

# *Intersexuality and Universal Marriage*

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## I. INTRODUCTION

Imagine the public furor that would erupt if Jake, a young, wounded veteran of the Iraq war returned home after an arduous rehabilitation, intending to marry his high school sweetheart Ashley and was *denied a marriage license because of his war wounds*: the loss of his penis and testicles thanks to a land mine. Talk shows would queue up to have the couple as guests. Politicians would offer their services to marry the couple in some other, more liberal state.

Nonetheless, one of the most “traditional” views of marriage, that is strenuously invoked against same-sex marriage (so called), would be forced by its own arguments to refuse to sanction the marriage of our wounded war veteran. Canon 1084 §1 of the Roman Catholic Code of Canon Law emphatically states

Antecedent and perpetual impotence to have intercourse, whether on the part of the man or the woman, whether absolute or relative, nullifies marriage by its very nature.<sup>1</sup>

On this view, Jake’s war wound would prevent him from marrying Ashley or anyone else in a Roman Catholic ceremony.

Whether the Roman Catholic Church or any other religious denomination should perform such a marriage is a matter for that religious denomination to decide and is not a matter of public policy. Whether the various states of the union should sanction such a marriage is a matter of public policy. Fortunately, no state law denies a marriage license to a war veteran wounded in such a way or anyone else whose genitals and gonads have been grievously damaged or surgically removed to cure their diseased state.

If one of the most traditional views on marriage used to argue against same-sex marriage constructs a boundary for heterosexual marriage that is out of line with popular sentiment and the law in all 50 states then certainly their arguments that marriage is the union of one man and one woman should be subject to critical examination.

As the Bush administration puts its weight behind the proposed Federal Marriage Amendment that state

Marriage in the United States shall consist only of the union of a man and a woman.

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<sup>1</sup> *Libreria Editrice Vaticana*, Title VII, Chapter III, Canon 1084, §1, online at [http://www.vatican.va/archive/ENG1104/\\_\\_\\_P3Y.HTM](http://www.vatican.va/archive/ENG1104/___P3Y.HTM), last visited February 18, 2004.

many states are rushing to enact similar amendments with even more speed. However, very few have noticed that any such amendment (or statute) immediately raises the questions of “Who is a woman?” and “Who is a man?”

The Supreme Court has many times held that the right to marry is a fundamental, protected liberty.<sup>2</sup> Defenders of the traditional view of marriage argue that the right to marry is the right of a woman to marry a man and the right of a man to marry a woman. If that is the case and if marriage is a fundamental right available to every person (of sufficient age and mental competence to contract) then the questions “Who is a woman?” and “Who is a man?” are of fundamental importance. Failure to answer these questions so that the woman-man distinction is exclusive and exhaustive can result in a court deciding that a person is incapable of marrying anyone! An Australian court handed down just such a decision in 1979!<sup>3</sup>

After more than a millennium of trying to squeeze all of humanity into one of two categories labeled “FEMALE” and “MALE” it is time for western law catch up to biology and medicine and realize that FEMALE and MALE are not fundamental metaphysical categories that neatly or even messily classify all human beings unambiguously. After two thousand years biology and medicine finally recognize that “female” and “male” are adjectives for anatomical, hormonal, and other characteristics. These characteristics typically align into what we recognize as “women” and “men”, but not all of the time. Nineteenth<sup>4</sup> and twentieth century biomedical discoveries have revealed that variations from the typical developmental paths occur during early embryonic development. A wide variety of physically intersexed conditions with atypical combinations of sexual characteristics can result.<sup>5</sup> After surveying the relevant medical literature published between 1955 and 2000 Anne Fausto-Sterling and her colleagues estimated that the frequency of individuals receiving “corrective” genital surgery runs

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<sup>2</sup> Most notably in *Skinner v Oklahoma*, 316 US 535 (1942); *Loving v Virginia*, 388 US 1 (1967); *Zablocki v Redhail*, 434 US 374 (1978).

<sup>3</sup> *In the Marriage of C. and D. (Falsely Called C)*, 35 Fed L Rep 340 (Family Court of Australia 1979).

<sup>4</sup> “As early as 1836 Isidore Geoffroy Saint Hilaire [1805-1861] after having demonstrated ‘how general is the influence exercised by the testes or the ovaries on the organization,’ explains the ‘hermaphroditism’ of the genital tract as produced during development by an ‘influence exercised directly upon the ovary or the testis, and indirectly, through its intermediary, upon the remainder of the genital tract.’” (Alfred Jost, *Problems of Fetal Endocrinology: The Gonadal and Hypophyseal Hormones*, 8 Recent Progress in Hormone Research, 379 (1953)). The citation is to Isidore Geoffroy Saint Hilaire, 2 *Histoire générale et particulière des anomalies de l’organisation chez l’homme et les animaux, ou, Traité de tératologie: ouvrage comprenant des recherches sur les caractères, la classification, l’influence physiologique et pathologique, les rapports généraux, les lois et les causes des monstruosités, des variétés et vices de conformation* 58 (J.-B. Baillière 1832-1837).

<sup>5</sup> For a review of gender identity development of intersexed persons see generally Kenneth J. Zucker, *Intersexuality and Gender Identity Differentiation*, 10 Annual Rev Sex Research 1 (1999).

between 1 and 2 per 1,000 live births.<sup>6</sup> In contrast, the 2000 Florida vote for President was decided by approximately 1 vote in 10,000.<sup>7</sup>

Atypical combinations can even be found at the chromosomal level. Most of us learned about “XX” and “XY” sex chromosome pairs in introductory biology courses. These are the typical combinations usually identified as “female” and “male,” but there are others. Some people lack a second sex chromosome. (“X0”, Turner Syndrome). Some people have three (“XXY”, Klinefelter Syndrome), four, or even five sex chromosomes. Most bothersome for any attempt at a strictly binary classification scheme of FEMALE and MALE, some individuals have an abundance of cells with “XX” sex chromosomes pairs as well as an abundance of cells with “XY” sex chromosomes pairs.

Any attempt to classify all of humanity into two exclusive and exhaustive categories for the sake of marriage, FEMALE and MALE, will fail, just as early 20<sup>th</sup> century attempt to define “the white race” to restrict immigration failed.<sup>8</sup> A classification seeking certainty by using many characteristics will leave some people in a twilight zone, classified as neither female nor male and deprived of the right to marry anyone. A classification seeking simplicity using only one or two key characteristics will have incongruous results. Some apparent “opposite-sex” marriages will turn out to be “same-sex” marriages.

**Reproduction** requires complementary female and male functionality. There can be no doubt of that. Certainly, those couples wishing and able to conceive children are especially privileged. I concur wholeheartedly with “traditionalists” that marriage provides a preferred setting for child-rearing. As a widowed, adoptive parent who was one half of an infertile couple, no one knows these last two points better than I do. However, neither child-rearing nor even reproductive capability is required in a marriage. There is a long tradition in Anglo-American law that infertility, even if it is certain, does not provide grounds for annulment or divorce.<sup>9</sup>

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<sup>6</sup> Melanie Blackless, Anthony Charuvastra, Amanda Derryck, Anne Fausto-Sterling, Karl Lauzanne, and Ellen Lee, *How Sexually Dimorphic Are We? Review and Synthesis*, 12 Am J Hum Biol 151 (2000) online at <http://bms.brown.edu/faculty/f/afs/dimorphic.pdf>. (Last visited on June 1, 2004.) They also estimate that as many as 2% of all persons have some variation from the “ideal male or female.”

<sup>7</sup> According to the 2000 *Official General Election Results* posted by the Federal Election Commission Bush received 2,912,790 votes, Gore received 2,912,253 votes, all other candidates received 138,067 votes for a total of 5,963,110 votes counted. (Data online at <http://www.fec.gov/pubrec/2000presgeresults.htm> last visited June 6, 2004.) Bush’s total exceeded Gore’s by 537 votes, approximately 1 in 10,000!

<sup>8</sup> See the discussions below of *Ozawa v United States*, 260 US 178 (1922) and *United States v Thind*, 261 US 204 (1923), as well as *Loving*, 388 US 1 (1967).

<sup>9</sup> In 1968 a New Jersey court reasoned “If the begetting of children were the chief end of marriage, it should follow that our public policy would favor annulling marriage in sterility cases where the fact of sterility is unknown to the parties at the time of the marriage. But no statute in this state permits annulment in such cases.” *T v M*, 100 NJ Super 530,538, 242 A2d 670,674-5 (1968). Reading this passage in isolation one wonders how a spouse could have possibly brought an annulment suit on grounds of infertility in the 1960s. By then it was well established that sterility was not grounds for annulment. In fact, *T v M* is the exception that proves the rule that in the eyes of the law marriage is not about reproduction. In *T v M* the couple conceived a pregnancy without sexually consummating their marriage! When they attempted sexual intercourse the husband could not penetrate his wife due to her vaginismus. “On one occasion the husband

Professor Julie Greenberg of Thomas Jefferson Law School in San Diego is among the few who have noticed the importance of the questions “who is a woman?” and “who is a man?” Professor Greenberg proposed that

the law reject the currently accepted biologically based model for determining sex and instead adopt a more flexible approach that emphasizes gender self-identification.<sup>10</sup>

I make a more radical proposal.

Once we realize that “female” and “male” are no more than adjectives describing a variety of anatomical and hormonal characteristics that do not always align in the typical fashion we must conclude that the law cannot require that marriage be the union of one **WOMAN** and one **MAN** and still hold marriage to be a basic civil right available to *every person*.<sup>11</sup> Instead of talking about the topic of the day as “same-sex marriage” we should

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used force in his attempt to penetrate. This resulted in his ejaculating against the vulva, causing a ‘splash pregnancy’.” (Id A at 671) A few months later the wife miscarried. The relevant New Jersey statute read

The parties, or either of them, were at the time of marriage physically and incurably impotent, provided the party making the application shall have been ignorant of such impotency or incapability at the time of the marriage, and has not subsequently ratified the marriage. (NJ Rev Stat 2A:34-1(c), cited id at 673)

According to Judge Hartman “The action [was] not contested on the merits” (id at 671) and he granted the annulment.

In 1943 an English court granted an annulment in the case of a sexually unconsummated marriage with a child born from a “splash pregnancy” (also called fecundation *ab extra*). See *Clarke (otherwise Talbott) v Clarke*, [1943] 2 All ER 540.

Surprisingly, there are no reported cases in which one spouse in an adoptive couple sought an annulment on grounds of the other spouse’s physical incapacity.

Failing to tell an intended spouse of your known sterility, from surgery for example, can provide the basis for an annulment on the grounds of fraudulent representation. (See for example *Turner v Avery*, 92 NJ Eq 473, 113 A 710 (NJ Chancery 1921).) However, sterility in and of itself does not provide grounds for annulment. (See, for example, *C. E. Jorden v Catherine M. Jorden*, 93 Ill App 633 (Ill App 2d Dist) (1900); *Larsen v Larsen*, 88 Pa Super 98 (1926); *Reed v Reed*, 26 Tenn App 690, 177 SW2d 26 (1943); *Gibbs v Gibbs*, 156 Fla 404, 23 So2d 382 (1945).)

<sup>10</sup> Julie A. Greenberg, *Defining Male and Female: Intersexuality and the Collision between Law and Biology*, 41 Ariz L Rev 265,270 (1999).

<sup>11</sup> David Berreby suggested just this argument in his article *Quelle Différence? Biology dooms the Defense of Marriage Act* posted on Slate on 09 /11/1996. (Online at <http://slate.msn.com/id/3118>, last visited June 1, 2004.) and then must have moved on to his next deadline.

I have found approximately 50 English language articles in law journals that discuss the marriage rights of physically intersexed and transsexual people going back to G. W. Bartholomew, *Hermaphrodites and the Law*, 2 U Malaya L Rev 83 (1960). This is one of the few articles that give significant emphasis to physically intersexed persons. Professor Greenberg’s article is the first American law journal that places significant emphasis on the physically intersexed. Among others that give significant emphasis to the physically intersexed are David William Meyers, *Problems of Sex Determination and Alteration*, 36 Medico-Legal J 174 (1968); Rebecca J. Bailey, *Family Law – Decree of Nullity of Marriage of a True Hermaphrodite Who Has Undergone Sex-Change Surgery*, 53 Australian L J 659 (1979); H. A. Finlay,

be talking about "*universal marriage*", the right of any two unmarried (not closely related) adult persons to marry each other and enjoy its legal benefits<sup>12</sup> (and obligations) regardless of the genital activities made possible and impossible by their sexual anatomies.

In 1996 during an earlier round of this culture war Hadley Arkes, the Edward Ney Professor of Jurisprudence and American Institutions at Amherst College and a staunch opponent of universal marriage gave testimony to the House Judiciary Committee) in

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*Sexual Identity and the Law of Nullity*, 54 Australian L J 115 (1980); and H. A. Finlay, *Legal Recognition of Transsexuals in Australia*, 12 J Contemp Health L & Pol'y 503 (1996).

A large majority of the articles focused on transsexuals argue in favor of a post-operative transsexual's right to marry someone of the same physical birth sex. Ian MacColl Kennedy was the first to emphasize the link between transsexual marriage and same-sex marriage. (*Transsexualism and Single Sex Marriage*, 2 Anglo-Am L Rev 112 (1973).) A few commentators oppose transsexual marriage, notably Meyers, *Problems of Sex Determination and Alteration*; Stan Twardy, *Medicolegal aspects of transsexualism*, 27 Med Trial Technique Quarterly 249 (1980); James J. Graham, *Transsexualism and the Capacity to Enter Marriage*, 41 The Jurist 117 (1981); and David Lee Mundy, *Note: Hitting Below The Belt: Sex-Ploitive Ideology & the Disaggregation of Sex and Gender*, 14 Regent U L Rev 215 (2002). Mundy's is the most vociferous voice, arguing emphatically against "changing the legal definition of sex from *objective* biology to subjective gender identity" (id at 234, emphasis added) out of concern for "the subjectivization of sex and its logical effect on society and the law." (Id at 217.) Eight times Mundy insists that the law use an *objective definition* of sex (id at 216, 217, 218, 231, 234 twice, and 239) **yet he never presents a biological definition!**

Mundy asserts

The debate regarding the legal definition of sex is, at its core, ontological. It cuts right to the quick of one's assumptions about the nature of man and the law. If, for example, sex is a biological accident and there are no inherent biological differences between men and women, then the idea of sex itself must be a social creation arbitrarily or capriciously constructed. Conversely, if gender differences reflect a natural order that is, at least in part, biological, then differentiation based on our design is not inherently irrational or oppressive; rather, it is possible that men and women can be different and complementary without being necessarily unequal. (Id at 216-217, citations omitted.)

and **completely ignores the question of whether the FEMALE-MALE distinction is exhaustive and exclusive**. In the end Mundy takes refuge in Judeo-Christian origins.

Beyond the dangers of judicial activism, however, there are other reasons why the law should remain objective with regards to sex. Our western legal system is "[g]rounded in the Judeo-Christian ethic . . . From the Judeo-Christian worldview, sex differentiation is not a mere construct but is integral even to the story of salvation. (Id at 237, citations omitted.)

Whether or not sex differentiation is integral to the story of salvation is beyond the scope of this Article and, more importantly, any American court of law.

<sup>12</sup> A partial list of "The benefits accessible only by way of a marriage license" [in Massachusetts] may be found in Chief Justice Marshall's majority opinion in *Goodridge et al v Department of Public Health, et al*, 440 Mass 309, \_\_\_\_ (2003). Some of these benefits, such as the "the prohibition against spouses testifying against one another about their private conversations, applicable in both civil and criminal cases" (Id at \_\_\_\_ ) are only granted by the state and cannot be made available to marriage partners by each other or a relevant third party such as an employer.

support of the Defense of Marriage Act. During his testimony Professor Arkes confidently testified

We are, each of us, born a man or a woman. The committee needs no testimony from an expert witness to decode this point.<sup>13</sup>

This is precisely a point on which the Committee and the American body politic do need expert testimony. Fortunately for the taxpayers, the Committee need travel no farther than Baltimore to visit the Brady Urological Institute at the Johns Hopkins University Medical School. Over the last 100 years Johns Hopkins researchers have been at the forefront of unraveling the mysteries of intersexuality, most notably the uro-genital surgeon Hugh Hampton Young<sup>14</sup> in the first half of the 20<sup>th</sup> century, then his successors the uro-genital surgeons Howard W. Jones, Jr. and William Wallace Scott<sup>15</sup>, and the psychologist John Money.<sup>16</sup>

Contemporary bio-medicine recognizes 8 sexual characteristics.<sup>17</sup>

1. Genetic or chromosomal sex—typically XX or XY; but there are many other variations
2. Gonadal sex (reproductive sex glands)-- ovaries or testes (or ovotestes);
3. Internal morphologic sex --- uterus/fallopian tubes/upper vagina or prostate/seminal vesicles/vas deferens/epididymis;
4. External morphologic sex (genitalia)-- clitoris/labia or penis/scrotum;
5. Hormonal sex—estrogens or androgens;
6. Phenotypic sex (secondary sexual features) -- breasts or facial and chest hair;
7. Assigned sex and gender of rearing; and
8. Sexual identity (not sexual orientation)

Each of these characteristics has a typical female and male form. (Or feminine and masculine if you prefer.) For most individuals these 8 characteristics align in typical fashion that we label with the words “female” and “male”, but they do not align not for all of us.

In this Article I choose to focus on just the first 4 characteristics listed above. They are all present at birth. Focusing on these physical characteristics avoids much of the heat that has been generated arguing the role of nature versus nurture in recent debates about

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<sup>13</sup> Online at <http://www.house.gov/judiciary/22356.htm> last visited February, 24, 2004.

<sup>14</sup> See generally Hugh Hampton Young, *Genital Abnormalities; Hermaphroditism & Related Adrenal Diseases* (Williams & Wilkins 1937).

<sup>15</sup> See generally Howard W. Jones and William Wallace Scott, *Hermaphroditism, Genital Anomalies, and Related Endocrine Disorders* (Williams & Wilkins, 2d ed, 1971).

<sup>16</sup> Among his many works see John Money and Anke A. Ehrhardt, *Man & Woman, Boy & Girl: The Differentiation and Dimorphism of Gender Identity from Conception to Maturity* (Johns Hopkins 1972) and John Money, *Sex Errors of the Body and Related Syndromes: A Guide to Counseling Children, Adolescents, and Their Families*, (P.H. Brookes, 2d ed, 1994).

<sup>17</sup> Id at 4.

homosexuality. Certainly, physical characteristics present at birth cannot be the products of the newborn's emotional experience.

In retrospect many of the 19<sup>th</sup> century cases discussed below involved wives who experienced Androgen Insensitivity Syndrome or Meyer-Rokitansky-Küster Syndrome, two particular forms of physically intersexuality. However, none of the parties involved in these cases were aware of physical intersexuality. These cases always turned on the question of whether the wife was physically capable of consummating the marriage. There have been very few legal cases questioning the sex of a physically intersexed person. However, there have been somewhat more cases questioning the sex of psychically intersexed persons, more often called "transsexuals." Consequently, this Article needs to consider these cases as it examines the question of who is a woman and who is a man in the eyes of the law. As the eminent anthropologist Clifford Geertz has commented "Intersexuality is more than an empirical surprise; it is a cultural challenge."<sup>18</sup> For "culture" we should read "law!"

Part II briefly surveys the intersexed in western thought with special attention to the law. Part III analyzes 5 cases in which courts attempted to provide a definition of sex in the context of marriage between 1970 and 2002. Part IV critiques traditional views of the role of sexual consummation and reproduction in marriage. Part V analyses the demand for strict binarism. Part VI asks whether sexual disambiguation surgery can be a legal prerequisite for marriage. The Conclusion in Part VII argues that there is a long tradition that the passage of time as well as the reproductive sex act can ratify a marriage. This is now specifically embodied in the statutes of 12 states that place a time limit on annulment suits for physical incapacity. (One state requires that the petitioner cease voluntary cohabitation as soon as the other party's impotency is learned.) The Appendix presents a brief survey of physically intersexed conditions. (It can be read at any time.)

## II A BRIEF SURVEY OF THE INTERSEXED IN WESTERN THOUGHT

The physically intersexed, also known as *hermaphrodites*, have fascinated western thought since classical times. They appear in both works of art and works of reason.

### A. The Ancient World

The word "hermaphrodite" comes from the name of "Hermaphroditus" a son of the gods Hermes and Aphrodite who were themselves the embodiments of ideal manhood and womanhood. Hermaphroditus himself grew to become a splendid example of manhood. In Book IV of his *Metamorphoses* the Roman poet Ovid (43BC-17AD) tells *The Story of Salmacis and Hermaphroditus*. When the nymph Salmacis caught a glimpse of Hermaphroditus she immediately fell rapturously in love with him and threw herself on him. When Hermaphroditus who "knew nought of love"<sup>19</sup> sought to extricate himself from her entangling embraces, Salmacis implored

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<sup>18</sup> Clifford Geertz, *Local Knowledge – Further Essays in Interpretive Anthropology* 81 (Basic Books 1983).

<sup>19</sup> Ovid, *The Story of Salmacis and Hermaphroditus*, in *Metamorphoses*, Bk. IV, l.53 (John Dryden trans).

Oh may the Gods thus keep us ever join'd!  
Oh may we never, never part again!<sup>20</sup>

Salmacis's plea did not go in vain. The gods obliged her request by merging their two bodies into one!

Both bodies in a single body mix,  
A single body with a double sex.<sup>21</sup>

Hippocrates (460-360BC), the father of western medicine, held that the uterus had seven cells.<sup>22</sup> A fetus gestating in one of the three rightmost cells would develop into a male. One gestating in one of the three leftmost cells would develop into a female. A fetus gestating in the middle cell would develop into an hermaphrodite with female and male genitalia. For Hippocrates hermaphrodites constituted a genuine third sex on a spectrum with male and female at opposite ends.<sup>23</sup>

Aristotle, like Hippocrates, held that males gestate on the right side of the uterus and females on the left side, but for a very different reason. According to Aristotle, the greater heat provided by the liver on the right side of the body causes the fetus to be fully concocted (as he called it) and develop into a male. The lesser heat provided by the spleen on the left side causes the fetus to be incompletely concocted, resulting in a female, an incompletely developed male.<sup>24</sup>

Aristotle viewed male and female as polar opposites with no intermediate forms. Yet he was well aware of the existence of hermaphrodites and had a ready explanation for them. According to Aristotle extra sexual organs, like extra fingers or toes, result from an excess of generative matter; too much for one embryo and not enough for two.<sup>25</sup> Speaking of extra sexual organs in particular he wrote

In certain cases we find a double set of generative organs one male and the other female. When such duplication occurs the one is always functional but not the other, because it is always insufficiently supplied with nourishment as being contrary to Nature; it is attached like a growth (for such growths also receive nourishment though they are a later development than the body proper and contrary to Nature.) If the formative power prevails, both are similar; if it is

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<sup>20</sup> Id at ll 102-103.

<sup>21</sup> Id at ll 112-113.

<sup>22</sup> G.E.R. Lloyd, *Science, Folklore and Ideology: Studies in the Life Sciences in Ancient Greece* 176 (Cambridge 1983). Galen (129-210) and his school also adhered to the seven cell theory of the uterus. See Fridolf Kudlein, *The Seven Cells of the Uterus: The Doctrine and Its Roots*, 49 *Bulletin of the History of Medicine* 415-416 (1965).

<sup>23</sup> Lorraine Daston and Katharine Park, *The Hermaphrodite and the Orders of Nature: Sexual Ambiguity in Early Modern France*, 1 *GLQ: a Journal of Gay and Lesbian Studies* 421 (1996).

<sup>24</sup> Aristotle, *On the Generation of Animals* 765a35-766b8 (Oxford 1912) (Arthur Platt, trans).

<sup>25</sup> Id at 772b15.



altogether vanquished, both are similar; but if it prevail here and be vanquished there, then the one is female and the other male.<sup>26</sup>

## B. The Physically Intersexed and Western Legal Theory

The differences in the legal rights and responsibilities of women and men have withered away to almost nothing in the last century. Until recently being declared a woman or a man had a significant legal impact. For over a millennium western legal authors occasionally mentioned hermaphrodites. In the first great treatise on English law Henry de Bracton (died 1268) wrote

Mankind may also be classified in another way: male, female, or hermaphrodite. Women differ from men in many respects, for their position is inferior to that of men.

A hermaphrodite is classified with male or female according to the predominance of the sexual organs.<sup>27</sup>

Nearly four centuries later in 1628 Sir Edward Coke (1552-1634) wrote

Every heire is either a male or a female, or an hermaphrodite, that is both male and female. And an hermaphrodite (which is also called Androgynus) shall be heire, either as male or female, according to that kind of sex which doth prevaile. And accordingly it must be baptized.<sup>28</sup>

These are the best known representatives of a tradition going back at least as far as Ulpian (Roman, 160-228) and including the Emperor Justinian I (483-565), Azo of Bologna (~1150-1230), and William Forbes (Scottish, died 1745). All of these writers supposed that one sex prevailed.

The 12<sup>th</sup> century Jewish rabbi/theologian/doctor/lawyer Maimonides (1135-1204) was educated in the confluence of Jewish and Islamic traditions. In *The Book of Women* he provides a detailed diagnostic procedure for determining whether a person is woman, man, hermaphrodite (both male and female genitals), or a *tumtum* (neither male nor female genitals).<sup>29</sup> According to Maimonides an hermaphrodite or a *tumtum* could become betrothed and seek to marry either a man or a woman.<sup>30</sup> However, the validity of such a betrothal was immediately in doubt and required a judgment of validity before a marriage could take place.

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<sup>26</sup> Id at 772b25-32.

<sup>27</sup> Henry de Bracton, 2 *On The Laws And Customs of England* 31-32 (Belknap 1968) (Samuel E. Thorne, trans).

<sup>28</sup> Sir Edward Coke, *The First Part Of The Institutes Of The Laws Of England* Bk.1 Ch.1 Sect. 1 (Garland, 1832 ed, 1979.)

<sup>29</sup> Moses Maimonides, 4 *The Code Of Maimonides, Book 4 The Book Of Women* 9-14 (Yale 1972) (Isaac Klein, trans).

<sup>30</sup> Id at 26.

That was the legal theory. What happened in fact?

### C. The Intersexed and Western Legal Fact: A 1601 Case from France

These passages from leading legal theorists all neglected one important point. Ambiguous sexual characteristics may not appear and are certainly not of primary importance until adolescence, by which time a person's sexual identity may have become well established in the community.

The historians Lorraine Daston and Katharine Park<sup>31</sup> and Thomas Laqueur<sup>32</sup> have reported how this reality had the utmost impact for the 20 year old Marin le Marcis in the small town of Angerville d'Orcher in Normandy in 1601. Le Marcis was initially christened "Marie", raised as a girl, and employed as a maidservant. In her late teens le Marcis began dressing as a man, took the masculine name "Marin", and announced his intention to marry his fellow maidservant, the widow Jeanne le Fevre. When Marin took Jeanne to meet his parents they asked him how he could possibly support a widow with two children.<sup>33</sup>

The local French authorities' concerns were much less pragmatic. They charged Jeanne and Marin with having committed lesbian acts. They also charged Marin with usurping masculine name and dress.<sup>34</sup> At the trial in Rouen the medical examiners testified that le Marcis' external genitalia were feminine.<sup>35</sup> His master and mistress each testified that le Marcis had had regular menstrual periods.<sup>36</sup> (One wonders how the *master* knew this!) The widow le Fevre testified that le Marcis had satisfied her "naturally, and adequately accomplished the works of marriage, with equal or greater pleasure than she had with her deceased husband, with whom she had engendered children" the three or four times they had had sexual intercourse.<sup>37</sup> Le Marcis defended himself by saying that "he had only made use of what nature had formed in him" and that his penis became visible only when erect. Unfortunately, due to illness and "timidity" he was unable to arouse himself and demonstrate this claim.<sup>38</sup>

The Rouen court delivered a guilty verdict with severe penalties for their unnatural acts. It sentenced Le Marcis to be hanged and then burned. The widow le Fevre was sentenced to watch the execution, be whipped in public for three days, have her possessions confiscated, and then be banished from Normandy.<sup>39</sup>

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<sup>31</sup> Lorraine Daston and Katharine Park, *Hermaphrodites in Renaissance France*, 1(5) Critical Matrix 1 (1985) and Daston and Park, 1 GLQ at 421.

<sup>32</sup> Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* 136-137 (Harvard 1990).

<sup>33</sup> Daston and Park, 1(5) Critical Matrix at 1.

<sup>34</sup> Id at 2.

<sup>35</sup> Id.

<sup>36</sup> Laqueur, *Making Sex* at 136.

<sup>37</sup> Daston and Park, 1 GLQ at 429.

<sup>38</sup> Daston and Park, 1(5) Critical Matrix at 2.

<sup>39</sup> Daston and Park, 1 GLQ at 426.

After the trial Jacques Duval, one of the medical examiners, decided to try another method of examination. He inserted his finger into le Marcis' vulva and found the penis le Marcis had described. Duval convinced himself that the organ was a penis and not a clitoris after he rubbed it until a thick masculine semen was ejaculated.<sup>40</sup> Duval reported this to the courts. However, the other medical examiners refused to perform such an examination and stood by their diagnosis.<sup>41</sup>

The court lifted its drastic sentences on le Marcis and le Fevre. However, it also realized that the medical examiners would never give a unanimous opinion on le Marcis. In a judgment that eerily presages a 1979 judgment in Australia, the court decreed that for the next four years le Marcis had to dress as a woman and refrain from sex (not to mention marriage) with both men and women.<sup>42</sup> Ten years later le Marcis was seen with a beard, working as a tailor and living as a man.<sup>43</sup>

### III. RECENT CASES DEFINING SEX IN THE CONTEXT OF MARRIAGE AS THE UNION OF ONE MAN AND ONE WOMAN

There is no uniform case or statute law on the questions of who is a woman and who is a man. Over the past 35 years several courts in English speaking jurisdictions have faced just such definitional questions, most often in cases involving post-operative transsexuals.

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<sup>40</sup> Daston and Park, 1(5) Critical Matrix at 2. Le Marcis' symptoms fit a diagnosis of 5 $\alpha$ -reductase 2 deficiency if we accept Duval's detection of a penis inside le Marcis' vulva instead of le Marcis' mistress and master's observation of regular menstrual periods.

<sup>41</sup> Jean Riolan diagnosed a prolapsed uterus. "Although he had not examined le Marcis first hand, Riolan argued *a priori* that there was insufficient space in the vulva to accommodate the anatomical structures necessary for male erection and ejaculation." (Daston and Park, 1 GLQ at 433, n31.)

<sup>42</sup> Id at 426.

<sup>43</sup> Le Marcis' medical history appears remarkably similar to that of Moragu, Herdt and Davidson's subject 10 in their study of persons experiencing 5 $\alpha$ -reductase 2 deficiency among the Sambia of Papua New Guinea. (Gilbert H. Herdt and Julian Davidson, *The Sambia "Turnim Man: Sociocultural and Clinical Aspects of Gender Formation in Male Pseudohermaphrodites with 5-Alpha-Reductase Deficiency in Papua New Guinea*, 17 Archives of Sexual Behavior 33 (1988).)

Moragu was 29 years old, assigned to the female sex, and reared as a female. In the mid 1970s, at about age 18, Moragu was discovered by his husband to have a penis. . .

The mid-wife reported how at birth she felt that Moragu's genitals were odd: the top of the labia was "too small," and the bottom "too big," for a normal female infant. The mother insisted that they not disclose this, for fear that others would think that the baby was strange. . .

It was also reported that after the onset of puberty, the subject developed a thin fine mustache. . . Moragu was then married formally to a man of a neighboring village. He had not yet experience menarche yet, which is normal, since here menarche is late [19.2 years] and marriage contracts are begun before a woman reaches menarche. No genital-to-genital intercourse is permitted until menarche. . .

He [Moragu's husband] reported how he initiated sex between them, and that they had genital-to-genital intercourse once, though he was able to penetrate only an inch or two. The next time, frustrated, he pulled back Moragu's grass skirt to examine the genital area. He said he saw a small penis in the middle of the labia, with testes thick and undeveloped on both sides. He was shocked, became angry, and thus rejected Moragu "as being a man, like me." (Id at 46-48)

Marie le Marcis might have met the same fate had she remained in a female sex role and married a man rather than adopted a male sex role as Marin le Marcis.

They have reached widely different conclusions. Courts in England, Texas, and Kansas have held that post-operative transsexuals have not changed their sex and, therefore, their marriages to persons of the same anatomical birth sex were null *ab initio*. On the other hand courts in New Jersey, New Zealand, Australia, California, and Florida<sup>44</sup> have held that post-operative transsexuals have indeed changed their sex and upheld the validity of their marriages to persons of the sex opposite their new sex.

#### A. The Essential Role of a Woman in Marriage (*Corbett v Corbett* , England, 1970)

The 1970 English case *Corbett v Corbett*<sup>45</sup> is the first marital case that called into question the sex of one of the parties in the eyes of the law. *Corbett v Corbett* is an annulment case. It does not make for happy reading. In common with many of the cases discussed in this Article it involved highly antagonistic parties each having a significant personal stake in the outcome of the case.

Arthur Corbett married April Ashley in September 1963. Arthur was 43, April was 28. April had been born George Jamieson and had sex reassignment surgery in 1960. Arthur and April lived together for no more than 14 days. Arthur sued for a decree of nullity on the grounds that April was a man and not a woman. Arthur also asserted that the marriage had never been consummated. April countersued asserting that they had attempted consummation but that Arthur had not completed the sexual act due to incapacity or willful refusal.

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<sup>44</sup> These last 4 cases, not discussed here, all involve post-operative spouses who entered into marriage with someone of the sex opposite their post-operative identity. The cases are

- *Attorney General v Otahuhu Family Court*, 1 NZLR 603 (High Court of New Zealand 1991)
- *Vecchione v Vecchione*, Civ No 96D003769, reported in L.A. Daily J., Nov. 26, 1997 at 1 (California)
- *Re Kevin: Validity of Marriage of Transsexual*, 165 Fed L Rep (Family Court of Australia 2001), (online at [http://www.familycourt.gov.au/judge/2001/html/rekevin\\_text.html](http://www.familycourt.gov.au/judge/2001/html/rekevin_text.html), last visited April 23, 2004), upheld In the Full Court of the Family Court of Australia at Sydney, Appeal No. EA 97/2001, File No. 8136/1999, 21 February 2003 (online at <http://www.familycourt.gov.au/judge/2003/pdf/attorney.pdf> last visited on April 23, 2004) (Australia)
- *Kantaras v Kantaras*, Florida Case No: 98-537CA 51998DR005375xxxWS, Circuit (Court of the Sixth Judicial Circuit in and for Pasco County, February 23, 2003 (online at <http://www.nclrights.org/cases/pdf/kantarasopinion.pdf>, last visited April 23, 2004) (Florida).

*Vecchione* is unreported and has not been consulted. In the other three cases the courts placed great emphasis on the realization that

- failure to recognize the post-operative transsexual in the post-operative sex
- in a regime only allowing opposite-sex marriage
- would leave the post-operative transsexual in a position to marry someone of the opposite birth sex (identical to the transsexual's post-operative sex)

thereby giving the public the impression of a legal same-sex marriage! (*Attorney General v Otahuhu Family Court*, 1 NZLR at 607; *Re Kevin* 165 Fed L Rep at §304; *Kantaras*, slip op at 749.)

<sup>45</sup> [1970] 2 All E.R. 33, online at <http://www.pfc.org.uk/legal/c-v-c.htm>, last visited on March 21, 2004.

Justice Ormrod decided the case by posing the question whether April “is or is not a woman” following surgery.<sup>46</sup> Reviewing the expert medical testimony Justice Ormrod declared

All the medical witnesses accept that there are, at least, four criteria for assessing the sexual condition of an individual. These are-

- (i) Chromosomal factors.
- (ii) Gonadal factors (ie presence or absence of testes or ovaries).
- (iii) Genital factors (including internal sex organs).
- (iv) Psychological factors.

Some of the witnesses would add-

- (v) Hormonal factors or secondary sexual characteristics (such as distribution of hair, breast development, physique etc which are thought to reflect the balance between the male and female sex hormones in the body).<sup>47</sup>

Justice Ormrod continued

It is common ground between all the medical witnesses that the biological sexual constitution of an individual is fixed at birth (at the latest), and cannot be changed, either by the natural development of organs of the opposite sex, or by medical or surgical means. The respondent's operation, therefore, cannot affect her true sex. The only cases where the term “change of sex” is appropriate are those in which a mistake as to sex is made at birth and subsequently revealed by further medical investigation.<sup>48</sup>

Justice Ormrod realized that a person’s sex is irrelevant in many areas of the law such as “contractual or tortious rights and obligations, and to the greater part of the criminal law”<sup>49</sup> and relevant but not essential to other areas of the law such as employment law and national insurance. In contrast

sex is clearly an essential determinant of the relationship called marriage, because it is and always has been recognised as the union of man and woman. It is the institution on which the family is built, and *in which the capacity for natural heterosexual intercourse is an essential element*.<sup>50</sup>

Justice Ormrod’s opinion reached its climax when he declared

Having regard to the essentially heterosexual character of the relationship which is called marriage, the criteria must, in my judgment, be biological, for even the most extreme degree of transsexualism in a male [i.e. (iv) psychological factors]

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<sup>46</sup> Id at 47.

<sup>47</sup> Id at 44.

<sup>48</sup> Id at 46.

<sup>49</sup> Id at 47.

<sup>50</sup> Id. (emphasis added)

or the most severe hormonal imbalance which can exist in a person with male chromosomes, male gonads and male genitalia cannot reproduce a person who is ***naturally capable of performing the essential role of a woman in marriage***. In other words, the law should adopt, in the first place, the first three of the doctors' criteria, i.e. the chromosomal, gonadal and genital tests, and, if all three are congruent, determine the sex for the purpose of marriage accordingly, and ignore any operative intervention.<sup>51</sup>

There can be little doubt what Justice Ormrod meant by “performing the essential role of a woman in marriage.” As we will see later, a long chain of cases had held that reproductive capability is not required in marriage. On the other hand, these cases attest to the requirement of *vera copula*, that is “true and perfect coition.” Obviously, Justice Ormrod is referring to the fact that April’s vagina was entirely constructed and in no part natural. For Justice Ormrod, having a vagina – the receptacle for receiving a penis - is the essential role of a woman in marriage. April fell short of being a woman since she lacked any ***natural*** capability for this.<sup>52</sup>

According to Justice Ormrod’s opinion ***feeling*** like a woman plays no legal role in *being* either a woman or a wife. His opinion had banished “psychological factors.” Feeling like a woman is entirely optional for a wife!

After finding April Ashley not to be a woman following her surgery Justice Ormrod recognized that uncharted territory still lay ahead.

The real difficulties, of course, will occur if these three criteria [chromosomes, gonads, and genitals] are not congruent. This question does not arise in the present case and I must not anticipate, but it would seem to me to follow from what I have said that greater weight would probably be given to the genital criteria than to the other two. This problem and, in particular, the question of the effect of surgical operations in such cases of physical inter-sex, must be left until it comes for decision.<sup>53</sup>

#### B. The Introduction of the Psychological Factor (*M.T. v J.T.* New Jersey, 1976)

Divorce court was also the setting for the first American case to consider the question of “how to tell the sex of a person for marital purposes.”<sup>54</sup> In this New Jersey case the husband (J.T.) paid for his wife’s (M.T.) sex reassignment surgery prior to their marriage. After two years of living as husband and wife and having intercourse he decided that he

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<sup>51</sup> Id. (emphasis added)

<sup>52</sup> In the case of *S v S (otherwise W)*, [1962] 3 All E.R. 55 an English court held that surgical enlargement of even the shortest vagina rendered this physical incapacity curable rather than incurable thereby precluding the possibility of annulling the marriage on the grounds of incurable physical incapacity, provided, of course, that the wife is a woman. Consequently, Justice Ormrod had to find April Ashley to be “not a woman” and someone without any ***natural*** capacity for receiving a penis in a vagina.

<sup>53</sup> *Corbett*, [1970] 2 All E.R. at 48.

<sup>54</sup> *M.T. v. J.T.*, 140 NJ Super 77; 335 A2d 204 (1976)

wanted no more of the marriage and walked out on her. When she sued for support he responded that she was a man, thereby making their marriage void.

In an extraordinarily humane opinion the trial judge wrote of the wife.

Are we to look upon this person as an exhibit in a circus side show?<sup>55</sup>

and denied the husband's petition for an annulment. An appellate court affirmed the decision.

Judge Handler's appellate court opinion directly addressed its disagreement with Justice Ormrod's decision in *Corbett*.

Our departure from the *Corbett* thesis is not a matter of semantics. It stems from a fundamentally different understanding of what is meant by "sex" for marital purposes. The English court apparently felt that sex and gender were disparate phenomena. In a given case there may, of course, be such a difference. A preoperative transsexual is an example of that kind of disharmony, and most experts would be satisfied that the individual should be classified according to biological criteria. The evidence and authority which we have examined, however, show that a person's sex or sexuality embraces an individual's gender, that is, one's self-image, the deep psychological or emotional sense of sexual identity and character. Indeed, it has been observed that the "psychological sex of an individual," while not serviceable for all purposes, is "practical, realistic and humane."<sup>56</sup>

For Judge Handler, unlike Justice Ormrod, *feeling* like a woman plays an important legal role in being a woman and a wife.

Sexual capacity or sexuality in this frame of reference requires the coalescence of both the physical ability and the psychological and emotional orientation to engage in sexual intercourse as either a male or a female.<sup>57</sup>

He concluded that

Plaintiff has become physically and psychologically unified and fully capable of sexual activity consistent with her reconciled sexual attributes of gender and anatomy. Consequently, plaintiff should be considered a member of the female sex for marital purposes.<sup>58</sup>

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<sup>55</sup> Quoted id A2d at 207.

<sup>56</sup> Id at 209.

<sup>57</sup> Id.

<sup>58</sup> Id at 211.

Statute law in 23 states<sup>59</sup> and the District of Columbia specifically allows post-operative transsexuals to change their birth certificates.

C. Texas, Where Men are Men, Women are Women, and Only Chromosomes Matter  
(*Littleton v Prange*, 1999)

Texas and Kansas are not among them. Courts in these states have held that post-operative transsexuals have not changed their sex and, therefore, their marriages to persons of the same anatomical birth sex were void *ab initio*.

Christie Lee Cavazos married Jonathan Littleton in 1989. In the early 1990s while Jonathan was hospitalized, unemployed, and unable to make his child support payments (to children from a previous marriage) the state of Texas, a community property state, compelled his wife Christie to make them.<sup>60</sup> After Jonathan died in 1996 Christie brought a wrongful death suit against a Dr. Prange. During the discovery phase of the suit Dr. Prange's attorney learned that Christie had been born Lee Cavazos and had sex reassignment surgery prior to her marriage to Jonathan. The attorney moved to have the suit dismissed on the grounds that since Christie was still a man she could not be Jonathan's surviving spouse. As someone unrelated to Jonathan, Christie would have no standing to sue.

In a 2-1 decision the 4<sup>th</sup> Texas Court of Appeals upheld a trial court ruling that invalidated the Littleton's marriage.<sup>61</sup> Chief Justice Hardberger's majority opinion reflects a much blunter understanding of the issues than Justice Ormrod's opinion in the *Corbett* case.

Chief Justice Hardberger's opinion opens with a popular statement of the issue in front of the court

This case involves the most basic of questions. When is a man a man, and when is a woman a woman? Every schoolchild, even of tender years, is confident he or

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<sup>59</sup> Illinois was the first state to adopt such a statute (no later than 1967. Now 410 ILCS 535/17 (2003)) (See John P. Holloway, *Transsexuals – Their Legal Sex*, 40 U Colo L Rev 282, 288 (1968)) Alabama: Ala Code § 22-9A-19(d) (2003). Arizona: Ariz Rev Stat § 36-326 (2003). Arkansas: Ark Code Ann § 20-18-307 (2003). California: Cal Health and Safety Code 103425 (West 2003). Colorado: Colo Rev Stat § 25-2-115(4) (2003). Connecticut: Gen Stat Conn § 368a-19a-42 (2003). District of Columbia: DC Code Ann § 7-217. Georgia: Ga Code Ann § 31-10-23(e) (West 2003). Hawaii: Hawaii Rev Stat § 338-17.7(4)(B) (2003). Kentucky: Ky Rev Stat Ann § 213.121(5) (Michie 2003). Louisiana: La Rev Stat Ann § 40.62(A),(C) West 2003). Maryland: Md Health Code Ann § 4-214(5) (2003). Massachusetts: Mass Gen Laws ch 36 § 13-5(e) (2003). Michigan: Mich Stat Ann § 333-2831(c) (Law Co-op 2003). Missouri: Mo Rev Stat § 193.215.9 (2003). Nebraska: Neb Rev Stat § 71-604.01 (2003). New Jersey: NJ Rev Stat § 26:8-40.12 (2003). New Mexico: NM Stat Ann § 24-14-25(D) (2003). North Carolina: NC Gen Stat § 130a-18(b)(4) (2003). Oregon: Or Rev Stat § 432.235(4) (2003). Utah: Utah Code Ann § 26-2-11 (2003). Virginia: Va Stat Ann § 32.1-269(E) (Michie 2003). Wisconsin: Wis Stat § 69.15(4)(b) (2003). Tennessee is the only state that expressly forbids changing sex on a birth certificate. (Tenn Code Ann § 68-3-203(d) (2003))

<sup>60</sup> Dateline (NBC television broadcast, Aug. 2, 2000).

<sup>61</sup> *Littleton v Prange*, 9 SW3d 223 (1999) online at <http://www.4thcoa.courts.state.tx.us/opinions/HTMLOpinion.asp?OpinionID=8210>, last visited on March 21, 2004.



she can tell the difference, especially if the person is wearing no clothes. . . . The deeper philosophical (and now legal) question is: can a physician change the gender of a person with a scalpel, drugs and counseling, or is a person's gender immutably fixed by our Creator at birth?<sup>62</sup>

After presenting the relevant facts in the case the opinion presents a refined statement of “The Legal Issue.”

Can there be a valid marriage between a man and a person born as a man, but surgically altered to have the physical characteristics of a woman? . . . This court, as did the trial court below, must answer this question: Is Christie a man or a woman?<sup>63</sup>

In her brief dissent Justice Lopez noted that “neither federal nor state law defines how a person's gender is to be determined.”<sup>64</sup> The majority opinion did not dispute this fact. After reviewing relevant precedents such as *Corbett* and *M.T. v J.T.* Justice Hardberger wrote that

In our system of government it is for the legislature, should it choose to do so, to determine what guidelines should govern the regulation of marriages involving transsexuals.<sup>65</sup>

In spite of a long legal tradition presuming the validity of marriages not clearly prohibited by law,<sup>66</sup> Chief Justice Hardberger proceeded to provide just such a set of guidelines. He

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<sup>62</sup> Id.

<sup>63</sup> Id at 225.

<sup>64</sup> Id at 232 (Lopez dissenting).

<sup>65</sup> Id at 230 (majority).

<sup>66</sup> “The policy of the law is to sustain marriages, where they are not incestuous, polygamous, shocking to good morals, unalterably opposed to a well defined public policy, or prohibited.” (*Mazzolini v Mazzolini*, 168 Ohio St 357,358, 155 NE 2d 206,207 (1958).) In this case Edward Mazzolini, a 58 year old widower who was a long time resident of Ohio, went to Massachusetts to marry Josephine Mazzolini, his 51 year old first cousin.

[They] were ostensibly married ceremonially in the Roman Catholic Church in Massachusetts . . . with the permission of the Roman Catholic Archdiocese of Boston. They then moved to Edward's home in Ohio to live. Both were at all times cognizant of their blood relationship and disclosed it to the church and civil authorities. (Id at NE 2d 207)

When the marriage failed Josephine moved back to Massachusetts. Edward sought to have the marriage annulled in the Ohio courts. At that time Ohio law did not allow first cousins to “be joined in marriage.” (It still doesn't. See Ohio Rev Code Ann § 3101.01 (Anderson 2003).) Moreover, then as now Massachusetts law stated that

No marriage shall be contracted in this commonwealth by a party residing and intending to continue to reside in another jurisdiction if such marriage would be void if contracted in such other jurisdiction, and every marriage contracted in this commonwealth in violation hereof shall be null and void. (Id at 208 quoting Mass Gen Laws Chapter 207, § 11.)

Edward failed to win an annulment. The Ohio Supreme Court held (by a 4-3 vote)

rejected the notion that Christie could change her complement of sexual organs from male to female.

(4) Through surgery and hormones, a transsexual male can be made to look like a woman, including female genitalia and breasts. Transsexual medical treatment, however, does not create the internal sexual organs of a woman (except for the vaginal canal). There is no womb, cervix or ovaries in the post-operative female.<sup>67</sup>

At most, Christie could have her male organs removed and an artificial vagina created. Seeking some constant factor underlying the change, Chief Justice Hardberger's opined.

(5) The male chromosomes do not change with either hormonal treatment or sex reassignment surgery. Biologically a post-operative female is still a male.<sup>68</sup>

No doubt he thought that (a) there are only two types of sex chromosome pairs and (b) sex chromosomes determine sexual anatomical characteristics unambiguously and without exception. Of course, he was wrong on both counts, as he could have learned from a visit to the nearby University of Texas Medical Center at San Antonio.<sup>69</sup> In any

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But since the statutes of Ohio do not expressly declare that a first-cousin marriage is void ab initio and since sexual relations between cousins, which would certainly include first cousins, are not incestuous, we are persuaded to adopt, in the instant case, the position, represented by the trend of the more modern cases and in accord with the general rule, 'that a marriage between persons of a class that the statute simply says shall not marry \* \* \* is not void, in the absence of a declaration in the statute that such marriage is void.' (*Mazzolini*, 155 NE 2d at 208-209.)

<sup>67</sup> *Littleton*, 9 SW3d at 230.

<sup>68</sup> *Id.*

<sup>69</sup> Chief Justice Hardberger et al would do well to pay attention the case of a child born in the Dallas area in early 2002.

A 17-day-old black neonate presented with ambiguous genitalia. A sharp line separated hypopigmented [mottled] skin on the left side of the abdomen from normally pigmented skin on the right side. A pendulous, wrinkled labioscrotal fold contained a gonad on the right side. In contrast, the hypoplastic, flat, left side was empty. A palpable left inguinal mass could not be clearly characterized with the use of ultrasonography. The phallus was 3 cm in length, with perineal hypospadias [urthrethral opening on the perineum] and 30-degree chordee. [Chordee is a congenital downward curvature of the penis due to a strand of connective tissue between the urethral opening and the glands.] Testing revealed 46,XX/46,XY mosaicism and normal levels of male hormones. [One wonders about the levels of female hormones.] Laparoscopic surgery was performed; on the left side a hemiuterus, a fallopian tube, fimbriae, and an ovary were found and resected. These structures were absent on the right side. A normal vas exited the right internal ring, leading to a well formed epididymis and a scrotal, biopsy-proven ovotestis with dotted islands of ovarian tissue capping the lower pole of the testicle. The ovarian tissue was removed, and left inguinal herniorrhaphy, placement of a left testicular prosthesis, and repair of the hypospadias were subsequently completed. At 21 months, the child has an excellent cosmetic result. (Jose A. Karam, M.D. and Linda A. Baker, M.D., *True Hermaphroditism*, 350 N Eng J Med 393 (January 22, 2004).)

Drs. Karam and Baker are on the staff of the University of Texas Southwestern Medical Center in Dallas. This child has to live with the rulings of Texas courts.

case Chief Justice Hardberger's criterion is hardly a criterion that any schoolchild would be able to employ unless the schoolchild had access to sophisticated laboratory equipment. Never mind the naked body of his opening remark, the criterion is not available to the naked eye.

More importantly, Chief Justice Hardberger's opinion relies on just a single factor: the sex chromosomes. Consequently, this opinion unwittingly leaves unsettled only those cases in which a person has atypical sex chromosomes. Hardberger's coarse grained analysis settles cases anticipated by Justice Ormrod in which chromosomes, gonads, and genitals are not present in typical alignment with all the subtlety of a twenty ton weight. According to this opinion gonads and genitals play no part in determining one's legal sex. Physically intersexed persons with either XX or XY chromosomes are simply the sex of their sex chromosomes according to this opinion. Their sex role from birth, even if it is the one on their birth certificate does not matter if someone finds out what sex chromosomes they have.

Chief Justice Hardberger's opinion concluded.

We hold, as a matter of law, that Christie Littleton is a male. As a male, Christie cannot be married to another male.<sup>70</sup>

By ruling Christie Littleton to be "a male", rather than "not a female" as Justice Ormrod had decided, Chief Justice Hardberger gave Christie legal blessing to marry any female she pleased provided, of course, that the other female has XX sex chromosomes! Although this was of no interest to Christie, some post-operative male-to-female transsexuals have sought to take advantage of this ruling to marry the woman they love in Texas.<sup>71</sup> Not surprisingly, they have run into resistance.<sup>72</sup>

D. What Gametes Do You Make? As a Matter of Fact, It's a Matter of Law (*In re Estate of Gardiner*, Kansas, 2001/2)

Kansas law states:

The marriage contract is to be considered in law as a civil contract between two parties who are of opposite sex. All other marriages are declared to be contrary to the public policy of this state and are void.<sup>73</sup>

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<sup>70</sup> Id.

<sup>71</sup> In September 2000, Robin Wicks married Jessica Wicks. Robin, a post-operative male-to-female transsexual, was born Grady Roland Wicks. See Polly Ross Hughes, Lesbians Plans to Wed Look Legal Bexar County Ruling Could Pave Way for Trip Down Aisle", *Houston Chronicle* Aug 30, 2000, online at <http://christielee.net/same2.html> last visited April 1, 2004.

<sup>72</sup> "'Remember Sodom and Gomorrah,' said one sign, carried by a protester. 'This is wrong and it needs to change. The homosexuals are saying it's a same-sex wedding but it's not that at all. It is a hoax on their part,' said Jack M. Finger." John W. Gonzalez, "Lesbians Legally Exchange Vows – Marriage of Same-Sex Couple from Houston a First for Texas", *Houston Chronicle* Sept. 17, 2000 online at <http://christielee.net/same14.html> last visited April 1, 2004.

<sup>73</sup> Kan Stat Ann § 23-101-1 (2002).

J'Noel Gardiner was born in Wisconsin as Jay N. Ball with a male body.<sup>74</sup> As Jay N. Ball he took "S. P." as his lawfully wedded wife.<sup>75</sup> Their divorce became final in May 1994<sup>76</sup>. Later that year, after J'Noel completed a series of sex reassignment surgeries, she had her name and sex amended on her birth certificate as specifically allowed by Wisconsin statute law.<sup>77</sup> In May 1998 J'Noel met Marshall Gardiner a well-to-do Kansan who had a son from a previous marriage. J'Noel and Marshall married in Kansas in September 1998.<sup>78</sup> A year later Marshall died without a will, leaving an estate worth over 2 million dollars.

Marshall's son Joe went to court to have himself declared the sole heir and administrator of his father's estate. When J'Noel sued for her rights as the surviving spouse Joe responded that J'Noel had no standing since there had never been a valid marriage. Joe's attorneys asserted that J'Noel was still a man. Joe won the first round of litigation when the district court, citing the *Littleton* decision and its emphasis on chromosomes, held that J'Noel was born and remained a male. J'Noel appealed.

The Appeals court rejected the lower court's reliance on the coarse grained, chromosomes only approach of *Littleton*. The Appeals court recognized the uncommon nature of the case when it wrote.

Some cases lend themselves to precise definitions, categories, and classifications. On occasion, issues or individuals come before a court which do not fit into a bilateral set of classifications. Questions of this nature highlight the tension which sometimes exists between the legal system, on the one hand, and the medical and scientific communities, on the other.<sup>79</sup>

The opinion excerpted 14 pages from Professor Greenberg's 1999 Article outlining the wide variety of atypical combinations of sexual characteristics and how they can arise. Recognizing this diversity of developmental factors and outcomes the Appeals court ordered that a trial court decide whether J'Noel was a male or female at the time she married Marshall, not simply what her chromosomes were at birth and throughout her life. It ordered the trial court to employ at least all of the 8 factors listed by Professor Greenberg. In so doing the Appeals court framed the legal question as follows "The question here is whether J'Noel should have been considered a female under Kansas law at the time the marriage license was issued."<sup>80</sup>

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<sup>74</sup> *In re Estate of Gardiner*, 29 Kan App 2d 92, 22 P3d 1086,1090 (2001) online at <http://www.kscourts.org/kscases/ctapp/2001/20010511/85030.htm>, last visited on March 21, 2004. (Hereinafter *Gardiner Appeals*.)

<sup>75</sup> *In re Estate of Gardiner*, 273 Kan 194, 42 P3d 120,123 (2002) online at <http://www.kscourts.org/kscases/supct/2002/20020315/85030.htm>, last visited on March 21, 2004. (Hereinafter *Gardiner Supreme*.)

<sup>76</sup> *Id.*

<sup>77</sup> *Gardiner Appeals*, 22 P3d at 1091. The statute is Wis Stat § 69.15(4)(b) (2002).

<sup>78</sup> *Gardiner Appeals*, 22 P3d at 1091.

<sup>79</sup> *Id.* at 1090.

<sup>80</sup> *Id.* at 1092.

The Appeals Court also had the vision to see that more was at stake even if chromosomes are legally the only factor that matters.

If one concludes that chromosomes are all that matter and that a person born with “male” chromosomes is and evermore shall be male, then one must confront every situation which does not conform with such a rigid framework of thought. There are situations of ambiguity in which certain individuals have chromosomes that differ from the typical pattern. The questions which must be asked, if not answered, are: “Are these people male or female?” and, “***Should they be allowed to get married?***”<sup>81</sup>

This was the first time an American court raised the question of ***whether a transgendered person could marry anyone***

Joe appealed the Court of Appeal’s decision before the case could go to trial. Comparing the prior cases available to it the Kansas Supreme Court opined

the essential difference between the line of cases, including *Corbett* and *Littleton*, that would invalidate the Gardiner marriage and the line of cases, including *M.T.* and *In re Kevin* [an Australian case], that would validate it is that ***the former treats a person's sex as a matter of law and the latter treats a person's sex as a matter of fact.***<sup>82</sup>

Citing the Kansas legislature’s silence on the marital rights of transsexuals the Kansas Supreme Court treated the problem as a matter of law rather than allowing a jury to treat the issue as a matter of fact. In so doing it adhered to longstanding legal precedent that words in statutes should be given their ordinary and everyday interpretation unless specifically defined otherwise by the statutes.

To find the ordinary and everyday meaning of “sex”, “male”, and “female” the Kansas Supreme Court turned to a 1999 Law Dictionary and an English language dictionary from **1970!**

The words “sex,” “male,” and “female” are words in common usage and understood by the general population. Black's Law Dictionary, 1375 (6th ed.1999) defines “sex” as “[t]he sum of the peculiarities of structure and function that distinguish a male from a female organism; the character of being male or female.” Webster's New Twentieth Century Dictionary (2nd ed.1970) states the initial definition of sex as “either of the two divisions of organisms distinguished as male or female; males or females (especially men or women) collectively.” “Male” is defined as “designating or of the sex that fertilizes the ovum and begets

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<sup>81</sup> Id at 1094.

<sup>82</sup> *Gardiner Supreme*, 42 P3d at 132-133. (emphasis added)

offspring: opposed to female.” “Female” is defined as “designating or of the sex that produces ova and bears offspring: opposed to male.”<sup>83</sup>

Given these three decade old definitions of “male” and “female” the Kansas Supreme Court easily found its way to rule

***The words “sex,” “male,” and “female” in everyday understanding do not encompass transsexuals.*** The plain, ordinary meaning of "persons of the opposite sex" contemplates a biological man and a biological woman and not persons who are experiencing gender dysphoria. ***A male-to-female post-operative transsexual does not fit the definition of a female.*** The male organs have been removed, but the ability to "produce ova and bear offspring" does not and never did exist. There is no womb, cervix, or ovaries, nor is there any change in his chromosomes.<sup>84</sup>

Undoubtedly, the same analysis holds for female-to-male transsexuals who have had all of their female organs removed, have never had a prostate gland or testes, and are unable to produce sperm cells. In Kansas, male to female transsexuals remain male, presumably because they once had the ability to produce sperm cells. Recognizing that J’Noel once had male sex organs the opinion ends with a declaration that “J’Noel remains a transsexual, and a male for purposes of marriage.”<sup>85</sup>

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<sup>83</sup> Id P3d at 135.

<sup>84</sup> Id. (emphasis added)

<sup>85</sup> Id at 137. Commenting on the district court’s decision in *Gardiner*, Shana Brown, has suggested that “the Kansas court’s ruling essentially leaves J’Noel without the right to enter into any marriage that would be recognized across state lines. She cannot marry a man in Kansas, and she cannot marry a woman in Wisconsin.” (*Sex Changes and “Opposite Sex” Marriage: Applying the Full Faith and Credit Clause to Compel Recognition of Transgendered Persons’ Amended Legal Sex for Marital Purposes*, 38 San Diego L Rev 1118 (2001)) Of course, the same holds for the Kansas Supreme Court’s ruling and the ruling of the *Littleton* court in Texas.

Brown’s assertion blurs the distinction between ***getting a marriage license to get married*** and ***staying married***. There are cases of post-operative male-to-female transsexuals remaining married to their wives after surgery. Although these couples could not get a marriage license to get married as members of the same sex, their marriages have not been challenged, even in New Jersey, the one state with an appellate court ruling upholding the validity of a marriage between a male-to-female transsexual and her husband.

Nevertheless, it is almost certain that Joe Gardiner and Dr. Prange would have brought legal action to have the Gardiner and Littleton marriages ruled void *ab initio* even if the marriages had been performed in New Jersey and the couples had resided there prior to returning to Kansas and Texas respectively. We cannot be certain how the Kansas and Texas courts would have ruled, or, if the couples had merely gone to Atlantic City to get married and then immediately returned to their home states.

In the absence of any rulings Brown’s point is well taken that couples such as the Gardiners and the Littletons should not have to live under the threat that they might have to defend the validity of their marriages in a court of law.

The flip side of Brown’s suggestion is that transsexuals ***do have*** a limited “universal” marriage right, the right to marry a partner, regardless of the partner’s legal sex. The universal marriage right is constrained by the willingness to choose a residence with the appropriate case law. Under current case law a post-operative male-to-female transsexual, for example, can marry a legal male in New Jersey, California, and Florida and a post-operative male-to-female transsexual can marry a legal female in Texas and Kansas!

E. Neither of the Above: The Law Confronts Physical Intersexuality (*In the Marriage of C. and D.*, Australia, 1979)

Many opponents of universal marriage argue that it is certain to lead to the end of civilization as we know it. In such an environment will it be any surprise if this faction next proposes that transsexuals forfeit the right to marry? (Some medical institutions providing sex reassignment surgery have required married candidates to get a divorce prior to commencing treatment.)

In the current political and moral climate many opponents of universal marriage describe same-sex attraction as “objectively disordered.”<sup>86</sup> One can only wonder what views they have on transsexuals. Indeed, in the first American case dealing with a transsexual in 1966, *Anonymous v Weiner*, a New York judge refused to change the sex on a transsexual’s birth certificate citing the advice of the New York Academy of Medicine.

It is questionable whether laws and records such as the birth certificate should be changed and thereby used as a means to help *psychologically ill persons* in their social adaptation.<sup>87</sup>

Given today’s contentious state of affairs I doubt that any argument depending on the plight of transsexuals will carry much weight with traditionalists or cause them to question their conceptual schemes.<sup>88</sup>

Therefore, I want to shift the argument to the plight of the physically intersexed, historically called “hermaphrodites”, persons born with atypical sexual anatomies combining female and male characteristics. No “disordered” state of mind caused them to be born this way, just as no “ordered” state of mind caused anyone to be born with a typical sexual anatomy.

We have seen that

- In *Corbett* an English court held that a post-operative male-to-female transsexual is not a woman. Therefore, she cannot marry a man. It left unresolved the question of marriage to a woman.

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<sup>86</sup> “[T]he inclination itself must be seen as an objective disorder.” Congregation for the Doctrine of the Faith, Letter to the Bishops of the Catholic Church on the Pastoral Care of Homosexual Persons,” October, 1, 1986, §3, online at [http://www.vatican.va/roman\\_curia/congregations/cfaith/documents/rc\\_con\\_cfaith\\_doc\\_19861001\\_homosexual-persons\\_en.html](http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19861001_homosexual-persons_en.html), last visited April 26, 2004.

<sup>87</sup> *Anonymous v. Weiner*, 270 NYS2d 319,322, 50 Misc2d 380,382 (1966). (emphasis added) In the context of a prisoner’s rights case Judge Richard Posner recently wrote “Someone eager to undergo this mutilation is plainly suffering from a profound psychiatric disorder.” *Maggert v Hanks*, 131 F3d 670,671 (1997)

<sup>88</sup> “To put it plainly, transsexualism constitutes a perpetual *obex* [impediment] to marriage because it is a radical, serious and incurable psychological disorder.” Graham, 41 The Jurist at 141. (“*The Jurist* is the only journal published in the United States devoted to the study and promotion of canon law.”)

- In *M.T. v J.T.* a New Jersey court held that a post-operative male-to-female transsexual is a woman. Therefore, she can marry a man (but not a woman.)
- In *Littleton* and *Gardiner* Texas and Kansas courts held that a post-operative male-to-female transsexual is a man and not a woman. In Texas because she still has XY chromosomes. In Kansas because of the gonads she used to have and the ones she never had. Therefore, marriage to a man is allowed but not marriage to a woman.

In 1979 English speaking jurisprudence reached the previously uncharted territory of the physically intersexed predicted by Justice Ormrod. In that year an Australian court declared *In the Marriage of C. and D. (Falsely Called C)*<sup>89</sup> that a marriage between a physically intersexed husband and his wife was void *ab initio* since the husband was not a man. By a stroke of good fortune his medical history had been published in 1966.<sup>90</sup>

At birth the husband's parents were told that he was a male with a gross phallic deformity that could not be corrected until he was 16. When he reached age 16 he had become accustomed to his genital details and did not seek surgery. He sought local medical help when he began to experience bouts of periodic abdominal pain accompanied by slight bleeding through his urethral opening "far back on the scrotum."<sup>91</sup> The gonad on the left side of his scrotum had always been apparent. A laparotomy revealed a Fallopian tube and a "right-sided gonad" on the right side but not the left side of his body. The examination also revealed a 2 inch long uterus.<sup>92</sup> The periodic bleeding stopped after removal of the Fallopian tube and gonad.

A year later he had a double mastectomy to remove his "well-formed" breasts which had embarrassed him by drawing the unwanted attention of his colleagues at work.<sup>93</sup> Within two years "he became enamoured of an attractive girl" and sought surgery to have his external genitals made "reasonably normal."<sup>94</sup>

The medical team analyzed the gonad that had been removed 3 years earlier and found that it was neither an ovary nor a testis but a true ovo-testis. "Intimately associated with ovarian structures were testicular components."<sup>95</sup> They did not analyze the remaining gonad on the left side of the scrotum. Analysis of 6 hormones usually correlated with sex were inconclusive. All were within normal range for a male or a female except for testosterone which was low for a male and 17-ketosteroid which was high for a female.<sup>96</sup> Only the chromosome tests were unambiguous. All 20 cells examined in detail showed an XX chromosomal pattern "indistinguishable from that of a normal female."<sup>97</sup>

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<sup>89</sup> *C. and D.* 35 Fed L Rep 340 (1979).

<sup>90</sup> Kenneth Fraser, M. J. J. O'Reilly, J. R. Rintoul, *Hermaphroditus Verus, with Report of a Case*, [1966] 1 Med J Australia 1003.

<sup>91</sup> *Id.* at 1004.

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> *Id.* at 1005.

<sup>96</sup> *Id.* at 1006.

<sup>97</sup> *Id.* at 1005.



In spite of this one unambiguous marker the physicians had no doubt of their course of action.

The presence of both testicular and ovarian tissue clearly indicated that this was a case of true hermaphroditism. In spite of the bisexual gonadal structure, the female chromosomal arrangement, the female internal genitalia, and the equivocal results of the hormonal assays, there was no doubt, in view of the assigned male sex, the male psychosexual orientation in a person of this age and the possibility of converting his external genitals into an acceptable male pattern, that he should continue in the sex in which he had been reared.<sup>98</sup>

The medical team performed surgeries in 1964-5 to make the external genitals “reasonably normal” and concluded “He is happily engaged, and is shortly to marry the girl with whom he was in love before his surgery was commenced.”<sup>99</sup> C. married D. in February 1967. They did not live happily ever after.

They had two children by the time they separated in 1978. In early 1970 they adopted a child and in late 1973 she gave birth to a child who was legally though not biologically his. (There is no discussion concerning the circumstances of conception.) During the legal proceedings in front of Justice Bell the husband did not dispute that they had not consummated their marriage

Justice Bell’s opinion should stand out as evidence that “activist” judges do not sit on only one side of the marriage wars. Citing the relevant Australian statute that

the consent of the parties is not a real consent because –  
(ii) *that party is mistaken as to the identity of the other party*, or as to the nature of the ceremony performed.<sup>100</sup>

Justice Bell continued

“The ground of identity is in my opinion made out in that the wife was contemplating immediately prior to marriage and did in fact believe that she was marrying, a male. She did not in fact marry a male but a combination of both male and female and notwithstanding that the husband exhibited as a male, he was in fact not and the wife was mistaken as to the identity of her husband.”<sup>101</sup>

Had Justice Bell stopped at declaring void just this particular marriage the husband C. would have presumably been able to marry another woman who knew his identity (i.e. his medical history.)

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<sup>98</sup> Id at 1006.

<sup>99</sup> Id.

<sup>100</sup> C. and D., 35 Fed L Rep at 344. (emphasis added)

<sup>101</sup> Id.

Finding “a further fatal argument to the existence of *any marriage*”<sup>102</sup> Justice Bell did not stop there. He suggested without citations that “subsequent medical practice appears to cast some doubts upon this [i.e., the medical procedures undertaken a decade earlier].”<sup>103</sup> Without considering the fact that the husband C. actually had had to live with his own medical autobiography “exhibit[ing] as a male in two of the three criteria”<sup>104</sup> and as a female in the third criterion, Justice Bell ruled that the physically intersexed husband was not a man and could not possibly be a husband at all.

...in s. 46(1) of the *Marriage Act*, the following words are used: “Marriage, according to the law of Australia, is the union of a man and a woman to the exclusion of all others.” . . . I have no hesitation in saying that the definition of “marriage” as understood in Christendom is the voluntary union of one man and one woman . . . ***I am satisfied on the evidence that the husband was neither man nor woman but was a combination of both, and a marriage in the true sense of the word as within the definition referred to above could not have taken place and did not exist.***<sup>105</sup>

Justice Bell’s ruling denied C. the right to marry anyone! Four centuries earlier Marin le Marcis only had to wait four years before he could marry.

Will the defenders of the traditional view of marriage deny the physically intersexed the right to marry without surgery or even after surgery? If the 14<sup>th</sup> Amendment tells us anything, it tells us that in America no one is denied their basic civil rights by virtue of the accidents of their birth.<sup>106</sup> As the U.S. Supreme Court wrote in *Planned Parenthood of Southeastern Pa. v Casey* (1992).

***The analysis does not end with the one percent . . . upon whom the statute operates; it begins there. . . . The proper focus of constitutional inquiry is the group for whom the law is a restriction, not the group for whom the law is irrelevant.***<sup>107</sup>

The decision in *C. and D.* highlights the fact that the proposed Federal Marriage Amendment guarantees no universal right to anyone. It merely taketh away. It taketh away the right of states to decide for themselves. It taketh away the right of gays and lesbians to marry the persons they love. If *C. and D.* were an American case it taketh away C.’s right to marry anyone. In the absence of the Federal Marriage Amendment C.

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<sup>102</sup> Id. (emphasis added)

<sup>103</sup> Id at 345.

<sup>104</sup> Id at 344.

<sup>105</sup> Id at 345. (emphasis added)

<sup>106</sup> See *Levy v Louisiana*, 391 US 68 (1968) invalidating a Louisiana law denying illegitimate children the right to sue for the wrongful death of their mother; *Weber v Aetna Casualty & Surety Co.*, 406 US 164 (1972) invalidating a Louisiana law denying illegitimate children the same rights to workmen’s compensation as legitimate children; *Gomez v Perez*, 409 US 535 (1973) invalidating a Texas law denying illegitimate children the same right to support from their natural father as is enjoyed by legitimate children; and *Trimble v Gordon*, 430 US 762 (1977) invalidating an Illinois law denying illegitimate children the right to intestate succession from their fathers.

<sup>107</sup> 505 US 833,894 (1992). (emphasis added)

could hope to bring an Equal Protection suit in the Federal courts to have himself at least declared to be a woman or a man for the sake of marriage eligibility. By not recognizing the right of everyone to marry someone, the proposed Federal Marriage Amendment taketh away even that. If C. were an American he would be the Dred Scott of the marriage wars.

#### IV. SEXUAL CONSUMMATION AND REPRODUCTION IN TRADITIONAL VIEWS OF MARRIAGE

Gerard V. Bradley, Professor of Law at Notre Dame and Robert P. George, the McCormick Professor of Jurisprudence at Princeton University are two of the leading proponents of the new natural law. They argue that the reproductive sex act within the bonds of marriage of a woman and a man is the only morally valid form of sexual activity.

Although much in our culture has tended in recent years to undermine the institution of marriage and the moral understandings upon which it rests, longstanding features of our legal and religious traditions testify to the intrinsic value of marriage as a two-in-one-flesh communion. Consummation has traditionally (though, perhaps, not universally) been recognized by civil as well as religious authorities as an essential element of marriage. "Physical defects and incapacities which render a party unable to consummate the marriage, existing at the time of the marriage, and which are incurable are, under most statutes, grounds for annulment." . . . This requirement for the validity of a marriage, where in force, has never been treated as satisfied by an act of sodomy, no matter how pleasurable. Nothing less (or more) than an act of genital union consummates a marriage; and such an act consummates even if it is not particularly pleasurable. Unless otherwise impeded, couples who know they are sterile can lawfully marry so long as they are capable of consummating their marriage by performing such an act. By the same token, a marriage cannot be annulled for want of consummation on the ground that one of the spouses turned out to be sterile. A marriage can, however, be annulled on the ground that impotence (or some other condition) prevents the partners from consummating it.<sup>108</sup> (footnotes and citations omitted)

In a nutshell they argue that even between wife and husband no form of sexual activity other than the reproductive sex act is valid since only the reproductive sex act unites a couple as two-in-one-flesh. Consequently, a couple anatomically unequipped for the reproductive sex act cannot marry. Of course, they have same-sex couples and same-sex marriage in mind but their strictures apply to our veteran of the war in Iraq who comes home after having stepped on a land mine and had his penis and testicles blown away.

Bradley and George are certainly correct that civil authority has *traditionally* recognized *sexual* consummation as an essential element of marriage. However, this merits closer examination. The passage just quoted cites a Georgia statute that reads

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<sup>108</sup> Gerard V. Bradley and Robert P. George, *Marriage and the Liberal Imagination*, 84 Georgetown L J 301,307-308 (1995).

To constitute a valid marriage in this state there must be:

- (1) Parties able to contract;
- (2) An actual contract; and
- (3) Consummation according to law.<sup>109</sup>

The phrase “Consummation according to law” may appear to refer to sexual consummation, but in fact it does not.<sup>110</sup> According to the Georgia Supreme Court “Sexual intercourse is not essential to the consummation of a valid marriage.”<sup>111</sup> In Georgia “Consummation according to law” means cohabitation as man and wife.<sup>112</sup>

For over a century and a half the relevant standard in Georgia<sup>113</sup> and elsewhere has been that a marriage can be annulled if the following 3 conditions all hold.

- It has not been sexually consummated,<sup>114</sup>

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<sup>109</sup> Ga Code Ann §19-2-1 (1991) when Bradley and George published. Currently, Ga Code Ann §19-3-1 (Michie 2003). This language dates back to the Georgia code of 1863. (See *Lefkoff v Sicro*, 189 Ga 554,564, 6 SE2d 687,695 (1939).)

<sup>110</sup> This choice of words *is* confusing. Reading further in the Georgia code clarifies matter a bit. “The form for application for marriage licenses shall be designed and printed in such a manner that applicants therefor shall designate the surnames which will be used as their legal surnames *after the marriage is consummated*.” Ga Code Ann §19-3-33.1(a) (Michie 2003) Surely Georgia wives who choose to take their husband’s surname as their own do so as soon as the ceremony is celebrated and do not have to wait until they have sexually consummated their marriage! South Carolina’s statute is much clearer on this matter. “If any such [marriage] contract has not been consummated by the cohabitation of the parties thereto the court may declare such contract void for want of consent of either of the contracting parties or for any other cause going to show that, at the time the supposed contract was made, it was not a contract.” (SC Code Ann §20-1-530 (Law Co-op 2003).)

<sup>111</sup> *Long v Long*, 191 Ga 606,607, 13 SE2d 349,350 (1941) In this case the wife sued the husband for divorce on grounds of cruelty after three weeks of cohabitation. The husband responded “that that since there was no sexual intercourse the marriage was not consummated, and accordingly there was in fact no marriage.” (Id.) The Georgia Supreme Court affirmed the lower court’s holding for the wife. For a similar statement about the validity of a marriage not depending on sexual intercourse see *Franklin v Franklin*, 154 Mass 515,516 28 NE 681,682 (1891) “The consummation of a marriage by coition is not necessary to its validity.”

<sup>112</sup> *Brown v Brown*, 234 Ga 300, 301, 215 SE2d 671, 673 (1975).

<sup>113</sup> “[T]hough the concubitus itself will not constitute marriage, yet it is so far one of the essential duties for which the parties stipulate, that the incapacity of either party to satisfy that duty nullifies the contract.” *Askew v Dupree*, 30 Ga 173,179 (1860) The case of *S v S*, 211 Ga 365, 86 So2d 103 (1955) ironically demonstrates that Georgia annulments depend on impotence and not simply the question of whether sexual relations have or have not occurred. In this case “the wife was capable of having sexual intercourse and becoming pregnant; there was no malformation in her genital organs; during the time they lived together they had sexual relations, but because of the paralyzed condition of the wife’s muscles she experienced no feeling when the act was being performed.” 211 (Id SE2d at 104.) The husband claimed that his wife “was incapable during the act of intercourse of having an orgasm or crisis of sexual excitement” and “was at the time of the marriage, and is now, permanently incapable of performing the *complete* act of sexual intercourse.” (Id, emphasis added.) The trial court held for the wife. Recognizing that “Upon a question of sexual intercourse the experience and sagacity of the jurors might very well be trusted to run the general logic of the case” (id at 105) the Georgia Supreme Court affirmed the jury’s verdict that, as a matter of fact, the wife was not impotent.

<sup>114</sup> Bradley and George also argue for the central role of sexual consummation by citing the following passage “an unconsummated marriage is little more than an engagement to marry.” (Bradley and George,

- due to a physical incapacity of one of the spouse at the time of the marriage,
- the incapacity is incurable.<sup>115</sup>

As of this writing 13 states<sup>116</sup> have gone one step further and have statutes that specifically require that the other spouse be unaware of the physical incapacity when the marriage is celebrated.<sup>117</sup> In these states the bride of our wounded war veteran would be legally incapable of suing for an annulment if she knew of her husband's incapacity when they married. In no state is this couple prohibited from marrying. In these 13 states the marriage contract between this couple certainly does not include an implied commitment to reproductive sex acts. ***In these 13 states marriage is certainly not about sexual activity that is reproductive in kind!***<sup>118</sup>

All of this suggests that there is more than one model for marriage. Reading back beyond a case cited by Bradley and George adds weight to this view.

#### A. The First American Case Reviewing Evidence of Physical Incapacity

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84 Georgetown L J at 308 n23 citing Homer H. Clark, Jr, *The Law of Domestic Relations in the United States* 93 (West, 2d ed, 1988) quoting *Akrep v Akrep*, 1 NJ 268,270, 63 A2d 253,254 (1949). *Akrep* is a suit for annulment on the grounds of fraud. In this case the husband had promised the wife that they would have a religious ceremony after a civil ceremony. "After the civil ceremony the parties partook of a dinner and then parted. They remained separated." (Id A2d at 253.) He reneged on his promise and the wife sued for an annulment. Here is the complete passage from *Akrep* that Clark truncated. "An unconsummated marriage is little more than an engagement to marry and where effected with fraud which would render a contract voidable, is voidable at the option of the injured party if promptly disaffirmed before any change of status has occurred." (Id at 254.) The New Jersey Supreme Court continued. "As the public concern is diminished, so too is the quality and kind of the required fraud lessened in a non-consummated marriage and may, according to the authorities, be any fraud which would render a contract voidable". (Id.)

<sup>115</sup> 52 Am Jur 2d *Annulment of Marriage* §§27-29 (2003).

<sup>116</sup> Colorado: Colo Rev Stat § 14-10-111(b) (2003). Delaware: 13:15 Dela Code Ann § 1506(2) (2003). Hawaii: Hawaii Rev Stat § 580-28 (2003). Illinois: 750 ILCS 5/301(2) (2003). Kentucky: Ky Rev Stat Ann § 403-120.(1).b (Banks-Baldwin 2003). Minnesota: Minn Stat § 518-02(b) (2003). Mississippi: Miss Code § 93-7-3(a) (2003). Montana: Mont Code Ann § 40-1-402(1)(b) (2003). New Jersey: NJ Rev Stat § 2A:34-1(c) (2003). Pennsylvania: 23 Pa Cons Stat § 3305(a)4 (2003). Texas: Tex Family Code Ann § 6.106(1) (2003). West Virginia: W Va Code §48-3-103(a)(3)(C) (2003). Wisconsin: Wis Stat § 767.03(2) (2003). Delaware's statute dates back to 1907. (See *S. v S.*, 42 Del 192,196, 29 A2d 325,326 (New Castle County Sup Ct 1942).)

<sup>117</sup> The doctrine that awareness of the other spouse's physical incapacity bars a suit for annulment on the grounds of physical incapacity goes back at least as far as John Ayliffe's *Parergon juris canonici anglicani* (1726).

The husband may pray a separation of matrimony on the account of a matrimonial impediment, though such impediment proceeds and arises from himself; as from his own impotency and frigidity; ***but if he knowingly marries a woman that cannot render him his due, he is (notwithstanding) bound to maintain her***, and shall not be divorced from her; for he ought to impute it to himself. (John Ayliffe, *Parergon juris canonici anglicani* 230 (D. Leach 1726) emphasis added.)

<sup>118</sup> Minnesota, Mississippi, and Montana had criminal sodomy laws in their statute books until the Supreme Court's invalidation of criminal sodomy laws in *Lawrence v Texas* (\_\_\_ US \_\_\_ (2003)). Thus, prior to *Lawrence* these three states allowed opposite sex couples to marry who were physically incapable of engaging in any official sex acts that were legal. (See Minn Stat § 609.293 (2003); Miss Code § 93-29-59 (2003); Mont Code Ann § 45-5-505(1) (2003).)

Bradley and George cite *J.G. v H.G.*, a Maryland case from 1870, to bolster their argument.<sup>119</sup> This is the first American case to review evidence presented for physical incapacity.<sup>120</sup> J.G., the husband, was 49 when he married H.G. in 1864. She was 28. Within 3 months of their wedding they separated, having been unable to consummate their marriage due to a physical impediment of hers. At that time Maryland law allowed for an annulment in case of "the impotence of either party at the time of the marriage."<sup>121</sup>

Six years later in 1870 the husband brought a suit for annulment. In his finding of fact Judge Bartol wrote

The physical condition of the appellee [wife], at the time of the marriage, was that of a very imperfect development of the sexual organs, both externally and internally. These organs were in a rudimentary condition, evincing that their development had ceased and been arrested before the age of puberty. She had never experienced the monthly sickness to which females of mature age are subject; and was without the natural passion or desire incident to woman.<sup>122</sup>

Based on these findings Judge Bartol concluded

The rudimentary condition of her sexual organs, and their imperfect development, not only rendered conception impossible, but there was on her part an incapacity for *vera copula*. That is to say, she was not capable of the act of generation in its natural and ordinary meaning, but only of incipient and imperfect coition.

In giving the results of their examination, the surgeons differ somewhat as to the degree or extent of the organic defects; but we have stated the conclusions which appear to us to be established by their testimony. They all concur in saying that the defect is incurable.

Whatever differences of opinion may have arisen as to the legal definition of impotence, ***it is well settled that if by reason of malformation or organic defect existing at the time of the marriage, there cannot be natural and perfect coition, vera copula, between the parties; and it appears that the defect is permanent***

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<sup>119</sup> Bradley and George, 84 Georgetown L J at 309 n27.

<sup>120</sup> *J.G. v H.G.*, 33 Md 401 (1870). This case cites two previous New York Chancery cases (*Devanbagh v Devanbagh*, 5 Paige 554 (1836); and *Newell v Newell*, 9 Paige 25 (1841)) that established the rule that medical practitioners must present testimony on physical incapacity before an annulment can be granted. In a slightly earlier case the Ohio Supreme Court granted a divorce in the case of a husband lacking a penis. (*Keith v Keith*, Wright 518 (1834) without more than a cursory statement of the evidence.

<sup>121</sup> "The impotence of either party at the time of marriage, is made, by the Code, Art. 16, sec. 25, ground for a divorce *a vinculo*; and impotence consists--first, in an incapacity of procreation from organic malformation; or, second, in incapacity for the act of copulation--and copulation, to come within." (*J.G. v H.G.*, 33 Md at 403.)

<sup>122</sup> *Id.* In the absence of statements about the presence or absence of pubic hair ovaries or testes these symptoms are consistent with a diagnosis of Meyer-Rokitansky-Küster-Hauser Syndrome (pubic hair and ovaries present, undescended testes absent) or Complete Androgen Insensitivity Syndrome (undescended testes present, pubic hair absent or decreased.)

**and incurable;** the case comes within the legal definition of impotence, and is cause for nullity of marriage.”<sup>123</sup>

Judge Bartol cited the 1845 English case of *Deane v Aveling* to support his reading of the law. (The remainder of the opinion deals with the impact of the separation agreement the parties signed when they separated.)

#### B. The First English Speaking Case Reviewing Evidence of Physical Incapacity

*Deane v Aveling*<sup>124</sup> is truly the first case to make a careful review of evidence of physical incapacity. Thomas Deane was 26 when he married the 25 year old Maria Aveling in 1842. By 1844 they were in litigation. He sued for an annulment on the grounds of non-consummation due to physical incapacity. Justice Lushington’s opinion has been cited by British and American courts ever since it first appeared in 1845. It merits careful consideration.

The medical facts in *Deane v Aveling* are strikingly similar to those in *J.G. v H.G.* (possibly Meyer-Rokitansky-Küster Syndrome but more likely Complete Androgen Insensitivity Syndrome.<sup>125</sup>) Maria Aveling had a short vagina and no uterus. None of the medical examiners commented on the existence of ovaries (or testes). Some of their testimony is worth reproducing.

Golding Bird, M.D. testified

She is capable of having connexion with and being carnally known by man, meaning thereby, that although there is a total absence of a uterus, and a malformation of the vagina, . . . , still a very small portion of the penis can be undoubtedly introduced, and connexion by that means take place; and the appearance of her sexual organs afford a very, *very* strong presumption, if not positive evidence, that to such extent sexual intercourse has taken place; . . . and also ***that there is every evidence of the ministrant’s capability of receiving sexual gratification; there is nothing attending on her state to prevent it; those parts tending to that result*** [i.e. her clitoris] ***being with her fully developed; as to her power or capability of imparting it*** [sexual gratification], ***I can offer no opinion.***<sup>126</sup>

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<sup>123</sup> Id. (emphasis added)

<sup>124</sup> *D-e v A-g (falsely called D-e)*, 1 Rob Eccl 279 (1845). British cases always refer to this case as *D-e v A-g (falsely called D-e)*. American courts somehow got a hold of the parties’ full surnames and refer to the case as *Deane v Aveling*. The opinion of the English court gives their first names. Hence we know their whole names!

<sup>125</sup> Dr. Bird reported that “she had the appearance rather of a girl not having attained puberty as an adult.” (Id at 285). I interpret this to mean that she had little or no pubic hair and axillary hair. Pubic hair and axillary hair develop at the onset of puberty in response to androgen. Their presence or absence provides a way to distinguish between Meyer-Rokitansky-Küster-Hauser Syndrome (pubic and axillary hair abundant) and Complete Androgen Insensitivity Syndrome (pubic hair and axillary hair absent or decreased.)

<sup>126</sup> Id at 288. (emphasis added)

John C. W. Lever, M.D., made similar comments and then closed with a remark about the prospects for surgery.

I found her external sexual organs perfectly formed and developed, and that ***the formation necessary for creating sexual desires*** [i.e. her clitoris] ***was also perfect***, but upon introducing the finger into the vagina, an impediment at once presented itself, and I discovered that the vagina, instead of being, as it ought naturally to have been, of the depth of four inches, or thereabouts, was in the said Maria D. of the depth of only one inch and a quarter, so far as I could judge, without positive admeasurement . . . and the said vagina was so constructed as to form a perfect *cul de sac*, without any means of communicating with any internal organ. . . On the twentieth of October [1844] . . . I . . . ascertained, to an absolute certainty, that there was not any uterus, and that ***any attempt to perform an operation for the extension of the vagina, would not only be useless, but, in all probability, fatal.***<sup>127</sup>

The third medical examiner, Lawson Cape, M.D., had a somewhat different view.

She is capable of coition, but the male organ being restricted from its full natural insertion I can hardly designate such coition perfect, though it is beyond incipient coition, as personal gratification can be afforded and actual emission ensue; exclusive of [i.e. aside from] such restricted admission of the male organ, the act of coition is perfect, the only distinction as regards such act in the case of the said Maria A. being, that the male organ can only be inserted to the limited extent which I have already set forth.<sup>128</sup>

In summary, Dr. Bird and Dr. Lever were sure that Maria could be sexually gratified but unsure that her husband could be. Dr. Cape suggested that he could be if he ejaculated outside her vagina.

Given the medical testimony Judge Lushington proceeded very carefully in his opinion. He began

I apprehend that we are all agreed that, in order to constitute ***the marriage bond between young persons***, there must be the power, present or to come, of sexual intercourse. Without that power, neither of ***the two principal ends of matrimony*** can be attained, namely, ***a lawful indulgence of the passions to prevent licentiousness, and the procreation of children***, according to the evident design of Divine Providence.<sup>129</sup>

Lushington easily disposed of Maria's unquestionable sterility as an issue.

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<sup>127</sup> Id at 289-290. (emphasis added)

<sup>128</sup> Id at 302.

<sup>129</sup> Id at 298. (emphasis added)



If there can be a reasonable probability that the lady can be made capable of *vera copula* – of the natural sort of coitus, though without the power of conception, I cannot pronounce this marriage void.... In the case first supposed, the husband must submit to the misfortune of a barren wife, as much when the cause is visible and capable of being ascertained, as when it rests in undiscoverable and unascertained causes. There is no justifiable motive for intercourse with other women in the one case than in the other.<sup>130</sup>

Thus ***procreation, although an end of marriage, is not required of marriage, not even the possibility of procreation.*** Mid-twentieth century English courts cited this part of Lushington's opinion to rule that

- intercourse with a condom sexually consummates a marriage,<sup>131</sup>
- prolonged penetration without seminal emission sexually consummates a marriage,<sup>132</sup> and
- actual or possible surgical enlargement of a vagina (similar to Maria Aveling's) precludes annulment for physical incapacity.<sup>133</sup>

Lushington quickly recognized that the key legal issue

... lies in the meaning of the term "sexual intercourse." How is it to be defined? This is a most disgusting and painful inquiry, but it cannot be avoided.<sup>134</sup>

He answered this as follows.

Sexual intercourse, in the proper meaning of the term, is ordinary and complete intercourse; it does not mean partial and imperfect intercourse: yet, I cannot go the length of saying, that every degree of imperfection would deprive it of its essential character. ***There must be degrees*** difficult to deal with: but if ***so imperfect as scarcely to be natural***, I should not hesitate to say that, legally speaking, it is no intercourse at all. I can never think that the true interest of society would be advanced by retaining within the marriage bonds ***parties driven to such disgusting practices. Certainly it would not tend to the prevention of adulterous intercourse, one of the greatest evils to be avoided.***

... when the coitus itself is absolutely imperfect, and I must call it unnatural, there is not a natural indulgence of natural desire; almost of necessity disgust is generated, ***and the probable consequences of other connexions of men of ordinary self control become almost certain. I am of the opinion that no man ought to be reduced to this state of quasi unnatural connexion, and consequent temptation***, and therefore, I should hold the marriage void.<sup>135</sup>

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<sup>130</sup> Id at 299.

<sup>131</sup> *Baxter v Baxter*, [1947] 2 All E.R. 886 specifically overruling *Cowen v Cowen*, [1945] 2 All E.R. 197.

<sup>132</sup> *R. v R. (otherwise F.)*, [1952] 1 All E.R. 1194 contradicting the Ontario case *Miller v Miller* [1947] Ont Rep 213.

<sup>133</sup> *S. v S. (otherwise W.)*, [1962] 3 All E.R. 55 specifically disapproving *D. v D.* [1954] 2 All E.R. 598.

<sup>134</sup> *D-e v A-g*, 1 Rob Eccl at 298.

<sup>135</sup> Id at 298-299. (emphasis added)

For Lushington the threshold lay at the point where penile-vaginal intercourse satisfies the husband to a sufficient extent that he does not engage in other forms of sexual activity with his wife or adultery with other women. We can only guess how Lushington would have opined in case a wife brought a complaint.<sup>136</sup>

Although not forbidden to marry again Maria Aveling faced bleak prospects. She would have to find a husband who would be satisfied without full penetration. Thomas Deane, on the other hand, was free to find himself a wife for “the lawful indulgence of the passions” and whatever else he pleased.

We need to return to Lushington’s preface to his argument where he wrote

I apprehend that we are all agreed that, in order to constitute the marriage bond *between young persons*, there must be the power, present or to come, of sexual intercourse.<sup>137</sup>

Lushington clearly had in mind the 1828 case of *Brown v Brown* in which a 52 year old newlywed wife simply declined to have conjugal relations with her 60 year old newlywed husband. The husband sued for an annulment on grounds of non-consummation. The judge in that case, Lord Nicholl, refused to grant the annulment reasoning “that a man of sixty who marries a woman of fifty-two should be content to take her *tanquam soror* [as a sister].”<sup>138</sup> For Lushington it was clear that Thomas Deane and Maria Aveling were “young people” and the Browns were not.

The evidence that Lushington had the *Brown* case in mind comes from the case of *W- v H- (falsely called W-)*.<sup>139</sup> That case involved a 49 year old newlywed wife with a physical impediment and a 54 year husband. The wife’s barrister presented Justice Nicholl’s *tanquam soror* dictum, however, the presiding judge wasn’t persuaded. He pointed out that in *Deane v Aveling* Lushington “says nothing of any limit to the age at which the right to complain ceases.”<sup>140</sup> Citing the fact that the wife’s condition though curable, had not in fact been cured by surgery especially dangerous to a 49 year old, the judge granted the annulment requested.<sup>141</sup>

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<sup>136</sup> In 1863 an English wife sought an annulment because of her husband’s impotence “caused by a long-continued habit of self-abuse.” She lost. The court held that the husband’s impotence “might possibly but not probably, be cured, the questions being one of moral restraint.” (*S- (falsely called E-) v E-*, 3 Swab T 240 (1863)) In the 1890s an Illinois circuit court heard a similar case in *Griffith v Griffith* and granted the wife’s suit for annulment. An appeals court threw out the annulment (55 Ill App 474 (1894)) only to have the annulment reinstated by the Illinois Supreme Court (162 Ill 368 (1896))

<sup>137</sup> *D-e v A-g*, 1 Rob Eccl 298. (emphasis added)

<sup>138</sup> 1 Hagg Eccl 524 (1828).

<sup>139</sup> 2 Swab T 240 (1861).

<sup>140</sup> Id at 244.

<sup>141</sup> “The courts decline to grant annulment for physical incapacity where, by reason of the advanced years of the parties at the time of the marriage, the desire for support and companionship, rather than the usual motives of marriage, must have actuated them.” (*Hatch v Hatch*, 110 NYS 18 (1908)) In this case a 56 year old soldier’s widow married a 69 year old man. “[W]hen she gained a husband, she lost a pension. For reasons not disclosed to the court, the exchange proved an unsatisfactory one to her.” (Id at 19.)

### C. Late Marriage

Late marriage, at the ages of the Browns, or W. and H. has always posed a challenge to defenders of the traditional view. Clearly, none of the husbands bringing the annulment suits just discussed were ready to take a wife as a sister but undoubtedly other men their age did so. They still do all the time. Can anyone expect 83 year old and 79 year old newlyweds to have an active sex life? I don't. If that's the case, then why does it matter if the newlyweds are members of opposite sexes or the same sex? (One of the lesbian couples married in San Francisco in February 2004 consisted of an 83 year old and a 79 year old.)

Defenders of the traditional view argue that there can be no marriage between persons who by their natures are *necessarily* incapable of conceiving a child. They argue that the procreation of children is one of the state's primary interests in sanctioning marriage, not just regulating it. They may be astonished to learn that three states allow certain marriages to take place *only* on the condition that there can be no children conceived! None of these states is called Massachusetts! Thirty states prohibit the marriage of first cousins. However, Arizona, Illinois, and Wisconsin allow first cousins of childbearing age to marry if one of the parties is permanently sterile.<sup>142</sup> On the other hand, none of these states prohibit first cousin couples from starting a family by adopting a child.<sup>143</sup>

It is certainly incongruous to hold that some pairs of people *must be forbidden* from marrying because they are incapable of conceiving a child while others are *only allowed* to marry in case they are incapable of conceiving a child.

There is more than one model for marriage.

### D. Reproductive Complementarity

Twenty years ago in an Article entitled "Transsexualism and Christian Marriage"<sup>144</sup> the Reverend Professor Oliver O'Donovan, currently Regius Professor of Moral and Pastoral

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In *Viermann v Viermann* the St Louis, Missouri Court of Appeals entertained an impotency suit brought by an 83 year old newlywed husband against his 69 year old wife. The court affirmed a lower court judgment that the husband had not demonstrated that his wife's impotency was incurable. (213 SW2d 259,261 (1948))

<sup>142</sup> See Ariz Rev Stat §25-101-B (2003), 750 ILCS § 5/212(a)(4)(ii), and Wis Stat §765.03(1) (2002). These states also allow first cousins to marry if they are both are at least age 65 (Arizona), 50 (Illinois), or 55 (Wisconsin). In addition, Utah and Indiana have an exception for first cousins in case both are at least age 65. (Utah Code Ann § 30-1-1(2)(a) and Ind Code §31-11-1-2 (2003)) Utah has an exception in case both first cousins have reached age 55 and one is permanently sterile. (Utah Code Ann § 30-1-1(2)(b)) With these age limits each of these states has put in place a sharp distinction between what Nicholl and Lushington would have termed "young persons" and "old persons" who can only take each other *tanquam soror* or *tanquam frater*. Continuing in the Nicholl-Lushington vein Arizona, Illinois, and Wisconsin have put in place exceptions that allow first cousins who are "young persons" to marry.

<sup>143</sup> See Ariz Rev Stat §8-103 (2003), 750 ILCS § 50/2, and Wis Stat §48.82(1)(a) (2002).

<sup>144</sup> Oliver O'Donovan, *Transsexualism and Christian Marriage*, 11 J Religious Ethics 135 (Spring 1983).

Theology Oxford University and Canon of Christ Church, employed the “necessarily, rather than contingently, incapable of conception” argument when considering whether a post-operative transsexual could enter into a *Christian* marriage. For Rev. O’Donovan

The question whether a postoperative transsexual can be a partner in a marriage resolves itself into two related questions: Will such a marriage be a union of a man and a woman? And, does it matter that it should be? Leaving aside for the moment the first of these two, we will devote this section to the second, attempting to show why it has been, and remains, *important to the Christian understanding* of marriage that it is contracted between members of the opposite sex, between “this man and this woman.”<sup>145</sup>

Rev. O’Donovan answers his second question as follows.

There were, however, two elements of the traditional teaching on homosexuality which provided the lack [in a same sex marriage]: first the teaching that genital intimacy in homosexual relationships is wrong because the genital organs are made for union with the opposite sex second, the teaching that homosexual partnerships cannot be marriages because they are necessarily, rather than contingently, childless.<sup>146</sup>

Rev. O’Donovan touches on the physically intersexed throughout his Article.<sup>147</sup> In a passage comparing transsexuals with the physically intersexed he writes.

A case can certainly be made at the psychological level for a dipolar opposition rather than a dimorphic one. It can, that is, be argued, that *masculinity* and *femininity*, are matters of relatively more or less rather than either-or. But it cannot be argued that this is the case with maleness or femaleness, the biological endowment from which the psychological and behavioral possibilities arise. It is generally well known that the starting point for dimorphic differentiation is already present at the conception of a child in the presence of a “Y” chromosome, the effect of which is to differentiate the development of male from female gonadal structures from which all embryos begin. The existence of hermaphroditic or “intersex” conditions is traced to a *malfunction* at some point in the outworking of the either-or of chromosomal endowment. The name

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<sup>145</sup> Id at 140. (emphasis added)

<sup>146</sup> Id at 141. Why do defenders of the traditional view of marriage so frequently make such statements in terms of “childlessness” rather than “inability to conceive a child?” Surely, they realize that adoption is a time honored variation for starting (or adding to) a family. When defenders of the traditional view of marriage argue that same sex couples cannot marry because they are “necessarily childless” they are asserting that same sex couples cannot be good parents. That is begging a question closely related to the one under examination. Framing any such discussion in terms of “childlessness” (and “childfulness”) disrespects all adoptive families. Framing the discussion in terms of “the ability to conceive a child” (or “fertility”) shows respect for all adoptive couples who have struggled with infertility and does not presume an answer to the question of whether same sex couples can be good parents.

<sup>147</sup> Rev. O’Donovan points out that Justice Ormrod’s decision in *Corbett* did not support Justice Bell’s decision in the 1979 Australian case of *C. and D.* (Id at 158 n6.) However, he never suggests how the case of *C. and D.* should have been decided.

“intersex” may suggest to the public mind a kind of rural staging post, situated in the uninhabited countryside halfway between the cities of maleness and femaleness: that is why the term “hermaphrodite,” offensive as it may be, is conceptually truer, suggesting that the condition is one of both-and, arising from a **malfunction** of the chromosomal endowment.<sup>148</sup>

Let us consider how the marriage of Deane and Aveling fares under a rule that forbids marriage when the partners are “necessarily, rather than contingently” incapable of conceiving a child and allows marriage when the partners are capable or only contingently incapable of conceiving a child.

Maria Aveling’s medical examination revealed symptoms entirely consistent with a person conceived with XY sex chromosomes who developed testes at the 7<sup>th</sup> week of gestation and then experienced Androgen Insensitivity Syndrome<sup>149</sup> causing her body to develop many female sexual characteristics rather than the male characteristics that would have developed had her body been able to process the androgens secreted by her testes.

Given the circumstances of her conception by a sperm cell carrying a Y sex chromosome containing genes that caused her gonadal ridge to develop into testes rather than ovaries Maria Aveling was **necessarily incapable** of conceiving a child<sup>150</sup> with a man (capable of producing sperm cells). Thus, on the “necessarily, rather than contingently incapable” argument, Maria Aveling, although raised as a female, could not marry a male! In contrast, the gestational “malfunction” that resulted in her body’s inability to process male hormones (androgens) and the resulting failure to develop a complete set of male sexual characteristics seems to be only contingent. On this analysis, Maria Aveling’s inability to conceive a child with a (fertile) woman is merely contingent rather than necessary. Consequently, the “necessarily, rather than contingently, incapable of conception” argument would allow her to marry a woman, just as it would allow a post-operative male-to-female transsexual to marry a woman.

Although Rev. O’Donovan argues that post-operative transsexuals cannot marry as member of their new sex, he never makes it clear whether they can marry as members of their old sex! Nor does he ever propose a clear rule for the physically intersexed. Indeed, the most recently quoted passage continues.

This does not mean that in cases of such ambiguity the chromosomal endowment is always the key to the person’s “real” sex, to which at all costs he or she should be assigned. The effect of the “both-and” malfunction is precisely that we have to distinguish between a person’s genotypical, or intended sex, and the phenotypical,

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<sup>148</sup> Id at 142-3. (emphasis added) Victoria S. Kolakowski recognized that Rev. O’Donovan takes it as a given that there are two and only two *true* sexes. (See Victoria S. Kolakowski, *Toward a Christian Ethical Response to Transsexual Persons*, 6 Theology and Sexuality 10, 26 n29 (1997)).

<sup>149</sup> Whether or not Maria Aveling actually experienced AIS is irrelevant. This argument holds for any XY person who experienced AIS and was raised as a female. Using Maria Aveling as an example merely personalizes the argument to an actual historical figure.

<sup>150</sup> Owing to the secretion of Müllerian Inhibiting Substance she also lacked a uterus to carry a child.

or actualized sex. When confronted with the difficulties of both-and, we may be forced to resolve them *away from* the sex to which, had all gone well in gestation, the person would have developed. The point is simply that the ambiguity, however it may be resolved, is an ambiguity in a dimorphic human sexual pattern.<sup>151</sup>

Perhaps some physically intersexed persons have genetic endowments<sup>152</sup> that make them necessarily incapable conceiving a child with anyone. Perhaps the physically intersexed

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<sup>151</sup> O'Donovan, 11 J Religious Ethics at 143.

<sup>152</sup> Androgen Insensitivity Syndrome is caused by a mutation to the Androgen Receptor gene on the X chromosome. (See Charmian Quigley et al, *Androgen Receptor Defects: Historical, Clinical, and Molecular Perspectives*, 16 Endocrine Rev 271,274 (1995).)

In the passage quoted above Rev. O'Donovan speaks of “a **malfunction** of the chromosomal endowment.” (Id.) This belies 2 significant misunderstandings of modern genetics. The first is that chromosomes are merely structures that carry aggregations of genes. Chromosomes only act as a whole unit during meiosis and mitosis. Developmental pathways begin with expression at the gene level, not at the chromosome level. The second is that the expression of a rare recessive gene is not a malfunction. It is simply the law-like biochemical outcome of the underlying genetic endowment that results in a lack of functionality present in the absence of one or both dominant genes. In some cases, such as the sickle cell trait, persons with one recessive gene and one dominant gene have an adaptive advantage (resistance to malaria) in certain environments compared to persons with two dominant genes. It is unfortunate that persons with two recessive genes have sickle cell anemia – a significant impairment of the blood's ability to carry oxygen. However, that is not a malfunction of the underlying genetic (or chromosomal) endowment.

Given that AIS is caused by the presence of a recessive gene on the X chromosome expressing itself in a law-like fashion by not producing androgen receptors, then it seems that Maria Aveling's sterility as an XY male is necessary rather than contingent. The fact that she inherited an X-linked recessive gene is certainly a contingent fact of her conception, but so is the fact that she was conceived by a sperm cell carrying a Y chromosome rather than a sperm cell carrying an X chromosome.

Rev. O'Donovan asserts that

the only way to understand biological ambiguity, even at the chromosomal level, is as a malfunction in the dimorphic program. (Id at 160 n11.)

the ambiguity, however it may be resolved, is an ambiguity in a dimorphic human sexual pattern. It appears, then, that the Christian understanding of marriage, which relates to the dimorphism of human biology, is not out of tune with modern medical understanding. (Id at 143)

By now it should be patently obvious to readers that this Article is grounded in the view that there are more than two suites of sexual characteristics in humankind. Rather than pursuing this argument at the moment I would like to consider Rev. O'Donovan's claim that “the Christian understanding of marriage, which relates to the dimorphism of human biology, is not out of tune with modern medical understanding.” Not surprisingly, Rev. O'Donovan focuses completely on reproductive anatomy.

If we want to have a modern scientific understanding of the predominant sexual dimorphism in humankind then we need to consider *all* aspects of that dimorphism, not just the predominant dimorphism in the reproductive systems. We are all aware that on the average males are larger and more muscular, have more body hair, and a deeper voice than females. Comparative primatology interprets this data as indicative of a polygynous (one male mating with multiple females) ancestry for humankind (See for example Alan Dixson, *Primate Sexuality: Comparative Studies of the Prosimians, Monkeys, Apes, and Human Beings*

cannot enter into *Christian* marriage as described by Rev. O'Donovan. That should not preclude them from entering into a secular, *American* marriage.

## V. BINARY CLASSIFICATION IN LAW

The law makes many binary classifications. We have all felt the impact of not having reached the age of majority at which we acquire all of our legal rights. Certainly setting the age of majority at 18 (or 21) has never been intended as reflecting a fundamental ontological distinction. It is nothing more than a best estimate of the threshold at which individuals become capable of accepting the full set of legal rights and responsibilities. We expect each and every one of us to cross this threshold. When the threshold appears to be set inappropriately for someone, legal mechanisms exist to provide rights earlier (emancipation) or defer them (guardianship for mental incompetence for example.)

### A. White versus Non-White: Racial Classification in the Context of Immigration

In 1790 the first Congress exercised its constitutional authority “to establish an uniform Rule of Naturalization.”<sup>153</sup> In passing the first act Naturalization Act Congress limited the prospect of American citizenship to

Any alien being a free white person <sup>154</sup>

without bothering to define what it meant to be “white.” Following the Civil War Congress extended naturalization to “persons of African nativity or African descent.”<sup>155</sup> In the area of naturalization law, the boundary between “white” and “non-white” remained unchallenged for well over a century.<sup>156</sup> The phrase “white person” remained, undefined, in the Naturalization Act of 1906.

Takao Ozawa had been raised and educated in California and Hawaii after having been born in Japan. His children were U.S. citizens by virtue of their birth in Hawaii. Considering the color of his skin Ozawa applied for citizenship. It was refused.

Ozawa took his case to the Supreme Court. In November, 1922, writing for a unanimous Supreme Court that included Justices Brandeis and Holmes, Justice George Sutherland argued that “white” did not refer just to the single factor of skin color.

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28,33 (Oxford 1998) Thus, the monogamous union of one female and one male is not the only form of mating “in tune” with a modern scientific understanding of human biology.

<sup>153</sup> US Const Art I, § 8, cl 4a.

<sup>154</sup> 1 Stat 103, c3 (1790)

<sup>155</sup> Act of July 14, 1870, ch. 255 §7, 16 Stat 254.

<sup>156</sup> For analyses of how the boundary between “white” and “non-white” was contested in other areas see Ian F. Haney López, *White By Law : The Legal Construction of Race* (NYU 1996) and Ariela J. Gross, *Litigating Whiteness: Trials of Racial Determination In The Nineteenth-Century South*, 108 Yale L J 109 (1998).

Manifestly the test afforded by the mere color of the skin of each individual is impracticable, as that differs greatly among persons of the same race, even among Anglo-Saxons, ranging by imperceptible gradations from the fair blond to the swarthy brunette, the latter being darker than many of the lighter hued persons of the brown or yellow races. Hence to adopt the color test alone would result in a confused overlapping of races and a gradual merging of one into the other, without any practical line of separation. . . . the federal and state courts, in an almost unbroken line, have held that the words “white person” were meant to indicate only a person of what is popularly known as the Caucasian race.<sup>157</sup>

Realizing, perhaps, that he had merely replaced one definitional problem (“white persons”) with another (“Caucasian race”) Sutherland warned that the issue was not yet resolved.

The determination that the words “white person” are synonymous with the words “a person of the Caucasian race” simplifies the problem, although it does not entirely dispose of it. Controversies have arisen and will no doubt arise again in respect of the proper classification of individuals in border line cases. *The effect* of the conclusion that the words “white person” means a Caucasian *is not to establish a sharp line of demarcation* between those who are entitled and those who are not entitled to naturalization, *but rather a zone of more or less debatable ground* outside of which, upon the one hand, are those clearly eligible, and outside of which, upon the other hand, are those clearly ineligible for citizenship.<sup>158</sup>

Sutherland undoubtedly knew that the Court’s docket already contained the next definitional dispute. In January, 1923 the Court heard the case of *United States v Thind*. Bhagat Singh Thind was described as “a high-caste Hindu, of full Indian blood.”<sup>159</sup> Given his white skin he claimed to be a member of the Caucasian race. The US District Court in Oregon had granted him citizenship over the objection of the Naturalization Examiner. The Examiner sued and Thind’s case went to the Supreme Court. Once again, Justice Sutherland wrote for a unanimous court.

Sutherland began his opinion by acknowledging that the piecemeal engineering in *Ozawa* was merely a stopgap measure. Congress had used the phrase “white persons” and not “Caucasian race.” When Congress used the words “white person,” Sutherland opined, it used them as words “of common speech and not of scientific origin.”<sup>160</sup> If the scientific meaning of “Caucasian” were employed then it would

include not only the Hindu, but some of the Polynesians (that is, the Maori, Tahitians, Samoans, Hawaiians, and others), the Hamites of Africa, upon the ground of the Caucasic cast of their features, though in color they range from

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<sup>157</sup> *Ozawa*, 260 US at 197.

<sup>158</sup> *Id.* (emphasis added)

<sup>159</sup> *Thind*, 261 US at 206.

<sup>160</sup> *Id.* at 208.



brown to black. *We venture to think that the average well informed white American would learn with some degree of astonishment that the race to which he belongs is made up of such heterogeneous elements.*<sup>161</sup>

That could not be allowed to happen. “The intention was to confer the privilege of citizenship upon that class of persons whom the fathers knew as white, and to deny it to all who could not be so classified.”<sup>162</sup> Justice Sutherland concluded

What we now hold is that the words “free white persons” are words of common speech, to be interpreted in accordance with the understanding of the common man, synonymous with the word “Caucasian” only as that word is popularly understood.<sup>163</sup>

Justice Sutherland had preserved the intent of the first Congress and its successors. Naturalization rights belonged to “white persons” (and after 1870 Africans). “Non-white persons” were denied these rights. If Congress wanted to ease restrictions on naturalization it could. In 1952 it finally did.<sup>164</sup>

## B. White versus Non-White: Racial Classification in the Context of Marriage

Racial classification also lay at the root of the last great American legal struggle for the right to marry: the right to marry regardless of race. An introductory section of the Virginia code defined “Colored persons and Indians” and even allowed an “Indian” to have up to one-sixteenth Negro blood.<sup>165</sup> However, the anti-miscegenation code itself merely defined the meaning of the term “white person.”

It shall hereafter be unlawful for any white person in this State to marry any save a white person, or a person with no other admixture of blood than white and American Indian. For the purpose of this act, the term "white person" shall apply only to the person who has no trace whatsoever of any blood other than Caucasian; but persons who have one-sixteenth or less of the blood of the

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<sup>161</sup> Id at 211. (emphasis added)

<sup>162</sup> Id at 207.

<sup>163</sup> Id at 214-215.

<sup>164</sup> Justice Black catalogued Congress’s slow progress on immigration policy when he wrote  
An act adopted by the first Congress in 1790 made ‘free white persons’ only eligible for citizenship. Later acts have extended eligibility of aliens to citizenship to the following groups: in 1870, ‘aliens of African nativity and \* \* \* persons of African descent,’; in 1940, ‘descendants of races indigenous to the Western Hemisphere,’ in 1943, ‘Chinese persons or persons of Chinese descent,’ and in 1946, Filipinos and ‘persons of races indigenous to India.’ While it is not wholly clear what racial groups other than Japanese are now ineligible to citizenship, it is clear that Japanese are among the few groups still not eligible, and that, according to the 1940 census, Japanese aliens constituted the great majority of aliens living in the United States then ineligible for citizenship. (*Torao Takahashi v Fish and Game Commission et al*, 334 US 410,412 n1 (1948) citations omitted)

<sup>165</sup> Va Code Ann 1-14 (1960 Repl Vol) quoted in *Loving*, 388 US at 5 n4.

American Indian and have no other non-Caucasic blood shall be deemed to be white persons.<sup>166</sup>

The Virginia anti-miscegenation laws focused exclusively on preserving the purity of the white race<sup>167</sup> by **prohibiting a complementary** marital relationship between a “white person” and anyone else. By not caring about preserving the purity of the “black, yellow, malay, and red”<sup>168</sup> races the Virginia marriage laws did not run the risk of leaving someone out in the cold as “none of the above” without the right to marry anyone. Consequently, nothing else needed definition since, for the purposes of the anti-miscegenation laws, the only categories that mattered were: “White persons” and its complement “non-White persons”, i.e. none of the above; everyone else.

The traditional view of marriage **requires complementarity** between spouses: a woman and a man. Therefore, the traditional view of marriage almost certainly requires separate definitions of “female” and “male”. Defining just one of the sexes and leaving “everyone else” to the other sex is likely to lead to highly unusual results. Recall that although Justice Ormrod ruled that April Ashley was not a woman, he did not rule that April Ashley was a man.

### C. Justice Ormrod on Sexual Binarism

Justice Ormrod’s decision in *Corbett* has long been castigated by the transsexual rights community. However, he at least had the good sense to recognize that the physically intersexed presented a significant challenge for the law and intentionally left their status undecided.

Justice Ormrod happens to have been trained as a physician as well as a lawyer. In March 1972 he addressed the Medico-Legal Society (of the UK) on the topic of *The Medico-Legal Aspects of Sex Determination*. It was published in the Society’s journal.<sup>169</sup>

Throughout the Article Justice Ormrod remained adamant that sex reassignment

operations do not and cannot change the sex of the patient. They merely remove the physical attributes of one sex and construct imitations of the other. . . they remain, unhappily for themselves, what they always were – psychologically abnormal males or psychologically abnormal females.<sup>170</sup> . . .  
[April Ashley’s] operation, in my view, was irrelevant because the result was pure artefact.<sup>171</sup>

At the end of his address Justice Ormrod breathed a sigh of relief. “I was fortunate to find myself faced with a transsexual.”<sup>172</sup> During the course of his address he made it clear

<sup>166</sup> Va Code Ann 20-54 (1960 Repl Vol) quoted in *Loving*, 388 US at 5 n4.

<sup>167</sup> See Nancy F. Cott, *Public Vows: A History of Marriage and the Nation* 41 (Harvard 2000).

<sup>168</sup> As stated by the trial judge, quoted in *Loving*, 388 US at 3.

<sup>169</sup> 40 Medico-Legal J 78 (1972).

<sup>170</sup> Id at 82.

<sup>171</sup> Id at 86.

<sup>172</sup> Id.

how well he understood the wide variety of physically intersexed conditions including descriptions of

- Androgenital Syndrome (Now termed Congenital Adrenal Hyperplasia and/or Progesterin-Induced Virilization)
- Testicular feminization. (Now termed Complete or Partial Androgen Insensitivity Syndrome)
- Testicular failure syndrome.<sup>173</sup>

Justice Ormrod also understood the wide range of variation in sex chromosome combinations. After reminding his audience that “there are 46 chromosomes in the normal cell nucleus” he went on to mention X0 (Turner syndrome), XXY (Klinefelter’s syndrome), XXX, XYY, and XX/XY combinations. Justice Ormrod declared “XX/XY individuals [who have some cells with XX sex chromosomes and other cells with XY sex chromosomes] are true hermaphrodites”<sup>174</sup> and warned his audience that “The chromosomal test, therefore, determines the sex of the *individual* cells of the body.”<sup>175</sup> In contrast

The true hermaphrodite *defies classification* except possibly on the social criterion. Genitally, gonadally, and chromosomally they are ambiguous.<sup>176</sup>

How April Ashley felt about herself did not matter to Justice Ormrod. Her genitals, gonads, and chromosomes were (presumably) unambiguous at birth. She did not defy Justice Ormrod’s anatomical classification. Although Justice Ormrod would not consider psychological factors in April Ashley’s case he did consider them relevant for the physically intersexed. The ambiguity among their genitals, gonads, and chromosomes gives them the right to choose a feminine or masculine identity.

Doctors are primarily concerned with the problem of how their intersex patients can best live in society, that is, which of the two roles, masculine or feminine, will best suit the individual patient. This can be conveniently, if not wholly accurately, expressed by asking which gender should the patient be encouraged to assume.<sup>177</sup>

...

In all cases [decisions about treatment] will involve deciding how the patient’s future life should be planned i.e. should the patient retain the gender in which he or she has been living or should it be changed.<sup>178</sup>

Clearly, Justice Ormrod thought that the physically intersexed could be given a “completed” sexual identity of female or male. Nevertheless, Justice Ormrod was glad

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<sup>173</sup> Id at 80-81.

<sup>174</sup> Id at 80.

<sup>175</sup> Id. (emphasis added)

<sup>176</sup> Id at 82. (emphasis added)

<sup>177</sup> Id at 79.

<sup>178</sup> Id at 83.

that he did not have to rule in such a case. During the short Question and Answer period a barrister named Jackson asked

what Sir Roger [Ormrod] would have decided had he found April Ashley had been an hermaphrodite in the way in which he defined the term.<sup>179</sup>

Justice Ormrod replied

I suppose like all judges I sort of relax ultimately on the onus of proof as a cozy kind of couch, when I cannot think of any other conceivable way of getting out of the hole I'm in . . . I think that the onus of proof would really come into it in this way, would it not: that one would say that the individual had failed to prove that he – as the case may be – is a woman. I think you would have to take it and ultimately rely on the onus of proof if one were really stuck.<sup>180</sup>

For Justice Ormrod the physically intersexed person “completed” into a woman would have to be “capable of performing the essential role of a woman in marriage.” The same for someone completed into a man.

Commentators such as Professor Greenberg have focused on Justice Ormrod’s reduction of sex to a set of anatomical features and his refusal to consider hormonal and psychological factors. I want to focus on Justice Ormrod’s insistence on strict binarism, that is, the classification of all persons into female and male exclusively and exhaustively.

Justice Ormrod began his address by stating

The law, which is essentially an artifact, is a system of regulations which depends upon precise definitions; medicine is a biological science and therefore depends on the facts of biology. The law is obliged to classify its material into exclusive categories. it is therefore, a binary system designed to produce conclusions of the *Yes* or *No* type. Biological phenomena, however, cannot be reduced to exclusive categories so that medicine cannot often give *Yes* or *No* answers.<sup>181</sup>

In one sense Justice Ormrod is correct. *If* the law makes classifications it needs to have as precise a definition as possible for courts to apply, especially if a binary classification is made. All of this begs the questions of whether a classification can be made effectively and whether a classification ought to be made. When Justice Ormrod writes

Biological research over the past 25 years has shown that none of the criteria for sex determination are completely reliable and that *the categories male and female are not mutually exclusive*. This work has greatly increased our understanding of sexual anomalies but in the process it *has made it extremely*

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<sup>179</sup> Id at 88.

<sup>180</sup> Id.

<sup>181</sup> Id at 78.

*difficult to find a satisfactory definition of the sexual status of an individual whose sex is in doubt.*<sup>182</sup>

it is difficult to imagine how categories that science says are not exclusive can be made exclusive and untraversable for legal purposes.

#### D. Dr. Ombrédanne's Sexual Balance Sheet

In the middle of the 20<sup>th</sup> century the renowned French uro-genital surgeon Dr. Louis Ombrédanne (1871-1956) tried to find a solution to this dilemma. He suggested that surgery could be employed to “perfect” the anatomy of persons otherwise incapable of marrying as male or female. Ombrédanne gave his analysis in a study<sup>183</sup> presented to a conference at the *Centre d’Etudes Laënnec* in Paris during the Winter of 1946-7 sponsored by the Archdiocese of Paris. (Emmanuel Cardinal Suhard, Archbishop of Paris, opened the conference.)

Based on a lifetime's work in uro-genital surgery, presented in his 1939 masterwork *Les Hermaphrodites et la Chirurgie* (“*Hermaphrodites and Surgery*”), Ombrédanne begins his analysis by asserting “***There is no criterion of sex. There is no such thing as regular sex.***”<sup>184</sup> (emphasis added) Ombrédanne first considers external sexual anatomy and then gonadal function but immediately provides counterexamples to such simple sets of criteria. Nevertheless, Ombrédanne argues, “We must, however, define sex, since marriage is permissible only between subjects of *different sexes*.”<sup>185</sup>

With all simple sets of criteria failing, Ombrédanne turns to Ulpian's (160-228) proposal that “*a subject belongs to the sex which prevails in him*; and this definition seems to us to be the only one sustainable.”<sup>186</sup> He continues

But to speak of a prevalence or, if you prefer, a predominance, supposes an *appreciation* based on a sexual *balance-sheet*. And the balance-sheet which results will be based on both forms and on functions. It is that balance-sheet which will make us consider a subject as masculine or feminine from the point of view of marriage.<sup>187</sup>

According to Ombrédanne, someone of ambiguous sex must be made “capable of copulation in conformity with their chosen sex”<sup>188</sup> to be capable of entering into marriage as a man or a woman. If necessary, they must be “willing to perfect surgically their anatomical sexual apparatus with a view to this possibility of copulation.”<sup>189</sup>

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<sup>182</sup> Id. (emphasis added)

<sup>183</sup> Louis Ombrédanne, *The Marriage of Hermaphrodites* (Malachy Gerard Carroll, trans.) in Dom Peter Flood, ed., *2 New Problems in Medical Ethics* 47 (Newman Press 1953).

<sup>184</sup> Id at 50.

<sup>185</sup> Id at 51.

<sup>186</sup> Id.

<sup>187</sup> Id at 51-52.

<sup>188</sup> Id at 53.

<sup>189</sup> Id.

The major stumbling block in Ombrédanne's approach is that he admits that the balance sheet he mentions cannot be valid until the genital functions show themselves, which is not until puberty!<sup>190</sup> Surgical correction of an hermaphrodite must wait until adolescence if not early adulthood.<sup>191</sup> Of course, these stages are well after a person has established a gender role in society! None of the cases Ombrédanne relates involve someone *changing* sex roles via surgery. Indeed, he warns against premature "sex-assignment" surgery. He mentions a patient who had had two previous "modifications" as an example of the harm parents could cause a child by having its "civil state [i.e. sexual classification] modified too early."<sup>192</sup>

In his comment the Catholic ethicist Father Tesson, Professor of Moral Theology at the *Institut Catholique de Paris* immediately recognized that the surgical approach suggested by Ombrédanne offered a possible means for the physically intersexed to resolve their situation and enter into marriage as a man or a woman. Father Tesson began his analysis by asserting

It is indisputable that a human being always has the right to fix himself or herself as clearly as possible in one of the two sexes of humanity.<sup>193</sup>

At that time the marital potency of some surgically "perfected" persons remained in doubt in the eyes of the Catholic Church. In particular, there was no clear doctrinal statement whether a woman lacking ovaries and a uterus was considered potent for the sake of marriage. The Courts of the Roman Rota (the judicial arm of Roman Catholicism) made rulings on both sides of the question.<sup>194</sup> Father Tesson held that ovaries and a uterus were not required for a woman to be considered capable of entering into marriage.

So did Ombrédanne's English language editor, Father Peter Flood. Father Flood thought that the more liberal view expressed by Father Tesson could be

reinforced by the following consideration: It seems to us that even when the vagina is apparently completely absent, there very probably exist in its usual site tissues which developed from the original embryonic cells which, but for an accident in the course of their growth, would have produced the specialized cells that form the fully developed vagina. In a sense, therefore the surgeon, operating to form a new vagina in this area is operating undeveloped or insufficiently developed vaginal tissues or at least on a lower grade of tissues formed from them.<sup>195</sup>

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<sup>190</sup> Id at 56.

<sup>191</sup> Id at 57.

<sup>192</sup> Id at 56.

<sup>193</sup> P. Tesson, *Theological Comment* (Malachy Gerard Carroll, trans) in Flood, ed, *2 New Problems in Medical Ethics* 58 (cited in note \_\_\_\_).

<sup>194</sup> See Graham, 41 *The Jurist* at 144-145 (cited in note \_\_\_\_).

<sup>195</sup> Dom Peter Flood, *English Editor's Forward*, in Flood, ed, *2 New Problems in Medical Ethics*, 47 (cited in note \_\_\_\_).

Little did Father Flood know that as he was expressing these views bio-medicine<sup>196</sup> was learning that these short to non-existent vaginas would have developed into male rather than female anatomical structures had there not been “an accident in the course of their growth.” Starting with Maria Aveling in 1845 many of the wives described as having short vaginas ending in a cul de sac were undoubtedly persons with XY sex chromosomes who had experienced partial or complete Androgen Insensitivity Syndrome that inhibited development of male characteristics other than rudimentary testes!

#### E. The *Right* to Be a Member of One Sex or the Other

In the half century since Ombrédanne’s essay appeared a handful of Catholic ethicists have concerned themselves with the capability of the physical intersexed to enter into marriage. Father Thomas J. O’Donnell, S.J, a professorial lecturer in medical ethics at Georgetown Medical School, gave perhaps the most complete treatment in the chapter title “Medico-Canonical-Moral Aspects of Marriage” his 1976 book *Medicine and Christian Morality*.<sup>197</sup>

Father O’Donnell was well aware of the breakthroughs achieved in embryology in the third quarter of the 20th century.

An unusual combination of constitutional, hormonal, and probably hereditary factors during prenatal development can give rise to various types of bi-sexual and intersexual anatomical anomalies in the generative system. This seems less strange if considered in the light of the sexually indifferent stage of embryonic development, when the urogenital sinus is common to the openings of the muellerian, wolffian, and metanephric ducts . . . and the genital tubercle becomes the male penis and the female clitoris. It is easy to see how any unusual influence of development could give rise to hermaphroditic anomalies.<sup>198</sup>

In spite of understanding the underlying embryology Father O’Donnell struggled mightily to fit all of humanity into two fundamental ontological categories: FEMALE and MALE. In so doing he elaborated on Father Tesson’s claim.

Everyone has a *right* to be a member of one sex or the other. The human race has received its pattern of sexual distinction ultimately from the Author of Nature.<sup>199</sup>  
(emphasis added)

It would certainly be surprising for a Catholic ethicist not to ground this fundamental distinction in the Divine.

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<sup>196</sup> See generally Jost, 8 Recent Progress in Hormone Research 379 (cited in note \_\_\_\_). Jost has been described as “the founder of fetal endocrinology.” (Nathalie Josso, et al, *Anti-Müllerian Hormone: The Jost Factor*, 48 Recent Progress in Hormone Research 1 (1993).)

<sup>197</sup> Thomas J. O’Donnell, S.J., *Medicine and Christian Morality* 213-232 (Alba House 1976). See also, Thomas J. O’Donnell, S.J., *Current Medical-Moral Comment*, 33 Linacre Quarterly 72 (Feb 1966).

<sup>198</sup> O’Donnell, *Medicine and Christian Morality* at 227.

<sup>199</sup> Id at 229.

Here we encounter the clearest presentation of the conceptual tension faced by Father O'Donnell. If there are two fundamental ontological categories of FEMALE and MALE and *if everyone is born into one (and only one) sex then what need is there for a right to be a member of "one sex or the other"?*<sup>200</sup> Father O'Donnell continues with a passage that makes it seem that the problem is an epistemological problem of knowing what sex a person is rather than it being an ontological problem of what sex the person is in reality.

When anomalies occur which render accurate identification of sex problematical, the tendency has been to refer to the individuals in terms of "intersexuality" or "bisexuality" Recent medical literature reflect a much truer and healthier approach to the problem by referring to it in terms of *unfinished* sexual development.... The ultimate question of which sex is properly identifiable in a given case is a question for the medical specialist to answer . . . And the action of the surgeon who helps, by his art, those who wish to escape from *the sexual indetermination imposed on them by nature*, is perfectly justified.<sup>201</sup> (emphases added)

Once again, we see the quest for the underlying essence of FEMALE and MALE.

Father Tesson and Father O'Donnell each speak of rights. Of course, rights are not necessarily requirements. A large portion of the American electorate chooses not to exercise its right to vote. Neither Father Tesson nor Father O'Donnell requires an intersexed person to undergo any medical treatment *unless they want to marry*.

I have given a lengthy review of physical incapacity cases earlier. There is no need to rehearse Father O'Donnell's arguments requiring medical intervention to repair cases of physical incapacity in the context of marital relations. However, there is one additional case in which Father O'Donnell *requires* medical intervention in order to marry: the *perfect hermaphrodite* who is over-equipped with genitalia. For Father O'Donnell

Perfect hermaphrodites are described as persons possessing all the generative organs, properly developed, of both male and female; so that the person can generate, *or at least copulate, either as a male or a female*.<sup>202</sup> (emphasis added)

In spite of pronouncements stretching back over a millennium that a person in whom "neither sex prevails" can choose one sex so long as they forsake the other, Father O'Donnell cautiously offers an opinion that such persons cannot enter into a Catholic marriage as they are. "It is at least probable that such persons cannot marry because it is probable that the natural law demands distinction of sex in marriage."<sup>203</sup> Like the XX husband in the 1979 Australian case of *C. and D.* these persons are not truly members of either sex, at least not yet. They must have surgery to remove themselves from the twilight zone on intersexuality. At least Father O'Donnell offers them that prospect.

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<sup>200</sup> Presuming, as Father O'Donnell argues, that transsexuals do not have the right to change sex.

<sup>201</sup> Id at 229-230.

<sup>202</sup> Id at 227.

<sup>203</sup> Id.



## VI. CAN THE RIGHT TO MARRY DEPEND ON SEXUAL DISAMBIGUATION SURGERY?

Can the right to marry depend on corrective surgery to make oneself a member of one sex or the other?

### A. *W v W* – Sexual Disambiguation Surgery is Sufficient (England, 2001)

In the one case in which an English speaking court upheld the marriage of a physically intersexed person, the court relied on the fact that there had been surgery while recognizing the legal conundrum that would have been faced had there not been surgery. In the 2000 case of *W v W* a husband who had already been divorced by his wife sought to have the marriage declared null and void so that he could remarry in the church. Once again an English language court faced the question of whether a wife who had partial Androgen Insensitivity Syndrome “was, or was not, a female at the date of the marriage ceremony.”<sup>204</sup> Justice Charles, the presiding judge, held that the wife was indeed a female at the time of the marriage and dismissed the application for annulment.

In this case the wife was born in 1947 with ambiguous external genitalia, chromosomal sex that “appeared to be male”<sup>205</sup> and given a boy’s name. In spite of the fact that her parents tried to raise her as a boy she demonstrated feminine interests from her earliest childhood. By her early teens she had developed feminine breasts and a romantic interest in boys. Greatly annoyed by this her father attempted to masculinize her with testosterone injections and threatened surgery to reduce the size of her breasts. At 17 she ran away from home for good, took a woman’s name, and rid herself of all appearances of masculinity. From that point on she lived her life as a woman. Gender conforming surgery originally planned for her early 20s had to be postponed until she was 40 due to a possible “cerebrovascular accident.” She started estrogen therapy in her early 30s.<sup>206</sup>

Justice Charles recognized that this case placed him squarely in the territory suggested by Justice Ormrod 30 years earlier in *Corbett v Corbett* where the three criteria of chromosomes, gonads and genitals are not congruent. Contrasting his case to Justice Ormrod’s Justice Charles emphasized the fact that prior to surgery the wife could not have engaged in sexual intercourse as either a man or a woman,<sup>207</sup> and that in this case, as a result of her surgery, the husband and wife had the capacity to consummate their marriage sexually.<sup>208</sup>

The fact that the couple could sexually consummate their marriage by an act of penile-vaginal intercourse meant that Justice Charles would have to declare that the wife was not a female to grant an annulment. Justice Charles considered the wife’s ability to

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<sup>204</sup> *W v W*, [2001] 2 Weekly L Rep 674,675. Also online at <http://www.pfc.org.uk/legal/w-v-w.htm>, last visited on March 21, 2004.

<sup>205</sup> *Id* at 674.

<sup>206</sup> *Id* at 677.

<sup>207</sup> *Id* at 682,706.

<sup>208</sup> *Id* at 706.

consummate the marriage sexually *as a female* to be a significant factor but not the decisive factor for determining whether she was a female for the purposes of marriage.<sup>209</sup>

In my judgment.... the decision as to whether individuals involved are female (or male) for the purposes of marriage should be made having regard to their development and all of the factors listed in *Corbett's* case, namely (i) chromosomal factors; (ii) gonadal factors (i.e. presence or absence of testes or ovaries); (iii) genital factors (including internal sex organs); (iv) psychological factors; (v) hormonal factors, and (vi) secondary sexual characteristics such as distribution of hair, breast development, physique etc)<sup>210</sup>

Justice Charles suggested that if the wife “had been born today the medical decision taken would have been that she should be brought up as a girl.”<sup>211</sup> But what clinched the decision for Justice Charles was the fact that the wife had made “a *final* choice to live as a woman well before she started taking estrogen and before she had surgery”<sup>212</sup>

Throughout his opinion Justice Charles recognized that failing to find the wife to be a female for the purposes of marriage could leave her in a twilight zone with the XX husband in the 1979 Australian case of *C. and D.*, unable to marry anyone. At one point he asked “*Are people who do not satisfy the biological test in Corbett's case neither men nor women nor male nor female for the purposes of marriage?*”<sup>213</sup> and suggested

This is a possible result but not one that I reach.... In my judgment such a result would create as many problems as it solved in the difficulties that already exist in defining a woman or a man, or a male or female, for the purposes of marriage by creating a third category the boundaries of which would not be clear.<sup>214</sup>

No doubt he felt fortunate that the wife in *W v W* had had surgery to create an artificial vagina.

## B. Sexual Disambiguation Surgery and Civil Rights – A Nineteenth Century Case

In 1852 a Dr. S. D. Gross, Professor of Surgery at the University of Louisville, published an Article describing surgery he had performed on a 3 year old who had been raised as a girl since birth. Her parents became concerned when she began to show masculine tendencies at two years of age.

A careful examination of the external genitals disclosed the following circumstances: There was neither a penis nor a vagina; but, instead of the former, there was a small clitoris, and, instead of the latter, a superficial depression, or cul-de-sac, covered with mucous membrane, and devoid of everything like an

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<sup>209</sup> Id at 707.

<sup>210</sup> Id at 709.

<sup>211</sup> Id.

<sup>212</sup> Id at 710.

<sup>213</sup> Id at 707.

<sup>214</sup> Id

aperture or inlet. The urethra occupied the usual situation, and appeared to be entirely natural; the nymphae were remarkably diminutive; but the labia were well developed and contained each a well-formed testis, quite as large and consistent as the organ generally is at the same age in boys.<sup>215</sup>

Gross decided to remove the testes. He thought that they had been the source of the child's masculine behavior. More ominously, he thought, they would become the source of sexual desire at puberty that might "lead to the ruin of her character and peace of mind."<sup>216</sup> Examining the testes after removal Gross found them to be "perfectly formed in every respect" thereby confirming his opinion.<sup>217</sup> Dr. Gross saw the young girl many times in the three years that elapsed between surgery and publication. He reported that "Her disposition and habits have materially changed, and are now those of a girl."<sup>218</sup> There were no further reports on the young girl. Gross doubted that she would marry<sup>219</sup> but congratulated himself for having removed the potential source of sexual desire.

Of one thing we can be certain, Gross's patient did not enjoy the right to vote (unless she lived until the ratification of the 19<sup>th</sup> amendment.) Alfred Swaine Taylor, a leading medico-legal authority of the day commented "It is clear from Dr. Gross's description, that this being was deprived of the rights and privileges of a *male* by the removal of the testicles."<sup>220</sup>

### C. The Integrity of the Body

In the 1966 case of *Schmerber v California* the Supreme Court held that blood drawn against the will of a suspected drunk driver was admissible as evidence. Writing for the narrow 5-4 majority Justice Brennan declared

The integrity of an individual's person is a cherished value.<sup>221</sup>

while defending this most minor invasion of bodily integrity. In so doing Brennan warned that the ruling should not be read as permitting more substantial intrusions. Two decades later the Court unanimously held that the Commonwealth of Virginia had no right to compel a suspect to undergo surgery so that a bullet could be retrieved from his body to be placed in evidence against him. Writing for the Court Justice Brennan recognized that such an intrusion on Rudolph Lee's bodily integrity went too far.<sup>222</sup>

If **compelling** a person to undergo surgery merely to remove a bullet intrudes so far on bodily integrity that it denies the fundamental 4<sup>th</sup> amendment right to be "secure in

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<sup>215</sup> S. D. Gross, *Case of Hermaphroditism, involving the Operation of Castration and illustrating a new principle in Juridical Medicine*, 24 (ns) Am J Med Sci 386,387 (Oct 1852).

<sup>216</sup> Id at 387-388.

<sup>217</sup> Id at 388.

<sup>218</sup> Id.

<sup>219</sup> Id at 390.

<sup>220</sup> Alfred Swaine Taylor, *Medical Jurisprudence* 497 (Blanchard and Lea, 5th American ed, 1861).

<sup>221</sup> 384 US 757,772 (1966)

<sup>222</sup> *Winston v. Lee*, 470 US 753 (1985).

[one's] person" what can we think of **requiring** surgery to create unambiguous sexual characteristics as a prerequisite for exercising the fundamental right to marry?<sup>223</sup> Such a position expresses more inhumanity than the opinion of a 1906 Kentucky court a century ago which wrote

We are of opinion that appellant [husband] was not required, or called upon, to resort to surgery in order to construct a wife.<sup>224</sup>

as it granted an annulment for physical incapacity to a forty-something year old husband several years the senior of his forty-something year old wife. She merely suffered from a rigid hymen preventing penetration.<sup>225</sup> They had cohabitated for all of three days!

If the state can require sexual disambiguation surgery as a prerequisite for the marriage of the physically intersexed then might it not be reasonable to infer that the state can also compel an infertile person to undergo infertility treatment as a prerequisite to marriage? or to require forced sterilization of a fertile person as a prerequisite to marriage? The Supreme Court has emphatically answered "NO" to these last two questions.

While it may shock some of my Brethren that the Court today holds that the Constitution protects the right of marital privacy, in my view it is far more shocking to believe that the personal liberty guaranteed by the Constitution does not include protection against such totalitarian limitation of family size, which is at complete variance with our constitutional concepts. Yet, if upon a showing of a slender basis of rationality, a law outlawing voluntary birth control by married persons is valid, then, by the same reasoning, a law requiring compulsory birth control also would seem to be valid.<sup>226</sup>

In this day and age it is hard to imagine how the exercise of any fundamental liberty such as the right to vote or the right to marry can depend on the outcome of surgery. Yet that is

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<sup>223</sup> For discussions of the more general topic of the appropriateness of "gender correcting" surgery see generally Suzanne J. Kessler, *Lessons from the Intersexed* (Rutgers 1998) and Alice Domurat Dreger, 'Ambiguous Sex' – or Ambivalent Medicine? *Ethical Issues in the Treatment of Intersexuality* 28 Hastings Center Report, 24 (May-June 1998). Also online at <http://www.isna.org/drupal/node/view/106>, last visited on March 21, 2004. This topic is just starting to draw the attention of legal scholarship. See, for example, Hazel Glenn Beh and Milton Diamond, *An Emerging Ethical And Medical Dilemma: Should Physicians Perform Sex Assignment Surgery On Infants With Ambiguous Genitalia?*, 7 Mich J Gender & L 1 (2000); Kishka-Kamari Ford, "First, Do No Harm"--*The Fiction of Legal Parental Consent to Genital-Normalizing Surgery on Intersexed Infants*, 19 Yale L & Pol'y Rev 469 (2001), Patricia L Martin, *Moving Toward an International Standard in Informed Consent: The Impact of Intersexuality and the Internet on the Standard of Care*, 9 Duke J Gender L & Pol'y 135 (2002); and Alyssa Connell Lareau, *Note: Who Decides? Genital Normalizing Surgery on Intersexed Infants*, 92 Georgetown L J 129 (2003).

<sup>224</sup> *Mutter v Mutter*, 97 SW 394 (1906).

<sup>225</sup> Daston and Park report that about 1560 "a gentleman of Anjou petitioned to have his marriage annulled on the grounds that his wife had a penis or clitoris almost two inches long which hurt him during intercourse and prevented him from penetrating her, the court ruled that the marriage could stand if she would consent to having her member removed." (Daston and Park, 1(5) *Critical Matrix* at 7 (cited in note \_\_\_\_)) Faced with the prospect of such surgery (without anesthesia) the wife declined the surgery and the marriage was annulled. (Id.)

<sup>226</sup> *Griswold v Connecticut*, 381 US 479,497 (1965) (Goldberg concurring)

the twilight zone in which the physically intersexed may find themselves so long as marriage is restricted to the union of one woman and one man.

If the cases of *C. and D.* and *W v W* demonstrate that the physically intersexed run the risk of having the validity of their marriages called into question even after surgery, then there is even more of a risk in the absence of surgery! Certainly these are the same risks that were run by light skinned persons of color trying to “pass” who married white persons when states outlawed interracial marriage.

The *Littleton* and *Gardiner* cases demonstrate that the validity of a marriage can be questioned even after it has ended with the death of one of the spouses. In both of those cases the transgendered spouse survived. However, it is entirely possible that a *Gardiner*-like intestacy case could arise after the death of the transgendered spouse. Consider the possibility of a case in which a wealthy transgendered spouse dies intestate leaving a surviving spouse and a sibling. The sibling quite probably knows the transgendered person’s life history and could bring a legal action to have the marriage declared void *ab initio*, thereby completely disinheriting the surviving spouse in favor of the sibling. It is even possible that the surviving spouse would be unaware of the deceased’s life history. Even if the courts upheld the validity of the marriage the surviving spouse could incur significant legal expenses. Any infringement on the marital rights of the physically intersexed also infringes on the marital rights of those persons they marry or wish to marry.

## VII. CONCLUSION

Race has long been a deeply ingrained category in American consciousness. Race was such a prominent factor during the Reconstruction era that even attempts to outlaw racial inequality were defined in terms of race!

All persons within the jurisdiction of the United States shall have the same right in every State and Territory to make and enforce contracts, to sue, be parties, give evidence, and to the full and equal benefit of all laws and proceedings for the security of persons and property *as is enjoyed by white citizens*.<sup>227</sup> (emphasis added)

It took over a century for the Supreme Court to recognize that “Clear-cut [racial] categories do not exist.”<sup>228</sup> Race is not a fundamental ontological category neatly dividing humanity into a small number of buckets exclusively and exhaustively.<sup>229</sup>

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<sup>227</sup> 1870 Voting Rights Act, 16 Stat 144, now 42 USC § 1981a.

<sup>228</sup> *Saint Francis College et al v Al-Khazraji*, 481 US 604,610 (1987)

<sup>229</sup> “The Supreme Court’s holding in *Thind* indicates that courts, when faced with ‘scientific’ evidence that does not comport with their common understanding of race, rejected the scientific framework. These early-twentieth-century opinions support the modern understanding that race has become socially constructed; race is whatever the average American believes it is.” Julie A. Greenberg, *Definitional Dilemmas: Male or Female? Black or White? The Law’s Failure to Recognize Intersexuals and Multiracials*, in Toni Lester ed, *Gender Nonconformity, Race, and Sexuality : Charting the Connections*, 107-108 (Wisconsin 2002).

Nor is sex a fundamental ontological category neatly dividing all of humanity into FEMALE and MALE exclusively and exhaustively. The cases reviewed represent just some of the wide variety of *atypical but natural* human experience described in the appendix which gives a brief overview of physically intersexed conditions.

In the last 5 years two American courts have given *different* single factor answers to the questions of who is a woman and who is a man. In Texas, sex is determined by chromosomes, in Kansas by the ability to generate egg cells or sperm cells. These single factor tests may have been sufficient for the individual transsexual cases presented to these courts. However, each of these single factor tests would fail spectacularly if applied to a physically intersexed person such as a woman who had experienced Complete Androgen Insensitivity Syndrome or the XX husband in the 1979 Australian case of *C. and D.* We can only guess how a Texas court would apply Chief Justice Hardberger's chromosomal test to someone with an abundance of cells with both XY and XX (or XO) sex chromosomes. Similarly, we can only imagine how a person born with ovotestes or a functional ovary and a functional testis or with two dysfunctional gonads would fare in Kansas court forced to apply the Kansas Supreme Court's gonadal test defining a woman as someone able to produce egg cells and a man as someone able to produce sperm cells.

Single factor tests are not always conclusive and when they are they can give unanticipated results.

Justice Ormrod's opinion in *Corbett* specified three physiological factors required to answer the question of who is a woman and who is a man: chromosomes, gonads, and genitals. Justice Ormrod's opinion had the virtue of recognizing its own incompleteness: by definition the physically intersexed could not be classified unambiguously according to the three factors he gave. Failing to heed Justice Ormrod's warning of incompleteness the Australian court in *C. and D.* declared the XX husband to be neither a man nor a woman. The fact that the multi-factor definition was not exhaustive did not disturb that court.

Justice Ormrod would most likely have ruled differently in the case of *C. and D.* In his 1972 address to the Medico-Legal Society he declared

The true hermaphrodite defies classification *except possibly on the social criterion*<sup>230</sup>. (emphasis added)

allowing a person's sexual identity to come into play. When pressed how he would have decided the case if April Ashley had been a physically intersexed person (as defined by the *Corbett* decision) Justice Ormrod responded that he would have relied on "onus of proof." April Ashley would have needed to "capable of performing the essential role of a woman in marriage." Given the long line of cases beginning with *Deane v Aveling* that did not even require a wife to have a uterus or ovaries this can only mean one thing. Justice Ormrod would have required April Ashley to demonstrate that she was capable of

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<sup>230</sup> Ormrod, 40 Medico-Legal J at 82 (cited in note \_\_\_\_).

“sexual intercourse, in the proper meaning of the term” to use Justice Lushington’s phrase from *Deane v Aveling*.<sup>231</sup>

In the end, defining “WOMAN” and “MAN” for the purpose of defining marriage as the union of one man and one woman comes down to the sex act. Sex, like race, is a social construct.

I close by going back to Justice Lushington’s opinion in *Deane v Aveling* where he wrote

I apprehend that we are all agreed that, in order to constitute the marriage bond between young persons, there must be the power, present or to come, of sexual intercourse. Without that power, neither of the two principal ends of matrimony can be attained, namely, a lawful indulgence of the passions to prevent licentiousness, and the procreation of children, according to the evident design of Divine Providence.<sup>232</sup>

The argument set forth in this Article has said remarkably little about sexual activities. I find it highly ironic that it is the traditionalist opponents of universal marriage who feel compelled to introduce the issue of sexual activity. Of course, they do this when they argue that only sexual acts that are reproductive in kind can consummate a marriage and, therefore, only these sexual acts are ethically valid. In so doing they continue to cling to the first of Lushington’s “principal ends of matrimony,” namely, the “lawful indulgence of the [sexual] passions to prevent licentiousness.”<sup>233</sup> For better or worse, “lawful” sex is no longer confined to marriage.

Surely, all of the physical incapacity cases on record involved spouses, usually husbands, who *chose* to go to court to get out of their marriages.<sup>234</sup> No law compelled them to seek an annulment.<sup>235</sup> They sought the easiest way possible to get out of their marriages when

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<sup>231</sup> *D-e v A-g*, 1 Rob Eccl at 298.

<sup>232</sup> *Id.*

<sup>233</sup> *Id.*

<sup>234</sup> Alice Dreger reports the case of a Madame X of Angers. She too, had undoubtedly experienced Androgen Insensitivity Syndrome during gestation. Her parents felt that it would be dishonest for her to marry young given her undoubted infertility (made evident by her failure to menstruate). In 1898 at age 44 she received a marriage proposal from a 60 year old widower who found her sterility a “selling point.” Dreger writes

Try as he might, Monsieur X could not penetrate his new wife to the depth he desired, and his attempts caused her some pain. The two, however, did not find the situation entirely unsatisfying: “she felt voluptuous sensations when ejaculation was produced in her husband, [and] these sensations reached their climax in the form of rhythmic spasms accompanied by a shaking of the whole body and an emission of sticky liquid in the area of the vulva.” (Alice Domurat Dreger, *Hermaphrodites and the Medical Invention of Sex* 124-125 (Harvard 1998))

Monsieur X did not seek an annulment. When Madame X discovered two “tumors” in her labia majora following a fall she sought the advice of Dr. Raoul Blondel in Paris. She also asked him whether he could enable more complete sexual connection with her husband. In spite of the fact that he immediately recognized the “tumors” to be undescended testes, Dr. Blondel proposed surgery to section her hymen and elongate her vagina. For some reason Madame X failed to have the surgery. (*Id.*)

<sup>235</sup> Nor did a third party ever have standing to seek an annulment for the physical incapacity of one of the spouses.

divorce was well nigh impossible. Court opinions don't always provide the petitioner's motivation for seeking an annulment for physical incapacity. Nevertheless, we can be certain that many, if not most of the spouses who sought an annulment were motivated by a desire to indulge their sexual passions.<sup>236</sup>

Although sexual activity that is reproductive in kind may be an implicit part of the marriage contract it is not mandatory and can be waived by the mutual prior knowledge and consent of the parties.<sup>237</sup> Even the traditionalists know that sexual consummation provides no more than an immediate abrogation of one ground for annulment and an

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<sup>236</sup> In a 1951 New Jersey case (*Donati v Church*, 13 NJ Super 454, 80 A2d 633) the imperfectly gratified husband tried to have it both ways. His wife's vagina was "infantile in type and too small to allow of copulation, although her husband was able to, and did frequently, insert the tip of his penis." (Id.) He sued for an annulment on grounds of physical incapacity yet continued to cohabit with his wife and "they had sexual intercourse of the kind and to the extent that her condition permitted . . . as late as two weeks before the final hearing. The conduct of the plaintiff toward the defendant can be defended only by reason of the marriage relation between them, and clearly constituted a ratification of the marriage." (Id at 634.)

In a 1992 South Carolina case (*EDM v TDM*, 207 SC 471, 415 SE2d 812) the wife brought suit for divorce. The "husband counterclaimed for an annulment of the marriage on the ground of fraud alleging Wife concealed her psychological problems and resulting sexual incapacity." (Id SE2d at 814.) The South Carolina Supreme Court affirmed the judgment of the Greenville County Family Court that "Husband failed to prove by a preponderance of the evidence he was entitled to an annulment on the ground of fraudulent inducement. Moreover, despite Husband's assertions to the contrary, **the parties' marriage was consummated by cohabitation** and therefore §20-1-530 bars an annulment even if fraud were proved in this case." (Id at 815, emphasis added.) The court noted that "It is undisputed the parties never had penile-vaginal intercourse before or after their marriage in 1985. The extent of their sexual activity was infrequent oral sex performed by Husband upon Wife" (id at 814) and noted that "This Court has never viewed actual sexual intercourse as distinguishable from other sexual activity in determining marital matters." (Id at 815.) (Prior to *Lawrence v Texas* South Carolina criminalized anal-genital sex ("buggery" see SC Code Ann §16-15-120 (Law Co-op (2003)) but not oral-genital sex.)

Bradley and George argue that "This requirement [physical capacity for sexual intercourse] for the validity of a marriage, where in force, has never been treated as satisfied by an act of sodomy, no matter how pleasurable. Nothing less (or more) than an act of genital union consummates a marriage." (Bradley and George, 84 Georgetown L J at 308, cited at n\_\_\_\_.) . Bradley and George are correct that only acts of genital union demonstrate the physical capacity conclusively. Strictly speaking, *EDM v TDM* does not invalidate their claim just presented. How could it? In South Carolina marriages are consummated by cohabitation. Nevertheless, the court statements in *EDM v TDM* (and *Donati v Church*) should give them pause to reflect on the distinction between physical incapacity and marital consummation.

<sup>237</sup> "A person who enters into the solemn contract of marriage, in the full knowledge that the implied condition of potency on the part of the other partner (a condition which would otherwise have entitled him or her to resolve the contract) can never be fulfilled, is barred by his or her own act of adoption or homologation from founding on such non-fulfilment as a ground for resolving it. . . . [It] is no more than a condition of the contract which the party (who would otherwise be aggrieved by its non-fulfilment) can waive without rendering the marriage invalid. (" (*L v L*, [1931] SC 477, 481) In this case from the Scottish Court of Sessions a woman married a man whose paralysis rendered him impotent in order to legitimate an illegitimate child fathered by someone else. After four years of cohabitation she sued for an annulment. The court held "that she was barred from founding on the defender's impotency, in respect that she entered into the marriage in knowledge of it, and that, in the circumstances of the case, it would be inequitable to allow her to found upon it." (Id at 477.)



immediate ratification<sup>238</sup> of marital rights and obligations, a ratification subject to divorce at a later date.

A reading of the physical incapacity cases reveals a body of jurisprudence recognizing another method of ratifying a marriage: *staying together in the marriage*.<sup>239</sup> As physical

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<sup>238</sup> New Jersey law states "The parties, or either of them, were at the time of marriage physically and incurably impotent, provided the party making the application shall have been ignorant of such impotency or incapability at the time of the marriage, and **has not subsequently ratified the marriage**." (NJ Rev Stat § 2A:34-1c. "Causes for judgments of nullity")

In *Godfrey v Shatwell* Judge Conford wrote

I am, moreover, convinced that the marriage has been ratified by the plaintiff with knowledge of the material facts. I find he was informed, in substance, of the condition of his wife in respect to sexual incapacity and as to the state of the prospects for her cure, and that he nevertheless cohabited with the defendant with the desire and intent to affirm his marital relationship. By his own admission he vigorously besought her return on both of the occasions when she assertedly left him, and he expressed his love and desire for her return to him as late as his appearance as a witness at the trial, explaining he was willing to take his chances on the eventual restoration of her wifely capacity. **While these expressions are laudable, they evidence an unequivocal attitude of affirmation of the marriage, which, in effect, is a ratification thereof and precludes relief under the statute.** I do not mean to imply that mere cohabitation after knowledge is necessarily ratification. Cohabitation for a reasonable time with the intent solely to ascertain if the impotence is incurable might be distinguishable. But here the cohabitation appears to me to have been in unqualified and unconditional affirmance of the marriage. The shortness of the period does not necessarily preclude a finding of ratification where the other evidence is weighty. I am constrained to find that plaintiff filed this action to rid himself of the defendant after he was finally satisfied she did not intend to return, because she deserted him, not because she was incurably impotent.

(*Godfrey v Shatwell*, NJ Super 501,508-9, 119 A2d 479,483 (1956) Emphasis added)

Judge Conford denied the husband's petition for an annulment for physical incapacity.

<sup>239</sup> Staying together in the marriage does not even require that the parties cohabit. The 1944 case of *Anonymous v Anonymous* (49 NYS 2d 314, Supreme Court, Bronx County) tells a tragic story. In this case an orthodox Jewish man and woman went through a civil ceremony in August 1940 intending to have a religious ceremony several months later. "[B]oth parties . . . agreed that the ceremony was not to be considered valid and binding and the marriage was not to be consummated until a religious ceremony was performed." (Id at 315.) They disclosed their marriage to only their closest friends and family, lived with their respective parents and according to the husband did not consummate the marriage sexually. Two months after their civil marriage the wife suffered a severe spinal injury while making wedding plans at the synagogue. This left her paralyzed and put in doubt her ability to perform "the marital act." For nearly 3 years the husband remained a dutiful husband while the wife was hospitalized.

The husband himself, by numerous acts, acknowledged the validity and the binding effect of the civil ceremony and of the marital status established thereby. In his dealings with the hospitals in which his wife was cared for, in his income tax returns, his registration for selective service, in communications had at his instance with his draft board, **in his suit for the injury sustained by his wife in which he asserted his claim as the husband for loss of consortium**, in his application to the Navy, in which he now serves, for an allotment to his wife--in all these and in other ways he avowed the marriage to be valid and subsistent. (Id at 316, emphasis added.)

In 1943 the husband fell in love with another woman. When he asked to be released from the marriage his wife refused "at least until the war was over." (Id at 317.) Not being satisfied with that answer the husband sought to have the marriage annulled.

The basis of the husband's complaint is that the parties agreed that the civil ceremony was not to be considered valid unless and until a religious ceremony was performed; that the marriage was, in fact, never consummated; that as a result of the injuries she sustained in the accident, the wife became

incapacity suits proliferated, many American and English courts added two requirements before granting an annulment: "sincerity and promptness."<sup>240</sup> Courts have more often than not refused to grant annulments for non-consummation to petitioners who have

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physically incapable of consummating the marriage, of performing the marital act; and for the plaintiff, under the circumstances, to go through a religious ceremony would be the performance of a futile act and the ceremony itself would be an idle one. 'The defendant', he urges, 'cannot be a wife to the plaintiff in every sense of the word nor can she fulfill the obligations of a true marriage.' (Id at 315.)

At the trial the wife testified that they had in fact sexually consummated their marriage after the civil ceremony. (Id at 316) A medical examiner testified that in spite of her paralysis "the wife, from a medical standpoint, was capable of performing the marital act" but raised doubts about her psychological capability to perform the marital act. (Id at 319.)

On appeal Judge Shentag did not need to deal with these questions of fact. He held that there was a valid marriage even if there had been no sexual activity following the civil ceremony and even if the wife were incapable of performing the marital act. (Id at 317.)

By his tender devotion for almost three years to his stricken wife, his invariably regular and frequent visits to her in the hospital, his endearing letters of love and encouragement and faith in their ultimate happiness, he recognized that they were, in fact as in law, truly wedded husband and wife. (Id at 316.)

He had ratified the marriage.

<sup>240</sup> In *G v G* (67 NJ Eq 30, 56 A 736 (1903)) a New Jersey court refused to grant an annulment sought by an adulterous (i.e. "insincere") wife accused of adultery 30 years into her unconsummated marriage.

Twelve states now specify strict statutory limits after which an annulment suit on the grounds of physical incapacity can no longer be commenced. Within 90 days of learning of the incapacity: Kentucky - Ky Rev Stat Ann § 403-120.(2).2 (Banks-Baldwin 2003). Within 1 year of learning of the incapacity: Colorado - Colo Rev Stat § 14-10-111(2)(b) (2003); Delaware - 13:15 Dela Code Ann § 1506(2) (2003); Wisconsin - Wis Stat § 767.03(2) (2003). Within 2 years of the marriage ceremony: Hawaii - Hawaii Rev Stat § 580-28 (2003); Michigan - Mich Comp Laws § 552.39 (2003); Vermont - 15-11 Vt Stat Ann § 515 (2003); Virginia - Va Code Ann § 20-89.1(b) (Michie 2003), Wyoming - Wyo Stat § 20-2-101(f) (2003). Within 4 years of the marriage ceremony: South Dakota - SD Cod Laws §25-3-8 (Michie 2003). Within 4 years of learning of the incapacity: Montana within - Mont Code Ann § 40-1-402(2)(d) (2003). Within 5 years of the marriage ceremony: New York - NY Domestic Relations Law § 14-9-140(D) (Consol 2003). In addition Texas requires that "the petitioner has not voluntarily cohabited with the other party since learning of the impotency." Tex Family Code Ann § 6.106(3) (2003).

At the other end of the continuum in 1985 a Pennsylvania Superior Court granted an annulment on the grounds of incurable impotence to a husband after 24 years of marriage sexually unconsummated with his wife.

The sexual problems in this unhappy union commenced on the honeymoon and have persisted for the last twenty-four years. When husband tried to confide his desires to his bride a thousand or so times, the object of his love quest told him to "knock it off" or that she was tired and didn't feel good. However, hope resided abundant in husband's emotional reservoir and he persisted throughout twenty-four years, or two hundred eighty-eight months to attempt to cement their union in a concrete manner. Vain and fruitless were his attempts for his wife's reluctance or sexual short circuit could not be overcome and she remained insurmountable and to him, her problems-impenetrable and inscrutable. It is an instance of: "The spirit is unwilling though the flesh be strong". (*Manbeck v Manbeck*, 339 Pa Super 493,500, 489 A2d 748,751)

enjoyed the benefits of marriage.<sup>241</sup> Beyond that we can only guess at how many marriages have remained unconsummated whether between “old persons” taking each other “as sister or as brother”<sup>242</sup> to generalize Justice Nicholl in *Brown v Brown* or between “young persons” to use Justice Lushington’s term.

The state may *allow* “young persons” to have their marriage annulled because it has never been consummated by a sexual act that is reproductive in kind. However, no state has ever *compelled* any couple to consummate their marriage by a sexual act of any kind.<sup>243</sup> At the end of his opinion in the landmark 1965 case *Griswold v Connecticut* overturning state laws banning contraceptive use by married couples Justice Douglas wrote

Would we allow the police to search the sacred precincts of marital bedrooms for telltale signs of the use of contraceptives? The very idea is repulsive to the notions of privacy surrounding the marriage relationship.<sup>244</sup>

If the state cannot enter the marital bedroom to search for contraceptives it can hardly be conceived to have to right to enter the marital bedroom to seek evidence of consummation.<sup>245</sup> Imagine the comedic potential of requiring eighty year olds to prove

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<sup>241</sup> In *Kirschbaum v Kirschbaum* (92 NJ Eq 7, 111 A 697 (1920)) Lena Kirschbaum sued Abraham Kirschbaum for an annulment on the grounds of physical incapacity 11 years after they married. Citing “sincerity and promptness” as the two prerequisites for an annulment suit, Chancellor Walker declared

I have no hesitation in pronouncing in this case that where, as here, the wife has accepted and enjoyed the benefits, such as they may be, of a merely platonic marriage for upwards of 11 years, she cannot be permitted to repudiate the contract, but must be held to have ratified it by conduct [waiting to sue] which she in no wise explains. (Id at A 701)

Given the usual economic asymmetry between husband and wife nineteenth and early twentieth century courts showed a decided bias toward husbands, usually denying annulments to wives while granting them to husbands. In the case of *E- v T- (falsely called E-)*, 3 Swab T 312 (1863), an English court granted an annulment to a husband who waited 11 years to sue for annulment commenting that “He behaved in a most manly and considerate way.” However, in *Peipho v Peipho* (88 Ill 438 (1878)) an Illinois court refused to grant an annulment for physical incapacity to a husband who had lived with his wife for 8 years (and then been separated for 5 more years.)

<sup>242</sup> “For instance, could it be maintained that either husband or wife could at the age of eighty set aside their marriage on the ground that one of the two parties had sixty years ago been visited with an affliction or mal-conformation? The law would surely hold that the complaint was, according to Lord Stowell’s expression ‘insincere,’ that the party complaining has made his or her election to abide by the contract, and would apply the canonist’s maxim ‘Habeat tanquam soror vel tanquam frater.’ The law would be very inhuman if it allowed the husband after a long cohabitation, without any satisfactory explanation of the delay, to throw his wife in her middle or old age, with ignominy, shame, and poverty, upon the world because she had been originally, however innocently, by physical causes incapacitated from performing some of the duties of the married state.” *W, falsely called R, v R*, 1 L R Prob Division 405,407-408 (1876)

<sup>243</sup> “This court has no jurisdiction in any case to enforce the performance of her marriage vows.” (*Devanbagh v Devanbagh*, 6 Paige 175,178 (NY Chancery 1836).)

<sup>244</sup> *Griswold*, 379 US at 485-6.

<sup>245</sup> In the recently decided case of *Standhardt v Arizona*, that upheld the state’s same-sex marriage ban, the Arizona Court of Appeals wrote

that they have consummated their marriage! Imagine the outrage that would be generated if the wife of a veteran with a grievous uro-genital war wound had to provide evidence of consummation!

If the state cannot compel a couple to consummate their marriage with a sexual act that is reproductive in kind how can the inability to perform that act stand in the way of a couple marrying? It should not. As Justice Nicholl understood in 1828, there is more than one model for marriage.

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Allowing all opposite-sex couples to enter marriage under Arizona law, regardless of their willingness or ability to procreate, does not defeat the reasonableness of the link between opposite-sex marriage, procreation, and child rearing. First, if the State excluded opposite-sex couples from marriage based on their intention or ability to procreate, the state would have to inquire about that subject before issuing a license, thereby implicating constitutionally rooted privacy concerns. (*Standhardt v Arizona*, No 1 CA-SA 03-0150 slip op at ¶36 (Ariz Court of Appeals, Div 1 (Oct 8, 2003))

citing exactly the same portion of *Griswold*! Slightly earlier in the opinion we read

Because the State's interest in committed sexual relationships is ***limited to those capable of producing children***, it contends it reasonably restricts marriage to opposite-sex couples. (Id at ¶33, emphasis added.)

Of course, we have seen above that Arizona is one of three states that allow first cousins to marry only if one of them is sterile! This first cousin exception is Ariz Rev Stat §25-101-B (2003). The ***very next statute on the books***, Ariz Rev Stat §25-101-C (2003), is the same-sex marriage ban. ("Marriage between persons of the same sex is void and prohibited.") How the Arizona Court of Appeals could claim that Arizona limits marriage only to couples capable of producing children is a subject for further research.

## Appendix - A BRIEF SURVEY OF PHYSICALLY INTERSEXED CONDITIONS

This Article focuses on the first four of the eight sexual characteristics presented in the Introduction.

1. Genetic or chromosomal sex (also called karyotype)—typically XX or XY; but there are many other variations<sup>246</sup>
2. Gonadal sex (reproductive sex glands)-- ovaries or testes (or ovotestes);
3. Internal morphologic sex --- uterus/fallopian tubes/upper vagina or prostate/seminal vesicles/vas deferens/epididymis;
4. External morphologic sex (genitalia)-- clitoris/labia or penis/scrotum.

These characteristics are present at birth (and at a post mortem following death!)

The great 20<sup>th</sup> century endocrinologist Alfred Jost recognized

After a period of embryogenesis preceding the appearance of any sexual structure, the different sexual characters appear during three successive periods of development:

- (a) *The sexual differentiation of the gonads*, starting from an undifferentiated primordium. ... The complete organogenesis of the gonads, especially of the ovary, overlaps the following phase.
- (b) *The differentiation of the genital tract* (“somatic sexual differentiation”) comprises the alternative development or retrogression of the double assortment of sex ducts, and the specialization of the common primordial (urogenital sinus, external genitalia). . . .
- (c) *Rapid appearance of the secondary sexual characters at puberty*,<sup>247</sup> preceded by the slow modeling of the corporeal forms from birth.

We are concerned with the first two of these phases, the phases that occur during gestation.

### A. Preliminaries

In introductory biology we learned that an XX pair of sex chromosomes produces a female and an XY pair produces a male. That is not always so. We should also remember from introductory biology that chromosomes only act as whole units during mitosis and meiosis. Aside from these cell division activities chromosomes are merely structures that

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<sup>246</sup> The chromosomal composition of humans (and other species) is denoted by giving first the number of chromosomes followed by the karyotype and any extra chromosomes. For example, a human being with a typical set of chromosomes would be denoted as “46,XX” or “46,XY”. Someone with Trisomy 21 (Down’s Syndrome) would be denoted as 47,XY,+21.

<sup>247</sup> Jost, 8 Recent Progress in Hormone Research at 383 (cited in note \_\_\_\_).

carry genes: much smaller units. Genes and hormones hold the key to understanding interactions that occur along the developmental pathways.

All human fetuses initially develop two primordial structures called the **gonadal ridge** and the **genital ridge** from the mesonephric ridge near the primitive kidneys.<sup>248</sup> The gonadal ridge develops into ovaries, testes, or ovotestes.<sup>249</sup> The genital ridge contains three structures that develop into male or female form.

- The genital tubercle develops into the clitoris or the penis.
- The urethrolabial fold develops into the inner labia or the skin on the shaft of the penis.
- The labioscrotal swelling develops into the outer labia or the scrotum.<sup>250</sup>

In addition, all human fetuses initially develop both a set of **Müllerian ducts**, the precursor of the internal female sex organs (uterus, fallopian tubes, upper vagina) and the **Wolffian ducts**, the precursor of the internal male sex organs (prostate, seminal vesicles, vas deferens, and epididymis).<sup>251</sup> The developmental paths taken by these structures all depend on production and detection of the appropriate hormones. Once we realize the existence of these common precursor forms it becomes easier to understand that are not two distinct paths to sexual development but many paths on a tree with many branches.

It is easier to begin with the paths typically taken.

## B. Paths Along the Branches Leading to Typical Suites of Sexual Characteristics

Here is the path along the branches leading to a typical suite of male characteristics.

In the presence of a Y chromosome each side of the gonadal ridge develops into a testis during the 7<sup>th</sup> week of gestation.<sup>252</sup> During the next few weeks the testes secrete two hormones that play a key role in the development of sexual characteristics. The Leydig cells in the testes produce **testosterone**, which stimulates the development of the Wolffian ducts into the prostate gland, seminal vesicles, vas deferens, and epididymis.<sup>253</sup> The Sertoli cells in the testes produce the “**Müllerian Inhibiting Substance**” (MIS), which, as its name implies, inhibits the development of the Müllerian ducts into the uterus, fallopian tubes, and upper vagina.<sup>254</sup>

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<sup>248</sup> T. W. Sadler, *Langman's Medical Embryology* 286-288 (Williams & Wilkins, 7<sup>th</sup> ed, 1995).

<sup>249</sup> Id at 287-291.

<sup>250</sup> Id at 298-301.

<sup>251</sup> Id at 291-298. The epididymis is a duct that connects a testis to a vas deferens.

<sup>252</sup> A decade ago it was thought that the Y chromosome contained a gene called the *SRY* gene (for “Sex Determining Region of the Y chromosome”) that produced a substance functionally named the “Testis Determining Factor,” hereinafter “TDF.” (See for example id at 286, which speaks of the *SRY* gene and TDF.). Although the *SRY* gene has been identified, TDF has not been. Over the last decade researchers have learned that testis determination is much more complex. See below, Appendix section E.3.

<sup>253</sup> Id at 292.

<sup>254</sup> Mary M. Lee and Patricia K. Donahoe, *Müllerian Inhibiting Substance: A Gonadal Hormone With Multiple Functions*, 14 *Endocrine Reviews* 152 (1993). The testes continue to produce MIS after regression of the Müllerian ducts is complete, remains high after birth and then decreases significantly at puberty. In

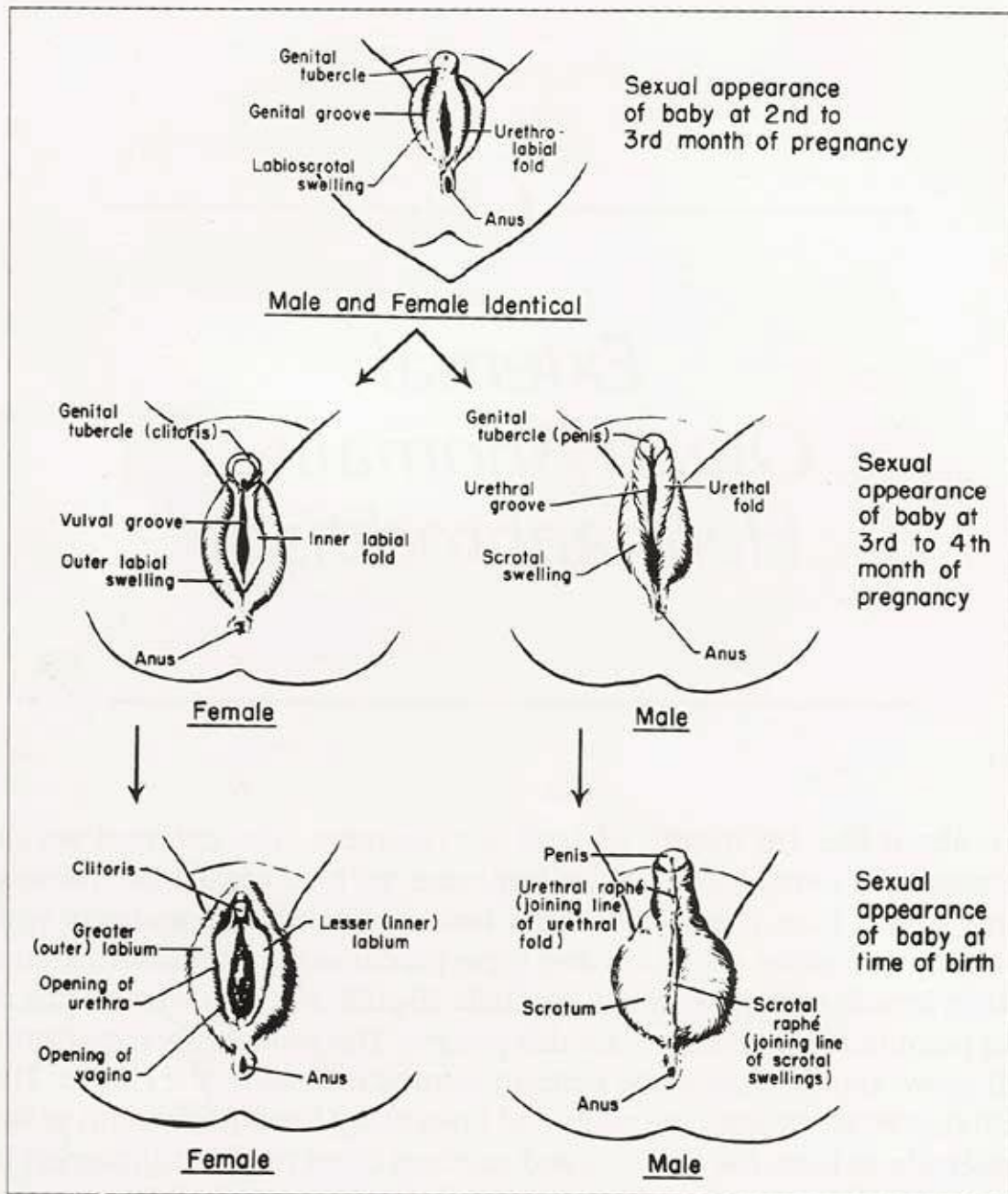
An enzyme called ***5-alpha-reductase 2*** encoded by a gene on an autosome (i.e. a chromosome other than a sex chromosome) converts testosterone into another male hormone called ***dihydrotestosterone***, more commonly called “DHT” and more commonly known from male baldness later in life! DHT acts on the genital ridge causing the genital tubercle to elongate into the penis, the urethrolabial fold to enclose the urethra in the penis, and the labioscrotal swelling to fuse and form the scrotum.<sup>255</sup>

Here is the path along the branches leading to a typical suite of female characteristics.

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contrast, ovarian production of MIS by the granulosa cells begins after birth and peaks during puberty and adult years. It appears that MIS plays many more functions than just inhibition of the Müllerian ducts. (Id at 152-153.)

<sup>255</sup> Sadler, *Medical Embryology* at 292,310.



(From Money 1994, p.38 *NEED PERMISSION*)

In the absence of a Y chromosome the gonads remain in an undeveloped state until the 13<sup>th</sup> week of gestation when they develop into ovaries under the influence of an as yet unidentified factor presumed to be on the X chromosomes.<sup>256</sup> In the absence of the Müllerian Inhibiting Substance the Müllerian ducts develop into the uterus, fallopian tubes, and upper vagina.<sup>257</sup> Without androgens present the Wolffian ducts shrivel up.<sup>258</sup>

<sup>256</sup> Id at 290-291.

<sup>257</sup> Id at 292-298.

<sup>258</sup> Id at 292.



The absence of testosterone also prevents production of DHT. In the absence of DHT the genital tubercle remains relatively small and develops into the clitoris, the urethrolabial fold stays open and becomes the inner labia, and the labioscrotal swelling remains unfused and becomes the outer labia.<sup>259</sup>

These days, when many of us learn the sex of our not-yet-born by sonogram, it may be difficult to remember how cursory a glance usually determines a newborn's sex in the delivery room. But is anyone really observing the newborn's *sex*? No. They are observing the newborn's external genital appearance and drawing an inference that the other sexual characteristics are now in alignment and will continue to be in alignment, even the purely anatomical characteristics. Chromosome tests are not normally run and the presence of ovaries is not checked. Having seen the directions taken at the several forks in the fetus's developmental path we are now in a better position to appreciate the forks less typically taken and the fragility of declaring "It's a girl!" or "It's a boy!"

### C. Paths Along Branches Less Often Taken Following Gonadal Differentiation

It is now time to consider forks less typically taken in the path to the development of sexual characteristics present at birth. These forks lead to atypical suites of sexual characteristics. The following table summarizes the information to be presented.

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<sup>259</sup> Id at 292,302-305.

Condition	Rate per Thousand Live Births	Chromo- somes	Gonads	Genitals	Müllerian Duct Derivatives	Wolffian Duct Derivatives
Turner Syndrome	0.3690	X0	streak ovaries	vagina	y	n
Congenital Adrenal Hyperplasia	0.0770	XX	ovaries	penis	y	n
Meyer- Rokitansky- Küster-Hauser Syndrome	0.1694	XX	ovaries	vagina	n	n
XX male	0.0250	XX	testes	penis	n	y
XY female	0.0250	XY	ovaries	vagina	y	n
Persistent Müllerian Duct Syndrome	n/a	XY	testes	penis	y	y
17 $\beta$ - Hydroxysteroid Dehydrogenase- 3 Deficiency	0.0068	XY	testes	vagina	n	y
Complete Androgen Insensitivity Syndrome	0.0101	XY	testes	vagina	n	y
5 $\alpha$ -Reductase 2 Deficiency	n/a	XY	testes	vagina	n	y
Klinefelter Syndrome	0.9220	XXY	testes	penis	n	y
total	1.6043					

(For the moment we will continue to suppose that testes develop in response to the presence of a Y chromosome and that ovaries develop in response to the absence of a Y chromosome.)

#### 1. 17 $\beta$ -Hydroxysteroid Dehydrogenase-3 Deficiency

Testosterone production in the Leydig cells of the testes plays a key role in the development of male genital tract characteristics. Testosterone production is the final step of a multi-stage process that begins with the breakdown of cholesterol and ends with the

conversion of androstenedione<sup>260</sup> into testosterone. The enzyme **17 $\beta$ -Hydroxysteroid dehydrogenase-3** (17 $\beta$ HSD3) enables this conversion.<sup>261</sup>

17 $\beta$ -Hydroxysteroid dehydrogenase-3 deficiency results from a mutation to the 17 $\beta$ HSD3 gene on an autosome.<sup>262</sup> In the absence of sufficient quantities of 17 $\beta$ HSD3 relatively little testosterone gets produced during gestation and the external genitalia take female form.<sup>263</sup>

- The genital tubercle takes on a clitoral appearance. (It may be enlarged.)
- The urethrolabial fold develops into the inner labia.
- The labio-scrotal swelling remains unfused.
- A blind-ended [lower] vagina forms.<sup>264</sup>

In contrast, the internal morphological characteristics take masculine form. The production of MIS in the Sertoli cells inhibits the development of the Müllerian ducts into the uterus, fallopian tubes, and upper vagina. However, the Wolffian ducts develop into the prostate, seminal vesicles, vas deferens, and epididymis in response to androstenedione.<sup>265</sup> The testes remain undescended in the inguinal canals or labia majora.<sup>266</sup>

Standard medical practice suggests removal of the testes shortly after early diagnosis of cases with complete female external genitalia and raising these children as girls.<sup>267</sup> They will never menstruate.

In the absence of intervention virilization occurs at puberty and is probably due to extratesticular conversion of androstenedione to testosterone.<sup>268</sup> The skin of the labia majora becomes rugged, the clitoris enlarges (>3cm), male pattern body hair may emerge and the voice may lower.<sup>269</sup> Gender role reversal occurs in about half of these individuals.<sup>270</sup>

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<sup>260</sup> The steroid Mark McGwire admitted taking.

<sup>261</sup> Wayne M. Geissler, et al, *Male Pseudohemaphroditism Caused by Mutations of Testicular 17 $\beta$ -Hydroxysteroid Dehydrogenase 3* 7 Nature Genetics 34 (1994).

<sup>262</sup> Annemie L. M. Boehmer et al, *17 $\beta$ -Hydroxysteroid Dehydrogenase-3 Deficiency: Diagnosis, Phenotypic Variability, Population Genetics, and Worldwide Distribution of Ancient and de Novo Mutations*, 84 J Clinical Endocrinology and Metabolism 4713,4714 (1999). 17 $\beta$ -Hydroxysteroid dehydrogenase-3 deficiency is asymptomatic in persons with XX karyotype. (Id.)

<sup>263</sup> Stefan Andersson et al, *Molecular Genetics and Pathophysiology of 17 $\beta$ -Hydroxysteroid Dehydrogenase 3 Deficiency*, 81 J Clinical Endocrinology and Metabolism 130,134 (1996).

<sup>264</sup> Boehmer et al, 84 J Clinical Endocrinology and Metabolism at 4714 (cited in note \_\_\_\_).

<sup>265</sup> Id.

<sup>266</sup> Andersson et al, 81 J Clinical Endocrinology and Metabolism at 134 (cited in note \_\_\_\_).

<sup>267</sup> Boehmer et al, 84 J Clinical Endocrinology and Metabolism at 4714 (cited in note \_\_\_\_).

<sup>268</sup> Id at 4715.

<sup>269</sup> Id.

<sup>270</sup> Jean D. Wilson, *The Role of Androgens in Male Gender Role Behavior*, 20 Endocrine Reviews 726,730 (1999).

A recent study estimates the naturally occurring rate of 17 $\beta$ HSD3 deficiency to be 1:147,000 based on analysis of the Dutch population.<sup>271</sup> However, among the Arabs in Gaza, who frequently intermarry, the incidence is as high as 1:200-300.<sup>272</sup>

## 2. Androgen Insensitivity Syndrome

Throughout this Article we have seen many cases involving wives who may have experienced what is now recognized as ***Complete Androgen Insensitivity Syndrome*** (cAIS).<sup>273</sup> The Yale gynecologist James McLean Morris gave the first complete description of cAIS in 1953.

There is a clinically recognizable syndrome found in patients who are essentially normally appearing women, but who have undescended testes in place of ovaries. . . . These patients present a fairly typical clinical picture. For this reason they have been singled out from the other forms of intersexuality, and we have called the clinical syndrome “testicular feminization.”

The outstanding characteristics of this syndrome are:

1. Female habitus with normal female fat deposits. In some cases the build has a eunuchoid tendency with long extremities and large hands and feet.
2. Normal female breasts, often with a tendency to be “overdeveloped,” although the nipples are sometimes juvenile.
3. Absent or scanty axillary and pubic hair in the majority of cases. There may be a slight amount of vulvar hair. The hair on the head is that of a normal female without temporal recession, but the facial hair is more often absent as in a child.
4. Female external genitals. The labia may be underdeveloped, especially the labia minora. The clitoris is normal or small. The vagina ends blindly, but is usually adequate for marital relations.
5. Absence of internal genitals except for rudimentary uterine and other anlage, including sometimes Fallopian tubes or spermatic ducts, and for the gonads, which may be intra-abdominal or may lie along the course of the inguinal canal.
6. Gonads consisting largely of seminiferous tubules usually without spermatogenesis, but in most cases with a marked increase of interstitial cells....

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<sup>271</sup> Boehmer et al, 84 J Clinical Endocrinology and Metabolism at 4717 (cited in note \_\_\_\_).

<sup>272</sup> Id at 4718.

<sup>273</sup> One commentator has suggested that Queen Elizabeth I experienced cAIS. (R. Bakan, *Queen Elizabeth I: A Case of Testicular Feminization?*, 17 Medical Hypotheses 277 (1985).) The evidence presented is intriguing but circumstantial. Unfortunately, no evidence is given about Anne Boleyn’s family. We can only speculate whether Henry VIII made inquiries about whether there were patterns of infertility on Anne’s mother’s side of her family.

7. Hormone assays in a limited number of cases suggest that these testes produce both estrogen and androgen. The pituitary gonadotropins have been elevated in some instances.<sup>274</sup>

He also cited 82 cases that had appeared in the medical literature beginning with an 1817 case.<sup>275</sup>

Morris labeled the condition “Testicular Feminization” since he conjectured that the testes produced an insufficient quantity of androgens to masculinize the body.<sup>276</sup>

Subsequent research has demonstrated that cAIS is the result of the body’s inability to process androgens, not its inability to produce them.<sup>277</sup> Morris had noted “a strong familial tendency as shown by the number of sisters with the same findings.”<sup>278</sup> The discovery that the gene coding for androgen receptor capability resides on the X chromosome<sup>279</sup> readily explains this hereditary phenomenon. cAIS results from a point mutation to this gene.<sup>280</sup>

At birth an XY cAIS baby has the genital appearance of a typical XX baby and is assigned to the female sex. Questions sometimes arise before puberty if undescended testes are discovered. Suspicions more frequently arise when menstruation fails to occur during the teen years. Examination reveals the absence of ovaries and uterus. A short, blind-ended vagina confirms the suspicions.<sup>281</sup> Nor is a prostate to be found. Only remnants of the original Wolffian ducts remain.<sup>282</sup>

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<sup>274</sup> John McLean Morris, *The Syndrome of Testicular Feminization in Male Pseudohermaphrodites*, 65 Am J Obstetrics & Gynecology 1192-1193 (1953).

<sup>275</sup> Id at 1194-1197. The first British case was reported in 1879-80.

<sup>276</sup> Id at 1206.

<sup>277</sup> See generally Charmian A. Quigley, et al, *Androgen Receptor Defects: Historical, Clinical and Molecular Perspectives*, 16 Endocrine Reviews 271 (1995).

<sup>278</sup> Morris, 65 Am J Obstetrics & Gynecology at 1193 (cited in note \_\_\_\_). A Talmudic passage (order Nashim, tractate Ketubot, 10b, ~400AD) reads

A man came before Rabbi Gamaliel the Elder and said to him, “Rabbi, I have had intercourse with my wife and no virginal blood resulted.” So the wife said to the Rabbi, “I am from the family *Dorkati*, where the women have neither menstrual flow nor virginal bleeding.” Rabbi Gamaliel examined her family and verified what she had stated.

Goodman suggests that this is a description of a family with a pattern of cAIS. (Richard M. Goodman (ed), *Genetic Disorders of the Jewish People* 65-66 (Johns Hopkins 1979).)

<sup>279</sup> J. A. Spencer, et al, *The Androgen Receptor Gene Is Located on a Highly Conserved Region of the X Chromosomes of Marsupial and Monotreme as Well as Eutherian Mammals*, 82 J Heredity 134 (1991).

<sup>280</sup> Quigley, et al, 16 Endocrine Reviews at 272-274, 295 (cited in note \_\_\_\_). The Androgen Receptor gene (“AR”) is the only steroid receptor gene found on the X chromosome. (Id.) “This X-chromosomal location of a gene as vitally important as that encoding the AR is intriguing. Why did a gene so crucial for the survival of the species end up in such a precarious position in all classes of mammals, unprotected by pairing with a matching chromosome? Perhaps, contrary to first appearances, this is in fact protective of reproductive fitness: because of its X-chromosomal location, mutations in this gene, by impairing reproductive capacity, are genetically lethal in males, reducing by one-third the accumulation of deleterious mutant AR gene alleles.” (Id at 310-311.)

<sup>281</sup> In about one third of subjects there is incomplete Müllerian duct regression. One hypothesis advanced to explain this finding is that the highly estrogenic milieu of the Müllerian ducts in an androgen-insensitive

Half a century ago Morris reported “The sex urges of the patient are usually the same as those of other women, an indication that the seat of the libido is more in the psyche than in the gonads. The urge for childbearing is strong and some of the married patients have sought medical advice for sterility.”<sup>283</sup>

A recent study estimates the naturally occurring rate of cAIS to be 1:99,000 based on an analysis of the Dutch population.<sup>284</sup> A 1992 Danish study estimated the naturally occurring rate to be 1:20,400.<sup>285</sup>

Mutations that result in impaired but not total androgen processing result in ***Partial Androgen Insensitivity Syndrome*** (pAIS). A fetus experiencing pAIS is able to process some but not all androgen produced. Consequently, the phallus can take on a penis-like or a clitoris-like appearance and the labioscrotal swelling may fuse into a scrotum or remain unfused as the outer labia.

### 3. 5 $\alpha$ -Reductase 2 Deficiency

Inheriting two copies of recessive forms of the *SRD5A2* gene on chromosome 2 results in a failure to produce the enzyme 5 $\alpha$ -reductase-2.<sup>286</sup> When ***5- $\alpha$ -Reductase 2 deficiency*** occurs the fetal body fails to convert testosterone into DHT, whose absence results in predominately female external genitalia at birth with a male ejaculatory system that terminates in a blind-ending vagina.<sup>287</sup> The degree of virilization at the onset of puberty can be striking though less masculine than in unaffected brothers.<sup>288</sup> The voice deepens, muscle mass grows substantially (due to an abundance of testosterone) and a functional penis capable of ejaculation develops from what had been considered a clitoris. However, the prostrate remains small and beard growth remains light.<sup>289</sup>

5 $\alpha$ -Reductase 2 deficiency occurs with regularity in at least four isolated populations in New Guinea (6:1,000),<sup>290</sup> the Dominican Republic (1:90),<sup>291</sup> Brazil,<sup>292</sup> and Turkey.<sup>293</sup> The Dominican and New Guinea populations have been studied extensively.

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fetus (due to conversion of testosterone to estrogen) interferes with the action of the anti-Müllerian hormone. (Id at 284).

<sup>282</sup> Annemie L. M. Boehmer, et al, *Genotype Versus Phenotype in Families with Androgen Insensitivity Syndrome*, 86 J Clinical Endocrinology & Metabolism 4151 (2001).

<sup>283</sup> Morris, 65 Am J Obstetrics & Gynecology at 1209 (cited in note \_\_\_\_). It should be noted that the brains of persons experiencing cAIS do not respond to androgens and as a result do not masculinize.

<sup>284</sup> Boehmer et al, 86 J Clinical Endocrinology & Metabolism at 4153 (cited in note \_\_\_\_).

<sup>285</sup> Quigley, et al, 16 Endocrine Reviews at 279 (cited in note \_\_\_\_).

<sup>286</sup> Jean D. Wilson, James E. Griffin, and David W. Russell, *Steroid 5 $\alpha$ -Reductase 2 Deficiency*, 14 Endocrine Reviews 577,581(1993)

<sup>287</sup> Berenice B. Mendonca, et al, *Male Pseudohermaphroditism Due to Steroid 5 $\alpha$ -Reductase 2 Deficiency*, 75 Medicine 64,71 (1996).

<sup>288</sup> Wilson, Griffin, and Russell, 14 Endocrine Reviews at 588 (cited in note \_\_\_\_).

<sup>289</sup> Julianne Imperato-Mcginley, et al, *Steroid 5  $\alpha$ -Reductase Deficiency in Man: An Inherited Form of Male Pseudohermaphroditism*, 186 Science 1213 (27 December 1974).

<sup>290</sup> Gilbert H. Herdt and Julilan Davidson, The Sambia “Turnim Man: Sociocultural and Clinical Aspects of Gender Formation in Male Pseudohermaphrodites with 5-Alpha-Reductase Deficiency in a Turkish Village, 17 Archives of Sexual Behavior 33 (1988). See also J. Imperato-McGinley, et al, *A Cluster of*

The Sambia tribe of New Guinea was not pacified until 1964<sup>294</sup> by which time 5 $\alpha$ -Reductase 2 deficiency had been present long enough for explicit cultural responses to emerge.<sup>295</sup> Sambia midwives always make sex assignments at birth and check for an odd-looking vulva or clitoris as a sign of 5 $\alpha$ -Reductase 2 deficiency.<sup>296</sup> Knowing that their masculine features are not yet apparent but will emerge at puberty these children are raised as neither *aatmwul* (male) or *aambelu* (female) but in a third category *kwolu-atmwol* “a word that indexes to “male thing-transformed-into-female-thing,”<sup>297</sup> now called “*turnim-man*” in the pidgin English they have learned.<sup>298</sup>

Before the trait became established in the Dominican Republic the affected children were raised as girls.<sup>299</sup> Now that trait is present in the third generation, the villagers sometimes raise these children as boys from birth or raise them first as girls and then as boys.<sup>300</sup> When the condition is recognized the Dominican villages call such infants *guevedoce*, which literally means “penis at twelve!” *ormachihembra*, which means “first woman, then man.”<sup>301</sup>

In western cultures much less familiar with these life trajectories such a child is judged to be a girl at birth. When masculine features emerge at puberty the young girl and her family usually find themselves unprepared for the available options. These include (a) continuing in a female sexual role with some male sexual features, (b) surgery and medical treatment to eliminate the male features, and (c) adopting a male sexual role<sup>302</sup>

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*Male Pseudohermaphroditism in 5 $\alpha$ -Reductase Deficiency in Papua New Guinea*, 34 *Clinical Endocrinology* 293 (1991).

<sup>291</sup> Imperato-Mcginley, et al, 186 *Science* at 1215 (cited in note \_\_\_\_).

<sup>292</sup> Mendonca, et al, 75 *Medicine* at 64 (cited in note \_\_\_\_).

<sup>293</sup> S. Akgun, et al, *Familial Male Pseudohermaphroditism due to 5 $\alpha$ -Reductase Deficiency*, 81 *Am J Med* 267 (1986).

<sup>294</sup> Herdt and Davidson, 17 *Archives of Sexual Behavior* at 35 (cited in note \_\_\_\_).

<sup>295</sup> *Id.* at 38.

<sup>296</sup> *Id.*

<sup>297</sup> Gilbert Herdt, *Mistaken Gender: 5-Alpha Reductase Hermaphroditism and Biological Reductionism in Sexual Identity Reconsidered* 92 *Am Anthropologist* 433,439 (1990).

<sup>298</sup> Herdt and Davidson, 17 *Archives of Sexual Behavior* at 38-41 (cited in note \_\_\_\_). A bit later Herdt wrote “My initial work with Sambia took a similar perspective in tacitly agreeing with them [many anthropologists] that the cultural construction of a third sex – the *kwolu-aatmwol* – as inexorable. Continuing field study has made me realize, however, that while Sambia recognize three sexes and at birth sex-assign them as such, their world view systematically codes only two genders, masculine and feminine in cultural discourse.” (Herdt, 92 *Amer Anthropologist* at 434.) For a contrary view that these children “are raised as normal males and regarded simply as having a birth defect” see J. Imperato-McGinley, et al, *A Cluster of Male Pseudohermaphrodites in 5 $\alpha$ -Reductase Deficiency in Papua New Guinea*, 34 *Clinical Endocrinology* 293,294 (1991). ). For our present purposes it is enough that these children are not raised as girls.

<sup>299</sup> Imperato-Mcginley, et al, 186 *Science* at 1213 (cited in note \_\_\_\_).

<sup>300</sup> Julianne Imperato-Mcginley, et al, *Androgens and the Evolution of Male-Gender Identity Among Male Pseudohermaphroditism With 5 $\alpha$ -Reductase Deficiency*, 300 *N England J Med* 1233,1235 (1979).

<sup>301</sup> *Id.*

<sup>302</sup> Wilson, 14 *Endocrine Reviews* at 731 (cited in note \_\_\_\_).

Gender role reversal appears to occur in about half the affected persons not diagnosed as infants or small children.<sup>303</sup>

No systematic studies have been done to ascertain the naturally occurring frequency of 5 $\alpha$ -Reductase 2 deficiency.<sup>304</sup>

#### 4. Persistent Müllerian Duct Syndrome

**Persistent Müllerian Duct Syndrome** (PMDS) is characterized by the persistence of the Müllerian derivatives: uterus, fallopian tubes, and upper vagina in a person with all of the typical male anatomical characteristics with the possible exception that one or both of the testes may be undescended.<sup>305</sup> At birth there is no evidence of external female characteristics. They usually remain unsuspected until the person affected suffers periodic abdominal pain or bleeding through his urethral opening after the onset of puberty.<sup>306</sup> Although male fertility may be impaired, removing these internal female organs does not affect male fertility.<sup>307</sup>

PMDS can result from lack of production of MIS by the Sertoli cells in the testes. The mutation causes premature termination of the MIS hormone as it is being built.<sup>308</sup> It can also result from the inability of Müllerian duct cells to process MIS due to inheritance of two copies of mutation in the *Wnt-7a* gene resulting in the inability to produce the signaling molecule Wnt-7a<sup>309</sup> (which also plays a role in the formation of straight limbs.<sup>310</sup>)

No systematic studies have been done to ascertain the naturally occurring frequency of PMDS. A 1993 study reported 150 cases known up to that date.<sup>311</sup>

#### 5. Congenital Adrenal Hyperplasia

The adrenocortical glands, located just above the kidneys, normally produce cortisol and aldosterone, hormones that regulate the body's sodium balance, energy supply, blood sugar level, and its reaction to stress.<sup>312</sup> Ninety percent of all cases of **Congenital Adrenal Hyperplasia** ("CAH") result when a fetus inherits recessive copies of autosomal

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<sup>303</sup> Jean D. Wilson, *The Role of Androgens in Male Gender Role Behavior*, 20 Endocrine Reviews 726, 731 (1999).

<sup>304</sup> Blackless, et al, 12 Am J Hum Biol at 153 (cited in note \_\_\_\_).

<sup>305</sup> Money, *Sex Errors* at 32 (cited in n \_\_\_\_).

<sup>306</sup> Id.

<sup>307</sup> Id at 33.

<sup>308</sup> Bertrand Knebelmann, et al, *Anti-Müllerian Hormone Bruxelles: A Nonsense Mutation Associated with the Persistent Müllerian Duct Syndrome*, 88 Proc Nat Acad Sci USA 3767,3770 (1991).

<sup>309</sup> Brian A. Parr and Andrew P. McMahon, *Sexually Dimorphic Development of the Mammalian Reproductive Tract Requires Wnt-7a*, 395 Nature 707,709 (1998).

<sup>310</sup> David T. MacLaughlin, Jose Teixeira and Patricia K. Donahoe, *Perspective: Reproductive Tract Development—New Discoveries and Future Directions*, 142 Endocrinology 2167,2168 (2001).

<sup>311</sup> Josso, et al, 48 Recent Progress in Hormone Research at 39 (cited in note \_\_\_\_).

<sup>312</sup> Perrin C. White and Phyllis W. Speiser, *Congenital Adrenal Hyperplasia due to 21-Hydroxylase Deficiency*, 21 Endocrine Reviews 245,245-248. (2000).



gene CYP21 on chromosome 21 from both parents.<sup>313</sup> As a result the fetus is unable to produce the steroid 21-hydroxylase enzyme necessary for the production of cortisol and aldosterone.<sup>314</sup> Instead, these glands produce elevated levels of the androgen androstenedione, which is converted downstream into testosterone and DHT.<sup>315</sup> The presence of high levels of androgens during the 3<sup>rd</sup> and 4<sup>th</sup> months of gestation results in an enlarged clitoris (clitoral hypertrophy) and possibly fused labia in an XX fetus.<sup>316</sup> These conditions can also result when androgens generated by an XY fraternal twin cross the placental barrier.<sup>317</sup>

At birth some CAH babies are judged to be boys.<sup>318</sup> Others are judged to be girls with large clitorises. Many doctors recommend clitoral reductions for them.

Research on the sexual orientation of women who experienced CAH has yielded widely ranging results. In 1984 John Money and his colleagues reported that 11 of 30 young women treated for CAH considered themselves to be bisexual or homosexual.<sup>319</sup> More recently, Zucker and colleagues reported that that a survey of young women who experienced CAH had no higher rate of homosexual orientation than a control group, however, they did have fewer heterosexual experiences than the control group.<sup>320</sup> After extensive interaction with the intersexual community Suzanne Kessler's impression is that adult intersexed women are more likely to be lesbians than women in general.<sup>321</sup>

After surveying the literature Fausto-Sterling and associates noted an extremely wide range of occurrence among population with a high of 3.47 per 1,000 live births among the Yupik tribe in Alaska.<sup>322</sup> They estimate that worldwide rate of CAH is approximately 0.0770 per 1,000 live births.<sup>323</sup>

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<sup>313</sup> The remaining 10% of cases are caused by recessive genes leading to deficiencies in other enzymes involved in the production of aldosterone and cortisol: 3 $\beta$ -Hydroxysteroid Dehydrogenase-3 Deficiency and 11 $\beta$  Hydroxylase Deficiency (only aldosterone production). Sodium imbalance does not threaten patients with the latter deficiency. However, they are often hypertensive. (Id at 248.)

<sup>314</sup> Id at 247.

<sup>315</sup> Id at 249.

<sup>316</sup> Id at 251.

<sup>317</sup> This is the mechanism that produces *freemartins*, highly virilized female cattle resulting from gestation with a fraternal twin brother. (See Frank R. Lillie, *Theory of the Freemartin*, 43 Science 611 (1916) and Frank R. Lillie *The Freemartin: A Study of the Action of Sex Hormones in the Fetal Life of Cattle*, 23 J Experimental Zoology 371 (1917).)

<sup>318</sup> One of the first cases on record concerned a certain Giuseppe Marzo of Naples. "It was established that Giuseppe Marzo transacted all his affairs of life, including sexual intercourse, as a man, despite the fact that he was declared a female at birth and was finally designated a male, once and for all, at the age of four years." (Alfred M. Bongiovanni and Allen W Root, *The adrenogenital syndrome*, 258 N Engl J Med 1283 (June 6, 1963).)

<sup>319</sup> John Money, Mark Schwartz and Viola G. Lewis, *Adult erotosexual status and fetal hormonal masculinization and demasculinization: 46,XX congenital virilizing adrenal hyperplasia and 46,XY androgen-insensitivity syndrome compared*, 9 Psychoneuroendocrinology 405 (1984).

<sup>320</sup> Kenneth J. Zucker et al, *Psychosexual Development of Women with Congenital Adrenal Hyperplasia*, 30 Hormones and Behavior 300 (1996).

<sup>321</sup> Kessler, *Lessons from the Intersexed* at 150 n35.

<sup>322</sup> Blackless et al, 12 Am J Hum Biol at 155 (cited in note \_\_\_\_).

<sup>323</sup> Id at 156.

## 6. Meyer-Rokitansky-Küster-Hauser Syndrome

**Meyer-Rokitansky-Küster-Hauser Syndrome** (“MRKHS”) results in unformed or underdeveloped Müllerian duct derivatives, namely, the uterus, fallopian tubes and upper vagina. A dimple or shallow pouch, unconnected to a uterus, appears where the vaginal orifice typically opens.<sup>324</sup> After the onset of puberty failure to menstruate in the presence of ovaries raises a suspicion of MRKHS. Surgery or dilation therapy can be employed to provide a vagina-like orifice.<sup>325</sup>

MRKHS is not due to the absence of estrogen production in the XX embryo. However, maternal estrogens may play a compensatory role.<sup>326</sup> Nor is it due to an inability to process estrogen.<sup>327</sup> The cause of MRKHS is not yet fully understood. However, it appears that the signaling molecule Wnt-4, which is implicated in kidney development,<sup>328</sup> also plays a role in the development of the Müllerian ducts.<sup>329</sup>

After surveying the literature Fausto-Sterling and associates estimate that MRKHS has a naturally occurring rate of approximately 0.1694 per 1,000 live births.<sup>330</sup>

### D. Atypical Chromosomal Combinations

All of the conditions considered so far depend on variance from typical hormonal pathways in fetuses with a XX or XY sex chromosomes. We now turn to conditions resulting from an atypical combination of sex chromosomes.

#### 1. Klinefelter Syndrome

**Klinefelter Syndrome** is the name given to persons with 1 Y chromosome and at least 2 X chromosomes. The most typical combination is XXY.<sup>331</sup> Klinefelter Syndrome may result from an atypical cell division in the zygote just after fertilization. It more often occurs when either the sperm cell or the egg cell carries at least one extra sex chromosome as a result of an atypical cell division leading up to its creation.<sup>332</sup>

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<sup>324</sup> Money, *Sex Errors* at 56 (cited in note \_\_\_\_).

<sup>325</sup> Id at 57.

<sup>326</sup> John F. Couse and Kenneth S. Korach, *Estrogen Receptor Null Mice: What Have We Learned and Where Will They Lead Us?*, 20 *Endocrine Reviews* 358,403 (1999).

<sup>327</sup> “There has been only one reported case of estrogen-receptor defect, suggesting that this receptor has a strategic role in fetal survival.” (Daniel D. Federman, *Three Facets of Sexual Differentiation*, 350(4) *N England J Med* 323 (January 22, 2004).)

<sup>328</sup> MacLaughlin, Teixeira, and Donahoe, 142 *Endocrinology* at 2168

<sup>329</sup> Seppo Vainio, et al, *Female Development in Mammals Is Regulated by Wnt-4 Signalling*, 397 *Nature* 405 (1999).

<sup>330</sup> Blackless et al, 12 *Am J Hum Biol* at 157 (cited in note \_\_\_\_).

<sup>331</sup> In addition there are cases with four and five sex chromosomes. See, for example, Mary G. Linden, Bruce G. Bender, and Arthur Robinson, *Sex Chromosome Tetrasomy and Pentasomy*, 96 *Pediatrics* 672 (Oct 1995).

<sup>332</sup> DNA analysis of 39 males experiencing Klinefelter syndrome showed that 21 (53%) resulted from an atypical division of the father’s sperm cell, 17 (44%) resulted from an atypical division of the mother’s egg cell, and 1 (3%) resulted from an atypical division following conception of the zygote. P. A. Jacobs, et al,

Klinefelter Syndrome babies appear with the typical set of male anatomical characteristics at birth so there is usually little motivation to check for the presence of an extra X chromosome before puberty.<sup>333</sup> Klinefelter Syndrome is usually diagnosed at puberty when breasts begin to develop in a female form and the penis and testes remain relatively small with the testes usually lacking the ability to create sperm cells.<sup>334</sup>

Reviewing 21 different surveys Fausto-Sterling and associates estimate the mean incidence of Klinefelter Syndrome to be approximately 0.922 per 1,000 live births classified as male.<sup>335</sup> One study found that 1 in 300 spontaneously aborted fetuses had 47,XXY characteristics indicating a conception rate of 1 in 1,000 (or 2 in 1,000 “male” conceptions.).<sup>336</sup>

## 2. Turner Syndrome

In contrast to Klinefelter Syndrome, which involves an extra sex chromosome, **Turner Syndrome** occurs when a person lacks a second complete sex chromosome (to complement a single X chromosome.) The second sex chromosome may have been lost in one of the earliest cell divisions in the newly formed fetus<sup>337</sup> or the second X chromosome may have had an arm broken.<sup>338</sup> Molecular analyses have demonstrated persons with Turner syndrome retain the maternal X chromosome in approximately two-thirds of the cases with the paternal X chromosome retained in the other one-third of the cases.<sup>339</sup>

Turner Syndrome babies have a typical complement of external female genitalia at birth.<sup>340</sup> However, 95-98% have “streak” ovaries.<sup>341</sup> At puberty breasts do not mature due to the lower than typical level of estrogen present.<sup>342</sup> Natural, unassisted pregnancies occur in approximately 2% of all cases of Turner Syndrome.<sup>343</sup> Miscarriage (29%), stillbirth (7%) and congenital anomaly (20%) rates are very high.<sup>344</sup>

Fausto-Sterling and associates reviewed 18 studies of Turner Syndrome and estimate the mean incidence of Turner Syndrome to be approximately 0.369 per 1,000 live births

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*Klinefelter's Syndrome: An Analysis of the Origin of the Additional Sex Chromosome Using Molecular Probes*, 52 Annals of Human Genetics 93 (1988).

<sup>333</sup> Money, *Sex Errors* at 12 (cited in note \_\_\_\_).

<sup>334</sup> Id at 13.

<sup>335</sup> Blackless et al, 12 Am J Hum Biol at 152 (cited in note \_\_\_\_).

<sup>336</sup> Jacobs, et al, 52 Annals of Human genetics at 93 (cited in note \_\_\_\_).

<sup>337</sup> Money, *Sex Errors* at 14 (cited in note \_\_\_\_).

<sup>338</sup> Id.

<sup>339</sup> Archana Mathur, et al, *The Parental Origin of the Single X Chromosome in Turner Syndrome: Lack of Correlation with Parental Age or Clinical Phenotype*, 48 Am J Hum Genet 682,685 (1991).

<sup>340</sup> Money, *Sex Errors* at 14 (cited in note \_\_\_\_).

<sup>341</sup> R. Abir, et al, *Turner's syndrome and fertility: current status and possible putative prospects*, 7 Human Reproduction Update 603,604 (2001).

<sup>342</sup> Id.

<sup>343</sup> Id.

<sup>344</sup> Id.

classified as female.<sup>345</sup> Other studies have estimated that as many as 3 percent of all fetuses conceived experience loss or breakage of a second sex chromosome during gestation and only 1 percent of these survive to term.<sup>346</sup>

## E. XX Males and XY Females

### 1. Background

Although Klinefelter Syndrome and Turner Syndrome involve an atypical number of chromosomes they each conform to a possible rule that “males” have at least 1 Y chromosome and “females” have no Y chromosomes. Not surprisingly, there are counterexamples to this rule.

The great American geneticist T. H. Morgan discovered sex chromosomes in the early part of the 20<sup>th</sup> century.<sup>347</sup> At mid-century Barr developed the chromatic test to determine the presence or absence of a second X chromosome.<sup>348</sup> Reports of XX males and XY females began to appear within the next few years.<sup>349</sup> By 1981 de la Chapelle estimated the incidence of XX males to be 1 in every 20,000-25,000 newborn males.<sup>350</sup> The presence of smaller, femininely sized teeth, determined by genes on the X chromosome, confirmed the hypothesis that a testis determining gene had translocated from the Y chromosome to the X chromosome.<sup>351</sup> Analysis of X-linked blood traits inherited from an XX male subject’s father provided further evidence in favor of this hypothesis.<sup>352</sup>

In 1990 Sinclair, Berta, et al identified the Sex determining region of the Y chromosome in humans and mice, called it the *SRY* gene and proposed it as a candidate for “the elusive testis-determining gene, *TDF*.”<sup>353</sup> Later that year they announced that they had found the *SRY* gene mutated on the Y chromosomes of two female XY subjects.<sup>354</sup> Two years later McElreavey et al confirmed these results in a survey of 25 cases of XY females.<sup>355</sup> In 1993 McElreavey et al had analyzed the DNA of over 30 XX males with neither internal

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<sup>345</sup> Blackless et al, 12 Am J Hum Biol at 152 (cited in note \_\_\_\_).

<sup>346</sup> Paul Saenger, *Turner’s Syndrome*, 335 N Eng J Med 1749 (December 5, 1996).

<sup>347</sup> Jane Maienschein, *What Determines Sex? A Study of Converging Approaches, 1880-1916*, 75 Isis, 457,479 (1984).

<sup>348</sup> Murray L. Barr and Ewart G. Bertram, *A morphological distinction between neurones of the male and female and the behaviour of the nuclear satellite during accelerated nucleoprotein synthesis*, 163 Nature 676 (1949).

<sup>349</sup> See for example George W. Clayton, J. Darrel Smith, Harvey S. Rosenberg, *Familial True Hermaphroditism*, 18 J Clinical Endocrinology 1349 (1958).

<sup>350</sup> Albert de la Chapelle, *The etiology of maleness in XX men*, 58 Human Genetics 105,107 (1981).

<sup>351</sup> Id at 106.

<sup>352</sup> Albert de la Chapelle, et al, *Genetic evidence of X-Y interchange in a human XX male*, 307 Nature 170 (1984).

<sup>353</sup> Andrew H. Sinclair, et al, *A gene from the human sex-determining region encodes a protein with homology to a conserved DNA-binding motif*, 345 Nature.240,244 (19 July 1990.)

<sup>354</sup> Philippe Berta, et al, *Genetic evidence equating SRY and the testis-determining factor*, 348 Nature 448 (29 November 1990).

<sup>355</sup> Ken McElreavey, et al, *XY sex reversal associated with a deletion of 5’ to the SRY “HMG box” in the testis-determining region*, 89 Proceedings of the National Academy of Science 11016 (November 1992).

nor external genital anomalies and found the *SRY* gene present in over 90% of the cases analyzed.<sup>356</sup>

## 2. Translocation

During mitotic cell division genes can translocate from one chromosome to its homologous partner.<sup>357</sup> The *SRY* gene typically resides on the Y chromosome. However, prior to the completion of spermatogenesis this gene can translocate onto the X chromosome, the homologue of the Y chromosome. Thus, the *SRY* gene may be present in an XX fetus without any Y chromosomes. Similarly, the *SRY* gene may be absent in an XY fetus.

## 3. Life Isn't So Simple

Ninety percent of the surveyed XX males without genital anomalies may have possessed the *SRY* gene, but 10% lacked that gene. Moreover, most XX males with genital anomalies lacked the *SRY* gene.<sup>358</sup> As a result McElreavey “propose[d] that the *SRY* protein activates male sex determination by blocking synthesis or activity of Z protein, which is a negative regulator of male sex determination.”<sup>359</sup>

Research since 1993 suggests that the testis-determination is even more complex than the cascade model proposed by McElreavey et al. The editors of a recent (2001) review of the subject wrote

Following the isolation of the *SRY* gene ten years ago, a handful of other genes have meanwhile been identified, mainly by positional cloning in human sex reversal syndromes, and shown to play an essential role in early gonadal development and differentiation. These include *SFI*, *WT-1*, *DAX1*, *SOX9* and, more recently, *DMRT1*. Other than *SRY*, an evolutionary newcomer found only in mammalian vertebrates, these genes are conserved in all vertebrates. So despite the differences in mechanisms vertebrates use to determine sex, the same basic set of transcription factor genes appears to operate. What has become clear is the fact that sex determination in vertebrates is not the result of a simple hierarchal cascade of gene actions as initially thought, but rather results from a complex network of positive and negative regulatory interactions.<sup>360</sup>

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<sup>356</sup> Ken McElreavey, et al, *A regulatory cascade hypothesis for mammalian sex determination: SRY represses a negative regulator of male development*, 90 Proceedings of the National Academy of Science 3368,3369 (April 1993).

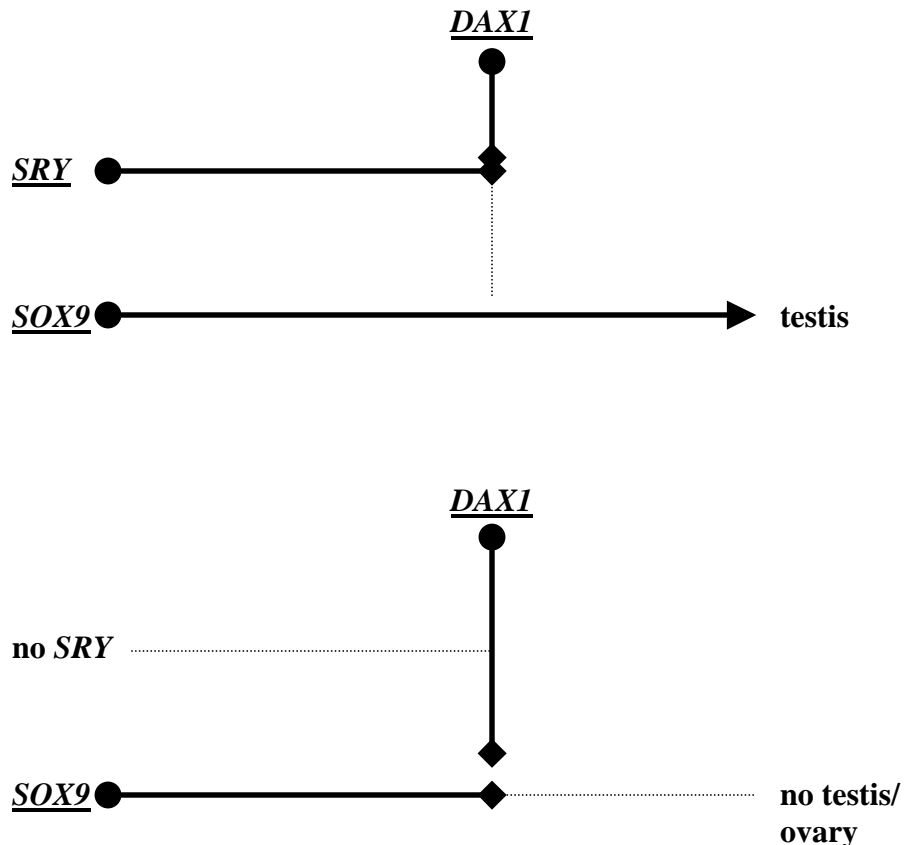
<sup>357</sup> Sadler, *Medical Embryology* at 4-10.

<sup>358</sup> Ken McElreavey, et al, 90 Proceedings of the National Academy of Science at 3369 (cited in note \_\_\_\_).

<sup>359</sup> Id at 3368.

<sup>360</sup> G. Scherer and M. Schmid eds., *Genes and Mechanisms in Vertebrate Sex Determination*, xi (Birkhäuser Verlag 2001).

Current research suggests that the *SRY* gene acts to inhibit the expression of the X-linked *DAX-1* gene.<sup>361</sup> The *DAX-1* gene, in turn, acts to inhibit testis formation<sup>362</sup> governed by expression of the *SOX9* gene located on chromosome 17 in humans.<sup>363</sup> This may be presented graphically as follows.



Interaction of *SRY*, *DAX-1*, and *SOX9* genes in gonadal differentiation.

If *DAX-1* is indeed an “anti-testis” gene, then testis formation will ensue in the absence of *DAX-1* regardless of whether the *SRY* gene is present or absent.

#### F. Genetic Mosaicism and Chimerism

Even more complex development patterns can result if the fetus has a mixed karyotype caused by ***mosaicism*** or ***chimerism***. Mosaicism results from an atypical cell division during the earliest phase of gestation that results in cell lines with two different sets of

<sup>361</sup> Peter N. Goodfellow and Giovanna Cermino, *DAX-1, an ‘antitestis’ gene*, in Scherer and Schmid eds., *Genes and Mechanisms in Vertebrate Sex Determination* at 57.

<sup>362</sup> Id at 63.

<sup>363</sup> Megha Patel, et al, *Primate DAX1, SRY, and SOX9: Evolutionary Stratification of Sex-Determination Pathway*, 68 Am J Human Genetics 275,276 (2001). They continue “*SOX9* is much older evolutionarily than *DAX1* or *SRY*, and may be part of an ancient ‘core’ sex-determination mechanism that predates mammalian radiation and has roles in sex determination and bone development.” (Id.)

chromosomes. Chimerism results when two separate fertilization events take place and cells from one fertilized zygote are incorporated into the body of another. Fine grained blood analysis often reveals mosaicism or chimerism.<sup>364</sup>

Mature egg cells result from two meiotic divisions.<sup>365</sup> Egg cell generation begins when the primary oocyte, typically containing 46 chromosomes, undergoes the first meiotic division. In the first meiotic division

1. homologous chromosomes pair up
2. a copy of each chromosome is created attached to the original copy (each copy is called a **chromatid**).
3. chromatid segments belonging to homologous chromosomes may be exchanged in **crossover**,
4. the homologous chromosome pairs split apart with one set of 23 (2 chromatid) chromosomes generating the secondary oocyte that inherits all of the cytoplasm (other, non-nuclear cell contents) and the other set of 23 (2 chromatid) chromosomes generating the primary polar body, which contains little else.

In the second meiotic division the double-structured chromosomes of the secondary oocyte splits into the mature ovum (which inherits all of the cytoplasm) and the secondary polar body (which does not detach from the ripe ovum before fertilization.) They contain chromosomes identical except for the results of crossovers. Although the secondary polar body consists of little more than 23 chromosomes not passed to the ripe ovum during the second meiotic division it can be fertilized by a sperm cell.

The best understood form of chimerism results from fraternal twin zygotes exchanging blood cells during gestation.<sup>366</sup> As a result, each zygote presents two different fine grained blood types. Two other forms of chimerism have been reported. The first of these forms of chimerism occurs when sperm cells separately fertilize both an egg cell and its attached polar body and the fertilized egg cell incorporates the fertilized polar body. A second type of chimerism occurs when zygotes created from the fertilization of two distinct egg cells fuse, no later than the 8 cell stage, before cellular differentiation begins.

Forty years ago Zuelzer et al<sup>367</sup> reported a striking case of chimerism after a young man offered to be a blood donor in Detroit. He was the child of an African-American mother and a Caucasian father. Initial analysis of his blood showed that some but not all cells exhibited the sickle cell trait common to African-American including his mother. This provided one of the clues that two of his father's sperm cells had fertilized two of his mother's germ cells. His skin colors provided the other clue. Zuelzer et al described his skin color as "a very light café-au-lait color"<sup>368</sup> but approximately 10% of his body

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<sup>364</sup> R.R. Race and Ruth Sanger, *Blood Groups in Man* 511-519 (Blackwell Scientific, 6th ed, 1975).

<sup>365</sup> See Sadler, *Medical Embryology* at 5-6 (cited in note \_\_\_\_ ) for details.

<sup>366</sup> Race and Sanger, *Blood Groups in Man* at 519-530 including a listing of 20 cases at 522-524.

<sup>367</sup> Wolf M. Zuelzer, Kathleen M. Beattie, and Leonard E. Reismann, *Generalized Unbalanced Mosaicism Attributable to Dispermy and Probable Fertilization of a Polar Body*, 16 Am J Human Genetics 38 (1964).

<sup>368</sup> Id at 40.

pigmentation was an appreciably darker brown!<sup>369</sup> Analysis of his skin cells revealed that the lighter skin contained only XY cells. Samples of the darker skin, on the other hand, indicated an XX cell population of approximately 10%. Zuelzer et al reasoned that the 10:1 ratio of genetic types seen in every system analyzed argued strongly in favor of incorporation of a fertilized polar body bereft of cell constituents other than chromosomes and against fusion of two fertilized egg cells.

Zygotic fusion of two fertilized egg cells has been demonstrated experimentally in mice and other species<sup>370</sup> and inferred in one case involving a human being<sup>371</sup> (on whom any such experimentation would be out of the question.) This child had ambiguous genitalia at birth.<sup>372</sup> Five months after birth the child had a 2cm long clitoris. A laparotomy revealed an ovary on the right side and an ovotestis on the left side. It also revealed a 4cm long uterus connected to a normal Fallopian tube on the right side but not connected to the Fallopian tube on the left side.<sup>373</sup> Lymphocyte analysis showed that 89-94% of these cells had a 46,XY karyotype with the remainder being 46,XX.<sup>374</sup> However, analysis of the gonads showed that 1-15% of the cells in the ovary and histologically ovarian portion of the ovotestis “had similar proportions of XY cells (1-15%) as the testicular portion of the left gonad (13%).”<sup>375</sup>

Race and Sanger list 21 cases of genetic chimeras resulting from two fertilization events reported between 1962 and 1974.<sup>376</sup>

There have been at least two reports of the mirror image of zygotic fusion: the development of brother-sister twins from fertilization of a single egg cell by a single sperm cell. In each case fine grained analysis of blood types and other genetic markers displayed complete concordance arguing conclusively for the monozygotic origin of each pair of twins. In the first case<sup>377</sup> the sister exhibited X0 karyotype and typical symptoms of Turner syndrome. Aside from being short (5'5") the brother exhibited sexual characteristics consistent with the XY karyotype discovered throughout his body. In the second case<sup>378</sup> the sister exhibited a mixture of X0 and XY karyotypes and some but not all of the symptoms of Turner syndrome. The brother displayed no female sexual

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<sup>369</sup> Id at 41.

<sup>370</sup> See A. K. Tarkowski, *Mouse Chimaeras Developed from Fused Eggs*, 190 *Nature* 857 (1961).

<sup>371</sup> Albert de la Chapelle, et al, *Early Fusion of Two Human Embryos?*, 38 *Annals of Human Genetics* 63 (1974). Dewald et al, questioned the conclusion that this chimeric individual resulted from the early fusion of two embryos noting that it could also have resulted from two different sperm cells fertilizing an ovum and a first division polar body. See Gordon Dewald, et al, *Origin of chi46,XX.46,XY Chimera in a Human True Hermaphrodite*, 207 *Science* 321,322 (1980).

<sup>372</sup> Id at 64.

<sup>373</sup> Id.

<sup>374</sup> Id at 66.

<sup>375</sup> Id at 73

<sup>376</sup> Race and Sanger, *Blood Groups in Man* at 531-536.

<sup>377</sup> Raymond Turpin, et al, *Présomption de monozygotisme en dépit d'un dimorphisme sexuel: sujet masculin XY et sujet neutre Haplo X.*, 252 *Comptes rendus des séances de l'Académie des sciences* 2945 (8 Mai 1961).

<sup>378</sup> J. H. Edwards, Tessa Dent, and Jacob Kahn, *Monozygotic Twins of Different Sex*, 3 *J Med Genetics* 117 (1966).



characteristics. However, all of his cells analyzed displayed X0 karyotype although the investigators presumed he also had cells with XY karyotypes.

Both of these cases of mosaicism probably resulted from an atypical cell division very soon after a sperm cell carrying a Y chromosome fertilized an egg cell (carrying an X chromosome) followed very soon afterwards by the zygote splitting into two zygotes. In both cases the Y chromosome must have been lost to one descendant cell line while it remained in the other descendant cell line. In the first case the early zygote split so that one of the resulting zygotes received only X0 cells and the other only XY cells. In the second case zygotic splitting resulted in both zygotes getting both X0 and XY cells!<sup>379</sup>

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<sup>379</sup> There have also been cases reported of monozygotic twins in which one has a 45,X0 karyotype and the other has a 46,XX karyotype. See Margareta Mikkelsen, A. Frøland, and J. Ellebjerg, *X0/XX Mosaicism in a Pair of Monozygotic Twins with Different Phenotypes*, 2 Cytogenetics 86 (1963).