

Intersexuality and Universal Marriage

Michael L. Rosin*

I.	INTRODUCTION	52
II.	A BRIEF SURVEY OF THE INTERSEXED IN WESTERN THOUGHT	59
	A. <i>The Ancient World</i>	59
	B. <i>The Physically Intersexed and Western Legal Theory</i>	60
	C. <i>The Intersexed and Western Legal Fact: A 1601 Case from France</i>	61
III.	RECENT CASES DEFINING SEX IN THE CONTEXT OF MARRIAGE AS THE UNION OF ONE MAN AND ONE WOMAN	63
	A. <i>The Essential Role of a Woman in Marriage: Corbett v. Corbett</i>	64
	B. <i>The Introduction of the Psychological Factor: M.T. v. J.T.</i>	66
	C. <i>Texas, Where Men Are Men, Women Are Women, and Only Chromosomes Matter: Littleton v. Prange</i>	68
	D. <i>What Gametes Do You Make? As a Matter of Fact, It's a Matter of Law: In re Estate of Gardiner</i>	71
	E. <i>Neither of the Above—The Law Confronts Physical Intersexuality: In the Marriage of C. & D.</i>	74
IV.	SEXUAL CONSUMMATION AND REPRODUCTION IN TRADITIONAL VIEWS OF MARRIAGE	79
	A. <i>The First American Case Reviewing Evidence of Physical Incapacity</i>	81
	B. <i>The First English-Speaking Case Reviewing Evidence of Physical Incapacity</i>	82
	C. <i>Late Marriage</i>	86

* Michael L. Rosin is a freelance writer and independent scholar. He received an A.B. from the University of Chicago, a M.Sc. (Econ.) from the London School of Economics, and a M.A. from the University of Pittsburgh. Please address all correspondence to mlrosin@att.net. The author would like to thank the staffs of the Seton Hall University Seminary Library, the New Jersey State Library, and the law libraries at Rutgers-Newark and the University of Pennsylvania; the Endocrine Society for making their publications available online; Professor Julie Greenberg for her work in the area of transgender legal issues and for her analogy between sex and race; Professor James Lennox for his tips on reading Aristotle; Professor Katharine Park for her help with Hippocrates; Professor Alice Dreger for her review of the author's historical diagnoses; Sally Gross for help with Maimonides; Cheryl Chase for providing a reference; Deirdre Reilly for being the author's constant muse; and Professors Hadley Arkes and Robert P. George for always making themselves available for discussion and encouraging the author's intellectual endeavors.

D.	<i>Reproductive Complementarity</i>	87
V.	BINARY CLASSIFICATION IN LAW	90
A.	<i>White Versus Nonwhite: Racial Classification in the Context of Immigration</i>	91
B.	<i>White Versus Nonwhite: Racial Classification in the Context of Marriage</i>	93
C.	<i>Justice Ormrod on Sexual Binarism</i>	94
D.	<i>Dr. Ombredanne's Sexual Balance Sheet</i>	97
E.	<i>The Right to Be a Member of One Sex or the Other</i>	100
VI.	CAN THE RIGHT TO MARRY DEPEND ON SEXUAL DISAMBIGUATION SURGERY?	102
A.	<i>W v. W: Sexual Disambiguation Surgery Is Sufficient</i>	102
B.	<i>The Integrity of the Body</i>	104
VII.	CONCLUSION	106
VIII.	APPENDIX—A BRIEF SURVEY OF PHYSICALLY INTERSEXED CONDITIONS.....	113
A.	<i>Preliminaries</i>	113
B.	<i>Paths Along the Branches Leading to Typical Suites of Sexual Characteristics</i>	114
C.	<i>Paths Along Branches Less Often Taken Following Gonadal Differentiation</i>	116
1.	17-Beta-Hydroxysteroid Dehydrogenase-3 Deficiency	116
2.	Androgen Insensitivity Syndrome	118
3.	5-Alpha-Reductase 2 Deficiency	120
4.	Persistent Müllerian Duct Syndrome	122
5.	Congenital Adrenal Hyperplasia	123
6.	Meyer-Rokitansky-Küster-Hauser Syndrome	124
D.	<i>Atypical Chromosomal Combinations</i>	125
1.	Klinefelter Syndrome.....	125
2.	Turner Syndrome.....	126
E.	<i>XX Males and XY Females</i>	127
1.	Background	127
2.	Translocation	128
3.	Life Isn't So Simple	128
F.	<i>Genetic Mosaicism and Chimerism</i>	129
I.	INTRODUCTION	

Imagine the public furor that would erupt if Jake, a young, wounded veteran of the Iraq conflict returned home after an arduous rehabilitation,

intending to marry his high school sweetheart Ashley and was *denied a marriage license because of his 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 veteran. Canon 1084 section 1 of the Roman Catholic Code of Canon Law emphatically states that “[a]ntecedent and perpetual impotence to have intercourse, whether on the part of the man or of the woman, which is either absolute or relative, of its very nature invalidates marriage.”¹ 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 a 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 fifty 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 states “[m]arriage in the United States shall consist only of the union of a man and a woman,” many states are rushing to enact similar amendments with even more speed.² 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?”

1. 1983 CODE c. 1084, § 1.

2. *Federal Marriage Amendment (The Musgrave Amendment): Hearing on H.J. Res. 56 Before the Subcomm. on the Constitution of the House Comm. on the Judiciary, 108th Cong. 7* (2004) (statement of Rep. Marilyn Musgrave (R-CO)).

The Supreme Court has held many times that the right to marry is a fundamental, protected liberty.³ 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!⁴

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 to 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 and twentieth century biomedical discoveries have revealed that variations from the typical developmental paths occur during early embryonic development.⁵ A wide variety of physically intersexed conditions with atypical combinations of sexual characteristics can result.⁶ After surveying the relevant medical literature published between 1955 and 2000, Melanie Blackless and her colleagues estimated that the frequency of individuals receiving “corrective” genital surgery runs between one

3. See, e.g., *Turner v. Safley*, 482 U.S. 78, 95-99 (1987) (protecting the constitutional right of prisoners to marry); *Zablocki v. Redhail*, 434 U.S. 374, 386, 388-91 (1978) (invalidating laws limiting the rights of noncustodial parents to marry); *Loving v. Virginia*, 388 U.S. 1, 12-13 (1967) (declaring the freedom of choice to marry cannot be limited by racial classification); *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942) (protecting marriage as a basic fundamental civil right).

4. See *In the Marriage of C. and D. (Falsely Called C)*, (1979) 35 F.L.R. 340.

5. Isidore Geoffroy Saint Hilaire (1805-1861) explained that hermaphroditism resulted from “an influence exercised directly” on the ovary, testis, and the rest of the genital tract. Alfred Jost, *Problems of Fetal Endocrinology: The Gonadal and Hypophyseal Hormones*, 8 RECENT PROGRESS IN HORMONE RES. 379 (1953) (quoting GEOFFROY SAINT HILAIRE, 2 HISTOIRE GÉNÉRALE ET PARTICULIÈRE DES ANOMALIES DE L'ORGANISATION CHEZ L'HOMME ET LES ANIMAUX 58 (J.-B. Baillière 1832-1837)).

6. See generally Kenneth J. Zucker, *Intersexuality and Gender Identity Differentiation*, 10 ANN. REV. SEX RES. 1 (1999) (reviewing gender identity development of intersexed persons).

and two per 1000 live births.⁷ In contrast, the 2000 Florida vote for President was decided by approximately one vote in 10,000.⁸

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 (such as “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, FEMALE and MALE, for the sake of marriage will fail, just as early twentieth century attempts to define “the white race” to restrict immigration and marriage failed.⁹ 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 childrearing. 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

7. See Melanie Blackless, et al., *How Sexually Dimorphic Are We? Review and Synthesis*, 12 AM. J. HUM. BIOLOGY 151 (2000). As many as 2% of all persons were also estimated to have some variation from the “ideal male or female.” *Id.* at 161.

8. According to the *2000 Official General Election Results* posted by the Federal Election Commission, George W. Bush received 2,912,790 votes, Albert Gore received 2,912,253 votes, and all other candidates received 138,067 votes for a total of 5,963,110 votes counted. See Federal Election Commission, *2000 Official General Election Results*, available at <http://www.fec.gov/pubrec/2000presgenresults.htm> (last visited Feb. 11, 2005). Bush’s total exceeded Gore’s by 537 votes, approximately 1 in 10,000! *See id.*

9. See discussion *infra* Parts V.A, V.B. of *Ozawa v. United States*, 260 U.S. 178 (1922); *United States v. Thind*, 261 U.S. 204 (1923); *Loving v. Virginia*, 388 U.S. 1 (1967).

that infertility, even if it is certain, does not provide grounds for annulment or divorce.¹⁰

Professor Julie Greenberg of Thomas Jefferson School of Law 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.”¹¹ 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*.¹² Instead of talking about the topic of the day as “same-sex marriage,” we should be talking about “*universal marriage*,” the right of any two unmarried (not closely related) adult

10. But 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, e.g.*, *Turney v. Avery*, 113 A. 710, 711 (N.J. Ch. 1921) (declaring sterility resulting from surgery not impotency for legal purposes). However, sterility in and of itself does not provide grounds for annulment. *See, e.g.*, *Jorden v. Jorden*, 93 Ill. App. 633, 636 (1900) (finding a sterile woman not impotent for purposes of a divorce statute); *Larsen v. Larsen*, 88 Pa. Super. 98 (1926) (finding failure to procreate does not prove impotency for purposes of divorce); *Reed v. Reed*, 177 S.W.2d 26 (Tenn. Ct. App. 1943) (requiring a show of incurable impotency at the time of marriage for granting of divorce); *Gibbs v. Gibbs*, 23 So. 2d 382, 383 (Fla. 1945) (denying divorce when wife could copulate but not procreate).

11. Julie A. Greenberg, *Defining Male and Female: Intersexuality and the Collision Between Law and Biology*, 41 ARIZ. L. REV. 265, 270 (1999).

12. Various articles have favorably discussed the marriage rights of transsexual people and the physically intersexed, but other commentators have opposed these marriage rights. *See* Stan Twardy, *Medicolegal Aspects of Transsexualism*, 27 MED. TRIAL TECH. Q. 249 (1980); James J. Graham, *Transsexualism and the Capacity to Enter Marriage*, 41 JURIST 117 (1981); David L. Mundy, Note, *Hitting Below the Belt: Sex-Ploitive Ideology & the Disaggregation of Sex and Gender*, 14 REGENT U. L. REV. 215 (2002). Mundy is the most vociferous, arguing emphatically against “changing the legal definition of sex from *objective* biology to subjective gender identity” out of concern for the subjectivization of sex and its logical effect on society and the law. *Id.* at 217, 234 (emphasis added). Eight times Mundy insists that the law use an *objective definition* of sex, *yet he never presents a biological definition!* *See id.* at 216, 217, 218, 231, 234, 237, 239. He 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 and quotations omitted.)

persons to marry each other and enjoy the legal benefits¹³ (and obligations) of marriage 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 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”¹⁴

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 School of Medicine. 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 Young¹⁵ in the first half of the twentieth century, then his successors the uro-genital surgeons Howard W. Jones, Jr. and William Wallace Scott,¹⁶ and the psychologist John Money.¹⁷

Contemporary bio-medicine recognizes eight sexual characteristics:

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;

13. A partial list of “[t]he benefits accessible only by way of a marriage license [in Massachusetts]” may be found in Chief Justice Margaret Marshall’s majority opinion in *Goodridge v. Department of Public Health*, 798 N.E.2d 941, 955-57 (Mass. 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,” are only granted by the state and cannot be made available to potential marriage partners by each other or a relevant third party such as an employer. *Id.* at 956.

14. H.R. REP. NO. 104-664, at 13 (1996).

15. See HUGH H. YOUNG, *GENITAL ABNORMALITIES: HERMAPHRODITISM & RELATED ADRENAL DISEASES* (1937).

16. See HOWARD W. JONES, JR. & WILLIAM W. SCOTT, *HERMAPHRODITISM, GENITAL ANOMALIES, AND RELATED ENDOCRINE DISORDERS* (2d ed. 1971).

17. Two of his many works include JOHN MONEY & ANKE A. EHRHARDT, *MAN & WOMAN, BOY & GIRL: THE DIFFERENTIATION AND DIMORPHISM OF GENDER IDENTITY FROM CONCEPTION TO MATURITY* (1972), and JOHN MONEY, *SEX ERRORS OF THE BODY AND RELATED SYNDROMES: A GUIDE TO COUNSELING CHILDREN, ADOLESCENTS, AND THEIR FAMILIES* (2d ed. 1994).

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).¹⁸

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

In this Article, I choose to focus on just the first four 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 homosexuality. Certainly, physical characteristics present at birth cannot be the products of the newborn’s emotional experience.

Many of the nineteenth century cases discussed below involved wives who experienced Androgen Insensitivity Syndrome or Meyer-Rokitansky-Küster Syndrome, two particular forms of physical intersexuality.¹⁹ However, none of the parties involved in these cases were aware of their 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 questions of who is a woman and who is a man in the eyes of the law. As the eminent anthropologist Clifford Geertz has commented, “[i]ntersexuality is more than an empirical surprise; it is a cultural challenge”²⁰ and for *culture* we should read *law!*²¹

Part II briefly surveys the intersexed in western thought with special attention to the law. Part III analyzes five 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 analyzes the

18. Greenberg, *supra* note 11, at 278 (citing MONEY, *supra* note 17, at 4).

19. See Appendix for detailed discussion of these conditions.

20. CLIFFORD GEERTZ, LOCAL KNOWLEDGE-FURTHER ESSAYS IN INTERPRETIVE ANTHROPOLOGY 81 (1983).

21. See Terry S. Kogan, *Transsexuals, Intersexuals, and Same-Sex Marriage*, 18 BYU J. PUB. L. 371, 413 (2004) (describing the concept of two sexes as a cultural construct and the resulting difficulty for courts in policing same-sex marriage).

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 twelve 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 and 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.²² Hermaphroditus himself grew to become a splendid example of manhood. In Book IV of his *Metamorphoses*, the Roman poet Ovid (43 B.C.-17 A.D.) tells the story of *Salmacis and Hermaphroditus*.²³ 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”²⁴ sought to extricate himself from her entangling embraces, Salmacis implored:

Oh may the Gods thus keep us ever join'd!
Oh may we never, never part again!²⁵

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.²⁶

22. See GEERTZ, *supra* note 20, at 81.

23. See OVID, *Salmacis and Hermaphroditus*, in *METAMORPHOSES*, Bk. IV, 123 (John Dryden trans., Garland 1976).

24. *Id.* at 125.

25. *Id.* at 126.

26. *Id.*

The school descended from Hippocrates (460-377 B.C.), the father of western medicine, believed that the uterus had seven cells.²⁷ A fetus gestating in one of the three rightmost cells would develop into a male.²⁸ One gestating in one of the three leftmost cells would develop into a female.²⁹ A fetus gestating in the middle cell would develop into a hermaphrodite with female and male genitalia.³⁰ For Hippocrates, hermaphrodites constituted a genuine third sex on a spectrum with male and female at opposite ends.³¹

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.³² 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.³³

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.³⁴

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

27. Galen (131-201) 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 BULL. HIST. MED. 415, 416 (1965); JOAN CADDEN, MEANINGS OF SEX DIFFERENCE IN THE MIDDLE AGES 91, 93 (1993).

28. See G.E.R. LLOYD, SCIENCE, FOLKLORE AND IDEOLOGY: STUDIES IN THE LIFE SCIENCES IN ANCIENT GREECE 176 (1983).

29. See *id.*

30. See Kudlein, *supra* note 27, at 415.

31. See Lorraine Daston & Katharine Park, *The Hermaphrodite and the Orders of Nature: Sexual Ambiguity in Early Modern France*, 1 GLQ: J. GAY & LESBIAN STUD. 419, 421 (1995).

32. See ARISTOTLE, *On the Generation of Animals*, in THE COMPLETE WORKS OF ARISTOTLE 1161, 1184-86 (Arthur Platt trans., Jonathan Barnes ed., 1984) (reproducing lines 765a35-766b8 of Aristotle's original work).

33. See *id.*

34. See *id.* at 1195 (reproducing line 772b15 of Aristotle's original work).

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.”³⁵

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 sexe which doth prevaile. . . . And accordingly it ought be baptized.”³⁶ These are the best known representatives of a tradition supposing that one sex prevails and which goes as far back as Ulpian (Roman, died 228) and includes the Emperor Justinian I (Roman, 483-565) and Azo of Bologna (c. 1150-1230).³⁷

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. Atypical 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, Katharine Park,³⁸ and Thomas Laqueur³⁹ have reported how this reality had the utmost impact for the twenty-year-old Marin le Marcis in a small village near Rouen in Normandy in 1601. Le Marcis was initially christened “Marie,” raised as a girl, and employed as a maidservant.⁴⁰ 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

35. 2 HENRY DE BRACTON, ON THE LAWS AND CUSTOMS OF ENGLAND 31-32 (Samuel E. Thorne trans., 1968) (citations omitted).

36. 1 SIR EDWARD COKE, THE FIRST PART OF THE INSTITUTES OF THE LAWS OF ENGLAND, Bk. 1, ch.1, § 1(8)(a) (Garland 1979) (1832).

37. See 1 JUSTINIAN, THE DIGEST OF JUSTINIAN 16 (Alan Watson ed., Univ. Pa. Press 1985) (“Question: with whom is a hermaphrodite comparable? I rather think each one should be ascribed to that sex which is prevalent in his or her make-up.”); BRACTON, *supra* note 35, at 31-32 n.16-17, 60-62 (quoting AZO, SUMMA INST. 1.5 nos. 4-5); 8 SELDEN SOCIETY, SELECT PASSAGES FROM THE WORKS OF BRACTON AND AZO 60, 62 (Frederic William Maitland ed., 1895).

38. See Lorraine Daston & Katharine Park, *Hermaphrodites in Renaissance France*, 1(5) CRITICAL MATRIX 1 (1985); Daston & Park, *supra* note 31, at 421.

39. THOMAS LAQUEUR, MAKING SEX: BODY AND GENDER FROM THE GREEKS TO FREUD 136 (1990).

40. See *id.*

Jeanne le Fevre.⁴¹ When Marin took Jeanne to meet his parents they asked him how he could possibly support a widow with two children.⁴²

The local French authorities charged Jeanne and Marin with having committed lesbian acts.⁴³ They also charged Marin with “usurping masculine name and dress.”⁴⁴ At the trial in Rouen the medical examiners testified that le Marcis’ external genitalia were feminine.⁴⁵ His master and mistress each testified that le Marcis had had regular menstrual periods.⁴⁶ 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.⁴⁷ 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.⁴⁸ Unfortunately, due to illness and “timidity” he was unable to arouse himself and demonstrate this claim.⁴⁹

The Rouen court delivered a guilty verdict with severe penalties for their unnatural acts. It sentenced Le Marcis to be strangled and then burned.⁵⁰ 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.⁵¹

After the trial, Jacques Duval, one of the medical examiners, decided to try another method of examination.⁵² He inserted his finger into le Marcis’ vulva and found the penis le Marcis had described.⁵³ Duval convinced himself that the organ was a penis and not a clitoris after he rubbed it until a thick masculine semen was ejaculated.⁵⁴ Duval

41. See Daston & Park, *supra* note 38, at 1.

42. See *id.*

43. See *id.*

44. *Id.* at 2.

45. See *id.*

46. See Laqueur, *supra* note 39, at 136.

47. Daston & Park, *supra* note 31, at 429.

48. See Daston & Park, *supra* note 38, at 2.

49. *Id.*

50. See *id.*

51. See *id.*

52. See *id.*

53. See *id.* at 2-3.

54. See *id.* at 2. Le Marcis’ symptoms fit a diagnosis of 5 α -reductase 2 deficiency (see Appendix) 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.

reported this to the courts.⁵⁵ However, the other medical examiners refused to perform such an examination and stood by their diagnosis.⁵⁶

The court lifted its drastic sentences on le Marcis and le Fevre.⁵⁷ 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.⁵⁸ Ten years later le Marcis was seen with a beard, working as a tailor and living as a man.⁵⁹

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 statutory law on the questions of who is a woman and who is a man. Over the past thirty-five years several courts in English speaking jurisdictions have faced just such definitional questions, most often in cases involving postoperative transsexuals. They have reached widely different conclusions. Courts in England, Texas, and Kansas have held that postoperative transsexuals have not changed their sex and, therefore, their marriages to persons of the same anatomical birth sex were null *ab initio*.⁶⁰ On the other hand, courts in New Jersey, New Zealand, Australia, California, and Florida have held that postoperative transsexuals have indeed changed their sex and upheld the validity of their marriages to persons of the sex opposite their new sex.⁶¹

55. See *id.* at 3.

56. See *id.* at 2. 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 & Park, *supra* note 31, at 433 n.31.

57. See Daston & Park, *supra* note 31, at 426.

58. See Daston & Park, *supra* note 38, at 3.

59. See *id.* Le Marcis' medical history appears remarkably similar to that of Moragu, a subject in a study of persons experiencing 5 α -reductase 2 deficiency from Papua New Guinea. See Gilbert H. Herdt & Julian Davidson, *The Sambia "Turim-Man": Sociocultural and Clinical Aspects of Gender Formation in Male Pseudohermaphrodites with 5-Alpha-Reductase Deficiency in Papua New Guinea*, 17 ARCHIVES SEXUAL BEHAV. 33 (1988). Moragu was raised as a female, but around age eighteen "was discovered by his husband to have a penis." See *id.* at 46-48.

60. See *Corbett v. Corbett* (otherwise *Ashley*), [1970] 2 All E.R. 33 (P); *Littleton v. Prange*, 9 S.W.3d 223 (Tex. App. 1999); *In re Estate of Gardiner*, 42 P.3d 120 (Kan. 2002).

61. See *M.T. v. J.T.*, 355 A.2d 204 (N.J. Super. Ct. App. Div. 1976); *Attorney Gen. v. Otahuhu Fam. Ct.*, [1995] 1 N.Z.L.R. 603; Julie Greenberg, *Legal Aspects of Gender Assignment*, 13 ENDOCRINOLOGIST 277, 281 (Jun. 2003) (discussing unreported case of *Vecchione v. Vecchione*, Civ. No. 96D003769 (Cal. App. Dep't Sup. Ct. 1997)), available at

A. *The Essential Role of a Woman in Marriage: Corbett v. Corbett*

The 1970 English case, *Corbett v. Corbett*, is the first marital case that called into question the sex of one of the parties in the eyes of the law.⁶² *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 1963.⁶³ Arthur was forty-three, and April was twenty-eight.⁶⁴ April, born George Jamieson, had sex reassignment surgery in 1960.⁶⁵ Arthur and April lived together for no more than fourteen days.⁶⁶ Arthur sued for a decree of nullity on the grounds that April was a man and not a woman.⁶⁷ Arthur also asserted that the marriage had never been consummated.⁶⁸ April countersued asserting that they had attempted consummation but that Arthur had not completed the sexual act due to incapacity or willful refusal.⁶⁹

Justice Ormrod decided the case by posing the question whether April “[was] or [was] not a woman” following surgery.⁷⁰ 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.

<http://www.isna.org/pdf/greenberg2003.pdf>; *In re Kevin* (Validity of Marriage of Transsexual), (2001) 28 Fam. L.R. 158, *aff'd*, (2003) 30 Fam. L.R. 1; *Kantaras v. Kantaras*, No. 98-5375CA (Fla. Cir. Ct. 2002), *rev'd* 884 So. 2d 155 (Fla. Dist. Ct. App. 2004). These last five cases all involved postoperative spouses who entered into marriage with someone of the sex opposite their postoperative identity.

In the four reported cases, the courts realized that not recognizing the new sex of postoperative transsexuals would leave these individuals in a position to marry someone of the opposite sex, thereby giving the public impression of a legal same-sex marriage! *See M.T.*, 355 A.2d at 208; *Attorney Gen.*, [1995] 1 N.Z.L.R. at 607; *In re Kevin*, (2001) 28 Fam. L.R. at 304; *Kantaras*, No. 98-5375CA, at 749. A thorough discussion of the cases just mentioned can be found in Kogan, *supra* note 21, at 386-402.

62. [1970] 2 All E.R. 33, 47 (P).

63. *See id.* at 34.

64. *See id.* at 34-35, 37.

65. *See id.* at 35-36.

66. *See id.* at 39.

67. *See id.* at 34.

68. *See id.*

69. *See id.* at 35.

70. *Id.* at 48.

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).⁷¹

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.⁷²

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" and relevant but not essential to other areas of the law such as employment law and national insurance.⁷³ 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.*"⁷⁴ 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., psychological factors] 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, ie 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.⁷⁵

71. *Id.* at 44.

72. *Id.* at 47.

73. *Id.* at 48.

74. *Id.* (emphasis added).

75. *Id.* (emphasis added).

There can be little doubt what Justice Ormrod meant by “performing the essential role of a woman in marriage.”⁷⁶ 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.⁷⁷

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.⁷⁸

B. *The Introduction of the Psychological Factor: M.T. v. J.T.*

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.”⁷⁹ In this New Jersey case, the husband (J.T.) paid for his wife’s (M.T.) sex reassignment surgery prior to their marriage.⁸⁰ After two years of living as husband and wife and having intercourse, he decided that he wanted no more of the marriage and walked out on her.⁸¹

76. *Id.*

77. In the case of *S v. S (otherwise W)*, 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). See [1962] 3 All E.R. 55, 59-64 (C.A.). 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. See *Corbett*, [1970] 2 All E.R. at 49.

78. See *Corbett*, [1970] 2 All E.R. at 48-49.

79. *M.T. v. J.T.*, 355 A.2d 204, 205 (N.J. Super. Ct. App. Div. 1976).

80. See *id.*

81. See *id.*

When she sued for support he responded that she was a man, thereby making their marriage void.⁸²

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?”⁸³ The judge denied the husband’s petition for an annulment, and an appellate court affirmed the decision.⁸⁴

Judge Handler’s appellate court opinion in *M.T. v. J.T.* 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.”⁸⁵

For Judge Handler, *feeling* like a woman plays an important legal role in being a woman and a wife: “[s]exual 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.”⁸⁶ He concluded that: “[p]laintiff 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.”⁸⁷

Statutory law in twenty-three states and the District of Columbia specifically allows postoperative transsexuals to change their birth certificates.⁸⁸

82. *See id.*

83. *Id.* at 207.

84. *See id.* at 211.

85. *Id.* at 209 (citations omitted).

86. *Id.*

87. *Id.* at 211.

88. *See* ALA. CODE § 22-9A-19(d) (2004); ARIZ. REV. STAT. § 36-326(A)(4) (2004); ARK. CODE ANN. § 20-18-307(d) (Michie 2004); CAL. HEALTH & SAFETY CODE § 103425 (West 2004); COLO. REV. STAT. § 25-2-115(4) (2004); CONN. GEN. STAT. ANN. § 19a-42(a) (West 2004); D.C. CODE ANN. § 7-217(d) (2004); GA. CODE ANN. § 31-10-23(e) (2004); HAW. REV. STAT. ANN.

C. *Texas, Where Men Are Men, Women Are Women, and Only Chromosomes Matter: Littleton v. Prange*

Texas and Kansas are not among them. Courts in these states have held that postoperative transsexuals have not changed their sex and, therefore, their marriages to persons of the same anatomical birth sex were void *ab initio*.⁸⁹

Christie Lee Cavazos married Jonathan Littleton in 1989.⁹⁰ After Jonathan died in 1996, Christie brought a wrongful death suit against a Dr. Prange.⁹¹ 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.⁹² 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.⁹³ As someone unrelated to Jonathan, Christie would have no standing to sue.⁹⁴

In a two-to-one decision, the Fourth Texas Court of Appeals upheld a trial court ruling that invalidated the Littletons' marriage.⁹⁵ 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 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

§ 338-17.7(a)(4)(B) (Michie 2004); KY. REV. STAT. ANN. § 213.121(5) (Banks-Baldwin 2004); LA. REV. STAT. ANN. § 40.62(A),(C) (West 2004); MD. CODE ANN., [HEALTH-GEN. I] § 4-214(b)(5) (2004); MASS. ANN. LAWS ch. 46, § 13(e) (Law. Co-op. 2004); MICH. COMP. LAWS § 333.2831(c) (2004); MO. REV. STAT. § 193.215(9) (2004); NEB. REV. STAT. § 71-604.01 (2004); N.J. STAT. ANN. § 26:8-40.12 (West 2004); N.M. STAT. ANN. § 24-14-25(D) (Michie 2004); N.C. GEN. STAT. § 130A-118(b)(4) (2004); OR. REV. STAT. § 432.235(4) (2004); UTAH CODE ANN. § 26-2-11(1) (2004); VA. CODE ANN. § 32.1-269(E) (Michie 2004); WIS. STAT. ANN. § 69.15(4)(b) (West 2004). Tennessee is the only state that expressly forbids changing sex on a birth certificate. *See* TENN. CODE ANN. § 68-3-203(d) (2004).

89. *See Littleton v. Prange*, 9 S.W.3d 223, 231 (Tex. App. 1999); *In re Estate of Gardiner*, 42 P.3d 120, 136-37 (Kan. 2002).

90. *See Littleton*, 9 S.W.3d at 225.

91. *See id.*

92. *See id.*

93. *See id.*

94. *See id.*

95. *See id.* at 231.

counseling, or is a person's gender immutably fixed by our Creator at birth?⁹⁶

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?⁹⁷

In her brief dissent Justice Alma López noted that "neither federal nor state law defines how a person's gender is to be determined."⁹⁸ 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 "[i]n our system of government it is for the legislature, should it choose to do so, to determine what guidelines should govern the recognition of marriages involving transsexuals."⁹⁹

In spite of a long legal tradition presuming the validity of marriages not clearly prohibited by law,¹⁰⁰ Chief Justice Hardberger proceeded to provide just such a set of guidelines. He rejected the notion that Christie could change her complement of sexual organs from male to female.¹⁰¹

At most, Christie could have her male organs removed and an artificial vagina created. Seeking some constant factor underlying the change, Chief Justice Hardberger opined "[t]he male chromosomes do not change with either hormonal treatment or sex reassignment surgery. Biologically a post-operative female is still a male."¹⁰²

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.¹⁰³

96. *Id.* at 223-24.

97. *Id.* at 225.

98. *Id.* at 232 (López, J., dissenting).

99. *Id.* at 230.

100. *See Mazzolini v. Mazzolini*, 155 N.E.2d 206, 208 (Ohio 1958) (noting that the policy of the law is to sustain marriages, where they are not incestuous, polygamous, shocking to good morals, or against public policy).

101. *See Littleton*, 9 S.W.3d at 230.

102. *Id.*

103. The court would do well to pay attention to the case of a child born in the Dallas area in early 2002. According to a recent article in a medical journal:

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

In any 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 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."¹⁰⁴

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!

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 [urethral 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 & Linda A. Baker, *True Hermaphroditism*, 350 NEW ENG. J. MED. 393, 393 (2004).

Doctors Karam and Baker are on the staff of the University of Texas Southwestern Medical Center at Dallas. *See id.* This child has to live with the rulings of Texas courts.

104. *Littleton*, 9 S.W.3d at 231.

D. What Gametes Do You Make? As a Matter of Fact, It's a Matter of Law: In re Estate of Gardiner

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."¹⁰⁵

J'Noel Gardiner was born in Wisconsin as Jay N. Ball with a male body.¹⁰⁶ 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 law.¹⁰⁷ In May 1998, J'Noel met Marshall Gardiner, a well-to-do Kansan, who had a son from a previous marriage.¹⁰⁸ J'Noel and Marshall married in Kansas in September 1998.¹⁰⁹ A year later Marshall died without a will, leaving a sizeable estate.¹¹⁰

Marshall's son, Joe, went to court to have himself declared the sole heir and administrator of his father's estate.¹¹¹ 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.¹¹² Joe's attorneys asserted that J'Noel was still a man.¹¹³ 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.¹¹⁴ J'Noel appealed.

The appeals court rejected the lower court's reliance on the coarse-grained, chromosomes-only approach of *Littleton*.¹¹⁵ 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

105. KAN. STAT. ANN. § 23-101 (2000), *quoted in In re Estate of Gardiner*, 22 P.3d 1086, 1092 (Kan. Ct. App. 2001).

106. *See Gardiner*, 22 P.3d at 1091.

107. *See id.* (citing WIS. STAT. § 69.15(4)(b) (2001)).

108. *See id.*

109. *See id.*

110. *See id.* at 1090.

111. *See id.*

112. *See id.*

113. *See id.*

114. *See id.* at 1090, 1105.

115. *See id.* at 1110.

system, on the one hand, and the medical and scientific communities, on the other.¹¹⁶

The opinion excerpted fourteen pages from Professor Greenberg's 1999 article outlining the wide variety of atypical combinations of sexual characteristics and how they can arise.¹¹⁷ 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.¹¹⁸ It ordered the trial court to employ at least all of the eight factors listed by Professor Greenberg.¹¹⁹ 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."¹²⁰

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?*"¹²¹

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 prior cases, the Kansas Supreme Court opined:

[T]he 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.*¹²²

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.¹²³

116. *Id.* at 1090.

117. *See id.* at 1094 (citing Greenberg, *supra* note 11).

118. *See id.* at 1110.

119. *See id.*

120. *Id.* at 1092.

121. *Id.* at 1094 (emphasis added).

122. *In re Estate of Gardiner*, 42 P.3d 120, 132-33 (Kan. 2002) (emphasis added).

123. *See id.* at 136.

In so doing, it adhered to longstanding legal precedent that words in statutes should be given their ordinary and everyday interpretation unless specifically otherwise defined.

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 1970.¹²⁴ The court wrote:

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* (2d 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 offspring: opposed to female.” “Female” is defined as “designating or of the sex that produces ova and bears offspring: opposed to male.”¹²⁵

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.¹²⁶

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.”¹²⁷

124. *See id.* at 135.

125. *Id.*

126. *Id.* (emphasis added).

127. *Id.* at 137.

*E. Neither of the Above—The Law Confronts Physical Intersexuality:
In the Marriage of C. & D.*

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.)¹²⁸

In the current political and moral climate, many opponents of universal marriage describe same-sex attraction as “intrinsicly disordered.”¹²⁹ One can only wonder what views they have on transsexuals. Indeed, in the first American case dealing with a transsexual, *Anonymous v. Weiner*, a New York judge refused to change the sex on a transsexual’s birth certificate citing the advice of the Committee on Public Health of the New York Academy of Medicine: “[I]t 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.”¹³⁰

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.¹³¹

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.

128. See Anne Bolin, *Transcending and Transgendering: Male-to-Female Transsexuals, Dichotomy and Diversity in THIRD SEX, THIRD GENDER: BEYOND SEXUAL DIMORPHISM IN CULTURE AND HISTORY* 447, 454 (Gilbert Herdt ed., 1994); Leonard H. Clemmensen, *The “Real-Life Test” for Surgical Candidates in CLINICAL MANAGEMENT OF GENDER IDENTITY DISORDERS IN CHILDREN AND ADULTS* 121, 124 (Ray Blanchard & Betty W. Steiner eds., 1990).

129. Letter from Congregation for the Doctrine of the Faith, to the Bishops of the Catholic Church on the Pastoral Care of Homosexual Persons (Oct. 1, 1986) § 3, *available at* http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19861001_homosexual-persons_en.html (last visited Feb. 18, 2005) (“[T]he inclination itself must be seen as an objective disorder.”).

130. *Anonymous v. Weiner*, 270 N.Y.S.2d 319, 322 (1966) (emphasis added).

131. See Graham, *supra* note 12. “To put it plainly, transsexualism constitutes a perpetual *obex* [impediment] to marriage because it is a radical, serious and incurable psychological disorder.” *Id.* at 141. See also Paul McHugh, *Surgical Sex*, 147 *FIRST THINGS* 34 (2004), *available at* <http://www.firstthings.com/ftissues/ft0411/articles/mchugh.htm> (last visited Dec. 24, 2004) (describing sex-change operations as misguided attempts to cure severe psychiatric problems with surgery).

We have seen that

- In *Corbett v. Corbett*, an English court held that a post-operative male-to-female transsexual is not a woman; therefore, she cannot marry a man.¹³² The court left unresolved the question of marriage to a woman.
- In *M.T. v. J.T.*, a New Jersey court held that a post-operative male-to-female transsexual is a woman.¹³³ 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.¹³⁴ In Texas, this is so because she still has XY chromosomes and in Kansas because of the gonads she used to have and the ones she never had. Therefore, marriage to a woman is allowed but not marriage to a man.

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 *In the Marriage of C. and D. (Falsely Called C.)* that a marriage between a physically intersexed husband and his wife was void *ab initio* since the husband was not a man.¹³⁵ By a stroke of good fortune his medical history had been published in 1966.¹³⁶

At his 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 sixteen years old.¹³⁷ When he reached age sixteen he had become accustomed to his genital details and did not seek surgery.¹³⁸ 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."¹³⁹ The gonad on the left side of his scrotum had always been apparent.¹⁴⁰ A laparotomy revealed a Fallopian tube and a "right-sided gonad" on the right side but not the left side of his

132. See [1970] 2 All E.R. 33, 34 (P).

133. See 355 A.2d 204, 210-11 (N.J. Super. Ct. App. Div. 1976).

134. See *Littleton v. Prange*, 9 S.W.3d 223, 231 (Tex. App. 1999); *In re Estate of Gardiner*, 42 P.3d 120, 136-37 (Kan. 2002).

135. See (1979) 35 FL.R. 340.

136. See Kenneth Fraser et al., *Hermaphroditus Verus, with Report of a Case*, 1 MED. J. AUSTL. 1003 (1966).

137. *Id.* at 1004.

138. See *id.*

139. *Id.*

140. See *id.*

body.¹⁴¹ The examination also revealed a two-inch-long uterus.¹⁴² The periodic bleeding stopped after removal of the Fallopian tube and gonad.¹⁴³

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.¹⁴⁴ Within two years “he became enamoured of an attractive girl” and sought surgery to have his external genitals made “reasonably normal.”¹⁴⁵

The medical team analyzed the gonad that had been removed three years earlier and found that it was neither an ovary nor a testis but a true ovo-testis.¹⁴⁶ “Intimately associated with these ovarian structures . . . were testicular components.”¹⁴⁷ They did not analyze the remaining gonad on the left side of the scrotum.¹⁴⁸ Analysis of six hormones usually correlated with sex were inconclusive.¹⁴⁹ 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.¹⁵⁰ Only the chromosome tests were unambiguous.¹⁵¹ All twenty cells examined in detail showed an XX chromosomal pattern “indistinguishable from that of a normal female.”¹⁵²

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.¹⁵³

141. *Id.*

142. *See id.*

143. *See id.*

144. *Id.*

145. *Id.*

146. *See id.* at 1004-05.

147. *Id.* at 1005.

148. *See id.*

149. *See id.* at 1006.

150. *See id.*

151. *See id.* at 1005.

152. *Id.*

153. *Id.* at 1006.

The medical team performed surgeries in 1964-1965 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."¹⁵⁴ *C.* married *D.* in February 1967.¹⁵⁵ They did not live happily ever after.

They had two children by the time they separated in 1978.¹⁵⁶ During the legal proceedings in front of Justice Bell, the husband did not dispute that they had not sexually consummated their marriage.

Citing the relevant Australian statute, Justice Bell noted that the consent of the parties was not a real consent because "*that party is mistaken as to the identity of the other party, or as to the nature of the ceremony performed.*"¹⁵⁷ 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.¹⁵⁸

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.

Finding "a further fatal argument to the existence of *any marriage*," Justice Bell did not stop there.¹⁵⁹ He suggested without citations that "[s]ubsequent medical practice appears to cast some doubts upon this [i.e., the medical procedures undertaken a decade earlier]."¹⁶⁰ 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"¹⁶¹ 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:

[I]n section 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

154. *Id.*

155. *See* In the Marriage of *C. and D. (Falsely Called C.)*, (1979) 35 F.L.R. 340, 341.

156. *See id.* One child was adopted and the other was legally, but not biologically his. *See id.*

157. *Id.* at 344.

158. *Id.*

159. *Id.* (emphasis added).

160. *Id.* at 345.

161. *Id.* at 344.

woman to the exclusion of all others” . . . *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 does not exist.*¹⁶²

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 have sexual relations with anyone and, presumably, remarry.¹⁶³

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 Fourteenth 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.¹⁶⁴ The United States Supreme Court wrote in *Planned Parenthood of Southeastern Pennsylvania v. Casey*: “*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.*”¹⁶⁵

The decision in *C. and D.* highlights the fact that the proposed Federal Marriage Amendment guarantees no universal right to anyone. The proposed amendment 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 proposed Federal Marriage Amendment, *C.* 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.

162. *Id.* at 345 (emphasis added).

163. See Daston & Park, *supra* note 38, at 3.

164. See *Trimble v. Gordon*, 430 U.S. 762, 763-76 (1977) (invalidating an Illinois law denying illegitimate children the right to intestate succession from their fathers); *Gomez v. Perez*, 409 U.S. 535, 538 (1973) (per curiam) (invalidating a Texas law denying illegitimate children the same right to support from their natural father as is enjoyed by legitimate children); *Weber v. Aetna Cas. & Sur. Co.*, 406 U.S. 164, 165, 175-76 (1972) (invalidating a Louisiana law denying illegitimate children the same rights to workmen’s compensation as legitimate children); *Levy v. Louisiana*, 391 U.S. 68, 69-70, 75-76 (1968) (invalidating a Louisiana law denying illegitimate children the right to sue for the wrongful death of their mother).

165. 505 U.S. 833, 894 (1992) (emphasis added).

IV. SEXUAL CONSUMMATION AND REPRODUCTION IN TRADITIONAL VIEWS OF MARRIAGE

Robert P. George, the McCormick Professor of Jurisprudence at Princeton University, and Gerard V. Bradley, Professor of Law at Notre Dame, 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. . . . 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.¹⁶⁶

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.¹⁶⁷ 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 conflict in Iraq who had his penis and testicles blown away after stepping on a landmine.

George and Bradley 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 stating that a valid marriage required:

166. Robert P. George & Gerard V. Bradley, *Marriage and the Liberal Imagination*, 84 GEO. L.J. 301, 307-08 (1995) (quoting 4 AM. JUR. 2D, *Annulment of Marriage* § 30 (1962)) (other citations omitted).

167. *See id.*

“(1) Parties able to contract; (2) An actual contract; and (3) Consummation according to law.”¹⁶⁸ The phrase “consummation according to law” may appear to refer to sexual consummation, but in fact it does not.¹⁶⁹ According to the Georgia Supreme Court, “[s]exual intercourse is not essential to the consummation of a valid marriage.”¹⁷⁰ In Georgia, “consummation according to law” means cohabitation as man and wife.¹⁷¹

For over a century and a half the relevant standard in Georgia¹⁷² and elsewhere has been that a marriage can be annulled if the following three conditions all hold:

- (1) It has not been sexually consummated,
- (2) due to a physical incapacity of one of the spouses at the time of the marriage,
- (3) the incapacity is incurable.¹⁷³

As of this writing, eleven states¹⁷⁴ 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.¹⁷⁵ In these states the

168. *Id.* at 307 n.23 (citing GA. CODE ANN. § 19-2-1 (1991)). This language dates back to the Georgia Code of 1863. *See* Lefkoff v. Sicro, 6 S.E.2d 687, 695 (Ga. 1939).

169. This choice of words *is* confusing. Reading further in the Georgia Code clarifies the matter a bit. “The form for application for marriage licenses shall be designed and printed in such a manner that applicants therefor [sic] 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) (2004) (emphasis added). Surely wives in Georgia 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!

170. Long v. Long, 13 S.E.2d 349, 350 (Ga. 1941). *See also* Franklin v. Franklin, 28 N.E. 681, 682 (Mass. 1891) (noting that the “consummation of a marriage by coition is not necessary to its validity”).

171. *See* Brown v. Brown, 215 S.E.2d 671, 672-73 (Ga. 1975).

172. *See* Askew v. Dupree, 1860 WL 2119, at *5 (Ga.) (“[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.”).

173. 52 AM. JUR. 2D *Annulment of Marriage* § 25 (2003).

174. *See* COLO. REV. STAT. § 14-10-111(1)(b) (2004); DEL. CODE ANN. tit. 13, § 1506(a)(2) (2004); 750 ILL. COMP. STAT. 5/301(2) (West 2004); KY. REV. STAT. ANN. § 403.120(1)(b) (Banks-Baldwin 2004); MINN. STAT. ANN. § 518.02(b) (West 2004); MONT. CODE ANN. § 40-1-402(1)(b) (2004); N.J. STAT. ANN. § 2A:34-1(c) (West 2004); 23 PA. CONS. STAT. ANN. § 3305(a)4 (2004); TEX. FAM. CODE ANN. § 6.106 (2004); WIS. STAT. ANN. § 767.03(2) (West 2004); W.VA. CODE ANN. § 48-3-105 (Michie 2004).

Delaware’s statute dates back to 1907. *See* S. v. S., 29 A.2d 325, 326 (Del. Super. Ct. 1942) (citing the 1907 Act now codified at DEL. CODE ANN. tit. 13, § 1506(a)(2) (2004)).

175. 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 1726:

The Husband may pray a Separation of Matrimony on the Account of a Matrimonial Impediment, tho’ [s]uch Impediment proceeds and ari[s]es from him[s]elf; as from his own Impotency and Frigidity: *But if he knowingly marries a Woman that cannot*

wife of our wounded 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 eleven states the marriage contract between this couple certainly does not include an implied commitment to reproductive sex acts. *In these eleven states marriage is certainly not about sexual activity that is reproductive in kind!*

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

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

Bradley and George cite *J.G. v. H.G.*, a Maryland case from 1870, to bolster their argument.¹⁷⁶ This is the first American case to review evidence presented for physical incapacity.¹⁷⁷ J.G., the husband, was forty-nine years old when he married H.G., who was twenty-eight years old.¹⁷⁸ Within three months of their wedding they separated, having been unable to consummate their marriage due to a physical impediment of hers.¹⁷⁹ At that time, Maryland law allowed for an annulment in case of “[t]he impotence of either party at the time of the marriage.”¹⁸⁰

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

[T]he 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

render him his Due, he is (notwith[s]tanding) bound to maintain her, and [s]hall not be divorced from her; for he ought to impute it to him[s]elf.

JOHN AYLIFFE, PARERGON JURIS CANONICI ANGLICANI 230 (D. Leach 1726) (emphasis added).

176. See George & Bradley, *supra* note 166, at 309 n.27 (citing *J.G. v. H.G.*, 33 Md. 401 (1870)).

177. See *J.G.*, 33 Md. at 404-05. This case cites two prior New York Chancery cases (*Devanbagh v. Devanbagh*, 5 Paige Ch. 554 (N.Y. Ch. 1836) and *Newell v. Newell*, 9 Paige Ch. 25 (N.Y. Ch. 1841)) that established the rule that medical practitioners must present testimony on physical incapacity before an annulment can be granted. However, in an earlier case, the Ohio Supreme Court granted a divorce in the case of a husband lacking a penis without more than a cursory statement of the evidence. See *Keith v. Keith*, 1 Ohio St. 518 (1834).

178. See *J.G.*, 33 Md. at 404.

179. See *id.*

180. *Id.* at 403.

females of mature age are subject; and was without the natural passion or desire incident to woman.¹⁸¹

Based on these findings, he 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 and incurable*, the case comes within the legal definition of impotence, and is cause for nullity of marriage.¹⁸²

Chief Justice Bartol cited the 1845 English case of *Deane v. Aveling* to support his reading of the law.¹⁸³

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

Deane v. Aveling is truly the first case to make a careful review of evidence of physical incapacity.¹⁸⁴ Thomas Deane was twenty-six when he married the twenty-five-year-old Maria Aveling in 1842.¹⁸⁵ By 1844, they were in litigation. He sued for an annulment on the grounds of non-consummation due to physical incapacity.¹⁸⁶ Judge 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.* (both possibly conditions of Meyer-Rokitansky-Küster Syndrome but more likely Complete Androgen Insensitivity

181. *Id.* at 405. 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).

182. *Id.* at 405-06 (some emphasis added).

183. *See id.* at 406.

184. D-e v. A-g (falsely calling herself D-e), [1845] 163 Eng. Rep. 1039 (Consistory Ct. of London).

185. *See id.*

186. *See id.*

Syndrome).¹⁸⁷ Maria Aveling had a short vagina and no uterus.¹⁸⁸ None of the medical examiners commented on the existence of ovaries (or testes).¹⁸⁹ Some of their testimony is worth reproducing.

Doctor Golding Bird testified:

[S]he is capable of having connexion with and being carnally known by man, meaning thereby that although there is a total absence of the uterus, and a malformation of the vagina, . . . still a very small portion of the penis can be undoubtedly introduced, and connexion by that means takes 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.*¹⁹⁰

Doctor John C.W. Lever made similar comments and then closed with a remark about the prospects for surgery: “[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.”¹⁹¹

The third medical examiner, Doctor Lawson Cape, 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.¹⁹²

187. Dr. Bird reported that Maria “had the appearance rather of a girl not having attained puberty than as an adult.” *Id.* at 1041. I interpret this to mean that she had little or no pubic or axillary hair, which normally develops at the onset of puberty in response to androgen. The presence or absence of this hair 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).

188. *See id.* at 1041.

189. *See id.* Dr. Bird testified that there “was decidedly a natural malformation of the parts,” but admitted to giving only a cursory examination. *See id.*

190. *Id.* at 1042 (emphasis added).

191. *Id.* (emphasis added).

192. *Id.* at 1046.

In summary, Dr. Bird and Dr. Lever were sure that Maria Aveling could be sexually gratified but were unsure that her husband could be.¹⁹³ Dr. Cape suggested that he could be if he ejaculated outside her vagina.¹⁹⁴

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.¹⁹⁵

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

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.¹⁹⁶

Thus *procreation, although an end of marriage, is not required of marriage, nor is 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,¹⁹⁷
- prolonged penetration without seminal emission sexually consummates a marriage,¹⁹⁸ and
- actual or possible surgical enlargement of a vagina (similar to Maria Aveling's) precludes annulment for physical incapacity.¹⁹⁹

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."²⁰⁰

193. *See id.* at 1041-43.

194. *See id.* at 1043.

195. *Id.* at 1045 (emphasis added).

196. *Id.* (emphasis added).

197. *See* Baxter v. Baxter, [1947] 2 All E.R. 886 (overruling Cowen v. Cowen, [1945] 2 All E.R. 197).

198. *See* R. v. R. (otherwise F.), [1952] 1 All E.R. 1194. *Contra* Miller v. Miller [1947] Ont. Rep. 213.

199. *See* S. v. S. (otherwise W.), [1962] 3 All E.R. 55 (disapproving D. v. D. [1954] 2 All E.R. 598).

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 with 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.²⁰¹

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 a case where a wife brought a complaint.²⁰²

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.²⁰³

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.”²⁰⁴ Lushington clearly had in mind the 1828 case of *Brown v. Brown* in which a fifty-two-year-old newlywed

200. *D-e v. A-g* (falsely calling herself *D-e*), [1845] 163 Eng. Rep. 1039, 1045 (Consistory Ct. of London).

201. *Id.* at 1045-46 (emphasis added).

202. In 1863, an English wife sought an annulment because of her husband’s impotence “caused by a long-continued habit of self-abuse” and she lost. *S-* (falsely called *E-*) *v. E-*, [1863] 164 Eng. Rep. 1266. The court held that the husband’s impotence “might possibly, but not probably, be cured; the questions being one of moral restraint.” *Id.*

203. *D-e*, [1845] 163 Eng. Rep. at 1045.

204. *Id.* (emphasis added).

wife simply declined to have conjugal relations with her sixty-year-old newlywed husband.²⁰⁵ The husband sued for an annulment on grounds of nonconsummation.²⁰⁶ The judge in that case, Sir John 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].”²⁰⁷ For Lushington it was dispositive 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-)* in which a forty-nine-year-old woman with a physical impediment married a fifty-four-year-old man.²⁰⁸ The wife’s barrister presented Nicholl’s *tanquam soror* dictum, however, the presiding judge was not persuaded.²⁰⁹ He pointed out that in *Deane v. Aveling* Lushington “says nothing of any limit to the age at which the right to complain ceases.”²¹⁰ The judge granted the annulment requested, citing the fact that the wife’s condition, though curable, had not in fact been cured by surgery especially dangerous to a forty-nine-year-old.²¹¹

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 and still do all the time. Can anyone expect eighty-three-year-old and seventy-nine-year-old newlyweds to have an active sex life? I do not. If that is the case, then why does it matter if the newlyweds are members of opposite sexes or the same sex?²¹²

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

205. See [1828] 162 Eng. Rep. 665, 666 (Arches Ct.).

206. See *id.*

207. *Id.*

208. See 164 Eng. Rep. 987, 988-89 (Sw. & Tr. 1861).

209. See *id.* at 989.

210. *Id.*

211. See *id.*

212. One of the lesbian couples married in San Francisco in February 2004 consisted of an eighty-three-year-old and a seventy-nine-year-old. See Jia-Rui Chong, *Lifelong Partners, Activists Wed at Last*, L.A. TIMES, Feb. 13, 2004, at A29.

marriages to take place *only* on the condition that there can be no children conceived!²¹³ None of these states is Massachusetts! Somewhat more than half of the fifty states prohibit the marriage of first cousins.²¹⁴ However, Arizona, Illinois, and Wisconsin allow first cousins of childbearing age to marry only if one of the parties is permanently sterile.²¹⁵ On the other hand, none of these states prohibit such first cousin couples from starting a family by adopting a child.²¹⁶

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 because 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*, the Reverend Professor Oliver O'Donovan, currently Regius Professor of Moral and Pastoral Theology at Oxford University and Canon of Christ Church College, employed the “necessarily, rather than contingently”-incapable-of-conception argument when considering whether a postoperative transsexual could enter into a *Christian* marriage.²¹⁷ 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

213. See ARIZ. REV. STAT. ANN. § 25-101-B (West 2004); 750 ILL. COMP. STAT. ANN. § 5/212(a)(4)(ii) (West 2004); WIS. STAT. ANN. § 765.03(1).

214. See for example ARIZ. REV. STAT. ANN. § 25-101-(A) (West 2004); 750 ILL. COMP. STAT. ANN. § 5/212(a)(4) (West 2004); IND. CODE ANN. § 31-11-1-2 (Michie 2004); UTAH CODE ANN. § 30-1-1(1)(e) (2004); and WIS. STAT. ANN. § 765.03(1) (West 2004).

215. See ARIZ. REV. STAT. ANN. § 25-101-B (West 2004); 750 ILL. COMP. STAT. ANN. § 5/212(a)(4)(ii) (West 2004); WIS. STAT. ANN. § 765.03(1) (West 2004). Arizona allows first cousins to marry if they are at least age 65; Illinois age 50; and Wisconsin age 55. See *id.* In addition, Indiana and Utah have an exception for first cousins in case both are at least age 65. See IND. CODE ANN. § 31-11-1-2 (Michie 2004); UTAH CODE ANN. § 30-1-1(2)(a) (2004). Utah has an exception in case both first cousins have reached age 55 and one is permanently sterile. See § 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.

216. See ARIZ. REV. STAT. ANN. § 8-103 (West 2004); 750 ILL. COMP. STAT. ANN. § 50/2(a) (West 2004); WIS. STAT. ANN. § 48.82(1)(b) (West 2004).

217. Oliver O'Donovan, *Transsexualism and Christian Marriage*, 11 J. RELIGIOUS ETHICS 135, 141 (1983).

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 only between members of the opposite sex, between “this man and this woman.”²¹⁸

Rev. O’Donovan answers his second question affirmatively as follows, “[F]irst, 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.”²¹⁹

Rev. O’Donovan touches on the physically intersexed throughout his article.²²⁰ 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 “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

218. *Id.* at 140 (emphasis added).

219. *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. This begs 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. For an interpretation of the role of adoption in grafting Gentile Christians into “the Fatherhood of the God of Israel” by baptism rather than by natural birth, see EUGENE F. ROGERS, JR., *SEXUALITY AND THE CHRISTIAN BODY* 260-65 (1999).

220. 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. & D.* See O’Donovan, *supra* note 217, at 158 n.6. However, he never suggests how the case of *C. & D.* should have been decided.

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* in the process of differentiation.²²¹

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 seventh week of gestation and then experienced Androgen Insensitivity Syndrome (AIS)²²² 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 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 postoperative male-to-female transsexual to marry a woman.

Although Rev. O’Donovan argues that postoperative transsexuals cannot marry as members of their new sex, he never makes it clear whether they can marry as members of their old sex! Nor does he ever

221. *Id.* at 142-43 (third and fourth 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 & SEXUALITY* 10, 26 n.29 (1997).

222. 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.

propose a clear rule for the physically intersexed. Indeed, the 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 may have to distinguish between a person's genotypical, or intended sex, and the phenotypical, or actualised 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 best be resolved, is an ambiguity which has arisen by a malfunction in a dimorphic human sexual pattern.²²³

Perhaps some physically intersexed persons have genetic endowments that make them necessarily incapable of conceiving a child with anyone.²²⁴ Perhaps the physically intersexed cannot enter into *Christian* marriage as described by Rev. O'Donovan. That should not preclude them from entering into a *secular, civil* 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 eighteen (or

223. O'Donovan, *supra* note 217, at 143.

224. Androgen Insensitivity Syndrome (AIS) is caused by a mutation to the Androgen Receptor gene on the X chromosome. See Charmian A. Quigley et al., *Androgen Receptor Defects: Historical, Clinical, and Molecular Perspectives*, 16 ENDOCRINE REV. 271, 274 (1995).

Rev. O'Donovan's description of the physically intersexed as a "*malfunction*" of "chromosomal endowment" belies two significant misunderstandings of modern genetics. O'Donovan, *supra* note 217, at 143 (emphasis added). 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 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; while it is unfortunate that persons with two recessive genes have sickle-cell anemia (a significant impairment of the blood's ability to carry oxygen), it is not a malfunction of the underlying genetic (or chromosomal) endowment. See WILLIAM H. DURHAM, *COEVOLUTION: GENES, CULTURE, AND HUMAN DIVERSITY* 105-08, 147-48 (1991).

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.

twenty-one) 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 (such as emancipation) or defer them (guardianship for mental incompetency, for example).

A. *White Versus Nonwhite: Racial Classification in the Context of Immigration*

In 1790, the first Congress exercised its constitutional authority “[t]o establish an uniform Rule of Naturalization.”²²⁵ In passing the first Naturalization Act, Congress limited the prospect of American citizenship to “any alien, being a free white person” without bothering to define what it meant to be “white.”²²⁶ Following the Civil War, Congress extended naturalization to “aliens of African nativity and to persons of African descent.”²²⁷ In the area of naturalization law, the boundary between “white” and “non-white” remained unchallenged for well over a century.²²⁸ The phrase “white person” remained, undefined, in the Naturalization Act of 1906.²²⁹

Takao Ozawa had been raised and educated in California and Hawaii after having been born in Japan.²³⁰ Based on the color of his light skin, Ozawa applied for citizenship.²³¹ It was refused.²³²

Ozawa took his case all the way to the United States Supreme Court.²³³ In November, 1922, writing for a unanimous Supreme Court, Justice Sutherland argued that “white” did not refer just to the single factor of skin color:²³⁴

225. U.S. CONST. art. I, § 8, cl. 4.

226. 1 Stat. 103, c.3, § 1 (1790).

227. Act of July 14, 1870, ch. 254, § 7, 16 Stat. 254.

228. 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* (1996); Ariela J. Gross, *Litigating Whiteness: Trials of Racial Determination in the Nineteenth-Century South*, 108 *YALE L.J.* 109 (1998).

229. *See* 34 Stat. 596.

230. *See* *Ozawa v. United States*, 260 U.S. 178, 189 (1922).

231. *See id.*

232. *See id.*

233. *See id.* at 184-90.

234. *See id.* at 197.

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. . . . [T]he 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.²³⁵

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:

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” mean 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.²³⁶

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*.²³⁷ Bhagat Singh Thind was described as “a high-caste Hindu, of full Indian blood.”²³⁸ Thind applied for citizenship, but his certificate of citizenship was questioned on the ground that he was not white.²³⁹ The United States District Court in Oregon had granted him citizenship over the objection of the Naturalization Examiner.²⁴⁰ The Examiner sued and Thind’s case went to the Supreme Court.²⁴¹ 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.²⁴² Congress had used the phrase “white persons” and not “Caucasian race.”²⁴³ When

235. *Id.*

236. *Id.* at 198 (emphasis added).

237. *See* 261 U.S. 204 (1923).

238. *Id.* at 206.

239. *See id.* at 207.

240. *See id.*

241. *See id.*

242. *See id.* at 207-08.

243. *Id.* at 208.

Congress used the words “white person,” Sutherland opined, it used them as words “of common speech and not of scientific origin.”²⁴⁴ 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 Caucasian cast of their features, though in color they range from 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.*²⁴⁵

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.”²⁴⁶ 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.”²⁴⁷

Justice Sutherland had preserved the intent of the first Congress and its successors. Naturalization rights belonged to “white persons” (and Africans after 1870). “Non-white persons” were denied these rights.

B. White Versus Nonwhite: 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 and still be classified as “Indian.”²⁴⁸ However, the antimiscegenation 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 chapter, the term ‘white person’ shall apply only to such person as has no trace whatever of any blood other than Caucasian; but persons who have one-sixteenth or less

244. *Id.*

245. *Id.* at 211 (emphasis added) (citations omitted).

246. *Id.* at 207 (quoting *Ozawa v. United States*, 260 U.S. 178, 195 (1922)).

247. *Id.* at 214-15.

248. VA. CODE ANN. § 1-14 (1960 Repl. Vol.), *quoted in* *Loving v. Virginia*, 388 U.S. 1, 5 n.4 (1967).

of the blood of the American Indian and have no other non-Caucasic blood shall be deemed to be white persons.²⁴⁹

The Virginia antimiscegenation laws focused exclusively on preserving the purity of the white race by *prohibiting a complementary* marital relationship between a “white person” and anyone else.²⁵⁰ By not caring about preserving the purity of the “black, yellow, malay, and red”²⁵¹ 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 antimiscegenation 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.²⁵² In March 1972 he addressed the Medico-Legal Society of the United Kingdom on the topic of *The Medico-Legal Aspects of Sex Determination*.²⁵³

Throughout his speech, 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

249. VA. CODE ANN. § 20-54 (1960 Repl. Vol.), *quoted in Loving*, 388 U.S. at 5 n.4.

250. See NANCY F. COTT, PUBLIC VOWS: A HISTORY OF MARRIAGE AND THE NATION 42 (2000).

251. *Loving*, 388 U.S. at 3.

252. See Mary Coombs, *Transgenderism and Sexual Orientation*, 3 NAT’L J. SEX. ORIENT. L. 4, 8 (1997), at <http://www.ibiblio.org/gaylaw/issue5/coombs.html>.

253. See Roger Ormrod, *The Medico-Legal Aspects of Sex Determinations*, 40 MEDICO-LEGAL J. 78 (1972).

other. . . [T]hey remain, unhappily for themselves, what they always were—psychologically abnormal males or psychologically abnormal females.²⁵⁴

At the end of his address, Justice Ormrod likely breathed a sigh of relief: “I was fortunate to find myself faced with a transsexual.”²⁵⁵ During the course of his address, he made it clear how well he understood the wide variety of physically intersexed conditions including descriptions of

- Androgenital Syndrome (now termed Congenital Adrenal Hyperplasia and/or Progestin-Induced Virilization);
- Testicular Feminization (now termed Complete or Partial Androgen Insensitivity Syndrome); and
- Testicular Failure Syndrome.²⁵⁶

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.²⁵⁷ Justice Ormrod declared “XX/XY individuals [who have some cells with XX sex chromosomes and other cells with XY sex chromosomes] are true hermaphrodites”²⁵⁸ and warned his audience that “The chromosomal test, therefore, determines the sex of the *individual* cells of the body.”²⁵⁹ In contrast, “[t]he true hermaphrodite *defies classification* except possibly on the social criterion. Genitally, gonadally, and chromosomally they are ambiguous.”²⁶⁰

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:

254. *Id.* at 82-83.

255. *Id.* at 86.

256. *See id.* at 80-81.

257. *Id.* at 80.

258. *Id.*

259. *Id.* (emphasis added).

260. *Id.* at 82 (emphasis added).

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.

... [I]n 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.²⁶¹

Clearly, Justice Ormrod thought that the physically intersexed could be given a “completed” sexual identity of female or male. Nevertheless, Ormrod was evidently pleased that he did not have to rule in such a case. During the discussion that followed, a barrister 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.”²⁶² Justice Ormrod replied:

I suppose like all judges I sort of relax ultimately on the onus of proof as a kind of cosy [sic] couch, when I cannot think of any other conceivable way of getting out of the hole I am in. . . . I think the onus of proof would really come into it in this way, would it not: that one would say that the individual has failed to prove that he—as the case may be—was a woman. I think you would have to take it and rely ultimately on the onus of proof if one were really stuck.²⁶³

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.”²⁶⁴ 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.²⁶⁵ This Article instead focuses on Justice Ormrod's insistence on strict binarism.

Justice Ormrod began his address by stating:

The law, which is essentially an artefact, 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

261. *Id.* at 79, 83.

262. *Id.* at 88.

263. *Id.*

264. *Corbett v. Corbett*, [1970] 2 All E.R. 33, 48 (P).

265. See Julie A. Greenberg, *Definitional Dilemmas: Male or Female? Black or White? The Law's Failure to Recognize Intersexuals and Multiracials in GENDER NONCONFORMITY, RACE, AND SEXUALITY: CHARTING THE CONNECTIONS* 102, 115-19 (Toni Lester ed., 2002).

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.²⁶⁶

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 binary classifications are made. All of this begs the questions of whether a classification can be made effectively and whether a classification ought to be made. 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 difficult to find a satisfactory definition of the sexual status of an individual whose sex is in doubt*.²⁶⁷

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

D. Dr. Ombredanne's Sexual Balance Sheet

In the middle of the twentieth century, the renowned French uro-genital surgeon, Dr. Louis Ombredanne (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. Ombredanne gave his analysis in a study presented to a conference at the *Centre d'Etudes Laënnec* in Paris during the Winter of 1946-1947 sponsored by the Archdiocese of Paris.²⁶⁸

Based on a lifetime's work in uro-genital surgery presented in his 1939 masterwork, *Les Hermaphrodites et la Chirurgie (Hermaphrodites and Surgery)*, Ombredanne begins his analysis by asserting "*there is no criterion of sex. There is no such thing as regular sex.*"²⁶⁹ Ombredanne first considers external sexual anatomy and then gonadal function but immediately provides counterexamples to such simple sets of criteria.

266. Ormrod, *supra* note 253, at 78.

267. *Id.* (emphasis added).

268. See Dom Peter Flood, *Preface to the French Edition* of 1 NEW PROBLEMS IN MEDICAL ETHICS 49 (Malachy Gerard Carroll trans., Dom Peter Flood ed., 1953). Emmanuel Cardinal Suhard, Archbishop of Paris, opened the conference. See *id.*

269. Professeur Ombredanne, *The Marriage of Hermaphrodites*, in 1 NEW MEDICAL ETHICS 50 (Malachy Gerard Carroll trans., Dom Peter Flood ed., 1953 (some emphasis added)).

Nevertheless, Ombredanne argues, “We must, however, define sex, since marriage is permissible only between subjects of *different sexes*.”²⁷⁰

With all simple sets of criteria failing, Ombredanne turns to Ulpian’s (died 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.”²⁷¹ He continues:

But to speak of a prevalence or, if you prefer, predominance, supposes an *appreciation* based on a sexual *balance-sheet*. . . . And the balance-sheet which results will be based both on *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.²⁷²

According to Ombredanne, someone of ambiguous sex must be made “capable of copulation in conformity with their chosen sex”²⁷³ 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.”²⁷⁴

The major stumbling block in Ombredanne’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!²⁷⁵ Surgical correction of an hermaphrodite must wait until adolescence, if not early adulthood.²⁷⁶ Of course, these stages are well after a person has established a gender role in society! None of the cases Ombredanne relates involve someone *changing* sex roles via surgery. Indeed, he warns against premature sex-assignment surgery.²⁷⁷ 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] to be modified too early.”²⁷⁸

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 Ombredanne offered a possible means for the physically intersexed to resolve their situation

270. *Id.* at 51.

271. *Id.*

272. *Id.* at 51-52.

273. *Id.* at 53.

274. *Id.*

275. *See id.* at 56.

276. *See id.* at 57.

277. *See id.* at 56.

278. *Id.*

and enter into marriage as a man or a woman.²⁷⁹ Father Tesson began his analysis by asserting “it is indisputable that a human being has always the right to fix himself or herself as clearly as possible in one of the two sexes of humanity.”²⁸⁰

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 Roman Rota (the judicial arm of the Roman Catholic Church) made rulings on both sides of the question.²⁸¹ Father Tesson held that ovaries and a uterus were not required for a woman to be considered capable of entering into marriage.²⁸²

Ombredanne’s English language editor, Father Peter Flood, shared this view. 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 specialised 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.²⁸³

Little did Father Flood know that as he was expressing these views, biomedicine²⁸⁴ was learning that these short to nonexistent vaginas would have developed into male rather than female anatomical structures had there not been “an accident in the course of their growth.”²⁸⁵ 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

279. See P. Tesson, S.J., *Theological Note*, in 1 NEW PROBLEMS IN MEDICAL ETHICS 58 (Malachy Gerard trans., Dom Peter Flood ed., 1953).

280. *Id.*

281. See Graham, *supra* note 12, at 144-45.

282. See Tesson, *supra* note 279, at 59.

283. Dom Peter Flood, *Editor’s Forward*, to 1 NEW PROBLEMS IN MEDICAL ETHICS 47 (Malachy Gerard Carroll trans., Dom Peter Flood ed., 1953).

284. See generally Jost, *supra* note 5 (reviewing fetal endocrine problems as related to developmental abnormalities such as pseudohermaphroditism). 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 RES. 1 (1993).

285. Flood, *supra* note 283.

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 Ombredanne's essay appeared, a handful of Catholic ethicists have concerned themselves with the capability of the physically intersexed to enter into marriage. Father Thomas J. O'Donnell, S.J., a professorial lecturer in medical ethics at Georgetown Medical School, has given this topic perhaps the most complete treatment.²⁸⁶

Father O'Donnell was well aware of the breakthroughs achieved in embryology in the third quarter of the twentieth century:

An unusual combination of constitutional, hormonal, and probably hereditary factors during prenatal development can give rise to various types of bi-sexual and inter-sexual 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 along these lines of development could give rise to hermaphroditic anomalies.²⁸⁷

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."²⁸⁸

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"?*²⁸⁹ Father O'Donnell continues with a passage that makes it seem that the problem is an epistemological

286. See THOMAS J. O'DONNELL, S.J., *MEDICINE AND CHRISTIAN MORALITY* 213-32 (1976); Thomas J. O'Donnell, S.J., *Current Medical-Moral Comment*, 33 *LINACRE Q.* 72 (Feb. 1966).

287. O'DONNELL, *supra* note 286, at 227.

288. *Id.* at 229 (emphasis added).

289. *Id.* Presuming, as Father O'Donnell argues, that transsexuals do not have the right to change sex.

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.”²⁹⁰

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. 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 rehash 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, “[p]erfect 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*.”²⁹¹

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.”²⁹² 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.²⁹³ They must have surgery to

290. *Id.* at 229-30 (quoting Tesson, *supra* note 279, at 58 (emphases added)).

291. *Id.* at 227 (emphasis added).

292. *Id.*

293. *See* (1979) 35 F.L.R. 340.

remove themselves from the twilight zone of intersexuality. At least Father O'Donnell offers them that prospect.

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*

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 2001 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.²⁹⁴ Once again a 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.”²⁹⁵ 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.²⁹⁶

In this case, the wife was born in 1947 with ambiguous external genitalia and chromosomal sex that “appeared to be male,” and she was given a boy’s name.²⁹⁷ In spite of the fact that her parents tried to raise her as a boy, she demonstrated feminine interests from her earliest childhood.²⁹⁸ By her early teens, she had developed feminine breasts and a romantic interest in boys.²⁹⁹ Greatly annoyed by this, her father attempted to masculinize her with testosterone injections and threatened surgery to reduce the size of her breasts.³⁰⁰ At seventeen she ran away from home for good, took a feminine name, and rid herself of all appearances of masculinity.³⁰¹ From that point on, she lived her life as a woman.³⁰² Gender conforming surgery originally planned for her early twenties had to be postponed until she was forty due to a possible

294. See 2 W.L.R. 674 (2001).

295. *Id.* at 675.

296. See *id.* 710.

297. *Id.* at 674, 676.

298. See *id.* at 676.

299. See *id.*

300. See *id.*

301. See *id.*

302. See *id.* at 677.

“cerebrovascular accident.”³⁰³ She started estrogen therapy in her early thirties.³⁰⁴

Justice Charles recognized that this case placed him squarely in the territory suggested by Justice Ormrod thirty 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,³⁰⁵ and that in this case, as a result of her surgery, the husband and wife had the capacity to consummate their marriage sexually.³⁰⁶

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 in order to grant an annulment. Justice Charles considered the wife’s ability to consummate the marriage sexually *as a female* to be a significant factor but not the decisive factor in determining whether she was a female for the purposes of marriage.³⁰⁷

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 (ie 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).³⁰⁸

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.”³⁰⁹ 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 oestrogen and before she had surgery.”³¹⁰

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, along with the XX husband in the 1979 Australian

303. *Id.*

304. *See id.*

305. *See id.* at 682, 706.

306. *See id.* at 706.

307. *See id.* at 707.

308. *Id.* at 709.

309. *Id.*

310. *Id.* at 710.

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?*”³¹¹ and suggested:

This is a possible result but not one that I reach. . . . [I]n 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.³¹²

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

B. 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.³¹³ Writing for the narrow five to four majority, Justice Brennan declared, “The integrity of an individual’s person is a cherished value,” while defending this most minor invasion of bodily integrity.³¹⁴ In so doing, Brennan warned that the ruling should not be read as permitting more substantial intrusions.³¹⁵ 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.³¹⁶ Writing for the Court, Justice Brennan recognized that such an intrusion on Rudolph Lee’s bodily integrity went too far.³¹⁷

If *compelling* a person to undergo surgery merely to remove a bullet intrudes so far on bodily integrity that it denies the fundamental Fourth Amendment right to be “secure in [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?³¹⁸

311. *Id.* at 707.

312. *Id.*

313. *See* 384 U.S. 757, 771-72 (1966).

314. *Id.* at 772.

315. *See id.*

316. *See* *Winston v. Lee*, 470 U.S. 753, 766-67 (1985).

317. *See id.*

318. U.S. CONST. amend. IV. For discussions of the appropriateness of “gender correcting” surgery, a topic starting to draw more attention, see SUZANNE J. KESSLER, LESSONS FROM THE INTERSEXED (1998); Alice D. Dreger, ‘*Ambiguous Sex*’—or *Ambivalent Medicine?* *Ethical Issues in the Treatment of Intersexuality*, 28 HASTINGS CENTER REP. 24 (May-June 1998); Hazel Glenn Beh & Milton Diamond, *An Emerging Ethical and Medical Dilemma: Should Physicians Perform Sex Assignment Surgery on Infants with Ambiguous Genitalia?*, 7 MICH. J. GENDER & L.

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 or to require forced sterilization of a fertile person as a prerequisite to marriage? The United States 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.³¹⁹

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

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 GEO. L.J. 129 (2003).

319. *Griswold v. Connecticut*, 381 U.S. 479, 497 (1965) (Goldberg, J., concurring).

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*³²⁰

It took over a century for the Supreme Court to recognize that “[c]lear-cut [racial] categories do not exist.”³²¹ Race is not a fundamental ontological category neatly dividing humanity into a small number of buckets exclusively and exhaustively.³²²

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 experiences described in the Appendix which gives a brief overview of physically intersexed conditions.

In the last five 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, and in Kansas, by the ability to generate egg cells or sperm cells. These single-factor tests may

320. Act of May 31, 1870, c.114, § 16, 16 Stat. 144 (current version at 42 U.S.C. § 1981(a)) (emphasis added).

321. *St. Francis Coll. v. Al-Khazraji*, 481 U.S. 604, 610 n.4 (1987).

322. See Greenberg, *supra* note 265, at 107-08. “*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 been socially constructed; race is whatever the average American believes it is.” *Id.*

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 X0) 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 multifactor 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*,"³²³ 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."³²⁴ April Ashley would have needed to be "capable of performing the essential role of a woman in marriage."³²⁵ 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

323. Ormrod, *supra* note 253, at 82 (emphasis added).

324. *Id.* at 88.

325. *Corbett v. Corbett* (otherwise Ashley), [1970] 2 All E.R. 33 (P).

capable of “sexual intercourse, in the proper meaning of the term,” to use Judge Lushington’s phrase from *Deane v. Aveling*.³²⁶

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.³²⁷

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.”³²⁸ For better or worse, “lawful” sex is no longer confined to marriage.

Surely, the majority of the physical incapacity cases on record involved spouses, usually husbands, who *chose* to go to court to get out of their marriages. No law compelled them to seek an annulment.³²⁹

326. D-e v. A-g (falsely calling herself D-e), [1845] 163 Eng. Rep. 1039 (Consistory Ct. of London).

327. *Id.*

328. *Id.*

329. Nor did a third party ever have standing to seek an annulment for the physical incapacity of one of the spouses. In the 1868 English case of *A. v. B.*, a third party tried. [1868] 1 L.R.-P. & D. 559. Mr. *A.* married his wife, identified as *E.S.*, in 1854. *See id.* at 560. She died intestate in 1868. *See id.* Her mother and brother “filed an act on petition, claiming the administration to the estate on the ground that, although she died married to the plaintiff for fourteen years, yet that marriage was in truth void, on account of the plaintiff’s impotence.” *Id.* Mr. *A.* sued to block their claim. *See id.* The court described *B.*’s claim for administration as “*a great novelty*, an attempt to question a marriage as void on the ground of impotency after the death of one of the parties.” *Id.* at 561 (emphasis added). The court began the logic of its opinion by pointing out that “Impotence does not render a marriage ‘void,’ but only ‘voidable.’” *Id.* The opinion is worthy of extensive quotation:

The distinction between ‘void’ and ‘voidable’ is not a mere refinement, but expresses a real difference in substance. This real difference is well known and

They sought the easiest way possible to get out of their marriages when divorce was well nigh impossible. Court opinions do not 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.³³⁰

perfectly recognized at common law with regard to many contracts in respect of which it is held that the injured party may treat the contract as void or not, at his option. . . .

Now, it is obvious enough that this matter of impotence is one of which ought to be raised only by the party who suffers an injury from it, and who elects to make it a ground for asking that the contract of marriage should be annulled. For although it has been said that the procreation of children is one main object of marriage, yet it cannot be doubted that marriages between persons so advanced in years as effectually and certainly to defeat that object, are perfectly legal and binding. The truth is, consensus non concubitus facit matrimonium. In all cases in which the incapacity to marriage is one in which society has an interest and which rests on grounds of public policy, it would be wrong and illogical that validity or invalidity should depend upon the option of the parties, and in all such cases the marriage is absolutely "void" and not "voidable" only. But impotency has always hitherto been considered in the ecclesiastical courts (and since their abolition in the Divorce and Matrimonial Court), as matter of personal complaint only. I do not find the principle of the Court's interference to annul such a marriage anywhere distinctly set forth. Its original exercise was, it is likely enough, mixed up with the interest of those who asserted the jurisdiction. But I conceive that it has a sound basis in the consideration that the party complaining was, though perhaps unintentionally, deceived in the contract, and ought not to be bound by it. On whatever ground it is rested—this much, at least, is clear—that it has been and is always dealt with as a matter of personal complaint and grievance; and that it has been so dealt with is apparent from the fact that the Courts have been in the habit of requiring many conditions to be fulfilled before they would grant relief, all of which are inconsistent with the notion that the marriage is absolutely void. Thus the party complaining must be sincere in the ground on which he is asking relief; there must be no unreasonable delay, and the defect must be incurable.

I must here take leave to point out that a contrary system would give rise to some almost intolerable results. The question whether two people are married or not may arise on a great variety of occasions and be raised by third persons, as creditors or otherwise. Now, *if the parties themselves in a case of impotency, are content with the consortium vitae, and prefer to maintain the bond of matrimony intact, would it not be almost intolerable that a third person should have the right to insist upon an inquiry into the nature of their cohabitation and the revelation of their physical defects?* With this observation, I will quit the subject.

Id. at 561-63 (emphasis added).

Mr. A.'s supposed impotence never arose as a question of fact. As a matter of law, it no longer mattered.

330. In a 1951 New Jersey case, the imperfectly gratified husband tried to have it both ways. See *Donati v. Church*, 80 A.2d 633 (N.J. 1949). 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 "have sexual intercourse until two weeks before the final hearing to the extent that her condition permitted. . . . The conduct of the plaintiff . . . clearly constituted a ratification of the marriage." *Id.* at 634.

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.³³¹ Even the traditionalists know that sexual consummation provides no more than an immediate abrogation of one ground for annulment and an immediate ratification 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*.³³² As physical incapacity suits

331. See, e.g., *L v. L*, [1931] S.C. 477, 481 (finding by a Scottish court that prior knowledge of incapacity inhibits the right to sue for an annulment on the grounds of impotence).

332. Staying together in the marriage does not even require that the parties cohabit. The 1944 case of *Anonymous v. Anonymous* tells a tragic story. 49 N.Y.S.2d 314 (N.Y. Sup. Ct. 1944). 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. See *id.* Two months after their civil marriage the wife suffered a severe spinal injury while making wedding plans at the synagogue. See *id.* This left her paralyzed and put in doubt her ability to perform “the marital act.” *Id.* For nearly three years the husband remained a dutiful husband while the wife was hospitalized. See *id.* at 316.

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.* Not being satisfied with that answer the husband sought to have the marriage annulled. See *id.* at 315.

At the trial the wife testified that they had in fact sexually consummated their marriage after the civil ceremony. See *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.

In the appeal, Judge Shentag stated that these facts were irrelevant to his decision. See *id.* 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. See *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.

proliferated, many American and English courts added two requirements before granting an annulment: “sincerity and promptness.”³³³ Courts have more often than not refused to grant annulments for nonconsummation to petitioners who have enjoyed the benefits of marriage.³³⁴ 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” to generalize Sir John Nicholl’s opinion in *Brown v. Brown*³³⁵ or between “young persons” to use Judge Lushington’s term.³³⁶

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.³³⁷ At the end of his opinion in the landmark 1965 case *Griswold v. Connecticut*

333. Twelve states now specify strict statutory limits after which an annulment suit on the grounds of physical incapacity can no longer be commenced: (1) within ninety days of learning of the incapacity: KY. REV. STAT. ANN. § 403.120(2)(a) (Banks-Baldwin 2004); (2) within one year of learning of the incapacity: COLO. REV. STAT. § 14-10-111(2)(b) (2004); DEL. CODE ANN. tit. 13, § 1506(b)(2) (2004); WIS. STAT. § 767.03(2) (2004); (3) within two years of the marriage ceremony: HAW. REV. STAT. § 580-28 (2004); MICH. COMP. LAWS § 552.39 (2004); VT. STAT. ANN. tit. 15-11, § 515 (2004); VA. CODE ANN. § 20-89.1(c) (Michie 2004), WYO. STAT. ANN. § 20-2-101(f) (Michie 2004); (4) within four years of the marriage ceremony: S.D. CODIFIED LAWS § 25-3-8 (Michie 2004); (5) within four years of learning of the incapacity: MONT. CODE ANN. § 40-1-402(2)(d) (2004); (6) within five years of the marriage ceremony: N.Y. DOM. REL. LAW § 140(d) (Consol. 2004). In addition, Texas requires that “the petitioner has not voluntarily cohabited with the other party since learning of the impotency.” TEX. FAM. CODE ANN. § 6.106(3) (Vernon 2004).

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 twenty-four years of a sexually-unconsummated marriage with his wife. See *Manbeck v. Manbeck*, 489 A.2d 748, 751 (Pa. Super Ct. 1985).

334. See, e.g., *Kirschbaum v. Kirschbaum*, 111 A. 697 (N.J. Super Ct. Ch. Div. 1920) (denying annulment to wife who accepted and enjoyed the benefits of marriage for eleven years).

335. See *Brown v. Brown*, [1828] 162 Eng. Rep. 665, 666 (Arches Ct.). “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-*, [1876] 1 L.R. Prob. Div. 405, 407-08.

336. *D-e v. A-g* (falsely calling herself D-e), [1845] 163 Eng. Rep. 1039, 1045 (Consistory Ct. of London).

337. “This court has no jurisdiction in any case to enforce the performance of her marriage vows.” *Devanbagh v. Devanbagh*, 6 Paige 175, 178 (N.Y. Chancery 1836).

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.”³³⁸

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.³³⁹ Imagine the comedic potential of requiring eighty-year olds to prove 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.

338. 381 U.S. 479, 485-86 (1965).

339. In the recently decided case of *Standhardt v. Arizona*, that upheld the state’s same-sex marriage ban, the Arizona Court of Appeals wrote

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.

77 P.3d 451, 462 (Ariz. Ct. App. 2003) (citing *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 461 (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 codified in ARIZ. REV. STAT. ANN. § 25-101-B (West 2004). The *very next statute on the books* is the same-sex marriage ban: “Marriage between persons of the same sex is void and prohibited.” § 25-101-C. 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.

VIII. 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;³⁴⁰
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 death!).

The great twentieth 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 primordia (urogenital sinus, external genitalia). . . .
- (c) *Rapid appearance of the secondary sexual characters at puberty*, preceded by the slow modelling of the corporal forms from birth.³⁴¹

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

340. 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.

341. Jost, *supra* note 5, at 383.

that chromosomes only act as whole units during mitosis and meiosis. Aside from these cell division activities, chromosomes are merely structures that carry much smaller units called genes. Genes and hormones hold the key to understanding interactions that occur along the developmental pathways.

All human fetuses initially develop a primordial structure called the *gonadal ridge* (also known as the *genital ridge*) from the mesonephric ridge near the primitive kidneys.³⁴² The gonadal ridge develops into ovaries, testes, or ovotestes.³⁴³ 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 genital swelling: develops into the outer labia or the scrotum.³⁴⁴

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 *Wolffian ducts*, the precursor of the internal male sex organs (prostate, seminal vesicles, vas deferens, and epididymis).³⁴⁵ The developmental paths taken by these structures depend on the balanced production and processing of the appropriate hormones. Once we realize the existence of these common precursor forms, it becomes easier to understand that there are not simply two distinct paths to sexual development, but, like a tree with many branches, many possible paths exist.³⁴⁶

It is easier to begin with the paths typically taken.

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

The path along the branches leading to a typical suite of male characteristics is as follows:

342. See T.W. SADLER, LANGMAN'S MEDICAL EMBRYOLOGY 286 (Williams & Wilkins 7th ed., 1995).

343. See *id.* at 286, 288, 290.

344. See *id.* at 298-303.

345. See *id.* at 291-98, 422-23. The epididymis is a duct that connects a testis to a vas deferens.

346. A good set of text and graphics on the syndromes of abnormal sex differentiation can be found at the Johns Hopkins Children's Center Web Site, at <http://www.hopkinsmedicine.org/pediatricendocrinology/intersex/sd2.html> (last visited Feb. 20, 2005).

In the presence of a Y chromosome, each side of the gonadal ridge develops into a testis during the seventh week of gestation.³⁴⁷ 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.³⁴⁸ The Sertoli cells in the testes produce “*Müllerian Inhibiting Substance*” (MIS), which, as its name implies, inhibits the development of the Müllerian ducts into the uterus, fallopian tubes, and upper vagina.³⁴⁹

An enzyme called *5-alpha-reductase* 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 for its role in male baldness later in life!³⁵⁰ 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.³⁵¹

The path along the branches leading to a typical suite of female characteristics is as follows:

In the absence of a Y chromosome, the gonads remain in an undeveloped state until the thirteenth week of gestation when they develop into ovaries under the influence of an as yet unidentified factor presumed to be on the X chromosomes.³⁵² In the absence of MIS, the Müllerian ducts develop into the uterus, fallopian tubes, and upper vagina.³⁵³ Without androgens present, the Wolffian ducts shrivel up.³⁵⁴ The absence of testosterone also prevents production of DHT.³⁵⁵ In the absence of DHT, the genital tubercle remains relatively small and

347. See SADLER, *supra* note 342, at 288-89. 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”(TDF). See *id.* at 286. 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 discussion *infra* Part VIII.E.

348. See *id.* at 290-92.

349. See Mary M. Lee & Patricia K. Donahoe, *Müllerian Inhibiting Substance: A Gonadal Hormone with Multiple Functions*, 14 *ENDOCRINE REVIEWS* 152 (1993).

350. See SADLER, *supra* note 342, at 292.

351. See *id.* at 292, 310.

352. See *id.* at 290-93.

353. See *id.* at 292-96.

354. See *id.* at 292-93.

355. See *id.* at 293, 309-10.

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.³⁵⁶

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. Chromosome tests are not normally run and the presence of ovaries is not checked. Only the newborn's external genital appearance is observed and the inference is drawn that the other sexual characteristics are in alignment and will continue to be in alignment. Having noted the paths usually taken in the fetus's development, we are now in a better position to appreciate the paths 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*

Paths less typically taken in a fetus's development lead to atypical suites of sexual characteristics present at birth. (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.³⁵⁷ Testosterone production is the final step of a multistage process that begins with the breakdown of cholesterol and ends with the conversion of androstenedione³⁵⁸ into testosterone. The enzyme *17-beta-Hydroxysteroid dehydrogenase-3* (17 β HSD3) enables this conversion.³⁵⁹

17-Beta-Hydroxysteroid dehydrogenase-3 deficiency results from a mutation to the 17 β HSD3 gene on an autosome.³⁶⁰ In the absence of

356. See *id.* at 292, 302.

357. See *id.* at 290.

358. This is the same steroid Mark McGwire admitted taking. See Christine Gorman, *Muscle Madness*, TIME, Sept. 7, 1998, available at http://dwb.unl.edu/Teacher/NSF/c11/c11Links/www.time.com/time/magazine/1998/dom/980907/personal_time.your_heal28.html.

359. See Wayne M. Geissler et al., *Male Pseudohermaphroditism Caused by Mutations of Testicular 17 β -Hydroxysteroid Dehydrogenase 3*, 7 NATURE GENETICS 34 (1994).

360. See Annemie L.M. Boehmer et al., *17 β -Hydroxysteroid Dehydrogenase-3 Deficiency: Diagnosis, Phenotypic Variability, Population Genetics, and Worldwide Distribution of Ancient and de Novo Mutations*, 84 J. CLINICAL ENDOCRINOLOGY & METABOLISM 4713, 4714

sufficient quantities of 17 β HSD3, relatively little testosterone gets produced during gestation and the external genitalia take female form.³⁶¹ The genital tubercle takes on a clitoral appearance. (It may be atypically large.)

- The urethrolabial fold develops into the inner labia.
- The labio-scrotal swelling remains unfused.
- A blind-ended [lower] vagina forms.³⁶²

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.³⁶³ However, the Wolffian ducts develop into the prostate, seminal vesicles, vas deferens, and epididymis in response to androstenedione.³⁶⁴ The testes typically remain undescended in the inguinal canals or labia majora.³⁶⁵

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.³⁶⁶ However, these girls will never menstruate.

In the absence of intervention, virilization occurs at puberty and is arguably due to extratesticular conversion of androstenedione to testosterone.³⁶⁷ The skin of the labia majora becomes rugged, the clitoris enlarges (>3cm), male pattern body hair may emerge, and the voice may lower.³⁶⁸ Gender role reversal occurs in about half of these individuals.³⁶⁹

A recent study estimates the naturally occurring rate of 17 β HSD3 deficiency to be 1:147,000 based on analysis of the mean birth rate in the

(1999). 17 β -Hydroxysteroid dehydrogenase-3 deficiency is asymptomatic in females with XX karyotype. *See id.* at 4714.

361. *See* Stefan Andersson et al., *Molecular Genetics and Pathophysiology of 17 β -Hydroxysteroid Dehydrogenase 3 Deficiency*, 81 J. CLINICAL ENDOCRINOLOGY & METABOLISM 130, 134-35 (1996).

362. *See* Boehmer et al., *supra* note 360, at 4714.

363. *See* SADLER, *supra* note 342, at 292.

364. *See* Boehmer et al., *supra* note 360, at 4714.

365. *See* Andersson et al., *supra* note 361, at 134.

366. *See* Boehmer et al., *supra* note 360, at 4714.

367. *See id.*

368. *See id.* at 4715.

369. *See* Jean D. Wilson, *The Role of Androgens in Male Gender Role Behavior*, 20 ENDOCRINE REVIEWS 726, 730-32 (1999).

Netherlands.³⁷⁰ However, among Arabs in Gaza, who frequently intermarry, the incidence is as high as 1:200-300.³⁷¹

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). The Yale University School of Medicine 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 normal-appearing women, but who have undescended testes in place of ovaries. . . . [T]hese 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. . . .
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.³⁷²

370. See Boehmer et al., *supra* note 360, at 4717.

371. See *id.* at 4719.

372. John McLean Morris, *The Syndrome of Testicular Feminization in Male Pseudohermaphrodites*, 65 AM. J. OBSTETRICS & GYNECOLOGY 1192-93 (1953).

Morris also cited seventy-two studies that had appeared in the medical literature beginning with an 1817 case.³⁷³ He labeled the condition “testicular feminization” since he conjectured that the testes produced an insufficient quantity of androgens to masculinize the body.³⁷⁴

Subsequent research has demonstrated that cAIS is the result of the body’s inability to process androgens, not its inability to produce them.³⁷⁵ Morris had noted “a strong familial tendency as shown by the number of sisters with the same findings.”³⁷⁶ The discovery that the gene coding for androgen receptor capability resides on the X chromosome³⁷⁷ readily explains this hereditary phenomenon. cAIS results from a point mutation to this gene.³⁷⁸

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.³⁷⁹ A prostate is not to be found, and only remnants of the original Wolffian ducts remain.³⁸⁰

Half a century ago, Morris reported:

373. *See id.* at 1194-99.

374. *Id.* at 1206-07.

375. *See generally* Quigley et al., *supra* note 224 (arguing that faults in the androgen receptor gene result in AIS).

376. Morris, *supra* note 372, at 1193.

377. *See* 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).

378. *See* Quigley et al., *supra* note 224, at 273-74, 291-97. The Androgen Receptor gene (AR) is a steroid receptor gene found on the X chromosome. *See id.* at 272, 274.

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 310-11.

379. In about one-third of subjects there is incomplete Müllerian duct regression. *See id.* at 284. One hypothesis advanced to explain this finding is that “the highly estrogenic milieu of the Müllerian ducts in an androgen-insensitive fetus (due to conversion of [testosterone] to estrogens) interferes with the action of the anti-Müllerian hormone.” *Id.*

380. *See* Annemie L.M. Boehmer et al., *Genotype Versus Phenotype in Families with Androgen Insensitivity Syndrome*, 86 J. CLINICAL ENDOCRINOLOGY & METABOLISM 4151, 4152 (2001).

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.³⁸¹

A recent study estimates the naturally occurring rate of cAIS to be 1:99,000 based on an analysis of the Dutch population.³⁸² A 1992 Danish study estimated the naturally occurring rate to be 1:20,400.³⁸³

Mutations that result in impaired but not total androgen processing result in *Partial Androgen Insensitivity Syndrome* (pAIS).³⁸⁴ A fetus experiencing pAIS is able to process some but not all androgen produced.³⁸⁵ 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.³⁸⁶

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-2.³⁸⁷ When *5-Alpha-Reductase 2 deficiency* occurs, the fetal body fails to convert testosterone into DHT, the absence of which results in predominately female external genitalia at birth with a male ejaculatory system that terminates in a blind-ending vagina.³⁸⁸ The degree of virilization at the onset of puberty can be striking, though less masculine than in "unaffected brothers."³⁸⁹ 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.³⁹⁰

381. Morris, *supra* note 372, at 1209. It should be noted that the brains of persons experiencing cAIS do not respond to androgens, and as a result do not masculinize.

382. See Boehmer et al., *supra* note 380, at 4153.

383. See Quigley et al., *supra* note 224, at 279.

384. See Boehmer et al., *supra* note 380, at 4152.

385. See *id.*

386. See Quigley et al., *supra* note 224, at 282.

387. See Jean D. Wilson, James E. Griffin & David W. Russell, *Steroid 5 α -Reductase 2 Deficiency*, 14 ENDOCRINE REVIEWS 577, 581, 586 (1993).

388. See Berenice B. Mendonca et al., *Male Pseudohermaphroditism Due to Steroid 5 α -Reductase 2 Deficiency*, 75 MED. 64, 71 (1996).

389. Wilson et al., *supra* note 387, at 588.

390. See Julianne Imperato-Mcginley et al., *Steroid 5 α -Reductase Deficiency in Man: An Inherited Form of Male Pseudohermaphroditism*, 186 SCI. 1213, 1213-14 (1974).

5-Alpha-Reductase 2 deficiency occurs with regularity in at least four isolated populations in New Guinea,³⁹¹ the Dominican Republic,³⁹² Brazil,³⁹³ and Turkey.³⁹⁴ The Dominican and New Guinea populations have been studied extensively.

The Sambia tribe of New Guinea was not pacified until 1964³⁹⁵ by which time 5-Alpha-Reductase 2 deficiency had been present long enough for explicit cultural responses to emerge.³⁹⁶ 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.³⁹⁷ 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-aatmwol* (“a word that indexes to ‘male thing-transformed-into-female-thing’”),³⁹⁸ which is now called “*turnim-man*” in the Pidgin trade language they have learned.³⁹⁹

Before the trait became established in the Dominican Republic, the affected children were raised as girls.⁴⁰⁰ Now that the trait is present in the third generation, the villagers sometimes raise these children as boys

391. See Herdt & Davidson, *supra* note 59, at 33; J. Imperato-Mcginley et al., *A Cluster of Male Pseudohermaphroditism in 5 α -Reductase Deficiency in Papua New Guinea*, 34 CLINICAL ENDOCRINOLOGY 293 (1991).

392. See Imperato-Mcginley et al., *supra* note 390, at 1215.

393. See Mendonca et al., *supra* note 388, at 64.

394. See Suat Akgun et al., *Familial Male Pseudohermaphroditism Due to 5 α -Reductase Deficiency*, 81 AM. J. MED. 267 (1986).

395. See Herdt & Davidson, *supra* note 59, at 35.

396. See *id.* at 37-38.

397. See *id.*

398. Gilbert Herdt, *Mistaken Gender: 5-Alpha Reductase Hermaphroditism and Biological Reductionism in Sexual Identity Reconsidered*, 92 AM. ANTHROPOLOGIST 433, 439 (1990).

399. Herdt & Davidson, *supra* note 59, at 38-41. Herdt later 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, *supra* note 398, at 433-34.

For a contrary view that these children “are raised as normal males and are regarded simply as having a birth defect,” see Imperato-Mcginley et al., *supra* note 391, at 294. For our present purposes, it is enough to note that these children are not raised as girls.

400. See Imperato-Mcginley et al., *supra* note 390, at 1213.

from birth or raise them ambiguously as girls.⁴⁰¹ When the condition is recognized, the Dominican villages call such infants *guevedoce*, which literally means “penis at twelve” or *machihembra*, which means “first woman, then man.”⁴⁰²

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.⁴⁰³ Gender role reversal appears to occur in about half the affected persons not diagnosed as infants or small children.⁴⁰⁴

No systematic studies have been done to ascertain the naturally occurring frequency of 5 α -Reductase 2 deficiency.⁴⁰⁵

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.⁴⁰⁶ At birth there is no evidence of external female characteristics. They usually remain unsuspected until the person affected suffers periodic abdominal pain at the onset of puberty.⁴⁰⁷ Although male fertility may be impaired, removing these internal female organs does not affect male fertility.⁴⁰⁸

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.⁴⁰⁹ It can also result from the inability of Müllerian duct cells to process MIS due to inheritance of two copies of

401. See Julianne Imperato-Mcginley et al., *Androgens and the Evolution of Male-Gender Identity Among Male Pseudohermaphroditism with 5 α -Reductase Deficiency*, 300 NEW ENG. J. MED. 1233, 1235 (1979).

402. *Id.*

403. See Wilson et al., *supra* note 387, at 577.

404. See Wilson, *supra* note 369, at 731.

405. See Blackless et al., *supra* note 7, at 153.

406. See MONEY, *supra* note 17, at 32.

407. See *id.* at 32-33.

408. See *id.* at 33.

409. See Bertrand Knebelmann et al., *Anti-Müllerian Hormone Bruxelles: A Nonsense Mutation Associated with the Persistent Müllerian Duct Syndrome*, 88 PROC. NAT'L ACAD. SCI. USA 3767, 3770 (1991).

mutation in the *Wnt-7a* gene resulting in the inability to produce the signaling molecule Wnt-7a.⁴¹⁰

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.⁴¹¹

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.⁴¹² Ninety percent of all cases of *Congenital Adrenal Hyperplasia* (CAH) result when a fetus inherits recessive copies of autosomal gene CYP21 on chromosome 21 from both parents.⁴¹³ As a result the fetus is unable to produce the steroid 21-hydroxylase enzyme necessary for the production of cortisol and aldosterone.⁴¹⁴ Instead, these glands produce elevated levels of the androgen androstenedione, which is converted downstream into testosterone and DHT.⁴¹⁵ The presence of high levels of androgens during the third and fourth months of gestation results in an enlarged clitoris (clitoral hypertrophy) and possibly fused labia in an XX fetus.⁴¹⁶ These conditions can also result when androgens generated by an XY fraternal twin cross the placental barrier.⁴¹⁷

410. See Brian A. Parr & Andrew P. McMahon, *Sexually Dimorphic Development of the Mammalian Reproductive Tract Requires Wnt-7a*, 395 NATURE 707, 709 (1998); David T. MacLaughlin et al., *Perspective: Reproductive Tract Development—New Discoveries and Future Directions*, 142 ENDOCRINOLOGY 2167, 2168 (2001).

411. See Josso et al., *supra* note 284, at 39.

412. See Perrin C. White & Phyllis W. Speiser, *Congenital Adrenal Hyperplasia Due to 21-Hydroxylase Deficiency*, 21 ENDOCRINE REVIEWS 245, 245-48 (2000).

413. The remaining ten percent 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. See *id.* at 248.

414. See *id.* at 247.

415. See *id.*

416. See *id.* at 251.

417. This is the mechanism that produces *freemartins*, highly virilized female cattle resulting from gestation with a fraternal twin brother. See Frank R. Lillie, *The Freemartin: A Study of the Action of Sex Hormones in the Foetal Life of Cattle*, 23 J. EXPERIMENTAL ZOOLOGY 371 (1917) [hereinafter Lillie, *Freemartin*]; Frank R. Lillie, *Theory of the Freemartin*, 43 SCI. 611 (1916) [hereinafter Lillie, *Theory*].

At birth, some CAH babies are judged to be boys, while others are judged to be girls with large clitorises.⁴¹⁸ Many doctors recommend clitoral reductions for these girls.

Research on the sexual orientation of women who experienced CAH has yielded widely ranging results. In 1984, John Money and his colleagues reported that eleven of thirty young women treated for CAH considered themselves to be bisexual or homosexual.⁴¹⁹ More recently, Zucker and colleagues reported 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.⁴²⁰ After extensive interaction with the intersexual community, Suzanne Kessler's impression is that, in general, adult intersexed women are more likely to be lesbians.⁴²¹

After surveying the literature Blackless and her associates noted an extremely wide range of occurrence with a high of 3.47 per 1000 live births among the Yupik tribe in Alaska.⁴²² They estimate that the worldwide rate of CAH is approximately 0.0770 per 1000 live births.⁴²³

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.⁴²⁴ A dimple or shallow pouch, unconnected to a uterus, appears where the vaginal orifice typically opens.⁴²⁵ After the onset of puberty, failure to menstruate in the presence of ovaries raises a suspicion of MRKHS.⁴²⁶ Surgery or dilation therapy can be employed to provide a vagina-like orifice.⁴²⁷

418. See, e.g., Alfred M. Bongiovanni & Allen W Root, *The Adrenogenital Syndrome*, 258 NEW ENG. J. MED. 1283 (1963) (discussing Giuseppe Marzo, who was declared female at birth and finally designated male at age four).

419. See John Money, Mark Schwartz & 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).

420. See Kenneth J. Zucker et al., *Psychosexual Development of Women with Congenital Adrenal Hyperplasia*, 30 HORMONES & BEHAV. 300, 310-11 (1996).

421. See Kessler, *supra* note 318, at 149-50 n.35.

422. See Blackless et al., *supra* note 7, at 155.

423. See *id.* at 156.

424. See MONEY, *supra* note 17, at 56.

425. See *id.*

426. See *id.*

427. See *id.* at 56-57.

MRKHS is not due to the absence of estrogen production in the XX embryo; however, maternal estrogens may play a compensatory role.⁴²⁸ Nor is MRKHS due to an inability to process estrogen.⁴²⁹ The cause of MRKHS is not yet fully understood. However, it appears that the signaling molecule Wnt-4, which is implicated in kidney development,⁴³⁰ also plays a role in the development of the Müllerian ducts.⁴³¹

After surveying the literature, Blackless and associates estimated that MRKHS has a naturally occurring rate of approximately 0.1694 per 1000 live births.⁴³²

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 one Y chromosome and at least two X chromosomes.⁴³³ The most typical combination is XXY.⁴³⁴ 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.⁴³⁵

428. See John F. Couse & Kenneth S. Korach, *Estrogen Receptor Null Mice: What Have We Learned and Where Will They Lead Us?*, 20 ENDOCRINE REVIEWS 358, 403 (1999).

429. “[T]here has been only one reported case of an estrogen-receptor defect, suggesting that this receptor has a strategic role in fetal survival.” Daniel D. Federman, *Three Facets of Sexual Differentiation*, 350(4) NEW ENG. J. MED. 323, 323 (2004).

430. See MacLaughlin et al., *supra* note 410, at 2168.

431. See Seppo Vainio et al., *Female Development in Mammals Is Regulated by Wnt-4 Signalling*, 397 NATURE 405 (1999).

432. See Blackless et al., *supra* note 7, at 157.

433. See MONEY, *supra* note 17, at 12.

434. See *id.* In addition, there are cases involving four and five sex chromosomes. See Mary G. Linden, Bruce G. Bender & Arthur Robinson, *Sex Chromosome Tetrasomy and Pentasomy*, 96 PEDIATRICS 672 (1995).

435. DNA analysis of thirty-nine males experiencing Klinefelter syndrome showed that twenty-one (53%) resulted from an atypical division of the father’s sperm cell, seventeen (44%) resulted from an atypical division of the mother’s egg cell, and one (3%) resulted from an atypical division following conception of the zygote. See P.A. Jacobs et al., *Klinefelter’s Syndrome: An Analysis of the Origin of the Additional Sex Chromosome Using Molecular Probes*, 52 ANNALS OF HUM. GENETICS 93 (1988).

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.⁴³⁶ 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.⁴³⁷

Reviewing twenty-one different surveys, Blackless and associates estimated the mean incidence of Klinefelter Syndrome to be approximately 0.922 per 1000 live births classified as male.⁴³⁸ One study found that one in 300 spontaneously aborted fetuses had 47,XXY characteristics indicating a conception rate of one in 1000 (or two in 1000 “male” conceptions).⁴³⁹

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).⁴⁴⁰ The second sex chromosome may have been lost in one of the earliest cell divisions in the newly formed fetus, or the second X chromosome may have been present but had an arm broken from it.⁴⁴¹ 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.⁴⁴²

Turner Syndrome babies have a typical complement of external female genitalia at birth.⁴⁴³ However, 95-98% have “streak” ovaries.⁴⁴⁴ At puberty, breasts do not mature due to the lower than typical level of estrogen present.⁴⁴⁵ Natural, unassisted pregnancies occur in approx-

436. See MONEY, *supra* note 17, at 12-13.

437. See *id.* at 13.

438. See Blackless et al., *supra* note 7, at 152.

439. See Jacobs et al., *supra* note 435, at 93.

440. See MONEY, *supra* note 17, at 14.

441. See *id.*

442. See 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. GENETICS 682, 685 (1991).

443. See MONEY, *supra* note 17, at 14.

444. See R. Abir et al., *Turner's Syndrome and Fertility: Current Status and Possible Putative Prospects*, 7 HUM. REPROD. UPDATE 603, 604 (2001).

445. See *id.*

imately two percent of all cases of Turner Syndrome.⁴⁴⁶ Miscarriage (29%), stillbirth (7%), and malformed baby (20%) rates are very high.⁴⁴⁷

Blackless and associates reviewed eighteen studies of Turner Syndrome and estimated the mean incidence to be approximately 0.369 per 1000 live births classified as female.⁴⁴⁸ Other studies have estimated that as many as 3% of all fetuses conceived experience loss or breakage of a second sex chromosome during gestation and only 1% of these survive to term.⁴⁴⁹

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 one Y chromosome and “females” have no Y chromosomes. Not surprisingly, there are exceptions to this rule.

The great American geneticist, T.H. Morgan, discovered sex chromosomes in the early part of the twentieth century.⁴⁵⁰ At mid-century, Barr developed the chromatin test to determine the presence or absence of a second X chromosome.⁴⁵¹ Reports of XX males and XY females began to appear within the next few years.⁴⁵² By 1981, de la Chapelle estimated the incidence of XX males to be one in every 20,000-25,000 newborn males.⁴⁵³ 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.⁴⁵⁴ Analysis of X-linked blood traits

446. *See id.*

447. *See id.*

448. *See* Blackless et al., *supra* note 7, at 152.

449. *See* Paul Saenger, *Turner's Syndrome*, 335 *NEW ENG. J. MED.* 1749 (1996).

450. *See* Jane Maienschein, *What Determines Sex? A Study of Converging Approaches, 1880-1916*, 75 *ISIS*, 457, 479 (1984).

451. *See* Murray L. Barr & 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).

452. *See, e.g.*, George W. Clayton et al., *Familial True Hermaphroditism*, 18 *J. CLINICAL ENDOCRINOLOGY & METABOLISM* 1349 (1958) (discussing the first recorded case of hermaphroditism found in two brothers with male genital appearance and XX sex chromosomes).

453. *See* Albert de la Chapelle, *The Etiology of Maleness in XX Men*, 58 *HUM. GENETICS* 105, 107 (1981).

454. *See id.* at 106.

inherited from an XX male subject's father provided further evidence in favor of this hypothesis.⁴⁵⁵

In 1990, Sinclair and Berta 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*."⁴⁵⁶ Later that year, they announced that they had found the *SRY* gene mutated on the Y chromosomes of two female XY subjects.⁴⁵⁷ Two years later, McElreavey confirmed these results in a survey of twenty-five cases of XY females.⁴⁵⁸ In 1993, McElreavey analyzed the DNA of over thirty XX males with neither internal nor external genital anomalies and found the *SRY* gene present in over ninety percent of the cases.⁴⁵⁹

2. Translocation

During mitotic cell division, genes can translocate from one chromosome to its homologous partner.⁴⁶⁰ The *SRY* gene typically resides on the Y chromosome.⁴⁶¹ However, prior to the completion of spermatogenesis this gene can translocate onto the X chromosome, the homologue of the Y chromosome.⁴⁶² Thus, the *SRY* gene may be present in an XX fetus without any Y chromosomes.⁴⁶³ Similarly, the *SRY* gene may be absent in an XY fetus.⁴⁶⁴

3. Life Isn't So Simple

Ninety percent of the surveyed XX males without genital anomalies may have possessed the *SRY* gene, but ten percent lacked that gene.⁴⁶⁵ Moreover, most XX males with genital anomalies lacked the *SRY*

455. See Albert de la Chapelle et al., *Genetic Evidence of X-Y Interchange in a Human XX Male*, 307 NATURE 170, 171 (1984).

456. 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 (1990).

457. See Phillippe Berta et al., *Genetic Evidence Equating SRY and the Testis-Determining Factor*, 348 NATURE 448 (1990).

458. See Ken McElreavey, et al., *XY Sex Reversal Associated with a Deletion of 5' to the SRY "HMG Box" in the Testis-Determining Region*, 89 PROC. NAT'L ACAD. SCI. 11016 (Nov. 1992).

459. See Ken McElreavey et al., *A Regulatory Cascade Hypothesis for Mammalian Sex Determination: SRY Represses a Negative Regulator of Male Development*, 90 PROC. NAT'L ACAD. SCI. 3368, 3369 (Apr. 1993).

460. See SADLER, *supra* note 342, at 4-10.

461. See McElreavey et al., *supra* note 459, at 3368.

462. See *id.*

463. See *id.*

464. See *id.*

465. See *id.* at 3369.

gene.⁴⁶⁶ 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.”⁴⁶⁷

Research since 1993 suggests that testis-determination is even more complex than the cascade model proposed by McElreavey. The editors of a recent 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 essential roles 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 additional 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 also become clear is the fact that sex determination in vertebrates is not the result of a simple hierarchical cascade of gene actions as initially thought, but rather results from a complex network of positive and negative regulatory interactions.⁴⁶⁸

Current research suggests that the *SRY* gene acts to inhibit the expression of the X-linked *DAX-1* gene.⁴⁶⁹ The *DAX-1* gene, in turn, acts to inhibit testis formation⁴⁷⁰ governed by expression of the *SOX9* gene located on chromosome 17 in humans.⁴⁷¹

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

466. See *id.*

467. *Id.* at 3368.

468. Gerd Scherer & Michael Schmid, *Preface* to GENES AND MECHANISMS IN VERTEBRATE SEX DETERMINATION xi (Gerd Scherer & Michael Schmid eds., 2001).

469. See Peter N. Goodfellow & Giovanna Camerino, *DAX-1, An “Antitestis” Gene*, in GENES AND MECHANISMS IN VERTEBRATE SEX DETERMINATION 57 (Gerd Scherer & Michael Schmid eds., 2001).

470. See *id.* at 63.

471. See Megha Patel et al., *Primate DAX1, SRY, and SOX9: Evolutionary Stratification of Sex-Determination Pathway*, 68 AM. J. HUM. 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 the mammalian radiation and has important roles in sex determination and bone development.” *Id.* (citations omitted).

results from an atypical cell division during the earliest phase of gestation that results in cell lines with two different sets of chromosomes.⁴⁷² Chimerism results when two separate fertilization events take place and cells from one fertilized zygote are incorporated into the body of another.⁴⁷³ Fine-grained blood analysis often reveals mosaicism or chimerism.⁴⁷⁴

Mature egg cells result from two meiotic divisions.⁴⁷⁵ Egg cell generation begins when the primary oocyte, typically containing forty-six 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, and
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.⁴⁷⁶

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).⁴⁷⁷ They contain chromosomes identical except for the results of crossovers.⁴⁷⁸ Although the secondary polar body consists of little more than the twenty-three chromosomes not passed to the ripe ovum during the second meiotic division, it can be fertilized by a sperm cell.⁴⁷⁹

The best understood form of chimerism results from fraternal twin zygotes exchanging blood cells during gestation.⁴⁸⁰ As a result, each

472. See MONEY, *supra* note 17, at 9.

473. See R.R. RACE & RUTH SANGER, BLOOD GROUPS IN MAN 519 (6th ed. 1975).

474. See *id.* at 511-19.

475. See SADLER, *supra* note 342, at 5-6.

476. *Id.* at 5.

477. See *id.* at 5-7.

478. See *id.*

479. See *id.* at 5-6.

480. See RACE & SANGER, *supra* note 474, at 519-30. A list of cases is also included. The exchange of blood cells between fraternal twins was first observed in fraternal twin cattle of different sexes, which explained the frequent masculinization of the female twin often called a free-martin. See Lillie, *Theory*, *supra* note 417, at 612.

zygote presents two different fine-grained blood types.⁴⁸¹ Three other forms of chimerism have been reported.⁴⁸² The first occurs when two sperm cells fertilize a single ovum.⁴⁸³ A second form 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.⁴⁸⁴ The third type of chimerism occurs when zygotes created from the fertilization of two distinct egg cells fuse, no later than the eight cell stage, before cellular differentiation begins.⁴⁸⁵

Forty years ago, Zuelzer reported a striking case of chimerism after a young man offered to be a blood donor in Detroit.⁴⁸⁶ He was the child of an African-American mother and a Caucasian father.⁴⁸⁷ Initial analysis of his blood showed that some but not all cells exhibited the sickle cell trait common to African-Americans, including his mother.⁴⁸⁸ 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 described his skin color as a "very light café-au-lait color," but approximately ten percent of his body pigmentation was an "appreciably darker brown."⁴⁸⁹ Analysis of his skin cells revealed that the lighter skin contained only XY cells.⁴⁹⁰ Samples of the darker skin, on the other hand, indicated an XX cell population of approximately ten percent.⁴⁹¹ Zuelzer reasoned that the 10:1 ratio of genetic types seen in every system analyzed argued strongly in favor of incorporation of a

481. RACE & SANGER, *supra* note 474, at 519-20, 527-28.

482. See C.E. Ford, *Mosaics and Chimaeras*, 25 BRIT. MED. BULL. 104, 107-08 (1969); Patricia Tippett, *Human Chimeras in CHIMERAS IN DEVELOPMENTAL BIOLOGY* 165-66, 169-70 (Nicole Le Douarin & Ann McLaren eds., 1984).

483. See Ford, *supra* note 482, at 104, 107. For a report of a case, see P.H. Fitzgerald et al., *A True Hermaphrodite Dispermic Chimera with 46, XX and 46, XY Karyotypes*, 15 CLINICAL GENETICS 94, 94-95 (1979).

484. See Ford, *supra* note 482, at 107-08. For reported cases, see Wolf M. Zuelzer et al., *Generalized Unbalanced Mosaicism Attributable to Dispermy and Probable Fertilization of a Polar Body*, 16 AM. J. HUM. GENETICS 38 (1964) and Stanley M. Gartler et al., *An XXXY Human Hermaphrodite Resulting from Double Fertilization*, 48 PROC. NAT'L ACAD. SCI. 332-35 (1962).

485. See Ford, *supra* note 482, at 107-08. For a report of a case, see Albert de la Chapelle et al., *Early Fusion of Two Human Embryos?*, 38 ANNALS OF HUM. GENETICS 63 (1974).

486. See Zuelzer et al., *supra* note 484, at 39.

487. See *id.* at 38.

488. See *id.* at 40.

489. *Id.* at 40-41.

490. See *id.* at 43.

491. See *id.*

fertilized polar body bereft of cell constituents other than chromosomes and against fusion of two fertilized egg cells.⁴⁹²

Zygotic fusion of two fertilized egg cells has been demonstrated experimentally in mice and other species⁴⁹³ and inferred in one case involving a human being.⁴⁹⁴ This child had ambiguous genitalia at birth.⁴⁹⁵ Five months after birth, the child had a two-centimeter-long clitoris.⁴⁹⁶ A laparotomy revealed an ovary on the right side and an ovotestis on the left side.⁴⁹⁷ It also revealed a four-centimeter-long uterus connected to a normal Fallopian tube on the right side but not connected to the Fallopian tube on the left side.⁴⁹⁸ Lymphocyte analysis showed that 89-94% of these cells had a 46,XY karyotype with the remainder being 46,XX.⁴⁹⁹ 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%)."⁵⁰⁰

Race and Sanger list twenty-one cases of genetic chimeras resulting from two fertilization events reported between 1962 and 1974.⁵⁰¹

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, the sister exhibited X0 karyotype and typical symptoms of Turner syndrome.⁵⁰² Aside from being short (5'5"), the brother exhibited sexual characteristics consistent with the XY

492. See *id.* at 41.

493. See Andrzej K. Tarkowski, *Mouse Chimaeras Developed from Fused Eggs*, 190 NATURE 857 (1961).

494. See de la Chapelle et al., *supra* note 485, at 63, 68. But see Gordon Dewald et al., *Origin of chi46,XX.46,XY Chimera in a Human True Hermaphrodite*, 207 SCI. 321, 322 (1980) (noting that this chimeric individual could have also resulted from two different sperm cells fertilizing an ovum and a first division polar body). The case of the child born in Dallas in early 2002 described by Doctors Karam & Baker clearly fits the same anatomical pattern as this case reported by de la Chapelle. See Karam & Baker, *supra* note 103, at 393. Unfortunately, Doctors Karam and Baker have not published a genetic analysis.

495. See de la Chapelle et al., *supra* note 485, at 64.

496. See *id.*

497. See *id.*

498. See *id.*

499. See *id.* at 66.

500. *Id.* at 73.

501. See RACE & SANGER, *supra* note 474, at 531-36.

502. See 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).

karyotype discovered throughout his body.⁵⁰³ In the second case, the sister exhibited a mixture of X0 and XY karyotypes and some, but not all, of the symptoms of Turner syndrome.⁵⁰⁴ The brother displayed no female sexual characteristics.⁵⁰⁵ However, all of his cells analyzed displayed X0 karyotype, although the investigators presumed he also had cells with XY karyotypes.⁵⁰⁶

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 by the zygote splitting into two. 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!⁵⁰⁷

503. *See id.*

504. *See* J. H. Edwards et al., *Monozygotic Twins of Different Sex*, 3 J. MED. GENETICS 117 (1966).

505. *See id.*

506. *See id.* at 122.

507. 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 et al., *X0/XX Mosaicism in a Pair of Presumably Monozygotic Twins with Different Phenotypes*, 2 CYTOGENETICS 86 (1963).