens was formally accused of being male. Officials forced her to undergo a physical exam, after which they declared her a female. According to some accounts, Avery Brundage (who would later serve as the IOC president for two decades) was enraged and appalled that Stephens, the U.S. competitor, would be accused of cheating, when Walsh, competing for Poland, was not. Brundage subsequently called for the mandatory systematic testing of all female athletes.

Systematic testing of all competing female athletes began in the 1940s, when every female athlete was required to prove her female-ness via a medical certificate (Heggie, 2010). There were occasional cases of sex ambiguity from this time until 1960, including an instance at the 1960 Olympics where two British athletes were accused of being male (Heggie, 2010). However, it was not until the 1960s that an explosion in accusations and tests began. In 1966 and 1967, all female athletes were forced to participate in naked physical inspections, colloquially called "nude parades" (Ritchie, Reynard, & Lewis, 2008), in which athletes walked in front of examiners who visually checked to see whether they were phenotypically female. Also in 1966, some athletic organizations began including gynecological examinations as

part of the physical inspection. These invasive physical tests made many athletes uncomfortable (Shani & Barilan, 2012; Peters, 1974). Some claimed it violated their religious beliefs and others abstained for undisclosed reasons. Athletes refusing to participate could not compete (Schultz, 2011).

Officials and the media have used athletes who abstained from the tests as proof that the tests are necessary (Cavanagh & Sykes, 2006; Heggie, 2010). North Korean runner Sin Kim Dan is often cited in this manner. After breaking records in 1961 and 1962, a number of competitors refused to run against her because of her masculine appearance. When gender verification testing became mandatory, she stopped competing (Stopera, 2009). A number of other "suspicious" (Hercher, 2010; Shani & Barilan, 2012) athletes abstained from the tests, including the Soviet Maria Itkina, a four-time track and field champion in Europe, Tat'iana Shchelkanova, a Soviet gold-medalist in the European Championships, and Iolanda Balas, a Romanian two-time Olympic gold medalist. The athletes most heavily criticized in the media for abstaining were Tamara and Irina Press, Ukrainian sisters who won a number of gold medals in the 1960s. The media referred to them as "creature[s]" (Wiederkehr, 2009, p. 562), "the Press brothers" (Wiederkehr, 2009, p. 560), and other debasing names when they dropped out of competition. All of these athletes had their sex questioned by the media, although none of them ever took (or failed) a sex test. However, officials and the media interpreted their act of abstaining from competition as evidence that testing was necessary.

Identifying the Chromosomal "Female"

The Cold War heavily impacted representations of women athletes in the media (Cavanagh & Sykes, 2006), casting Western athletes as beautiful, feminine women, while simultaneously rendering athletes from the Soviet Bloc as ugly or "mannish" (Wiederkehr, 2009). Worldwide political tensions contributed greatly to the ways in which testing was justified, carried out, and reported. For example, the *Los Angeles Times* (1968) reported that "Wendy Allen, 23-year-old American slalom specialist from San Pedro, a bouncy little brunette [said], 'We never thought about it in our sport. . . . Then we read about some husky Russian women beating our women in some track and field event, and we don't want it to happen to us'" (as cited in Wiederkehr, 2009, p. 562). In another example, the *Los Angeles Times* (1970) printed the following explanation of sex verification testing: "the sex tests were started . . . to drive out types who really had no business in women's track. The Eastern European countries were the prime offenders" (as cited in Wiederkehr, 2009, p. 565).

The focus on Eastern European athletes was perhaps unsurprising because Avery Brundage remained at the head of the IOC during this time. Brundage led a controversial career; an open admirer of Hitler, Brundage previously argued for Germany to host the Olympic Games in 1936 despite the Nazi reign of terror. Reportedly, he forced any "anti-Olympic" officials to resign (Povich, 1996) and played a critical role in removing and replacing two U.S. Jewish athletes just before the competition (Butterfield, 1948; Guttman, 1984; Povich, 1996). Though he denied involvement with their replacement, his reputation suffered. It was said that Brundage, a former discus athlete, "had a discus where his heart belong[ed]" (Povich, 1996). Thus, just as Brundage played an integral role in the early development of sex verification testing (given his clear position about the possibility of women cheating in sports), it is possible that his inclination to prioritize Western ideals at the

expense of Jewish athletes related to his targeting of athletes from the Eastern European Bloc[4] for sex verification tests. Discourses in the media and international sporting bodies soon stopped asking whether testing was necessary and instead shifted focus to "What is the best way to conduct [sex] verification testing?"

The "nude parades" ceased because athletes and critics deemed them invasive, embarrassing, and inappropriate. Instead, the IOC required all female athletes to take a newly developed chromosome test (Simpson et al., 2000). The Barr body cheek swab test could identify an XX chromosomal pattern. Only athletes with two X chromosomes could compete as females (Heggie, 2010; Saner 2008). In 1967, Polish gold medal sprinter Ewa Klobukowska became the first woman to fail a gender verification exam (Buzuvis, 2013). Officials banned Klobukowska from professional sports and stripped her of her medals (Stopera, 2009). The media widely chastised her for cheating. Interestingly, though she failed the IOC's standards for female-ness, Klobukowska later conceived and gave birth to a child (Sullivan, 2011). Klobukowska's experience begins to hint that sex verification tests may not be primarily about biological sex, but rather a mapping of a different type of discipline onto the weighty discourse of sex.

Identifying the Chromosomal "Male"

The chromosome test was later deemed to be significantly flawed because males with XX Male Syndrome or Klinefelter's Syndrome (XXY) could be cleared to compete as females (Ritchie et al., 2008). As it turns out, there are a number of conditions in which individuals have three or more sex chromosomes, conditions that would produce a "flawed" test. Notably, the chromosome tests did not produce any males masquerading as females, but rather drew attention to athletes with ambiguous sex. For example, the 1966 Austrian world champion downhill skier Erika Schinegger failed the test and later had a sex reassignment surgery to live instead as Erik (Heggie, 2010; Wiederkehr, 2009). Schinegger's case points to a notable challenge of the sex binary: If Schinegger failed the test of being female, and yet needed to have surgery to become male, the sex binary is clearly troubled. Fewer athletes failed the test after 1968, possibly because nations tested their athletes themselves (Heggie, 2010). Avery Brundage, still the president of the IOC in 1972, claimed that while he would always remain suspicious of female athletes, he was satisfied with the results of testing because the athletes were "more feminine now" (*Los Angeles Times*, August 13, 1972, W21, as cited in Wiederkehr, 2009, p. 560).

Political animosity between the United States and Eastern European countries continued to fuel arguments in favor of conducting testing. In 1980, the Polish-American track sprinter Stella Walsh, who enraged Brundage when she was not tested in the 1936 games, was murdered in an armed robbery. The coroner's examination revealed that she had male genitalia, but both male and female chromosomes, a pattern known today as mosaicism (Saner, 2008). Although Walsh lived as a woman her entire life and was quite likely athletically *disadvantaged* by her condition,[5] the revelation shook the athletic world. Negative reports about Walsh contributed to the growing discourse about the need for sex verification testing. Hilda Strike, a Canadian track Olympian who lost to Walsh in 1932, reportedly assumed the IOC would give her Walsh's gold medal when Walsh's "cheating" was exposed upon her death (Farhi, 2008). Panicked fears of an Eastern European sex fraud scheme resumed, although the IOC allowed the deceased track and field

Hall-of-Famer to keep her medals (Heggie, 2010). That Walsh's medical condition is used to support the case for sex testing is actually quite contradictory. Walsh's physical combination of male genitalia with both male and female chromosomes reveals a problem with equating either physiology or chromosomes with sex per se. Both cannot unproblematically represent biological sex, as here they contradict each other. Walsh's ambiguous chromosomes in themselves trouble the idea of sex as a binary, but the inability to map them onto other supposed markers of biological sex shows a problem with the definition of sex itself.

Walsh's death occurred against the political landscape of the Cold War. In an effort to excel on the national sporting stage, the East Germans allegedly began a state-sponsored doping regime in order to build an army of superhuman sports heroes (Stopera, 2009), and concerns about cheating ran rampant in the media. In a 1976 *Chicago Tribune* article, Dr. Dan Hanley defended the need for gender verification tests as a means to root out potential cheaters. He argued, "A man with feminine tendencies would not have an advantage. A woman with male tendencies definitely would" (as cited in Wiederkehr, 2009). The deeply rooted assumption that all men have athletic advantages over all women critically influenced the development of sex verification testing. Of Ratjen, the media widely reported the "eye witness" accounts from losing athletes and inside acquaintances. For example, Dorothy Tyler, a silver medalist, claimed "I had competed against Dora and I knew she was a man. . . . You could tell by the voice and the build. But 'she' was far from the only athlete. You could tell because they would always go into the toilet to get changed" (as reported in Saner, 2008). Public discourse seemed driven to catch cheaters yet never stopped to ask what counted as cheating and what did not.

Identifying "Advantage"

One case forced the IOC and the IAAF to recognize some of the contradictions in existing tests, shifting the focus again. In 1985, Spanish hurdler Maria José Martinez-Patino successfully had her high-profile disqualification for failing the test overturned by proving that her condition, androgen insensitivity syndrome (AIS), gave her no physical advantage, even though she was not chromosomally female. This moment revealed a disjuncture in testing motivation as it related to sex. The fact that she was not considered truly female was not the problem, but rather the possibility of an advantage in competition. It was again evident that sex testing was hiding a disciplinary apparatus attuned to something quite different from sex. This case in particular prompted questions about chromosomal testing, since it did not identify athletic advantage (Heggie, 2010). However, Martinez-Patino's victory was bittersweet, as during the scandal the press humiliated her; shortly after, her friends and boyfriend abandoned her and her boss fired her from her job (Gandert, Bae, Woerner, & Meece, 2012).

After Martinez-Patino's case, the discourse shifted from asking, "What is the best way to conduct [sex] verification testing?" to "What [sex] 'conditions' give unfair advantage?" Different organizations handled the complexity in different ways. For instance, though the IOC decided to keep chromosomal testing, it replaced the Barr body test with a Y-chromosome DNA test (Simpson et al., 2000). Beginning with the 1992 Olympics, the IOC tested whether an athlete was chromosomally *male* instead of whether she was *female*, thus checking for whether an athlete had an (assumed) advantage. The IAAF, on the other hand, dropped

chromosomal testing in 1988 and reverted to a manual/visual check. In 1992, however, IAAF officials deemed even the visual check unnecessary since the athletes were already observed while urinating for their drug test. In 2004, volleyball became the last individual sport to abolish the tests (Shapiro, 2012), although the IOC continued sex verification testing.

In the 1996 Olympic Games in Atlanta, eight female athletes failed the new Y-chromosomal tests required by the IOC, but officials eventually cleared all of them for competition. Seven of these women had AIS, which was determined not to give an athletic advantage. Officials also cleared the eighth athlete to compete as female, though their criteria are unknown (Sullivan, 2011). Thus, while all eight athletes were able to prove they were ''female enough'' to compete, they were forced to face extensive testing, suspicion, and embarrassment. Under immense pressure, the IOC abolished universal testing and moved to ''suspicion-based'' (Sullivan, 2011, p. 407) testing for the 2000 Olympic Games in Sydney. At this point, only suspected individuals had to pass a test to compete (Ritchie et al., 2008). Today, the IOC's policy specifies who can cast suspicion upon athletes—including individual athletes suspecting themselves, a chief medical officer, an IOC Medical Commission member, or the chairman (IOC, 2012a). However, historically, athletes have been considered ''suspicious'' based on accusations by a myriad of people, including teammates, trainers, other coaches, competitors, organizational sporting officials, and members of the media, who spread accusations and assumptions to a broad audience.

During the last decade, the competitors most often suspected of not meeting the sex standards were non-White athletes. While athletes from the Eastern Bloc were targeted in the earliest iterations of testing, recent cases have been clustered in countries from the Global South, involving women whose facial structures and muscular appearances did not conform to typical ideals of Western femininity (Ray, 2009). For example, in 2006, Santhi Soundarajan, a promising runner from the Dalit caste in India, failed a sex test after winning a silver medal at the Asian Games. After watching her urinate, a suspicious official flagged Soundarajan (Sullivan, 2011). Without any warning and with no explanation of what was occurring, officials required Soundarajan to be tested by four doctors, none of whom spoke her native language. After the tests, she was told to go home. It was only by watching the national news on television that she learned, along with the entirety of her country, that she was not considered a female. Soundarajan explained how she learned of her sex verification test failure in an ESPN article, stating, ''He told me, 'You can't do sports anymore . . . you saw it on the news. It's been confirmed, you cannot compete in sports' . . . and that was the end of my sports life'' (Shapiro, 2012). Soundarajan was stripped of her medal and she never competed again. Reportedly, Soundarajan has AIS, like Martinez-Patino (Glazer, 2011–2012). Though Martinez-Patino was able to overturn the decision that kept her from competing years earlier, Soundarajan was not so lucky. She returned home humiliated and depressed. Unable to deal with harassment related to the sex verification scandal, Soundarajan reportedly attempted suicide in 2007 (Glazer, 2011–2012; Dreger, 2010; Saner, 2008; Sullivan, 2011), but has since become a coach (Veerapa, 2015).

Soundarajan's case did not attract significant media attention, but a subsequent testing debacle turned into an international media explosion. In 2009, when Caster Semenya broke the record in the 800-meter race at the African Junior Athletics Championships in track and field, the IAAF asked Athletics South Africa to test

her, claiming her masculine appearance and rapid improvement made it necessary (Schultz, 2011; Young, 2015). They did not consider that Semenya may have improved as a result of her first experience with world-class coaching, but instead accused Semenya of both "natural doping" and sex fraud (Munro, 2010). Like Soundarajan, Semenya did not know the reason for the test. However, unlike Soundarajan, Semenya's home country of South Africa rallied around her, claiming the treatment of their champion was racist and sexist. Semenya grew up as a girl, her genitalia are female, and she self-identifies as a woman (Hercher, 2010). Officials finally cleared Semenya to run in 2010, and she won the silver medal in the London 2012 Olympic Games (Goddard, 2013). The investigation took 11 months and involved the expertise of a gynecologist, psychologist, internal medicine specialist, endocrinologist, and gender expert (Schultz, 2011). In the end, this high-profile case spurred the governing athletic organizations to revise their policies yet again.

Identifying Hormonal "Advantage"

After Semenya's case, the idea that intersexuality was a form of "natural" or "genetic" doping increased in prominence within sex verification testing discourse (Wiederkehr, 2009). According to the IOC's Anti-Doping Rules:

> It is each *athlete's* personal duty to ensure that no *prohibited substance* enters his or her body. *Athletes* are responsible for any *prohibited substance* or its *metabolites* or *markers* found to be present in their bodily *specimens*. Accordingly, it is not necessary that intent, fault, negligence or knowing *use* on the *athlete's* part be demonstrated in order to establish an anti-doping violation. (IOC, 2006, 2.1.1, emphases in original)

This article implies that athletes are responsible for their own internal bodily processes. The Anti-Doping Rules further explicate, "As an exception to the general rule of Article 2.1, the *prohibited list* may establish special criteria for the evaluation of *prohibited substances* that can also be produced endogenously" (IOC, 2006, 2.1.3, emphases in original). That internally produced substances are subject to doping regulations set a framework through which hormone levels might be "legally" constructed as doping and athletes constructed as "natural cheaters."

Through this focus on natural hormonal "doping," athletic organizations turned to hormone-based tests (Shapiro, 2012). With such tests, the link between sex verification testing and biological sex became more and more tenuous. In 2011, the IOC Medical Commission suggested that females could compete as long as their androgen levels fell below what is normally considered a male range. Everyone naturally produces androgens, but females typically produce lower amounts than males. If female athletes' levels of androgen were not within the approved range, they were required to undergo hormone therapy to lower their androgen levels in order to compete (Shapiro, 2012). Athletes who failed to comply were banned from competition. In 2012, just before the London Olympic Games, the IOC revealed a new policy that put this recommendation in place. The official IOC Regulations on Female Hyperandrogenism explained:

> Competitions at the 2012 London Olympic Games . . . are conducted separately for men and women (with the exception of certain events).

> Human biology, however, allows for forms of intermediate levels between the conventional categories of male and female, sometimes referred to as intersex. Usually, intersex athletes can be placed in the male or female group on the basis of their legal sex. However, as explained below, intersex female athletes with elevated androgen production give rise to a particular concern in the context of competitive sports, which is referred to as ''female hyperandrogenism.'' In general, the performances of male and female athletes may differ mainly due to the fact that men produce significantly more androgenic hormones than women and, therefore, are under stronger influence of such hormones. Androgenic hormones have performance-competitive advantage in sports. This is one of the reasons why the exogenous administration of such hormones and/or the promotion of the endogenous production of these hormones are banned under the World Anti-Doping Code, to which the IOC is a signatory. (IOC, 2012b, p. 1)

Clearly the IOC linked specific gendered genetic conditions to violating the Anti-Doping Code, yet the IOC ignored other genetic conditions, revealing the constructed nature of sex verification tests. For example, swimmer Michael Phelps' alleged connective tissue disorder, Marfan syndrome, which causes traits such as long arm spans and a long body, has never been tested. In a similar example, experts found Olympic champion Finnish cross-country skier Eero Antero Mäntyranta to have hereditary polycythemia, a condition that increases the oxygen carrying capacity of the blood (Mallon & Heijmans, 2011). Increased oxygen provides quite an advantage in endurance sports (Gladwell, as cited in Burkeman, 2013). However, neither of these athletes has been accused of ''natural doping.'' Such physiological conditions *could have been* related to gender or sex and thus fallen under testing categories; however, historically they were not. The idea of normative physiology in sex verification testing was constituted in relation to sex and gender binaries, but this constructed discrimination could have been otherwise.

Although the question that drives testing remains ''What sex conditions give athletes an unfair advantage?'' the connection between what is being tested and sex/gender becomes more and more tenuous. Currently, the topic as it concerns female athletes is still in transformation. Governing officials have celebrated the switch to hormone-, suspicion-based testing as a more ''accurate'' and ''humane'' approach to sex verification. Indeed, the recent IOC 2012 5th World Conference on Women and Sport espoused the certainty of hormone testing. For instance, Dr. Thomas H. Murray, president and chief executive officer of the Hastings Centre, claimed that females with high levels of testosterone are ''basically . . . male'' and thus have an unfair advantage when competing with ''regular women who produce 'normal' levels of testosterone'' (IOC, 2012a, p. 31). Panelist Dr. Eric Vilain, director of the Centre for Society and Genetics and Chief of Medical Genetics, explained that the ''parameters of biological sex [fall] under six categories: chromosomal, genetic, hormonal, the internal reproductive structures, external genitalia, and brain sex'' (IOC, 2012a, p. 31), yet in all of these categories, the new policy still assumes one may only be either male or female and that all these markers are necessary. The necessity of having six parameters of biological sex reveals the instability of the concept itself. If sex can be determined by any one of these markers and if these

categories do not map onto one another, this suggests instead a fragmented binary, which overlaps with more than one disciplinary regime.

Disciplinary Discontinuity and the Emergence of Gendered Physiological Discrimination

The discursive history of sex verification testing reveals a complex intersection of multiple fields of power. As numerous scholars have argued (Fausto-Sterling, 2000; Harrison & Hood-Williams, 2002; Oudshoorn, 1994), scientific findings are imbued with and influenced by the gender politics of their time. Therefore, the varied ways of testing certain bodies for the correct displays of sex—whether that be in phenotype, genitalia, chromosomes, or hormones—should also be understood as carrying with them normative ideals regarding bodies. This tracing of sex testing allows us to examine who is deemed suspicious, the discursive disjunctures figured through testing changes, and the emergence of gendered physiological discrimination in relation to intersexuality.

Finding the "Suspicious" Athlete

Throughout the history of sex verification testing, sex, gender, and advantage are often intertwined and conflated. Female athletes function as "space invaders" (Puwar, 2004) in elite sports, an arena where women have historically been considered out of place. Although female athletes have been included in the Olympics for over a century, the fact that sex verification testing is still considered necessary suggests that the athletic body is still coded as masculine (Cavanagh & Sykes, 2006) and even exclusive of the feminine or female. In addition, the recent focus on "fairness" in female sports, as Buzuvis (2013) pointed out, "is rooted in the assumption that women are categorically inferior as athletes compared to men" (p. 68). Thus, "[s]ex verification testing of any kind also endorses the cultural tendency to question the femininity of any woman who demonstrates too much of the very attributes that are prized in sport, like strength and speed" (Buzuvis, 2012, p. 63), assuming that such an athlete must not truly be female, since she has these traits.

Athletic female bodies challenge ideals of femininity, a tendency that seems to be exacerbated by factors relating to gender expression, race, and nationality. Most of the athletes suspected of not truly being female over the course of the tests somehow provoked Western anxieties (Cavanagh & Sykes, 2006). Their bodies can be read as falling outside the implicit "somatic norm" (Puwar, 2004) that female bodies are expected to conform to in elite sport; bodies are only "suspicious" if they do not look like what they are supposed to look like—White and lean with facial and bodily features historically associated with Western European descent. In a tense time between the U.S. and Germany, the German competitor Dora Ratjen held the gender verification spotlight. As the United States moved into the Cold War with the Soviet Union, Russian and Eastern European women became the feared spectacle. All of these women were reported in the media as masculine in appearance, implying that they might not truly be female. Today, athletes of color from the Global South are the subjects of suspicion-based sex verification. Under suspicion-based testing, finding someone's athletic ability "suspicious" usually involves identifying her physical appearance as non-normative in some way. Considering who is not declared

suspicious—White, Western, feminine women—it seems as if racism and Eurocentrism figure heavily into these judgments of femininity.

What the discourse tracing suggests, then, is that female athletes are (1) deemed suspicious simply on the basis of being athletes and (2) rendered more so by being visibly identifiable as not hegemonically feminine. However, once an athlete is deemed suspicious with regard to sex, how to test is still an issue. Major discontinuities in the history of sex verification testing not only highlight shifts in the nature of testing but often reconfigure the nature of suspicion as well.

Testing the "Suspicious" Athlete

Examining the history of sex verification, three major disjunctures in the discourse are evident. The first occurs when governing agencies shifted from chromosome testing for an XX chromosomal pattern to testing for an existent Y chromosome. The second disjuncture occurs when chromosomal testing was discarded entirely because chromosomes do not necessarily reveal advantage. Finally, the third disjuncture occurs when testing shifted to examine hormones, or the search for "natural doping."

At each of these turning points, the goal of testing shifted with the test. First, the object was to see whether the athlete was female. Then, it became to see whether she was male. Interestingly, the next shift moved away from sex per se, to the supposed *advantages* enjoyed by those considered male or intersex. Here, the tests began to separate from sex itself and focus more on the idea of advantage. In the last shift toward "natural doping," the testing for advantage matured enough to set disciplinary bounds—still in the name of sex—on a body's hormonal production levels.

These discontinuities show that sex verification testing is not purely about distinguishing between biological males and females, as was claimed when it began. Rather than searching for males masquerading as females, political discourses shifted multiple times so that whatever sex verification policies are current try to force bodies that do not fit either of the two categories into a physiological dualism. Buzuvis (2013) explains that good athletes usually owe their talent to a confluence of factors, not simply to being male, intersex, or transgender. As Hercher (2010) adds, "Producing an excess of testosterone is a genetic advantage, and there is nothing inherently wrong with that. Genetic advantages are the norm and not the exception in competitive sports. High-level competitive athletics are rife with individuals who are genetic outliers" (p. 552). However, it is only for advantages considered related to sex that the IOC requires impacted athletes to undergo "treatment" to be cleared for competition. Scholars and medical professionals have concerns about administering "treatment" for conditions that do not require medical intervention. Hormone therapy forces intersex athletes to see their bodies as unnatural and in need of modification (Munro, 2010), when there is no medical imperative to change.

There is a unique anxiety around sex, and "as the sex of the body is, increasingly, seen to be unstable . . . new efforts to manage the gender of Olympic athletes [come] into being (Cavanagh & Sykes, 2006, p. 79). As the sex binary is destabilized, intersex athletes are beginning to be recognized as such, even though they are not yet allowed to compete under that designation. However, something beyond sex—though not necessarily entangled with sex—is involved and is being mapped onto intersexuality. That is, the ways that testing and the surrounding discourse have shifted leads us to believe that something *in addition* to a fragmented binary of biological sex is at play.

By separating the related, yet different, processes of intersex discrimination and gendered physiological discrimination, we are working toward a more complex understanding of not only the way physiologies are disciplined but also how this discipline can function apart from sex and sexual markers (though in this case the two are interrelated in important ways). That is, sex verification testing reveals a *gendered* physiological discrimination, but the same phenomenon may be intimately related to race, nation, class, sex, ability, and sexuality in other circumstances.

Toward a Theory of Gendered Physiological Discrimination

We argue that sex verification testing is not, foremost, an issue of sex. Rather than simply breaking down the binary between male and female and showing that there are many variations in between, sex verification testing shatters even *the line between the two*. There is no direct correlation between any of these aspects of "sex"—a female can have the "correct" phenotype but "incorrect" chromosomes; or she can have "correct" chromosomes and a hormone "imbalance." Hormones and chromosomes have both been picked up by sports governing bodies over the years to "prove" the sex of female athletes. As each system of testing has consistently been found "faulty," thrown out, and replaced, it is worth questioning whether hormones and chromosomes should be considered markers of biological sex.

We argue that what we are examining is not simply biological sex, but the way that sex intersects with *physiological processes*. Although there are clearly issues of gender and sex implicated in this discrimination, the ultimate level at which female athletes are determined as not "female enough" is not equivalent to biological sex. It is something different. We argue that gendered physiological discrimination can capture this phenomenon. Gendered physiological discrimination as a form of discipline is defined as the systematic discrimination against types of bodies whose internal chemical, chromosomal, and/or hormonal composition is considered to deviate from an invisible, constructed norm. In this definition, we differentiate gendered physiological discrimination from that based on biological sex by defining sex as referring to a person's phenotype, genitalia, and gonads. There is, however, a point we would like to emphasize about biological sex. As other authors have argued, cases of gender verification testing clearly work to destabilize and deconstruct the male-female binary of biological sex (Sloop, 2012; Wackwitz, 2003). We fully support the necessity of understanding biological sex as a continuum, rather than two isolatable types. We do not wish to overshadow the importance of this argument, but rather to make the terms more complex in order that we might have a more detailed understanding of interwoven fields of oppression.

Physiological discrimination recognizes that disciplining certain naturally occurring internal bodily processes and chemical compositions is a form of oppression. Bodies are always political; in addition to external bodily characteristics, internal bodily processes are also being politicized and disciplined. However, physiological discrimination cannot be removed from an understanding of other forms of oppression (Acker, 2006; McCall, 2001; West & Fenstermaker, 2002), but instead acts in concert with racism, sexism, policing of gender expression, and other discursive—and material—fields of power. In this way, we see that contemporarily it is most often athletes of color from the Global South that first have their femaleness questioned by opponents and judges. The internal processes of their bodies ultimately deem whether they are fit to compete, and this physiology is discursively

represented as either "female" or "male" to the public at-large. Cases such as that of Caster Semenya or Santhi Soundarajan not only challenge the external somatic norm (Puwar, 2004) but also present examples of bodies that do not correspond to normative *physiologies*. By creating the term *gendered physiological discrimination*, we hope to give critical communication scholars a new lens through which to conceptualize the complex interrelation of fields of power, by considering how physiological discrimination may be gendered, raced, classed, sexed, abled, and sexualized in different ways.

The struggles over women's health, sexual violence, birth control, and abortion are evidence of feminists' concern for women's bodies as a site of struggle (Wolkowitz, 2006). Bordo (1990) studied the bodies of women as a symbolic form that is inscribed with rules, hierarchies, and cultural commitments that is disciplined through daily rituals, food, and dress. She argued that women's bodies are never deemed "good enough" in society and are always part of political discourse. However, while a major source of oppression, bodies also offer the possibility of undoing oppression, which makes their political inscriptions inherently important to discussions of sexism and feminism.

While bodies certainly fall within the realm of sexism, it is useful to separate gendered physiological discrimination as a different but related phenomenon. We argue that differentiating the physiological from other fields of power is a useful way to understand the complexity and robust experiences that contribute and relate to sexism. The equation of gender identity and sex difference was a very powerful means of maintaining dominance and disciplining women. Separating gender performance from sex helps to illuminate the different ways that oppression works to disadvantage women. The male-female binary is so powerful that mapping other personal aspects onto biological sex can feed oppression by seemingly "naturalizing" them. Just as it was quite powerful for feminists to differentiate gender identity from biological sex and sexuality, recognizing that sex and sexuality are themselves disciplined by gender was important. We hope that it may be equally powerful to differentiate physiology from sex, showing how the discursive attachment of sex testing to categories of sex actually serves to obscure other disciplinary measures enacted on the body. By differentiating between the two, the imperative placed on physiological differences conforming to notions of sex can be recognized and critiqued in more forceful ways and arenas of biological difference can be teased apart from the weighty disciplinary regime surrounding sex and gender. As a corollary, once chromosomes, hormones, and other gendered physiological processes are differentiated from sex, they may no longer function as evidence of sexual difference and biological sex could lose important ideological pillars, perhaps even leading to a discursive collapse of the sex binary. Finally, this separation will allow for the possibility of examining physiological discrimination in situations where it is not explicitly tied to biological sex.

Conclusion and Implications

As technological prowess increases our ability to test internal bodily processes to higher degrees of specification, we believe that physiological discrimination could serve as a powerful theoretical tool for communication researchers, as the way that such discoveries are encoded in language will continue to serve new and revised ideological functions. Here, we identify topics of study wherein the concept of physiological discrimination could be explored. First, sex education offers an interesting intersection between physiology, sex, and sexuality. The ways that teenage bodies are normalized

through sexuality education textbooks (Hayden, 2001) could provide a ground for examining the way physiology interacts with the policing of sexuality.

Second, physiological discrimination could be useful for discussions about biomedicine and individuals' susceptibility to certain diseases (Willard, 2005). As knowledge about individual bodily processes is gathered by doctors and insurance companies for "preventative" care, the potential for physiological discrimination looms. How this information is treated by insurance companies is an important issue to explore in future studies. This leads to a third area of research: the way internal bodily processes are discursively deployed in corporate health and wellness programs. Fourth, other areas that could draw from physiological discrimination include obesity or fat studies and fertility studies. The relationship between obesity and the disciplining of physiological processes could lead to important new fields of inquiry. Finally, future iterations of this work could investigate the ways in which gendered physiological discrimination can be differently sexed or related to other fields of power such as race, nation, class, ability, and sexuality.

This essay is part of a larger critical agenda that seeks to uncover disciplinary mechanisms in policies, organizations, and institutions. By introducing a new term to capture a specific kind of oppression that is related to but different from sexism, we continue the work of feminists and critical scholars in drawing attention to the ways that discrimination operates, in the hope of reducing it or at least shifting its terms. As scientific analysis of the body expands in purview, the possibilities for disciplining different bodily aspects expand with it. Physiological discrimination not only offers scholars a theoretical tool for analyzing such disciplinary regimes but points to the growing necessity for greater incorporations of the body into empirical and theoretical communication work.

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Notes

1. The slippage between sex and gender often implies an essentialization of feminine gender expression with female sex organs and a normative "female" phenotype. Although most sources we cite use the term "gender verification," we prefer to protest the equation of sex and gender by using "sex verification" instead. Accordingly, when applicable, we change the use of "gender" in quotations to "[sex].".
2. We use the term "elite sports" to refer collectively to national and international athletic organizations and events.
3. A surge of popularity in eugenics occurred during this time, which likely set a context for much of the anxiety about sex and gender in sports and certainly for the idea that one might test individuals for the ideal type of athlete.
4. Countries comprising the Eastern European Bloc had notable Jewish populations and were politically opposite from Brundage's support for Nazi Germany during this time.
5. People with mosaicism have different levels of sensitivity to androgens, which aids in building muscle and can enhance performance. They may not be able to use testosterone and thus might be disadvantaged in sports performance. Overall, most medical professionals acknowledge that sex-related genetic differences confer no unfair physical advantages for competition (Farhi, 2008; Tucker & Collins, 2009).

References

Acker, J. (2006). Inequality regimes: Gender, class and race in organizations. *Gender & Society*, *20*(4), 441–464. doi:10.1177/0891243206289499

Ashcraft, K., & Prasad, P. (2013). Organizing. In P. Simonson, J. Peck, R. Craig, & J. Jackson (Eds.), *The handbook of communication history* (pp. 377–396). New York, NY: Routledge.

Berg, S. (2009). 1936 Berlin Olympics: How Dora the man competed in the woman's high jump. *Spiegel International Online*. Retrieved from http://www.spiegel.de/international/germany/1936-berlin-olympics-how-dora-the-man-competed-in-the-woman-s-high-jump-a-649104.html

Bordo, S. (1990). Reading the slender body. In M. Jacobus, E. Fox Keller, & S. Shuttlewood (Eds.), *Body/politics: Women and the discourses of science* (pp. 133–156). New York, NY: Routledge.

Burkeman, O. (2013). Malcolm Gladwell: If my books appear oversimplified, then you shouldn't read them. *The Guardian*. Retrieved from http://www.theguardian.com/books/2013/sep/29/malcolm-gladwell-david-and-goliath-interview

Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. New York, NY: Routledge.

Butterfield, R. (June 14, 1948). Avery Brundage. *Life*, 115–126.

Buzzanell, P. M. (1995). Reframing the glass ceiling as a socially constructed process: Implications for understanding and change. *Communication Monographs*, *62*(4), 327–354. doi:10.1080/03637759509376366

Buzuvis, E. E. (2012). Including transgender athletes in sex-segregated sport. In G. B. Cunningham (Ed.), *Sexual orientation and gender identity in sport: Essays from activists, coaches, and scholars* (pp. 23–34). College Station, TX: Center for Sport Management Research and Education.

Buzuvis, E. E. (2013). Transsexual and intersex athletes. In M. L. Sartore-Baldwin (Ed.), *Sexual minorities in sports: Prejudice at play* (pp. 55–71). Boulder, CO: Lynne Reinner Publishers.

Campbell, K. (1998). Inventing women: From Amaterasu to Virginia Woolf. *Women's Studies in Communication*, *21*(2), 111–126. doi:10.1080/07491409.1998.10162552

Cavanagh, S. L., & Sykes, H. (2006). Transsexual bodies at the Olympics: The International Olympic Committee's policy on transsexual athletes at the 2004 Athens summer games. *Body & Society*, *12*, 75–102. doi:10.1177/1357034X06067157

Dreger, A. (2010). Sex typing for sport. *Hastings Center Report*, *40*(2), 22–24. doi:10.1353/hcr.0.0250

Farhi, P. (2008). The runner's secret. *The Washington Post*. Retrieved from http://www.washingtonpost.com/wpdyn/content/article/2008/08/21/AR2008082103680.html.

Fausto-Sterling, A. (2000). *Sexing the body: Gender politics and the construction of sexuality*. New York, NY: Basic Books.

Foucault, M. (1984). Nietzsche, genealogy, history. In P. Rabinow (Ed.), *The Foucault reader* (pp. 76–100). New York, NY: Pantheon Books.

Gandert, D., Bae, A., Woerner, T., & Meece, T. (2013). Intersection of women's Olympic sport and intersex athletes: A long and winding road. *Indiana Law Review*, *46*, 387.

Glazer, S. (2011–2012). Sporting change: Litigating sexism out of the Olympic intersex policy. *Journal of Law and Policy*, *20*, 545–580.

Goddard, E. (2013). IAAF denies claims of castration of transgender London 2012 competitors. *Inside the Games*. Retrieved from http://www.insidethegames.biz/sports/summer/athletics/1014949-iaaf-denies-claims-of-castration-of-transgender-london-2012-competitors

Guttmann, A. (1984). *The games must go on: Avery Brundage and the Olympic movement*. New York, NY: Columbia University Press.

Halberstam, J. (1991). Automating gender: Postmodern feminism in the age of the intelligent machine. *Feminist Studies*, *17*(3), 439–460.

Harrison, W. C., & Hood-Williams, J. (2002). *Beyond sex and gender*. Thousand Oaks, CA: Sage Publications.
Hayden, S. (2001). Teenage bodies, teenage selves: Tracing the implications of bio-power in contemporary sexuality education texts. *Women's Studies in Communication*, *24*(1), 30–61. doi:10.1080/07491409.2001.10162426
Heggie, V. (2010). Testing sex and gender in sports; reinventing, reimagining and reconstructing histories. *Endeavour*, *34*(4), 157–163. doi:10.1016/j.endeavour.2010.09.005
Hercher, L. (2010). Gender verification: A term whose time has come and gone. *Journal of Genetic Counseling*, *19*(6), 551–553. doi:10.1007/s10897-010-9323-z
Hoad, N. (2010). "Run, Caster Semenya, run!" Nativism and the translations of gender variance. *Safundi: The Journal of South African and American Studies*, *11*(4), 397–405. doi:10.1080/17533171.2010.511785
International Olympic Committee. (2006). *Anti-doping rules applicable to the XX Olympic Winter Games in Turin, 2006*. Lausanne, Switzerland: Author.
International Olympic Committee. (2012a). *Proceedings from 5th World Conference on Women and Sport, "Together Stronger: The Future of Sport," Los Angeles, CA, February 16–18*. Lausanne, Switzerland: Author.
International Olympic Committee. (2012b). *IOC Regulations on Female Hyperandrogenism: Games of the XXX Olympiad in London, 2012*. Lausanne, Switzerland: Author.
Jack, J. (2012). Gender copia: Feminist rhetorical perspectives on an autistic concept of sex/gender. *Women's Studies in Communication*, *35*(1), 1–17. doi:10.1080/07491409.2012.667519
Laqueur, T. (1990). *Making sex: Body and gender from the Greeks to Freud*. Cambridge, MA: Harvard University Press.
LeGreco, M., & Tracy, S. (2009). Discourse tracing as a qualitative practice. *Qualitative Inquiry*, *15*(9), 1516–1543. doi:10.1177/1077800409343064
Looy, H., & Bouma III, H. (2005). The nature of gender: Gender identity in persons who are intersexed or transgender. *Journal of Psychology and Theology*, *33*(3), 166–178.
Mallon, B., & Heijmans, J. (2011). *Historical dictionary of the Olympic movement*. Lanham, MD: Scarecrow Press/Rowman & Littlefield.
McCall, L. (2001). *Complex inequality: Gender, class, and race in the new economy*. New York, NY: Routledge.
Mouratidis, J. (1984). Heracles at Olympia and the exclusion of women from the ancient Olympic Games. *Journal of Sport History*, *11*(3), 41–55.
Munro, B. (2010). Caster Semenya: Gods and monsters. *Safundi: The Journal of South African and American Studies*, *11*(4), 383–396. doi:10.1080/17533171.2010.511782
Oudshoorn, N. (1994). *Beyond the natural body: An archaeology of sex hormones*. New York: Routledge.
Peters, M., with Wooldridge, I. (1974). *Mary P.: Autobiography*. London, UK: Paul.
Povich, S. (1996). Berlin, 1936: At the Olympics, achievements of the brave in a year of cowardice. *Washington Post*. Retrieved from http://www.washingtonpost.com/wp-srv/sports/longterm/general/povich/launch/olympics.htm
Puwar, N. (2004). *Space invaders: Race, gender and bodies out of place*. Oxford, UK: Burg.
Ray, C. (2009, November). Caster Semenya: 21st century 'hottentotvenus'? *New African*, *489*, 18–19.
Richardson, S. S. (2012). Sexing the X: How the X became the "female chromosome." *Signs*, *37*(4), 909–933.
Ritchie, R., Reynard, J., & Lewis, T. (2008). Intersex and the Olympic Games. *Journal of the Royal Society of Medicine*, *101*, 395–399. doi:10.1258/jrsm.2008.080086
Saner, E. (2008, July 30). The gender trap. *The Guardian*. Retrieved from http://www.guardian.co.uk/sport/2008/jul/30/olympicgames2008.gender
Schultz, J. (2011). Caster Semenya and the "question of too": Sex testing in elite women's sport and the issue of advantage. *Quest*, *63*(2), 228–243. doi:10.1080/00336297.2011.10483678

Shani, R., & Barilan, Y. (2012). Excellence, deviance, and gender: Lessons from the XYY episode. *The American Journal of Bioethics*, *12*(7), 27–30. doi:10.1080/15265161.2012.681338

Shapiro, S. (2012, July 23). Caught in the middle. *ESPN the Magazine*. Retrieved from http://espn.go.com/olympics/story/_/id/8192977/failed-gender-test-forces-olympian-redefine-athletic-career-espn-magazine

Simpson, J., Ljungquist, A., Ferguson-Smith, M., de la Chapelle, A., Elsas, L., Ehrhardt, A., ... Carlson, A. (2000). Gender verification at the Olympics. *Journal American Medical Association*, *284*(12), 1568–1569. doi:10.1001/jama.284.12.1568

Sloop, J. M. (2012). "This is not natural:" Caster Semenya's gender threats. *Critical Studies in Media Communication*, *29*(2), 81–96. doi:10.1080/15295036.2012.670876

Stopera, M. (2009, August 25). *The 10 most shocking Olympic gender scandals*. Retrieved from http://www.buzzfeed.com/mjs538/the-10-most-shocking-olympic-gender-scandals

Sullivan, C. (2011). Gender verification and gender policies in elite sport eligibility and "fair play." *Journal of Sport and Social Issues*, *35*(4), 400–419. doi:10.1177/0193723511426293

Tracy, S. (2007). Taking the plunge: A contextual approach to problem-based research. *Communication Monographs*, *74*(1), 106–111. doi:10.1080/03637750701196862

Tucker, R., & Collins, M. (2009). The science and management of sex verification in sport. *South African Journal of Sports Medicine*, *21*(4).

Veerapa, M. (2015, July 29). Santhi keen on getting her Asian medal back. *The Times of India*, Retrieved from http://www.timesofindia.indiatimes.com/sports/more-sports/athletics/Santhi-keen-on-getting-her-Asiad-back/articleshow/48262924.cms

Wackwitz, L. (2003). Verifying the myth: Olympic sex testing and the category "woman." *Women's Studies International Forum*, *26*(6), 553–560. doi:10.1016/j.wsif.2003.09.009

West, C., & Fenstermaker, S. (1995). Doing difference. *Gender & Society*, *9*(1), 8–37. doi:10.1177/089124395009001002

Wiederkehr, S. (2009). "We shall never know the exact number of men who have competed in the Olympics posing as women": Sport, gender verification and the Cold War. *The International Journal of the History of Sport*, *26*(4), 556–572. doi:10.1080/09523360802658218

Willard, B. (2005). Feminist interventions in biomedical discourse: An analysis of the rhetoric of integrative medicine. *Women's Studies in Communication*, *28*(1), 115–148. doi:10.1080/07491409.2005.10162486

Wolkowitz, C. (2006). *Bodies at work*. Thousand Oaks, CA: Sage Publications.

Young, S. L. (2015). Running like a man, sitting like a girl: Visual enthymeme and the case of Caster Semenya. *Women's Studies in Communication*, *38*(3), 331–350. doi:10.1080/07491409.2015.1046623