The Olympic festival is believed to have been created during the seventh or eighth century BC by Heracles as a means of fostering “goodwill” among the Greek peoples (Mouratidis, 1984, p. 49). Although it was common for women to participate in sporting events and other festivals during this period, they were specifically excluded from the festival at Olympia. In these early days and throughout the history of the ancient Olympic Games, women were not allowed to attend the competition as spectators, let alone as athletes. Mouratidis (1984, p. 41) argues that the practice of banning women from attending the Olympic festival was intimately tied to the “hero–athlete” Heracles. Heracles, also known as Hercules, quickly became the hero of the first Olympic Games, crowning their inauguration by winning every event in the competition.

Heracles was considered both a great hero and an accomplished warrior. A woman was not allowed to enter the presence of such a great hero—warrior, for fear that if she did, the strength of the warrior would be reduced. Women were thus forbidden to enter the festival at Olympia or any “sanctuary” belonging to Heracles, who became known as “Misogynos” or “Heraclés, the woman-hater” (Mouratidis, 1984, p. 54).

[N]o woman was allowed to watch the Olympic Games or even to cross the Alpheios river during the forbidden days. The penalty for the women detected entering the Olympic festival was death being thrown from a precipitous mountain with high rocks called Typaion. The only recorded case of a transgression of this law throughout the history of the games was that of Kallipateira or Pherenike as some people called her. The Hellanodicae saw that she was a woman but pardoned her out of respect for her father and her brothers and her son, all of whom won victories at the Olympic Games. The Hellanodicae then passed a decree that for the future all trainers should appear in the games naked. (Mouratidis, 1984, p. 51)

This is the first recorded instance of sex testing in the Olympic Games.

Although competitors and trainers are no longer required to attend the games naked, the presence of women in the modern Olympic Games remains under scrutiny. Today, women are allowed to participate in the games, but in doing so, they face the suggestion that they may not be real women and, as such, may be required to submit to a genetic sex test to prove their female validity. Sex testing, now applied on a case-by-case basis to those athletes suspected of being too masculine for women’s competition, was mandatory for all athletes competing in women’s Olympic events between 1968 and 1998 (Women athletes at 2002 Winter Games will not have to prove they’re women,
During the test, skin cells (usually scraped from inside an athlete’s mouth) are evaluated to determine if they have the chromosomal makeup required of female Olympians. Only those athletes who present the XX sex chromosomes considered standard for females of the species are automatically eligible for competition and inclusion in women’s events. All others are subjected to greater scrutiny and may be disqualified unless and until they are able to present sufficient evidence of their femininity to athletic officials. Modern athletes who fail the sex test are not physically pitched headlong over a precipice as were their ancient counterparts. They may well face consequences that are nearly as devastating, however, when they are kicked out of the Olympic Games, stripped of their athletic accomplishments, banned from competition, and denied membership in the category “woman”.

Sex testing is an injurious practice—one applied only to women—that is predicated upon the assumption that there are two and only two forms of the human body—male and female—and that the identification of these two forms constitutes objective observation of naturally occurring biological realities. Sex categories are considered to be both immutable and fundamental to human life. Thus, the identification of male or female sex characteristics—be they genetic (XX vs. XY chromosomes), physical (vagina vs. penis), or hormonal (estrogen vs. testosterone)—and the division of the species into binary categories based upon these identifications is assumed to be consistent with a “natural order” and, therefore, the only reality-based option.

This almost universally accepted system of classification does not allow for alternative conceptions of the sex–gender system, nor does it account for human bodies that do not conform to these expectations. That does not mean, however, that nonconformist bodies do not exist; nor does it mean that binary classification is appropriate, normal, natural, or desirable. Analysis of the sex testing of Olympic athletes provides an opportunity to examine more closely the problems that underlie the imposition of this binary sex–gender system upon athletes in particular and humanity in general.

**SEX TESTING: A CATEGORICAL IMPERATIVE?**

Despite the complexity of human physiology, the rote categorization of athletes into the mutually exclusive categories of “male” or “female” and the near equation of sex with gender remain largely unquestioned within the international athletic community. Sex testing is the means through which the assumption of this binary sex–gender system is both enforced and made visible to observers. The three terms “sex testing”, “gender verification,” and “femininity testing” are used nearly interchangeably by Olympic officials, athletes, and reporters for the popular press. The constellation of these three terms suggests the inseparability of sex from gender and of sex and gender from femininity. In an effort to reduce the amount of on-site testing at the Olympic Games and other international athletic competitions, athletes who pass an officially sanctioned sex test receive a passport to participate in future athletic competitions. Tellingly, the passport is known as a “femininity card” (Kolata, 1992).

Categorical acceptance of sex–gender designations is indicative of the extent to which the myth of a binary sex–gender system is embedded in the international athletic community and its participating cultures around the globe. Through the practice of sex testing, a woman’s sex, gender, and femininity are defined according to the rules established by and generated for these binary categories and their accompanying myth systems.

Variously defined along a continuum from fairy tale to archetype, myth is a polysemous construct that helps to create and recreate the ideological world. The power of myth lies in its ability to profoundly, yet covertly, influence cultural and individual assumptions and actions (Levi-Strauss, 1969; Nimmo and Combs, 1980; Sartore, 1991). Myths may “go unidentified because they are considered to be truth[s], self-evident facts, scientific facts, common sense, universal values, or are quite unconscious” (Slusser, 1989, p. 78). Myth also functions by “transform[ing] history into nature” (Barthes, 1972, p. 129); thus, it is able to embed itself in the world of “the natural” by coupling with the underlying and unquestioned patterns of thinking that permeate a culture’s existence (Morarity, 1991).

In the case of the Olympic Games, myth creates the perceived need for sex testing by naturalizing the categories of competition. The whole of Olympic competition is predicated upon the assumption that there are two and only two sexes inherent in the human species. This binary sex–gender system forms the basis for division of athletes into two groups—males and females—and athletic competition into two sets of events—men’s events and women’s events. These divisions are simultaneously helpful and damaging to those identified as women. They are helpful to women in that these two categories, being consistent with most of the sex–gender systems currently encountered by women across the globe, enable
groups of people to compete against others who have suffered under regimes that tend to discourage athleticism among women. Unfortunately, however, this advantage is only advantageous because, for the most part, binary sex–gender systems require that women maintain a lesser status than men—both in and out of competition. Thus, the very system which seeks to provide a space for women to compete is also the system that insists upon their competitive inferiority.

Sex testing, then, is the coercive measure by which the categories male and female are imposed upon living beings by the International Athletic Committee and other athletic governing bodies. Since 1968, the year of its inception or reincarnation from ancient tradition, supporters of sex testing have argued that without a sex test, there is no assurance that athletes competing in women’s events are, indeed, women. For those who support sex testing, the practice is seen as a means of preserving the integrity of the games for female participants by (1) protecting women from being forced to compete against males in disguise and (2) preventing genetically “anomalous” individuals from infiltrating the ranks of “true” women competitors. Their conclusion that sex testing is necessary to preserve and protect the integrity of women’s events is supported by and generated out of myth systems which uphold common conceptions about (a) the incompatibility of athletes and feminism and (b) the naturally occurring division of humanity into male and female groupings. Both of these assumptions have helped to sustain the practice of sex testing for over 30 years. During that time, Olympic officials have instituted several different methods for determining a woman’s sex, moving from the visual inspections, or “nude parades” (Carlson, 1991; Ewing, 1992), conducted during the international athletic competitions of 1966 and 1967, to the first genetic sex test implemented for the Olympics in 1968, to the more sophisticated genetic testing used in recent years. Each advance in screening technology has failed to provide a definitive and undisputable marker of the category “woman.”

**FEMININE ATHLETES: AN OXYMORON?**

Preservation of the category “woman” for athletic competition is considered necessary because it is commonly assumed that women are simply not capable of achieving the same sort of physical prowess as men. Women, or so the story goes, are weaker than men; they do not jump as high or throw as far; they do not travel as quickly on foot, skis, or skates, across land or through water; they do not throw, hit, punch, or kick as well or as hard; they do not set the same sorts of records or win the same types of competitions as do their male counterparts. These myths about the clear demarcations between the characteristics of men and the characteristics of women support the sexual division of sport by facilitating the assumption that such divisions are natural, when in fact, they are socially constructed. Because of the extent to which these assumptions are ingrained in human cultures—including those surrounding the Olympic Games—women have had less opportunity to compete and to realize their full potentials as athletic beings. Women have been frequently excluded from participation in sport based upon the assumption that they need a special level of protection in and from athletic arenas (Blue, 1987). During the 1928 Olympics, for instance, women were grudgingly allowed to run the 800-m track event for the first time. After several runners “collapsed” near the finish line, Olympic officials declared the race a danger to women and eliminated it from the schedule of events. Women were not allowed to run the 800 m in the Olympics again until 1960 (Blue, 1987). However, despite active measures taken to prevent women from participating in and excelling at athletic competition, at this point in history, the gap between elite male and elite female athletes is remarkably slight. In 1988, for example, the fastest woman in the 100-m race at the Olympic Games ran less than 1 s behind the fastest man in the 100 m, and the gap is closing in other events as well. It may be, then, that cultural restrictions, not genetic differences, have prevented women from exceeding the athletic achievements of men (Hubbard, 1990). The myth of male athletic superiority within a binary sex–gender system, however, is so strong that even some feminists may find it difficult to accept the possibility of other alternatives.

Sex testing likely originated out of, and may be sustained by, the perceived clash between mythic conceptions of womanhood and the achievements of female athletes (see Kolata, 1992). As Kolata (1992) argues, the struggle to accept women as Olympic-caliber athletes was a struggle to redefine the feminine role. In the early days of women’s competition in the modern Olympic Games, for example, newspaper reporters emphasized the “feminine” characteristics of women athletes. The headline from one newspaper, in particular, is widely quoted as declaring, “Fastest Woman in the World Is an Expert Cook” (Blue, 1987, p. 72). By 1968—the year of the first genetic sex test in Olympic history—women were able to compete in more Olympic events than ever before, including volleyball (introduced in 1964 as the first Olympic
team sport for women), swimming (which added seven new events between 1964 and 1968), and track and field (with the addition of the 400-m run and the pentathlon). Sex testing provided a means of verifying the gender of individuals who had broken the traditional molds of femininity by participating in these and other events. At that point, it served a dual purpose: fulfilling the requirements of the repressive state by monitoring the athletic participation of women and satisfying the needs of women athletes and Olympic observers who equated excellence in athletics with male performance and, therefore, worried that excellent women athletes were actually men, or had become men by virtue of their training (Kolata, 1992). In 1968, when “Lindsay Schmidt” (a pseudonym), a long-distance runner seeking a berth on the Olympic team, passed the sex test, she was overjoyed. The questions raised by the institution of sex testing had made her fearful. After years of intense training, running farther than women were supposed to run, and disguising herself as a man to gain entry into marathon events, Lindsay Schmidt was afraid that despite all evidence to the contrary, she was somehow male (Wackwitz, 1996). Women, after all, were not supposed to be able to do the things that she did.

MALE VS. FEMALE: A TALE OF TWO BODIES?
The practice of sex testing provides a rare glimpse at a specifically coercive technique used to further institutionalize sex–gender distinctions and protect the stability of these socially defined categories and their attendant systems of sexual division. Sex testing is the regulation and reinforcement of the institution of the sex category “female.” It defines who does and does not belong. When women challenged traditional notions of “femininity” by becoming seriously competitive athletes, they called into question the permanence and immutability of their assigned sex category. Some believe that without sex testing, the integrity of women’s sport would be compromised. Cheaters or deviants would then be able to compete in women’s events, dubiously and illegally entering the institution of “female.” Such a crossover would further challenge the legitimacy and definition of the categories themselves, thereby threatening the institution.

Despite the fact that protests against sex testing have illustrated that neither the chromosomal make-up nor the physical appearance of a person is a 100% reliable indicator of biological sex, the assumption of a binary system remains widely accepted. In fact, social and scientific definitions of sex are sometimes in complete contradiction to one another, particularly within the international athletic community, where the standards for inclusion in the category “female” are more stringent than in other areas of life. After Eva Klobukowska, for example, failed to pass a genetic sex test in 1967, she was excluded from the category “woman” despite the fact that she had successfully passed a visual verification test only 1 year earlier (Blue, 1987; Loss of girl runner’s records draws a protest from Poland, 1968; Sex test disqualifies athlete, 1967). Because the genetic test, at the time, enjoyed complete presumption over a physical exam, Klobukowska was stripped of all her athletic awards, including two Olympic medals won in 1964, and was forced out of international competition. “I know what I am and how I feel,” she told the press. “It is a dirty and stupid thing to do to me” (Loss of girl runner’s records draws a protest from Poland, 1968).

The first woman to successfully challenge the results of a genetic sex test was Maria José Martinez Patino (Ewing, 1992). Nearly 20 years after Eva Klobukowska was banished from competition, Patino petitioned the International Amateur Athletic Federation for reinstatement to athletic competition. “I knew I was a woman,” she explained, “in the eyes of medicine, God and most of all, in my own eyes. If I hadn’t been an athlete my femininity would never have been questioned” (Carlson, 1991, p. 27). Patino, a runner and hurdler, was banned from competitive sports after a 1985 sex test revealed that she had the XY chromosomes typically characteristic of a “man.” Her body lacked the ability to process testosterone, however, resulting in physical characteristics that are consistent with those used to identify members of the category “woman.” Four months after she failed the test, she was instructed to fake a career-ending injury, but she refused to obey the wishes of her government, choosing to run instead. Her defiant decision proved costly: Maria Patino was humiliated in the press, banned for life from competing in the sport she loved, fired from her job, and abandoned by her friends and her boyfriend. “Women must fight,” she warned, “and not just for a day or a year. What happened to me was like being raped. I’m sure it’s the same sense of incredible shame and violation. The only difference is that, in my case, the whole world was watching” (Carlson, 1991, p. 29). Maria Patino was reinstated in 1988 (Vines, 1992). Her case serves as a reminder of the capriciousness of power, the fragility of the category “woman,” and the problems with applying a base 2 system of classification to a base 10 reality.

The science of sex testing also reflects this fragility by pointing to the difficulty of enforcing an either–or
system of classification. According to Bernard Din-geon, users of the original "buccal smear test" (implemented for the Olympics in 1968) set out to prove that a woman was a female. The more recently developed PCR test, however, is used to seek a different outcome—to "prove she is not a man" (Holmes, 1992). The very notion, enacted scientifically, that these are two different approaches to the problem of sex determination yields a paradox: the categories "man" and "woman" are considered mutually exclusive—one is either a man or a woman—yet to be "not woman" is not the same thing as to be a "man." Clearly, sex is neither physical nor genetic nor binary: it is cultural, a human interpretation by which meaning is assigned to physical and genetic qualities.

Athletic cultures are reflective of larger cultural systems in which men and women, males and females, are believed to be two distinct forms of the human being. The binary sex—gender system is enforced and reinforced by the primary myth systems of science and religion. Texts of many religions, including Judaism, Christianity, and Islam, report the creation of male and female beings by a divine source. These texts include information for followers about not only the existence of two sexes, but also the characteristics of and expectations for each. For many people, these texts are considered divine evidence of fundamental truth, and they form the foundation for differential treatment of people on the basis of their sex (Bullough, Shelton, & Slavin, 1988). Still others are influenced by the widely exercised subscription to religious beliefs and practices undertaken within their cultural groupings. The mythic structures of these religions and the societies that subscribe to them thus serve to create a platform upon which current assumptions and expectations about a binary sex—gender system reside. Religion, communicated through narrative structures, thereby forms the basis for epistemological and ontological assumptions about the "nature" of being and the definition of life.

Likewise, much scientific doctrine—particularly that which is steeped in the tradition of Western medicine and biology—explicates the characteristics of a naturally occurring binary sex—gender system. For most people, the assumptions of modern science in this regard are accepted as a given: At base, human beings come in two distinct forms—male and female—which are easily determined based upon phenotypical and/or genotypical traits. However, even for an infant who is readily identifiable at birth as either male or female, the process of becoming a gendered human being requires physical, psychological, and behavioral adaptation to the specific sex—gender category to which the infant was originally assigned (Fausto-Sterling, 2000; Hubbard, 1990). Scientific methodology, however, obscures the impact of these adaptation efforts by accepting as a given the underlying genetic foundation for sex assignment. The division of humanity into two types of sexual beings has become an implicit or taken-for- granted assumption that now informs nearly all Western scientific research into human biology and physiology (Hubbard, 1990; cf. Laqueur, 1990).

Both science and religion are culturally constructed through the communication of norms and values and assumptions about the physical world of human beings. These norms, values, and assumptions are communicated through the processes of storytelling, ritual, and myth. Scientists and religious leaders tell stories which are repeated over time and across cultures. Although each form narratives about underlying belief structures and suppositions, Western science is unlike religion, in that it fails to acknowledge—and, in fact, purposefully obscures—the reliance upon storytelling as a means of sustaining its system of inquiry (Hubbard, 1990). However, the stories of both scientists and religious leaders define and are defined by the myths which they create and support. The world of myth, in turn, serves to reify the manifest and latent assumptions presented through the storytelling ritual. Because of the prevalence of both religious and scientific systems of thought, each contributes to the other and reinforces common understandings and agreements about the definition of human life and sexuality. Whether one accepts that God or nature (or both) created men and women as distinct creatures, that acceptance is based upon faith, and that faith is based upon social agreement informed by myth.

The issue of sex testing in Olympic sport problematizes—in a very real manner—the stories of both religion and science regarding the binary categorization of sex into male and female, and the means by which each person's "sex" is determined. Although gender is commonly perceived as the social construction of sex, sex categories are themselves human constructions (Butler, 1990; Hubbard, 1990). People are not male or female by nature, but rather are defined as male or female by society, cultural convention, and athletic officials. Not limited to Olympic competition, sex testing is used in a variety of athletic venues to determine and define the parameters of being a woman. In 1993, for example, four women expecting to compete in the Southeast Asia Games were barred from doing so after failing the sex test. According to the head of the Medical Committee for those games, two of the women "did not know they were not
females until they were told” (Newman, 1993). What then is the purpose of sex testing? To eliminate variables not “intended” by God or nature? To maintain the purity of sport? To exert control over all women by suggesting that physical speed, strength, and stamina are natural in men, but not in women? To call into question the identity of each competing athlete, to make her pause—even if only momentarily—and reflect upon the wisdom of her decision to compete? Or is the purpose of sex testing to encourage women to enforce standards of “femininity” upon their sisters in competition?

Whatever the reasons, these are the consequences. By requiring conformity to social norms and situating people into seemingly distinct, but nevertheless constructed categories, governing bodies of sport wield oppressive power that serves to create and reinforce a system of difference based upon hierarchy and grounded in oppression. Imposition of dichotomous categories is an enactment of cultural power relations, in which one group dominates another through categorization and enforced difference (Bourdieu, 1984). According to Pierre Bourdieu (1984), placing individuals into these specifically defined and unquestioned groups contributes “to the maintenance of [the established] order only because it has the specifically symbolic power to make people see and believe... [through] the imposition of mental structures” (Bourdieu, 1984, p. 480). These structures are supported by and institutionalized through myth.

The commonly recognized essential characteristics of the categories male and female signal the existence of an “institution,” broadly conceived (Berger and Luckmann, 1966, p. 54). People perceive this institution to be a part of an external, objective reality that is defined by nature—men are men and women are women because they are. It is considered a self-evident, a-priori truth that humans are fundamentally either male or female. However, as Berger and Luckmann (1966, p. 60) explain, “it is important to keep in mind that the objectivity of the institutional world, however massive it may appear to the individual, is a humanly produced, constructed objectivity.” Nevertheless, because institutionalized categories appear to be externally imposed and grounded in the ever-present realities of God or nature or both, they have “coercive power” and are not easily dissolved or questioned (p. 60). The outright application of coercion to maintain belief in and adherence to sex–gender categories, therefore, is rarely necessary as a means of maintaining the integrity of the classificatory system.

**DISCUSSION**

Sex testing in international athletics is an example, taken to the extreme, of the scrutiny faced by all human beings who are subjected to life in a rigid binary sex–gender system. Interrogating sex testing as a practice provides a means of interrogating the system upon which sex testing is based, for it highlights both the institutional rigidity of the categories and the existence of individuals who defy typical classification under the current system. Perhaps the most interesting and frustrating aspect of sex testing in general is its practice creates a dilemma for feminist thinkers: sex testing clearly discriminates against women, yet sex testing, exposed to its roots, suggests that the category woman is, itself, discriminatory in some senses. The challenge to sex testing, taken beyond the first principled call to end the discrimination, holds the fearful possibility of further destabilizing the very category upon which many feminists rely for solidarity and strength—the category “woman.” Thus, the traditional arguments against sex testing (e.g., sex discrimination and segregation), as valid and disturbing as they are, nevertheless, serve to support and are supported by the notion and enforcement of a binary sex–gender system of classification. For although postmodernism has demonstrated that the category “woman” is not at all monolithic or unified, there remains, for many feminists, a significant commitment to the idea that the continuum of women is, in some senses, defined by its differences from the continuum of men.

Sex testing in international athletics affords an opportunity to take a deeper look, to go beyond the norm—yes, even the norm of discrimination—to see sexual and gendered worlds as more constructed than first thought, and what an opportunity it is, for in the practice of sex testing, the system has shown its hand in two fundamental ways: (a) The binary categories so commonly recognized, accepted, and utilized do not work and are not mutually exclusive as has been supposed by medical professionals and laypersons alike; and (b) the system itself relies upon, indeed is dependent upon, binary categorization for its very existence and survival. What, after all, would patriarchy be without the discrete categories of men and women? As a binary system—a constructed and socially imposed binary system—the struggle is to preserve the integrity of that system as it is designed against the reality of life as it is lived.

There exist many people—even some Olympic-caliber athletes—who do not fit properly within the boundaries established for the classificatory sex–gender system. Some use the term “intersexual” to
describe people like Eva Klobukowska and Maria Patino who fall outside (or in-between) the categories provided by patriarchy, medicine, science, religion, and law. Much discussion and understanding of intersexuality, however, continues to be based upon the acceptance of male and female categories. Intersexual bodies, therefore, are not widely considered to have their own biological identity with regard to sex, but rather are described as “bodies having mixtures of male and female parts” (Fausto-Sterling, 2000, p. 257, n4). The parts, it seems, continue to be classified under the ruling binary system, even when the bodies to which they belong—the people they comprise—are excluded, lumped into the category of “other,” or labeled as “intersexuals.”

Because the binary system is so completely ingrained in mainstream cultures and thought, people who do not fit neatly into one category or the other are commonly forced into one and made to conform—both physically and psychologically—to the standards of an acceptable sex. Sexual assignment may take the form of a series of physical interventions, such as prenatal therapy or surgical alterations to a newborn child. For others, however, there may be no “opportunity” for medical intervention or no outward evidence of nonconformity (Fausto-Sterling, 2000). Societies, then, rely upon socialization as a means of ensuring the adaptation of their members to cultural, social, and even biological norms. With much of this “work” occurring at or before birth, it is no surprise that so many people who were identified as women—who were raised as girls and who were socialized to become women—have no knowledge of their so-called intersexuality. Maria Patino’s case is compelling, because she was able to fight the system and to win. However, her case is made all the more compelling to the average person precisely because she was so outwardly “normal.” She was socialized as a female; she had breasts and a vagina; she had a boyfriend. She also had testes. She became the first woman in history to successfully be the success story people read about in books and newspapers today?

Now that sex testing, in part due to Patino’s strength, courage, and determination, is to be applied on an as-needed basis, will this shift elicit other demons from across cultural lexicons? Will sexual orientation, religion, race, ethnicity, country of origin, and/or economic status become markers for differential testing? Have these “markers” already been factored into the equation when determining who does and does not qualify to compete as a woman? Unfortunately, only time will tell about the future, and we may never fully know about the past because sex testing has historically been a practice shrouded in secrecy and made invisible under the auspices of protecting the privacy of athletes. In that regard, sex testing is much like its father, the patriarchal and heterosexist system which spawned the test. Both are reliant upon and protected by the myth of two and only two sexes: one superior to the other and ordained as such by God and by nature, the other expected to accept these findings and to be comfortable with silence and, when necessary, imposed invisibility.

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