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Articles

BIOLOGICAL TRUTHS AND LEGAL FICTIONS

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I. INTRODUCTION

When scandal broke out in January 1998 over an alleged affair between President Clinton and a White House intern, *Slate* magazine began speculating as to the causes of presidential misbehavior.¹ Among possible explanations was a sociobiological rumination, to wit, that presidents are alpha-males who are evolutionarily selected for their propensity to engage in promiscuous sex and to father many offspring. In furtherance of this theory, *Slate* re-ran a 1996 campaign piece on this idea:

Consider the extreme thirst for status and power found in male [H]omo sapiens in general and Clinton and Dole in particular. According to evolutionary psychologists, this thirst exists because during evolution, it led to lots of offspring. Those of our male ancestors who most doggedly climbed to the top of the local status hierarchy were often rewarded with sex partners—either multiple wives (the Dole approach) or multiple lovers (the Clinton approach). Hence

* Professor, Law & Medical Ethics, University of Wisconsin. The author wishes to acknowledge the helpful comments on earlier versions of this paper made by Robert Arnold, Pamela Bridgewater, Evan Gerstemann, John Kidwell, Neal Komesar, Marc Galanter, Krista Ralston, Jane Schacter, Renie Schapiro, Alan Weisbard, Daniel Wikler, and Stuart Youngner.

1. Franklin Foer, *Why Clinton Screws Around* (last modified Jan. 31, 1998) <<http://www.slate.com/Gist/98-01-31/Gist.asp>>.

the cruel irony facing Clinton and, to a lesser extent, Dole: From nature's point of view, a central purpose of pursuing status is to convert it into sex. Yet, demonstrated success in making this conversion is now deemed a disadvantage in the quest for the highest-status slot in the world.²

The article continued, with the implication that modern morality is at odds with biological reality, and that the morality ought, therefore, to change.

This sort of normative use of biology and evolutionary theory is certainly not new. It is familiar to all in the form of Herbert Spenser's adoption of "survival of the fittest" as a metaphor for Nineteenth century society drawn from Darwinian observations in the Galapagos islands, and, more recently, set off a spate of controversy with the 1970s publication of Edward Wilson's book *Sociobiology*.³ In its latest incarnation, evolutionary psychology, we are returned to discussions about how the biological realities of our physiology and the evolutionary processes by which that physiology came into being argues for a system of morality that accords with biological compulsions, both because it is futile to resist these impulses and because evolution has shown these to be preferred ways of being.⁴

Law is certainly not immune to these influences, and through the years case law and legislative enactments have frequently embodied

2. To support this rumination, Slate "recycled" an August 30, 1996 column by Robert Wright. See Robert Wright, *Clinton philandered; Dole left his wife. Who's the worse "character"?* (last modified Sept. 13, 1997) <<http://www.slate.com/Earthling/96-08-30/Earthling.asp>>.

3. EDWARD O. WILSON, *SOCIOBIOLOGY* (1980).

4. See, e.g., *THE ADAPTED MIND: EVOLUTIONARY PSYCHOLOGY AND THE GENERATION OF CULTURE* (Jerome H. Barkow et al. eds., 1992); *THE COMPARATIVE DEVELOPMENT OF ADAPTIVE SKILLS: EVOLUTIONARY IMPLICATIONS* (Eugene S. Gollin, eds., 1985); *EVOLUTIONARY SOCIAL PSYCHOLOGY* (Jeffrey A. Simpson ed., 1996); KALMAN GLANTZ & JOHN PEARCE, *EXILES FROM EDEN: PSYCHOTHERAPY FROM AN EVOLUTIONARY PERSPECTIVE* (1989); BEN GOERTZEL, *FROM COMPLEXITY TO CREATIVITY: EXPLORATIONS IN EVOLUTIONARY, AUTOPOIETIC, AND COGNITIVE DYNAMICS* (1997); *HANDBOOK OF EVOLUTIONARY PSYCHOLOGY: IDEAS, ISSUES, AND APPLICATIONS* (Charles Crawford & Dennis Krebs eds., 1997); SAM KASH KACHIGAN, *THE SEXUAL MATRIX: BOY MEETS GIRL ON THE EVOLUTIONARY SCALE* (1996); KENNETH MAXWELL, *THE SEX IMPERATIVE: AN EVOLUTIONARY TALE OF SEXUAL SURVIVAL* (1994); THEODORE MILTON, *TOWARD A NEW PERSONOLOGY: AN EVOLUTIONARY MODEL* (1990); PAUL QUINNETT, *DARWIN'S BASS: THE EVOLUTIONARY PSYCHOLOGY OF FISHING MAN* (1996); ROBERT J. RICHARDS, *DARWIN AND THE EMERGENCE OF EVOLUTIONARY THEORIES OF MIND AND BEHAVIOR* (Science and Its Conceptual Foundations ed., 1987); MATT RIDLEY, *THE ORIGINS OF VIRTUE: HUMAN INSTINCTS AND THE EVOLUTION OF COOPERATION* (1997); WILLIAM A. ROTTSCHAEFER, *THE BIOLOGY AND PSYCHOLOGY OF MORAL AGENCY* (1998); *SEX, POWER, CONFLICT: EVOLUTIONARY AND FEMINIST PERSPECTIVES* (David M. Buss & Neil M. Malamuth eds., 1996); ANTHONY STEVENS & JOHN PRICE, *EVOLUTIONARY PSYCHIATRY: A NEW BEGINNING* (1996); ROBERT WRIGHT, *THE MORAL ANIMAL: WHY WE ARE THE WAY WE ARE: THE NEW SCIENCE OF EVOLUTIONARY PSYCHOLOGY* (1995).

assumptions about the biological underpinnings of human behavior, and imbued those underpinnings with a normative value, that is, assumed that if nature had created certain predilections then there must be a good reason for this phenomenon, and it should be encouraged by the law.

But while the promise and pitfalls of incorporating sociobiology into explicitly normative rules governing everything from justifiable homicide to differential employment opportunities for men and women may be clear, it is worth noting that law's uneasy reliance on biology goes even deeper than this. It goes to the very definitions and classifications by which the world is understood. Since classifications exist precisely so that we may differentiate among people and things, and thereby permit differential treatment of those in differing categories, the use of biological definitions in law has profound consequences. By appealing to the apparent clarity and physical permanency of biological notions of life and death, male and female, mother and father, law constrains itself. Instead of asking what sort of social arrangements should constitute a "family" for which "family law" will apply, it begins by asking what sort of biological arrangements constitute a family. Absent an overwhelming problem with this classification, law contentedly yields the definitional terrain to science.

Of course, those who struggle with a definition of death, or a definition of motherhood, may feel compelled to make their work consistent with known biological facts. Consistency between a rule of law and an underlying reality seems, after all, not only intellectually honest but also necessary to ensure public acceptance of the new rules. But this is not necessarily the case.

There are many examples in which the public has become comfortable with rules based on treating people or things *as if* they really met the criteria for an underlying biological reality. One category of such examples encompasses situations where the public is fully complicit in an outright fiction, as the rules define people as things that biology shows they definitely are not. A fine example is treating adoptive parents in all respects as if they were their child's biological parents.⁵ What may determine public acceptance of such fictions is the degree to which they protect the current interests of parties affected by the problem at hand. Adoptive parents are granted a status equivalent to that of biological parents provided that the biological parents voluntarily relinquished their legal ties to the child with full understanding of the consequences and adequate time for reflection

5. See *infra* discussion accompanying notes 28-30.

prior to making a definitive decision.⁶

A second category of such examples includes situations where there is a belief that there is a biological truth about the classification of a person, but that this truth is, at least for the moment, unknowable. A good example is declaring absent people dead after a sufficient passage of time.⁷ "Missing and treated as if dead" is well accepted provided that some provision is made for future events, for example, ameliorating the effects of an erroneous declaration by creating a fund to compensate a long-lost person who reappears to find her assets were distributed to her heirs. In addition, the public may well be wary of the fiction if it is not necessitated by a demonstrable problem, such as the need to settle title to property or regularize marital status. Where such problems could be addressed by other means (e.g., by eliminating the notion of "ownership" in property law or ending current restrictions on bigamy), public acceptance of the fiction will depend upon a credible argument that the fiction provides the best solution.⁸

A third category of examples, and one that may well leave the public most distrustful of legal fictions, includes those where the biological truth is uncertain because the biological categories themselves are unclear. The definitions of "life" and "sex" fall into this sphere.⁹ Since neither term has a clear meaning in biology, the task of choosing one biological definition over all others necessarily entails resort to a second order of analysis. Usually this means an effort to examine the *purposes* for which the definition is being written, and then examining the available biological definitions to determine which one best serves the public policy purposes for its use. Thus, debate over when human life begins tends to arise when discussing abortion, and the choice of definitions will incorporate consideration of whether the purpose is to prevent destruction (in which case a broad definition will be adopted) or to facilitate citizens' free activities (in which case a narrow definition will be adopted).¹⁰ Similarly, the controversy over defining "female" for the purposes of eligibility on Olympic women's teams has persisted without resolution due to a lack of consensus over *why* one divides athletes into teams by sex. Delineation between "male" and "female" becomes blurred in persons with chromosomal structures that lead to outward appearances at odds with genetic defi-

6. *See id.*

7. *See infra* discussion accompanying notes 34-45.

8. *See id.*

9. *See infra* discussion accompanying notes 46-83.

10. *See infra* discussion accompanying notes 46-57.

nitions.¹¹ Although such persons are socially defined as one gender, they may have latent physical attributes of the other, leading to almost surrealistic debates over proper placement in athletic competitions.¹²

Finally, there are cases in which there *isn't any* biological truth at all, but the *impression* that a biological truth exists is being used to create legal categories that are beyond judges and voters to alter, thus lending a sense of inevitability to the legal categories and any consequences that flow therefrom. The current debate swirling around the use of "race" as a classifier for American citizens, and the number of race categories from which to choose, is a leading example. Definitions of race become bogged down in extended discussion of self-identification versus biological definition when it comes to distributing certain social goods, such as eligibility for compensatory payments in the case of Native Americans.¹³

The use of legal fictions is one way to manage the problem of discordance between the social rules we need and the biological *truths* we perceive. But it tends to lead to tortured decision-making precisely because law and lawyers forget that there is no need to constrain legal and social imagination. This reminder is made even more urgent by the growing interest in the biology of genetics, in particular. In some ways best understood as a form of fortune-telling, genetic analysis may well become the most potent form of biological determinism¹⁴ and thus the most potent force in the development of future legal fictions.

This article documents just a few of these legal fictions, and notes those conditions that make them tolerable. A better solution, however, might be found in a more explicit recognition that biological classifications are but one factor in defining social classifications and the rules that apply to them.

II. CATEGORY ONE: EVERYONE KNOWS IT'S A FICTION

The blood ties between parent and child have almost mythologi-

11. See Sylvia A. Law, *Homosexuality and the Social Meaning of Gender*, 1988 WIS. L. REV. 187 (1988).

12. See Michael H. Shapiro, *The Technology of Perfection: Performance Enhancement and the Control of Attributes*, 65 SO. CAL. L. REV. 11 (1991); see generally Shelley Page, *Who is Female and How Do You Know?* OTTAWA CITIZEN, July 19, 1992, at E1.

13. See generally Steven Platzman, *Objects of Controversy: The Native American Right to Repatriation*, 41 AM. U. L. REV. 517 (1992); Kevin L. Kelly & Melinda A. Maxwell, *Native Right: Native Americans*, 22 ENVTL. L. 1225 (1992).

14. See generally RICHARD C. LEWONTIN, *BIOLOGY AS IDEOLOGY: THE DOCTRINE OF DNA* (1993).

cal significance in every culture,¹⁵ representing both the act of procreation and the physical reflection of the parent's body in the body of the child.¹⁶ "[I]t is only natural," states one commentator, "that our sublime and complex feelings regarding this issue reflect precisely the sentiment that law should preserve as a family unit that which nature has rendered genetically similar."¹⁷

The biological model of the family, with its overlay of insistence upon expressing biological relationships within a socially sanctioned, heterosexual marriage,¹⁸ has resulted in the creation of a grand presumption, to wit, that all "real" families follow a biological model of one male and one female parent. No third party can gain a permanent, legally recognized relationship with a child absent an extraordinary intervention by the law or the permanent withdrawal of the natural parents from the child's life. These biological, or *real*, parents are given an almost unbeatable presumption in their favor when it comes to contested custody and parenting cases. When supplanted by non-biological parents, they are made to disappear in order to re-create the illusion of a *biological* family.¹⁹

At the same time, though, this seeming fascination with biology has had a strong competitor — the need to find substitute parents when genetic linkages were missing or inconvenient. Adoption, a statutory creation not existing at common law,²⁰ though long taking

15. See, e.g., NANCY CHODOROW, *THE REPRODUCTION OF MOTHERING: PSYCHOANALYSIS AND THE SOCIOLOGY OF GENDER* 13-30 (1978).

16. See *id.* at 202-03; see also ARTHUR D. SOROSKY ET AL., *THE ADOPTION TRIANGLE* 55-72 (1978). The importance of genetic ties is confirmed by research suggesting that many psychological attributes may also be influenced by genetic heritage, although environmental influences may swamp these effects. Compare EDWARD O. WILSON, *ON HUMAN NATURE* 20-25 (1978); RICHARD C. LEWONTIN ET AL., *New Biology Versus Old Ideology in NOT IN OUR GENES: BIOLOGY, IDEOLOGY, AND HUMAN NATURE* 265 (1984).

17. John L. Hill, *What Does it Mean to be a "Parent"? The Claims of Biology as the Basis for Parental Rights*, 66 N.Y.U. L. REV. 353, 390 (1991). The emotional significance of that biological link became enshrined in religious traditions that grappled with death and the finiteness of humankind. See, e.g., ROBERT J. LIFTON, *THE LIFE OF THE SELF* 32 (1983). For example, many cultures and religious traditions, such as Judaism, hold that there is no formal "afterlife." See *id.* Rather, we live on through our children, a kind of limited, genetic immortality. See *id.* Their memories of us continue our existence. See *id.* And when the memories fail, a small part of ourselves, our genes and our traits, still persist. See *id.* It is no coincidence, then, that Jewish tradition dictates that a man marry his brother's widow if the brother should die childless. See *Deuteronomy* 25:3-10. To do less would be to allow the brother's genes to go untransmitted, surely condemning him to true death.

18. See R. Alta Charo, *Biological Determinism in Legal Decisionmaking: The Parent Trap* 3 TEX. J. WOMEN & L. 265-307 (1994).

19. See generally MARILYN STRATHERN, *REPRODUCING THE FUTURE: ESSAYS ON ANTHROPOLOGY, KINSHIP, AND THE NEW REPRODUCTIVE TECHNOLOGIES* (1992).

20. See *Smith v. Organization of Foster Families*, 431 U.S. 816, 845-46 (1977).

place informally or with private legislation,²¹ is evidence of a strong social tradition that recognizes the purely social and psychological dimensions of parenting, even where these occur in the absence of biological ties.²² Yet even with adoption, adoptive parents may acquire parental status with respect to a particular child only after termination of the parental rights of the child's biological parents, particularly those of the natural mother. The *presumption of biology* serves as an irrebuttable legal presumption that the birth mother of the child is its legal mother and that adoption can take place only consequent to a termination of the parental rights of the birth mother.²³

In the United States, adoption began as a means for privatizing the cost of maintaining orphans.²⁴ Although some attention was paid to the child's well-being, placement mainly served to privatize the cost of the child's education and care, while providing inexpensive labor to the adults taking in the child.²⁵ It only later became grounded in child welfare, and that welfare was generally defined as re-creation of a biological-style family unit for the child to enter.²⁶ Adoption statutes

21. See Irving J. Sloan, *The Law of Adoption and Surrogate parenting* 5-11 (1988).

22. In early Rome and in other ancient cultures, adoption served a primarily religious function associated with ensuring a legitimate male heir to carry out sacred obligations. *Id.* at 5-7. Even after the religious overtones vanished, civil law countries viewed adoption principally as a vehicle for perpetuating the adoptive parent's name and property rather than as a means of benefitting the adoptee. See e.g., Stephan B. Presser, *The Historical Background of the American Law of Adoption*, 11 J. FAM. L. 443 (1971); Fred L. Kuhlman, *Intestate Succession By and from the Adopted Child*, 28 WASH. U. L.Q. 221 (1943); Leo Albert Huard, *The Law of Adoption: Ancient and Modern*, 9 VAND. L. REV. 743, 745 (1956). The English common law did not recognize adoption at all; England finally legalized it by statute in 1926. See *The Adoption of Children Act, 1926*, 16 & 17 Geo. 5, ch. 29. (Eng.). A more cynical explanation, therefore, of the romanticization of genetic linkages between father and child, and the degree to which adoption is structured to re-create families with clear lines of succession from a single father, rests on the needs of men to conserve their property for the benefit of only a few children, those to whom they are truly related by blood and whom they have, in a sense, contracted to sire. See Presser, *supra*.

23. See, e.g., Lori B. Andrews, *Surrogate Motherhood: Should the Adoption Model Apply?*, 7 Children's Legal Rts. J. 13 (1986). See generally PHILIPPE ARIES, *CENTURIES OF CHILDHOOD: A SOCIAL HISTORY OF FAMILY LIFE* (1962).

24. By the nineteenth century, the economic atmosphere tempted many adoptive parents to take advantage of a child's labor without returning much by way of education and succor. See, e.g., Homer Folks, *The Care of Destitute, Neglected, and Delinquent Children* 64-65 (1902). See generally Presser, *supra* note 22.

25. Barbara Laslett, *The Family as a Public and Private Institution*, in *INTIMACY, FAMILY, AND SOCIETY* 94 (Skolnick & Skolnick eds., 1974).

26. Although Americans have always farmed out children in some fashion, adoption as known today did not fully emerge until the mid-nineteenth century when general adoption legislation was introduced on a wave of social welfare reform. Before then child placement in this country was an informal affair. See generally, Laslett, *supra* note 25, at 101-03. Upon the death of one or both parents, a child was simply "put-out" for a suitable blood relative,

soon followed suit, reflecting a slow shift in public attitudes from the notions of apprenticeship and service to the notion that child placement should primarily serve the welfare of the dependent child.

Modern adoption statutes are replete with statements that make it clear that the primary focus of today's adoption laws is the well-being of the adopted child.²⁷ In the case of the out-of-wedlock infant given to strangers for adoption, society generally deems it in the adoptee's best interests to make him a full-fledged member of his adoptive family, as though he had been born into his adoptive family.²⁸

Thus, once created by statute, adoption was designed to use law to re-create the image of the biological family unit. It required that the biological parents be permanently removed from the child's life and the adoptive parents substituted for them,²⁹ a policy that would be followed in the 1990s by the permanent removal of inconvenient genetic or gestational parents. It was not possible for the child to be adopted without the natural parents relinquishing all parental rights and responsibilities. Under law, they became legal strangers.³⁰

The tragic stories of Baby Jessica,³¹ Kimberly Mays,³² and Baby

usually designated in the decedent's will, to raise. Orphaned or abandoned children without family connection and too young for apprenticeship went to public facilities until they were useful enough to be either "bound-out" (indentured or apprenticed) or sent to uninvestigated homes. See, ARTHUR W. CALHOUN, 1 A SOCIAL HISTORY OF THE AMERICAN FAMILY 296-98 (1917). Christian reformers, through religiously affiliated private agencies, began to shift the focus of their efforts toward the placement of infants and young children in homes where they would be treated more like family members than servants. See Presser, *supra* note 23, at 482-88, as cited in Lisa A. Fuller, *Intestate Succession Rights of the Adopted Child: Should the Stepparent Adoption be Extended?* 77 CORNELL L. REV. 1188, 1192 (1992).

27. The requirement of many modern adoption statutes that prospective adoptive parents pass a rigorous screening process before the adoption is finalized illustrates this concern. See OFFICE OF TECHNOLOGY ASSESSMENT OF THE CONGRESS OF THE UNITED STATES, INFERTILITY: MEDICAL AND SOCIAL CHOICES (1988). [hereinafter OTA 1988].

28. Furthermore, it is widely believed that an adoptee's retention of ties with his biological family can undermine the psychological aspect of this assimilation. See e.g., *Crumpton v. Mitchell*, 281 S.E.2d 1, 6 (N.C. 1981). Thus, courts have described adoption statutes as "giving the adopted child a 'fresh start' by treating him as the natural child of the adoptive parent," In Re Estates of Donnelly, 502 P.2d 1163, 1166 (Wash. 1972), and in essence a "substitution of the adoptive in place of the natural family and severance of legal ties with the child's natural family." *Crumpton*, 281 S.E.2d at 6.

29. See Martha Minow, *The Free Exercise of Families*, 1991 U. ILL. L. REV. 925, 925 (1991) (employing a constitutional analysis of the changing nature of families in a time of increasing challenges to civil liberties).

30. JOHN T. DEMPSEY, *THE FAMILY AND PUBLIC POLICY: THE ISSUE OF THE 1980'S* (1981).

31. Baby Jessica, relinquished at birth by her biological mother and a man incorrectly acting as her biological father, was placed with prospective adoptive parents in another state. See Carol McHugh, *Adoption Contests Not Common - But Risks Are*, CHI. DAILY L. BULL.,

Pete,³³ which captivated the American public in 1993, demonstrate beyond question that such simplistic and reductionist approaches fail to capture the emotional complications and the public attitudes toward parenting. In those three cases, a child ended up with her biological parents (Jessica), rearing parent (Kimberly), and both (Pete), thus demonstrating that the legal fiction of the adoptive family as a biological unit cannot be sustained when the legal procedures fail to protect the interests of those whose biological realities are being denied.

These three cases tested the sympathies of the American public, which wavered wildly among preferring biology over adoption, intention over genetics, and happiness over everything. They demonstrated that the law's attempt to make biology (genetics and gestation) and contract (adoption and surrogacy) yield to public policy (heterosexual, marital families that resemble biological families in the wild) is flawed, because no one of these factors can easily and consistently outweigh all the others.

But the most consistent thread that ran through all these stories

Aug. 30, 1993, at 3. Very soon thereafter, the birth mother revoked her consent, and the correctly identified biological father refused his consent. *See id.* After a tortured two year legal battle, Baby Jessica was returned to her birth parents, now married to one another, while her rearing parents sobbed. *See id.* They had been portrayed as having superior parenting skills and offering a better chance for a happy home for the child. *See id.* But the rapidity with which the birth mother revoked her consent, the absence of consent from a correctly identified biological father, and the indisputable biological linkage to the birth mother and her husband militated against leaving Jessica with the rearing parents. *See id.* Indeed, many commentators opined that the real tragedy here was that the case was not resolved eighteen months earlier. *See id.*

32. Kimberly Mays, on the other hand, successfully halted all contact with her biological parents, despite their never having consented to her relinquishment. *See* Hank Grezlak, *Family Law Attorneys Split Over Decision In Mays Case*, LEGAL INTELLIGENCER, Aug. 20, 1993, at 1. Mays was switched at birth with another infant, and her biological parents, the Twiggs, reared the other girl, who died in her childhood from a congenital heart defect. *See id.* Medical treatment for the girl revealed that she could not be the biological daughter of the Twiggs, and after her death, these parents tracked down the Mays family as those who had gone home with their biological daughter. *See id.* Following a tense period of visitation by Kimberly with her biological family, her rearing father requested a temporary end to her contact with the Twiggs. *See id.* The Twiggs sought a recognition of their legal status as Kimberly's parents, and Kimberly sought a court order to sever all ties to the Twiggs. *See id.* A Florida court granted Kimberly her requested relief. *See id.*

33. Baby Pete was relinquished at birth by his birth mother and an incorrectly identified genetic father. *See* Judith Gaines, *Unique Adoption Ruling; Both Sides Cheer Settlement That Shares Vt. Boy*, BOSTON GLOBE, Aug. 21, 1993, at 1. The court, with acquiescence of the parties, declared the genetic father to be the legal father, with visitation rights and support responsibilities. *See id.* It terminated the parental rights of the birth mother, as per her wishes, and declared the rearing mother to be the adoptive, legal, and custodial mother of the child. *See id.* Of course, as one father was already in the picture, the rearing father was granted no status other than that of a step-parent. *See id.*

was that a legal fiction would not be comfortably sustained unless: (1) it is necessary to achieve a fairly compelling purpose, such as assuring that a child's best interests are considered (e.g., sympathy for Baby Jessica's adoptive parents was based in large part on the belief that Jessica would be far better off remaining with her faux-biological family); (2) it actually achieves that purpose (the distress over Kimberly Mays' situation demonstrated public intolerance for the legal fiction that Kimberly was the Mays' biological daughter and unrelated to the Twiggs, as she clearly felt it was in *her* best interests to explore both families.) and (3) the cure is not worse than the disease. When adoption fictions work to deny the affected adults a fair opportunity to protect their own interests, even an adoption that presumably *is* serving the child's best interests will be undone. Baby Pete's genetic father, denied a chance to claim his paternity at Pete's birth, was seen as so badly injured by the legal fiction that Pete's adoptive parents were his only parents that the court re-organized the arrangement.

III. CATEGORY TWO: WHEN BIOLOGICAL TRUTHS EXIST BUT CANNOT BE FOUND

Law considers "absence" as more than being away from one's home. The absentee has vanished, and it is impossible to tell whether he is dead or alive. This uncertainty is the hallmark of the absentee: According to an expression of Tronchet, and as extraordinary as it may seem, the absentee is neither dead nor alive; in this uncertainty, it cannot be proven that he is dead nor that he is alive.³⁴ It is, thus, doubt which prevails.³⁵

The number of these "living dead" in the United States has been estimated between 60,000 to 100,000 people.³⁶ They create a morass

34. See Frances T. Freeman Jalet, *Mysterious Disappearance: The Presumption of Death and the Administration of the Estates of Missing Persons or Absentees*, 54 IOWA L. REV. 177, 226-27 (1968) (discussing absentee statutes based on continued life).

35. See *id.*

36. In 1996, 10,048 people were reported missing in Iowa alone. See *Missing Persons*, DES MOINES REG., Feb. 11, 1997, at 10. Nationally, in 1996, "955,252 missing persons (adults and juveniles) were reported to the police and entered into the [Federal Bureau of Investigation's] FBI's National Crime Information Center. The FBI estimates that 85 to 90 percent of missing persons are juveniles." Martin Frost, *America Cannot Forget About Missing Children*, FT. WORTH STAR-TELEGRAM, May 24, 1997, at 15. According to author Jonathan Coleman, the FBI's computer file on missing persons at the National Crime Information Center has listed up to 60,000 reported cases of "regular Americans as absent without logical explanation." Paul Dean, *Disappearing Acts*, L.A. TIMES, Sept. 19, 1989, at 1, available in 1989 WL 2247211. The head of the private missing persons agency, Search, Inc., estimates that 100,000 adult Americans are missing. See Dean, *supra*.

of legal problems,³⁷ and ignoring those problems presents an unacceptable burden on those alive and present. Thus, various rules have developed to govern the management of this phenomenon, attempting to balance the interests of those with rights contingent upon the absentee's death with those rights of the absentee himself, should he still be alive.

The presumption of death based on absence for a period of years appears in almost all common law states. While historically some relied solely on the common law presumption,³⁸ most states have em-

37. Questions may arise concerning the security of transactions with the missing person's estate, such as the disposition of his land. *See, e.g.*, *Martin v. Phillips*, 514 So. 2d 338, 341 (Miss. 1987) (holding that reliance on decree of death of absentee by vendees could prevent return of property on absentee's reappearance); the right to proceeds of insurance policies on his life and pensions, *see, e.g.*, *Lord v. Metropolitan Life Ins. Co.*, 434 So. 2d 1180, 1182 (La. App. 1st Cir. 1983) (rejecting application of presumption of death to award of benefit under life insurance policy); the right to a cause of action, *see, e.g.*, *Pierce v. Gervais*, 425 So. 2d 922, 924-25 (La. App. 4th Cir. 1983) (refusing to vacate judgment of divorce granted to spouse of soldier missing in Vietnam, resulting in denial of military widow's benefits); 20 C.F.R. § 404.721(b) (1989) (governing payment of social security survivors' benefits to spouses of absentees); the necessity of providing for his dependents, *see, e.g.*, *Ledet v. State Dept. of Health and Human Resources*, 465 So. 2d 98, 101 (La. App. 4th Cir.), *writ denied*, 468 So. 2d 1211 (1985) (holding that plaintiff whose right of action for wrongful death of sister depended on prior death of absentee mother could rely on presumption of death based on absence); *Germain v. Germain*, 220 N.Y.S.2d 1013 (Sup. Ct. 1961) (sequestering property and income of missing defendant, appointing spouse as receiver to use them for her support); the marital status of his spouse and the paternity and legitimacy of children of his spouse's second marriage, *see, e.g.*, *Wells v. Wells*, 191 A.2d 763 (N.J. 1963) (upholding validity of plaintiff's marriage to spouse missing for thirty-three years, and finding second marriage eleven years after spouse disappeared was a nullity); *Stewart v. Rogers*, 133 S.E.2d 155 (N.C. 1963) (upholding validity of second marriage, despite failure of absentee's spouse to wait statutory seven years, because absentee disappeared in life-endangering circumstances); *McCaffrey v. Benson*, 38 La. Ann. 198 (1886) (finding second marriage a nullity because of pre-existing, undissolved marriage to person who had disappeared); LA. CIV. CODE ANN. art. 80 (West 1993), *repealed by* 1938 La. Acts No. 357 (authorizing remarriage of spouse of absentee); *Succession of Mitchell*, 323 So. 2d 451, 456-57 (La. 1975) (children legitimated by subsequent marriage of their biological parents, despite possibility that first husband, an absentee, was alive at the time of their conception and birth); the conservation of his property from possible waste, the release of property from a life tenancy; *see, e.g.*, *Succession of Butler*, 166 La. 224 (1928), *reh'g granted*, 117 So. 127 (La. 1928) (succession devolves exclusively on coheirs of absentee); *Eagle v. Emmet*, 4 Brad. 117 (N.Y. Sur. Ct. 1856) (legacy to absentee did not lapse prior to seven years of absence because facts of disappearance did not suggest death); the merchantability of land titles from his estate, *see, e.g.*, *Saracino v. Kosower Const. Co.*, 140 A. 458 (N.J. 1928) (plaintiff's title to real property unmerchantable because absentee ancestor in title, though presumed dead, might return), and claims of inheritance from him, *see, e.g.*, *Heirs of Wilson v. Smith*, 14 La. Ann. 368 (1859) (denying succession rights to real property of claimants who were unable to identify the absentee owner thereof as the *de cujus*); *Wachovia Bank & Trust Co. v. Deal*, 44 S.E.2d 73 (N.C. 1947) (denying claim of collaterals to trust estate of absentee, who on the evidence was neither presumed dead nor proven to be without descendants).

38. *See, e.g.*, *Cobble v. Royal Neighbors of America*, 236 S.W. 306 (Miss. 1921); *Karl*,

bodied the presumption in a statute, either individual³⁹ or adapted from the Uniform Probate Code.⁴⁰ The presumption acts as a bright line; after the requisite time has passed, the absentee is treated as if he were biologically dead: his will is probated, his marriage is acknowledged as dissolved, and his other rights and responsibilities are nullified.

The key to the success of the common law and statutory provisions lies in their preservation of remedies in the event of error. While imperfect, provision for return of some property or compensation from a public insurance fund operates to guarantee a minimum degree of fairness to parties erroneously declared dead. The residual unfairness is tolerated because it is outweighed by the damage caused to innumerable people who are clearly alive if some sort of scheme for presuming death were not put in place.

A second area in which law creates presumptions of death concerns the official time to be recorded as the moment of death.⁴¹ The issue takes on importance in the case of accidents in which two people die so close in time that it is impossible to tell which person died first. Should there be an issue of inheritance between them, it is important to know which person survived longer. If the survivor was an heir to the first person to die, then property would flow from the first person to die to the survivor, and thence to the survivor's heirs. Since the two people may have had residuary heirs, figuring out which person died first would determine which residuary heirs to the respective decedents would stand to inherit the estates. In the absence of evidence of survivorship, however, the lack of certainty could lead to interminable delays in probating the estates, and prevent the transmission of the property to those still alive and capable of putting it to profitable use.

Drechsler, Comment, *Absentee's Property Act*, 1942 WIS. L. REV. 282-83 (1942) (discussing Wisconsin's non-statutory common law presumption). See *In re Will of Menzel v. Northwestern Nat'l Bank*, 77 N.W. 2d 833 (Minn. 1956) (discussing the use of Wisconsin's non-statutory common law presumption). See generally 22 Am. Jur. 2d *Death* § 551 (1996).

39. See, e.g., ARK. CODE ANN. § 16-40-105 (Michie 1987); CAL. EVID. CODE § 667 (West 1997); IND. CODE ANN. § 29-2-5-1 (West 1997); MISS. CODE ANN. § 13-1-23 (West 1972).

40. In 1939, the American Bar Association and the National Conference of Commissioners on Uniform State Laws approved a model law on this point, but by 1957 only three states had adopted it. See *Haynes v. Metropolitan Life Ins.*, 277 A.2d 251, 254 (Md. 1971). The Uniform Probate Code provides for a presumption of death after five years' absence. See UNIF. PROBATE CODE § 1-107(3), 8 U.L.A. 28 (1987). However, the time period has been changed in some of the states that have adopted the code section. Some states have returned to the traditional seven years; see, e.g., N.D. CENT. CODE § 31-11-04 (Michie 1997). Minnesota has shortened the period to four years. See MINN. STAT. ANN. §§ 524.1-107(3), 576.141 (West 1997).

41. See generally, Internal Revenue Code, 26 U.S.C.A. § 2042 (West 1998); FED. R. CIV. P. 17; *DuRoure v. Alvord* 120 F. Supp. 166 (1954).

For the purpose of facilitating the orderly transfer of property from owner to heir in these cases, many states have enacted a simultaneous-death statute.⁴² As with absentees, the law creates a new presumption, here that the people died in the same instant. This will be the basis on which property is distributed unless someone can prove that one of them probably survived the other.⁴³ Unlike the absentee presumption, however, the presumption does not operate by taking a particular fact, such as absence of seven years, and then declaring that this fact alone is enough to constitute proof that a person is probably dead. Here, no best guess of the order of deaths is made. Instead, a wholly new, and quite unlikely, version of biological reality is adopted as presumptively true absent good evidence to the contrary. In this sense, the simultaneous death statutes are creating presumptions of law, not simply setting forth permissible inferences of fact from clues like extended absence.

That these statutes represent presumptions of law rather than inferences (or presumptions of fact) is made abundantly clear by the Uniform Probate Code (UPC), which introduced a revised rule that persons killed in a common accident are presumed to have died at the same instant unless someone proves that one of them probably survived at least 120 hours longer than the other.⁴⁴ Thus, under the UPC, where one person is declared dead at the scene, and the other arrives alive at the emergency room but dies soon thereafter, property from the person dead on the scene does not go to the person dead in the emergency room, and thence to the heirs of the person in the emergency room. Instead, the heirs of both share the estates, as they would had these two actually died simultaneously.⁴⁵

One reason such a presumption of law is tolerated is that the competing interests are both socially constructed. The purpose for noting the order of deaths is to facilitate invoking inheritance laws. Where determining this fact is too unwieldy to facilitate probate, or where facilitating probate seems pointless because the survivor did not live long enough to enjoy the inheritance, the law simply declines to use the general rule.

Indeed, the law need not have used the fiction of simultaneous death at all - it could have been written to simply say that the order of deaths doesn't apply when it can't be determined or when to do so

42. See, e.g., Ill. Rev. Stat. 1981 ch. 110 1/2; IDAHO CODE § 15-2-601 (1997).

43. See, e.g., UNIF. SIMULTANEOUS DEATH ACT (amended 1991), 8A U.L.A. 557 (Supp. 1992).

44. See UNIF. PROBATE CODE §§ 2-104, 2-601 (West 1998).

45. See *id.*

does not further the purposes of probate law. But by pretending that the deaths really were biologically simultaneous, there is no need to write myriad special provisions throughout federal and state codes. Instead, existing codes can be used, and the simultaneous times of death neatly plugged into existing formulae. This is very much like adoption, where the legal (albeit not psychological) fiction of kinship permits a global change in the adoptees' civil status.

IV. CATEGORY THREE: CONFUSIONS INHERENT IN BIOLOGY

A. *Whose Life is It, Anyway?*

Notions of human "life" suffer from a lack of clarity within biology itself as to its definition and its objective measurement. The most common situation in which the dilemma arises is in the attempt to identify when developing forms of human life, such as gametes, embryos, fetuses, and newborns, are entitled to the same basic human rights that are automatically applied to children and adults. The solutions are most often applied, as in the area of death, when disputes arise concerning the rights of accepted members of the moral community to take actions that will affect the physical state of the disputed members' bodies. Abortion, which destroys disputed members' bodies, is but the most vivid example. With so little agreement about the characterization of the accepted members' actions (moral vs. immoral, strongly vs. weakly protected by legal rights), advocates from all sides often resort to reliance on claims that biological reality in the area is clear and singular, and that this reality leads ineluctably to a single solution to the policy debate.

It is perhaps no surprise that the field of reproductive law and policy is drowning in several fundamental misconceptions:⁴⁶ first, that there is a single, accepted biological answer to the question "when does human life begin?";⁴⁷ second, that moral philosophy universally holds that human rights attach to any and all types of human life; and third, that law is obligated to hold that legal rights attach to any entity that is biologically human and alive or that is accepted by moral philosophy as the possessor of human rights.⁴⁸

Like the process of dying, the process of conception and birth

46. For a rehearsal of all these arguments, see e.g. Jed Rubenfeld, *On the Legal Status of the Proposition that "Life Begins at Conception,"* 43 STAN. L. REV. 599 (1991).

47. See, e.g., S. 2135, 105th Cong., 2nd Sess. (1998) (stating that Congress "finds that the life of each human being begins at fertilization").

48. See, e.g., SCOTT DOUGLAS GERBER, *TO SECURE THESE RIGHTS: THE DECLARATION OF INDEPENDENCE AND CONSTITUTIONAL INTERPRETATION* 182 (1995), as cited in Jason F. Robinson, *Book Review, Gerber's To Secure These Rights*, 12 J.L. & POL. 123, 124-30 (1996).

has no single moment at which an entity becomes a living human being. Rather, living cells with human genetic material become progressively more intertwined, then begin multiplying and differentiating, and finally become physiological systems capable of sustained existence outside the uterine environment. This process of development offers many developmental markers, but none, in and of themselves, satisfy the philosophical and legal question of when society must (or even ought to) embrace the entity as a full member of its community. Different cultures feel bound to recognize the full range of human rights in such entities at times as different as fertilization or 30 days following birth.⁴⁹

Nonetheless, American law has historically looked to biology to determine the time at which to initiate legal standing. Live birth was long the initial prerequisite for conferral of legal standing⁵⁰ because it provided the simplest bright line rule and the most obvious time at which to recognize the existence of a new entity as a legal person.⁵¹ The live birth rule did not purport to characterize the fetus as anything in particular, (e.g., property, potential child). The rule merely said what the fetus was not, (i.e., it was not a person with legal standing to sue or be sued).

Once fetal independence and integration were recognized, the point at which the biological paradigm conferred legal standing was revised.⁵² But as technology advanced, medical practitioners discovered that fetuses became capable of independent integrated functioning in utero at the so-called "moment of viability."⁵³ Consistent with a position that all human bodies capable of independent integrated functioning (even if they currently were not, in fact, independent of the mother's womb) receive legal standing, the courts were forced to abandon the live birth rule because the point at which the criteria for

49. For example, under some circumstances, Orthodox Judaism does not acknowledge personhood until thirty days after birth. See DAVID FELDMAN, *MARITAL RELATIONS, BIRTH CONTROL AND ABORTION IN JEWISH LAW* 253 (1974), as cited in Barbara Gregoratos, *Tempest in the Laboratory: Medical Research on Spare Embryos from In Vitro Fertilization*, 37 HASTINGS L.J. 977, 986 (1986).

50. See ROSCOE POUND, *JURISPRUDENCE* 384-94 (1959).

51. See Patricia A. King, *The Juridical Status of the Fetus: A Proposal for Legal Protection of the Unborn*, 77 MICH. L. REV. 1647, 1657-59 (1979).

52. See, e.g., *Bonbrest v. Kotz*, 65 F. Supp. 138 (D.D.C. 1946).

53. Mary Ellen Avery, *Editorial: Considerations on the Definition of Viability*, 292 NEW ENG. J. MED. 206, 206 (1975) (identifying that any definition or modus operandi agreed upon at one point in time would change within the next year but also recognizing that to answer the question of viability of a human fetus depends on deciding at what point to treat "the product of conception" as any piece of tissue removed at operation or when to "mobilize the facilities of a neonatal intensive-care unit to promote a small possibility of survival").

legal standing were satisfied preceded birth. Starting with *Bonbrest v. Kotz*,⁵⁴ a flurry of cases were decided applying the new biological bright line, most often to confer legal standing upon viable fetuses to sue (after birth) for prenatal injuries inflicted after viability.⁵⁵

Justice Blackmun's decision in *Roe v. Wade*⁵⁶ appeared to settle remaining issues concerning the legal standing of fetuses, but closer examination reveals that it merely settled the status of fetus *vis-à-vis* a competing interest on the part of a woman to terminate her pregnancy.⁵⁷ The Court simplified this balancing process considerably when it declared that, based on historical analysis, the Constitution and its amendments were drafted without any thought that the phrase "person" would encompass fetuses. Thus, fetuses would not be considered legal "persons" for the purpose of the Fifth and Fourteenth Amendments (which direct the federal and state governments, respectively, to ensure due process and equal protection of the law to all persons). As pregnant women *are* legal "persons" for the purposes of these amendments, their rights would nearly always be protected, even at the expense of any rights states choose to grant to fetuses.

The word "person" is used as a term of art in law to signify an entity granted equal protection of the law. The term is *not* co-extensive with the biological concept of "a live human;" corporations can be persons while fetuses or antebellum slaves are not. But the intuition that legal persons *ought* to be co-extensive with biological persons stems from the larger intuition that the legal system ought to be co-extensive with physical reality.

Unfortunately, as with the case of "gender," biology cannot neatly define the term "person." While biology can define "human," it cannot define "personhood" solely in terms of physical characteristics. For example, to define all living cells with a human genome — such as a fertilized egg — as a person would define every living cell in our skin, kidneys and other organs as a person as well. Thus, some philosophical inquiry into the purpose for dividing live human cells as "per-

54. 65 F. Supp. 138 (D.D.C. 1946) (holding that a child which was injured in the process of removal from its mother's womb was a viable child with standing in court to maintain action for its injury and thus child could not be denied recovery on ground that it was merely a part of its mother).

55. See e.g., Roland F. Chase, Annotation, *Liability for Prenatal Injuries*, 40 A.L.R.3d 1222 (1971); Thomas M. Fleming, Annotation, *Right of Child to Action Against Mother for Infliction of Prenatal Injuries*, 78 A.L.R.4th 1082 (1990); Sheldon R. Shapiro, Annotation, *Right to Maintain Action or to Recover Damages for Death of Unborn Child*, 84 A.L.R.3d 411 (1978).

56. 410 U.S. 113 (1973).

57. See generally *id.*

sons" or "non-persons" is required in order to use what biological information is available.

B. *She, He, and What?*

Perhaps nothing seems so basic as our notions of who is a girl and who is a boy. But, in fact, ambiguities about biological definitions of sex are another example of an area in which genuine ambiguities in biological definitions themselves undermine the task of making rules. Here, however, even a willingness to go beyond what is intuitive can fail to achieve acceptable public policy if the purposes of the rule are inadequately articulated and the technical implementation of the nuanced rule has substantial room for error.

Some of the best examples come from the world of sports. Gender tests were first introduced to the Olympics in 1966 to prevent men from seeking an advantage by competing as women.⁵⁸ "The Press sisters from the Soviet Union, Irina, a pentathlete and hurdler, and Tamara, a shot putter and discus thrower, won five Olympic gold medals and one silver in 1960 and 1964 amid suspicions about their sexuality."⁵⁹ When gender testing began in 1966, they retired, arousing more suspicions.⁶⁰ Similar stories developed over the years, and, more recently, a Filipina sprinter billed as Asia's next track queen was forced to publicly proclaim she *is* indeed female even though medical tests have so far shown she is genetically male.⁶¹

58. Because of the obvious advantages in strength and size of men over women it has long been accepted that the two sexes should compete in separate competitions. See Gail Vines, *Last Olympics for the Sex Test?* 135 NEW SCIENTIST 39 (1992). During the 1960s, when women began hard physical training, and perhaps because of the advent of misuse of anabolic steroids, there were increasing concerns regarding the sexuality of some female athletes. See *id.* at 39-40. It was decided by the major sporting organizations that all women should undergo "gender verification" to prove their femininity. See *id.* at 39.

The first attempt at sex testing by the International Amateur Athletic Federation in 1966 involved the parade of naked female athletes before a panel of male doctors. Fortunately this was immediately replaced by the International Olympic Committee with the buccal smear test for the Barr body (X chromatin). At the Barcelona Games in 1992 the Barr test was replaced by the polymerase chain reaction (PCR) test, which detects the presence of the Y chromosome. The buccal smear is minimally invasive, is inoffensive, and gives rapid results. It does not, however, detect women abnormally virilised by such conditions as congenital adrenal hyperplasia, but it does show the chromosomal abnormality (XY) of phenotypic women with testicular feminisation. The latter undergo physical examination to assess their phenotype and are allowed to compete in Olympic competition.

Roslyn Carbon, *Female Athletes: ABC of Sports Medicine*, 309 BRIT. MED. J. 254, 255 (1994).

59. See *Olympic Weekly*, ATLANTA CONST., July 28, 1995, at G2.

60. See *id.*

61. See Karen Allen, *Gender in Question*, USA TODAY, Mar. 7, 1996, at 3C, available in

Indeed, the phenomenally rapid rise of the Chinese women athletes at the Barcelona Olympics resulted in allegations that they *must* be males, and was the impetus for much of the testing at the Asian games.⁶² Many observers, particularly feminists, were outraged that rapid achievement in sports was viewed by so many sports organizers as beyond the spectrum of "normal" female capacities, especially since Olympic level athletes of either sex are likely to be outliers in terms of both genetic and environmental predisposition to excellence in physical activities.

The most common explanation for the interest in sex testing is to prevent males from competing as women, on the assumption that males have a general advantage in strength and fatty-lean tissue ratios. But there are more than a dozen conditions, known as intersex states, in which there may be a mixing of male and female traits; some give such disputed-women some advantage in sports, others cause a disadvantage.⁶³ It depends on what type of hormones they're producing, what kinds of effects these hormones have on the body, and whether success at a particular sport depends upon such effects.⁶⁴

Although techniques for gender testing have evolved over time to take advantage of new technologies, athletic federations as well as some physicians say the testing is unreliable, unnecessary, and unfair to women, who may be ridiculed and wrongly disqualified because of the results. Early testing regimes consisted of phenotypic examination, often requiring women athletes to parade nude before a panel of gynecologists so that genital examination could be performed.⁶⁵ Chromosome testing by blood sampling was hailed as a major advance, and the subsequent introduction of buccal sampling and polymerase chain reaction (PCR) was considered the crowning achievement in subtle, relatively non-invasive testing.⁶⁶

Chromosome testing, though usually accurate for the purpose of classifying people as *genetically* male or female according to genetic definitions and conventions, does not necessarily identify people who

1996 WL 2047897; Eric Garwood, *He Said, She Said: Gender Questioned*, FLA. TODAY, Feb. 21, 1996, at 2C, available in 1996 WL 10048997.

62. See Mike Fish, *Superpower Obsession*, ATLANTA J. CONSTITUTIONAL, Apr. 17, 1994, at A8.

63. See Vines, *supra* note 58, at 40-42; See also A. Carlson, *When is a Woman Not a Woman?* 13 WOMEN'S SPORTS & FITNESS 24 (1991).

64. See Vines, *supra* note 58, at 40-42.

65. See Carbon, *supra* note 58, at 255.

66. Buccal smears for cell samples are certainly less *psychically invasive*, although technically they are more physically invasive than the earlier gynecological parades. See Vines, *supra* note 58, at 40; Carbon, *supra* note 58, at 255.

are hormonally or genitally at odds with their chromosomal inheritance. Since "gender" is commonly understood to embody more than an intrinsic indicator of genetic sex,⁶⁷ but also self-identification with either men or women as well as ascribed identification, chromosome testing cannot necessarily serve to sort the population into "men" and "women."⁶⁸

Although seemingly an improvement, unfortunately PCR testing is so sensitive that lab error rates can exceed that for the more primitive forms of chromosomal testing; even a small number of a male technician's own shedding skin cells can contaminate the sample under testing.⁶⁹ It has been reported that four to six athletes have been disqualified or have dropped out of each Olympiad since 1968 because of the chromosome tests while only seven cases of "justifiable" exclusion have been confirmed.⁷⁰ And while the International Amateur Athletic Federation (IAAF) stopped testing female athletes in 1992, after they concluded chromosome testing was inconclusive and scientifically inaccurate in determining the sex of an athlete, it continues in other sporting federations.⁷¹ "Scientific and medical bodies have also joined the protest, asking sports bodies, especially the International Olympic Committee (IOC), to stop using chromosome testing. They include the American Medical Association and the

67. See John Money, GAY STRAIGHT, AND IN-BETWEEN 28-29 (1988) (describing a list of eight various criteria for determining sex).

68. For example, people undergoing transsexual surgery report that they have had a life-long perception of their inner psychological selves which has been at odds with their gender and has been ascribed to them through the reactions and definitions of others. On the other hand, some people have a self-perception that is in accord with their genetic make-up, but their appearance or behavior is at odds with some cultural norms of appearance and behavior associated with their gender. In such cases, the authenticity of their self-perception will be challenged. See, e.g., Jerold Taitz, *Judicial Determination of the Sexual Identity of Post-Operative Transsexuals: A New Form of Sex Discrimination*, 13 AM. J. LAW & MED. 53, 53 n.1 (1987).

69. See generally Albert de la Chapelle, *The Use and Misuse of Sex Chromatin Screening for 'Gender Verification' of Female Athletes*, 256 JAMA 1920 (1986); B. Digeon et al., *Sex Testing in the Olympics*, 358 NATURE 447 (1992); Malcolm A. Ferguson-Smith & Elizabeth A. Ferris, *Gender Verification in Sport: The Need for Change?* 25 BRIT. J. SPORTS MED. 17 (1991); Arne Ljungqvist & Joe Leigh Simpson, *Medical Examination for Health of All Athletes Replacing the Need for Gender Verification in International Sports: The International Amateur Athletic Federation Plan*, 267 JAMA 850 (1992); Joe Leigh Simpson, *Disorders of Gonads and Internal Reproductive Ducts*, in 2 PRINCIPLES AND PRACTICE OF MEDICAL GENETICS 1593 (Ajan E.H. Emery et al., eds. 1990); Darnelle M. Thompson et al., *Routine Use of Hair Root or Buccal Swab Specimens for PCR Analysis: Advantages Over Using Blood*, 207 CLINICA CHIMICA ACTA 169 (1992); A. Yamaguchi et al., *A Simple Method for Gender Verification Based on PCR Detection of Y-Chromosomal DNA and its Application at the Winter Universiade 1991 in Sapporo City, Japan*, 13 INT'L J. SPORTS MED. 304 (1992).

70. See *supra* discussion accompanying notes 58-69.

71. See *id.*

American College of Obstetrics and Gynecology, respected bodies that put pressure on the organizers of the 1996 Olympics in Atlanta."⁷²

Political critiques of sports sex testing and its attachment to traditional notions of male and female capacities might have been viewed as irrelevant had sex testing actually furthered a clear and compelling policy goal. Unfortunately, it does not. Strength differentials do not necessarily track genetic make-up more consistently than other factors. Training is by far the most significant determinant of success.⁷³ Moreover, within the world of medicine and biology, there are non-genetic factors that can outweigh the average advantage in strength that is normally conveyed by mere presence of a normally operating Y chromosome. For example, women who have taken steroidal hormones cannot be detected by chromosome screening. They will, however, have a strength advantage over most of their untreated sisters due to the drug's effect of enlarging their muscles.

Similarly, females with a condition called congenital adrenal hyperplasia⁷⁴ will pass the chromosome test with flying colors even though the condition can make them unusually muscular. In this common hereditary disorder, the adrenal glands of women with normal XX chromosomes produce an excess of male hormones, which can lead to masculine traits, including ambiguous external genitalia and masculine body proportions. Pseudo-hermaphrodites⁷⁵ and true hermaphrodites,⁷⁶ people with rare conditions, display a range of phenotypes, from almost typically male to almost typically female. These athletes, too, will usually pass undetected by chromosome screening.

Conversely, there are two abnormalities that would label phenotypical females as "male" if chromosome screening is done, but which do not convey any atypical strength.⁷⁷ People with Turner's Syndrome are female in appearance and physical orientation, but are short, and usually don't menstruate or conceive.⁷⁸ And one of the

72. See *What Is a Man, What Has He Got?* IRISH TIMES, Oct. 13, 1994, at 20.

73. See Roslyn Carbon, *Female Athletes: ABC of Sports Medicine*, 309 BRIT. MED. J. 254 (1994).

74. THE MERCK MANUAL OF DIAGNOSIS AND THERAPY, *Pediatrics and Genetics*, §16.196, 2071 (15th ed., 1987).

75. "Female pseudohermaphrodites are normal females exposed to excessive amounts of androgenic steroids in utero. They have 46,XX karyotypes and normal internal genitalia, but ambiguous external genitalia." *Id.* at § 16.187, 1962.

76. "True Hermaphrodites have both ovarian and testicular tissue, and mixed masculine and feminine genital structures; a rare individual may be fully masculinized externally." *Id.*

77. See Page, *supra* note 12 at E1.

78. See *id.*

most common intersex states is androgen sensitivity, where phenotypical females have the same XY chromosome make-up as genetic males, but don't respond to the male hormone testosterone. The result is a person with breasts, a vagina, and a female sex life, and with no atypical strength or musculature.⁷⁹

Men, meanwhile, have never been subjected to these tests, even though they too can have genetic abnormalities that on paper make them appear female. In Klinefelter's Syndrome and XX male syndrome, phenotypical men have two XX chromosomes; while their genitalia may be atypically small, they will have male body build and muscle strength. Though classified as XX males by genetic convention, such men would presumably pass the sports' world's chromosome tests, being viewed as females and thus eligible for women's teams, despite the presumed advantages of male musculature.

But the problem is larger than the imperfection of using chromosome testing to ascertain sex; it is the difficulty in articulating a clear rationale for the testing at all. Its purported purpose, which is to level the playing field for women by having them compete only against women, ignores the very real variation in genetic coding for body type among ordinary women. For example, those who are born with a strong predisposition to greater than average height will have an advantage in a number of track and field events. Their sisters of average height could surely complain that a failure to qualify as an Olympic high-jumper has less to do with training, determination, and commitment and more to do with one's fortune in inherited body type. The training and other "character" factors only help to differentiate among the already fortunate tall women.

Indeed, mixed attitudes about whether sporting events are about celebrating excellence in outcome versus excellence in effort is evident in the multiple weight classes for boxing (which allows lighter competitors to be appreciated for their skill and training) versus the single class structure of basketball (which has never fronted a short-persons' league) and most other sports. Without clarity about the purpose of the sports spectacle, the credibility of humiliating and often erroneous sex testing will be undone, as little purpose seems to be served by resorting to such a problematic practice.⁸⁰

The question of identifying people as men or women is also of interest beyond the world of Olympic politics. Similar questions have

79. *See id.*

80. Similar questions arise in the context of debates over banning steroid use. *See, e.g.,* Willard Gaylin & Ruth Macklin, FEELING GOOD AND DOING BETTER: ETHICS AND NONTHERAPEUTIC DRUG USE 107-126 (Thomas H. Murray, ed., 1984).

arisen in legislative politics.⁸¹ For example, British Labour Party officials made an impromptu ruling in 1994 on whether a man who has a sex change operation is a 'woman' and, if so, when she becomes one. The party's interest was sparked when it was confirmed that up to fifty Labour parliamentary candidates in winnable seats were to be chosen from all-women short lists, opening up the vista of a legal challenge over whether a candidate is, or is not, a woman.⁸² As for transsexuals, the questions can range from whether a phenotypic female raising a child conceived with the phenotypic female's sperm should be treated as the "mother" or the "father" of the child to whether birth certificates should be re-issued with a change of sex following transsexual surgery.⁸³

The legal response in both situations would be made more credible if more attention were focused on why the distinction is needed and less on the underlying genetic make-up of the individual. For the Labour Party, the issue ought to be why there are all-women short lists (e.g. to ensure women a spokesperson who understands their lives) and whether the disputed individual can fulfill that purpose.

V. CATEGORY FOUR: ILLUSIONS OF BIOLOGICAL TRUTHS

The normative power of what is perceived to be an unshakeable biological reality is brought home most forcefully when examining classification systems that are political and cultural constructs which attain persistent, unchallenged credibility due to the belief that they are based instead on physical reality. The biological determinism that underlay many 19th century notions of women's capabilities and roles is one example. Racial classifications are another.⁸⁴

A recent study found that when new racial categories were offered in the early 1970s, thirty-four percent of people participating in a census survey in two consecutive years changed racial groups from

81. See, e.g., Andy McSmith, *New Labour Party Men Grapple with Sexual Identity*, OBSERVER (London) Oct. 9, 1994 at 13.

82. See *id.*

83. See generally Gail Brent, *Some Legal Problems of the Post-Operative Transsexual*, 12 J. FAMILY L. 405 (1972-73); Justice Ormrod, *The Medico-Legal Aspects of Sex Determination*, 40 MEDICO-LEGAL J. 78 (1972). For cases concerning birth certificate alterations, see *Van Oosterwijck v. Belgium*, 3 Eur. Ct. Hum. Rts. 557 (1981); *Rees v. U.K.*, 7 Eur. Ct. Hum. Rts. 429 (1985).

84. See, e.g., Christopher A. Ford, *Administering Identity: The Determination of "Race" in Race-Conscious Law*, 82 CALIF. L. REV. 1231 (1994); Ian F. Haney Lopez, *The Social Construction of Race: Some Observations on Illusion, Fabrication, and Choice*, 29 HARV. C.R.-C.L. L. REV. 1 (1994) (analyzing the definitions of race offered by a myriad of sources); Luther Wright, Jr., *Who's Black, Who's White, and Who Cares: Reconceptualizing the United States's Definition of Race and Racial Classifications*, 48 VAND. L. REV. 513 (1995).

one year to the next.⁸⁵ Another documents how the race classification assigned at birth may well be different from that assigned at death.⁸⁶ The next sea change could occur in the year 2000, depending on new census rules allowing for persons to select more than one of the current racial categories (white, black, American, Aleut, Asian/pacific islander, Eskimo, and "other") to describe themselves.⁸⁷

Despite a century of proof that race is a social and not a biological category, it is still viewed as a matter of "blood."⁸⁸ It has been used as a tool to squelch criticism of the particular racial classification schemes in place;⁸⁹ to bolster theological and cultural beliefs that are intertwined with race classification; and, most recently, to construct arguments about the "immutability" of race as the foundation of a

85. See James Shreeve, *Terms of Estrangement*, 15 DISCOVER 56, 57 (1994).

86. See Robert A. Hahn et al., *Inconsistencies in Coding of Race and Ethnicity Between Birth and Death in US Infants. A New Look at Infant Mortality, 1983 through 1985*, 267 JAMA 259 (1992). The objective of this study was to ascertain the consistency of the racial and ethnic classification of United States infants between birth and death and its impact on infant mortality rates. See *id.* at 259. The subjects used were all "US infants born from 1983 through 1985 who died within a year." *Id.* The process utilized was the "national linked birth/infant-death computer tape, augmented with information on infants' race and ethnicity at death, to compare the coding of race and Hispanic ethnicity at birth and at death." *Id.* The results showed an "inconsistency in the coding of race is low for whites (1.2%), greater for blacks (4.3%), and greatest for races other than white or black (43.2%). Most infants reclassified at death (87.3%) are classified as white at death." *Id.* The study concluded that "the coding of race and ethnicity of infants at birth and death is remarkably inconsistent, . . ." *Id.*

87. As of 1994, the Census Bureau utilized four specific racial categories in addition to the generic "other" category: white, black, Asian-Pacific Islander, and American-Indian-Alaskan native. See Steven A. Holmes, *U.S. Urged to Reflect Wider Diversity in Racial and Ethnic Classifications*, N.Y. TIMES, July 8, 1994, at A18. See also generally Robert A. Hahn, *The State of Federal Health Statistics on Racial and Ethnic Groups*, 267 JAMA 259 (1992). See Trude Bennett, "Racial" and Ethnic Classification: Two Steps Forward and One Step Back? 112 PUB. HEALTH REP. 477 (1997) (describing current racial and ethnic classification policies of the Office of Management and Budget (OMB)). Recommendations from the Interagency Committee for the Review of the Racial and Ethnic Standards to the Office of Management and Budget Concerning Changes to the Standards for the Classification of Federal Data on Race and Ethnicity, 62 Fed. Reg. 36,873 (OMB 1997) (notice and request for comments) (visited Mar. 1, 1998) <<http://www.wais.access.gpo.gov>>.

88. See Ritchie Witzig, *The Medicalization of Race: Scientific Legitimization of a Flawed Social Construct*, 125 ANNALS INTERNAL MED. 675 (1996).

The term "race" has many definitions, ranging from a family unit to a species, but in common and medical usage, defining "race" has meant separating *Homo sapiens* into three to six groups. This division of *Homo sapiens* into race taxons started in the 18th century, when the sciences of genetics and evolutionary biology were not yet invented. These disciplines have since shown that human race taxonomy has no scientific basis. Race categories are social constructs, that is, concepts created from prevailing social perceptions without scientific evidence.

Id. at 675 (emphasis in original).

89. See *id.* at 676.

policy prohibiting maltreatment of those whose race puts them at a disadvantage through no "fault" of their own.⁹⁰

Carolus Linnaeus, author of the 1758 founding document of taxonomy, the "Systema Naturae,"⁹¹ divided the worlds flora and fauna into a series of branching categories that reflected apparent closeness in physiology. Darwin's "Origin of Species," coupled with modern genetics, led biologists to define "species" as groups of life forms that are intra-fertile. But despite the fact that all members of a species can breed together, not all do; geographic separation can lead some sub-groups to breed within themselves more frequently than outside themselves.

The result can be a concentration of whichever traits happen to have been prevalent in the earliest sub-population. These sub-groups, technically fertile with one another but in practice not occupying the same gene pool, are called sub-species. In some animals, such as dogs and cats, those interested in tracking physical characteristics often call these sub-groups "breeds." This is the notion that underlies much of the argument for a biological definition of "race."

Interestingly, racial clarifications were first proposed by Linnaeus not as terms that reflected biological difference, but merely geographic clustering.⁹² It was Johann Friedrich Blumenbach (1752-1840), a German anatomist and naturalist, who proposed a human taxonomy in which, while all peoples originated from a single common man, some groups — "races" — differed in characteristic ways from the original aesthetic ideal.⁹³ These races conveniently clustered geographically, which was explained by noting that the differences undoubtedly arose due to adaptation to climate and diet as humans spread over the globe.⁹⁴ In this pre-genetic era, it was believed that changes occurring in one's lifetime, such as darkening of skin in response to sunlight, could eventually be passed on to children.

Modern geneticists thought that examining the frequency of genetic markers would yield a more precise accounting of these races; it did not. On average, there is only 0.2% difference in genetic material between any two randomly chosen people.⁹⁵ Further, when two random individuals are chosen and one examines only the material that

90. See Ford, *supra* note 84, at 1239-41.

91. See Witzig, *supra* note 88, at 675; Gould, *infra* note 93, at 66-67.

92. See Witzig, *supra* note 88, at 675.

93. See Stephen Jay Gould, *The Geometer of Race*, 15 DISCOVER 65 (1994).

94. See *id.* See also Claude Bouchard *Genetic Basis of Racial Differences*, 13 CAN. J. SPORT SCI. 104-08 (1988).

95. See Hoffman, *infra* note 96, at 4.

differs between them, on average only six percent of it will be associated with which "race" the two people have been assigned.⁹⁶ Another nine percent will be associated with the individuals' respective nationalities, and eighty-five percent will not be associated with any variable in particular.⁹⁷ In other words, to the degree that individuals do differ genetically, racial classification will correlate with only a twelfth of the difference.⁹⁸ Likewise, the choice to classify people by color of eye, hair, and skin, along with teeth, eye shape, and hair texture was in part tautological — these were the features that appeared to vary most in association with geography — and responds primarily to the instinct to classify by what can be seen.⁹⁹

Classifications could as easily, and more cleanly, be made by blood type, antigen type, or fingerprint.¹⁰⁰ Fingerprints tend to feature loops, or whorls, or arches.¹⁰¹ Classifying humans this way would yield a "loops" race consisting of most Europeans, black Africans, and east Asians; a "whorls" race of Mongolians and Australian aborigines; and an "arches" race of Khoisans, central Europeans and others.¹⁰²

But these groupings would not have coincided with the original geopolitical bases for making racial classifications at all, and they would undermine the notion of race by failing to accord with the pattern of trait differentiation in facial features.¹⁰³ Indeed, any attempt to classify humans by more than one specific trait runs into the problem of concordance: while "Asian" may be characterized by particular skin tones, eye shapes, and hair colors and textures, many Asians will have the eyes typical of their assigned group but hair or skin tone characteristic of another.¹⁰⁴

While it is true that traits whose genes are located in adjacent regions on the same chromosome will tend to travel together through

96. Paul Hoffman, *The Science of Race*, 15 DISCOVER 4 (1994).

97. *See id.*

98. *See id.* *See also* F.L. Jackson, *Race and Ethnicity as Biological Constructs*, 2 ETHNICITY Dis. 120 (1992); Bouchard, *supra* note 94. Research shows that genetic variation in gene products and in the non-coding sequence of DNA is quite extensive in humans. *See* Bouchard, *supra* note 94, at 106. Variation is found more frequently in non-coding DNA sequences than in coding exons, and while this variation does not influence the primary structure of the proteins, it may have considerable impact on gene expression. *See id.* However, much of that genetic variation is shared by all human beings, and only about 10% is specific to races or populations within races. *See id.*

99. *See* Diamond, *infra* note 100, at 87-89.

100. *See* Jared Diamond, *Race Without Color*, 15 DISCOVER 83, 86 (1994).

101. *See id.* at 87.

102. *See id.*

103. *See supra* discussion accompanying notes 93-102.

104. *See id.*

the generations, the myriad deletions, substitutions, transpositions, and mutations that occur during reproduction guarantees that the traits ultimately will remain independent of one another.¹⁰⁵

The closest thing we can find to a clean, "objective" measure of diversity is genetic distinctness. By this measure, Khoisans of Southern Africa would be one race; other sub-Saharan Africans would form several distinct races, and the entire remainder of the world's population — European, Asian, American, etc — would belong to one race.¹⁰⁶ Consider the geographic, technological, and social histories of these groups, and one quickly realizes that this formulation is a measure of reproductive isolation, and nothing more.

Nonetheless, there is an enduring myth of a biological basis for racial classifications, and it is this myth that has strengthened the arguments for a "natural" or "god given" separation of humans. This has been the basis for religious teachings and social policy for so long that it is nearly impossible to penetrate pervasive misunderstanding with actual facts. Indeed, even when we appear to be breaking through the myth, for example by offering a box labeled "multiracial" for those who view themselves or are viewed by others as having "mixed" parentage, we nonetheless reinforce the notion that the parents, or grandparents, were a "pure" white, or black, or yellow, or red. No such phenomenon exists.

While race undoubtedly exists as a social classification, sometimes welcomed, more often resented, it is hardly a biological distinction. Nonetheless, the race-based social classifications, which might otherwise break down under the pressure of competing classifications based on geography, language, religion, wealth, or system of moral philosophy, have endured by pointing to this faux-biology and proclaiming an objectivity and inevitability to eye/hair/skin color categorizations.

Thus, the mere belief that there is a clear unshakeable biological definition can defeat generations of scholars who write about why there is little that is clear, unshakeable, or unrelated to political or social goals. Since biological realities are often mistaken for a divine or natural blueprint of the social world, challenging what appears to be writ in physiology will often be received with outrage, humor, in-

105. See U.S. Department of Energy, Office of Health and Environmental Research *To Know Ourselves: Introducing the Human Genome* (describing basic genetic terminology, the human genome research project, and its history) (last visited June 29, 1998) <http://www.ornl.gov/TechResources/Human_Genome/tko/03_introducing.html>.

106. See generally, Diamond, *supra* note 100-02 and accompanying text.

credulity, or dismissiveness; rarely will it be received with comprehension and acceptance.

VI. CONCLUSION

With the advent of the genetic era, our understanding of biology is ever deepening. With this comes the temptation to deepen our reliance on biology as well. This could well be a mistake.

Whether in theology or in philosophy, law has long looked outside itself for a set of constraints on legal imagination and rule making. It has also looked to the natural world, finding there the seeming simplicity of unambiguous and unchangeable truths, such as who is alive and who is dead, who is a mother and who is a father, who is a man and who is a woman, and even, who is black and who is white.

Alas, these biological truths are neither unambiguous nor unchangeable. Indeed, at times, they are no truth at all. But law uses them, nonetheless, and even erects fictions in the forms of presumptions of fact and of law, in order to reorder the world of social relationships into one that seems to reflect the world of biological relationships.

What would happen if law were to continue to do this in the unreflective fashion it has pursued until now? As genetic findings increase in number, so too will the possibilities for legal classifications that attempt to track these developments. Researchers have been publishing hints of a biological factor in the development of human homosexuality since the early 1990s.¹⁰⁷ If a confirmed, genetic influence were to be identified, how would that further legal treatment of the phenomenon of homosexuality? Would the population of those engaged in homosexual acts be divided into "true" homosexuals (i.e., those with the genetic predisposition), and "pseudo" homosexuals? Would the legal tolerance of these acts depend upon whether the individuals were true homosexuals only acting true to the "genetic nature" versus pseudo homosexuals acting out of a perverse desire to defy societal norms of heterosexuality?

A child needs protection. The law is there to identify the adults who will provide it. Biology may tell us who birthed the child, and whose egg provided the maternal DNA. But this is neither necessary nor sufficient to determine whom the law should call a mother. A person may have a Y chromosome, but this is neither necessary nor

107. See, e.g. D.F. Swaab & M.A. Hofman, *An Enlarged Suprachiasmatic Nucleus in Homosexual Men*, 537 *BRAIN RESEARCH* 141 (1990); Simon LeVay, *A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men*, 253 *SCIENCE* 1034 (1991).

sufficient to determine if this person should compete on a "men's" team in the Olympics. And a permanently comatose member of the species *Homo sapiens* may be alive at the cellular and physiological level, but to grant human rights may be pointless. While law may find biology one useful factor in its classification of persons and their rights, it cannot afford to ignore the purposes for which those rights and rules are created.

For each opportunity to import biological categories into law, it is essential to ask: Why? What social purpose is to be furthered, and does reliance in biological definitions serve that purpose? If not, does reliance on biological categories offer such advantages in terms of administrative simplicity or added public credibility that it justifies the confusion, indeed unfairness, it often creates in marginal cases? The rules of morality and social regulation cannot be found in our genes; all we will find there are amino acids.