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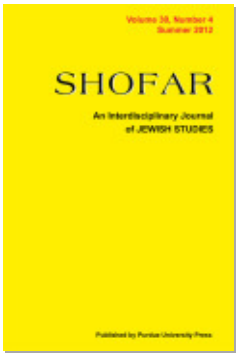

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Not Judging by Appearances: The Role of Genotype in Jewish Law on Intersex Conditions[1]

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Jewish communities have always had children with intersex conditions, which involve atypical anatomic, chromosomal, or gonadal sex. In the last several decades, Orthodox rabbis have issued *ad hoc* rulings to assign sex to children and adults with intersex conditions. However, rabbinic texts reflect disunity over whether to assign gender, for the purposes of Jewish law, according to outward appearance or chromosomal makeup. This rabbinic controversy has been exacerbated by an increasingly complicated medical picture. Endocrinologists have diagnosed more than two dozen intersex conditions, across nine overarching congenital types. Such complexity makes it difficult for rabbis to make across-the-board decisions about gender assignment. This essay examines how rabbinic law may change because gender cannot be assigned consistently by chromosomal sex—despite the prevalence of this formulaic criterion in rabbinic opinions. Consequently, Jewish legal reasoning is poised to shift from a static reliance on chromosomal sex. The essay also considers the implications of this trajectory on Jewish law towards sex change surgery and transsexuals.

Periodically, a tempest hits the sports world as questions are raised about the sexual identity of a female track and field athlete. The sex identity storm swirled around Eva Klobukowska (in 1967), Maria Patiño (1985), Santhi Soundarajan (2006), and, most recently, 18-year-old South African runner Caster Semenya (2009). Despite their female genitalia, these athletes appear

[1]An earlier version was presented at the University of Chicago Law School Conference, "*What Pertains to a Man?* Transcending Gender Boundaries in Jewish and Israeli Law," March 1, 2010. The author appreciates his in-depth discussions with Michael Broyde as well as feedback from Jennifer Moran and Ellen Feder, among others.

masculine insofar as they lack certain female secondary sexual characteristics, such as breast development and wide hips.[2] If her chromosomes are "male" (i.e., XY) and her testosterone levels are elevated, should such a runner qualify as a female athlete? In February 2010, the IOC convened a symposium for experts to reach a common understanding of how sexual ambiguities should be handled. It is sports authorities who find themselves trying to resolve these rare cases of sex assignment because, in Western countries, sports is one of the few domains in which it is legal to differentiate between males and females. Differential treatment is prohibited in many other areas, including employment, housing, medical care, and education. Granted, discrimination by sex roles remains embedded in cultural attitudes and practices, but the law steers decision-makers toward undifferentiated treatment. Besides sports, religion is another domain that is permitted to treat people differently because of their sexual identity. In Roman Catholicism and Islam, for instance, women may be limited to particular ecclesiastical roles, ritual functions, and religious orders. In traditionalist Jewish culture, the differential treatment of men and women puts considerable pressure on any ambiguities or uncertainties in gender identity. In Orthodox Jewish life, any person who does not conform to the conventional gender binary also does not fit neatly into social spaces and religious practices. Gender shapes more than Jewish marriage and family law. Orthodox social space is choreographed by informal rules and Jewish law, governing physical contact, ritual segregation, seclusion, text study, and interaction between the sexes. In religious practices, men's obligations and ritual roles differ markedly from women's. Adherents of Jewish praxis are expected to act in line with their gender identity and, accordingly, face strong incentives to resolve any uncertainties.

During the last 40 years, Jewish legal discourse has confronted new uncertainties about the assignment of gender because surgery and hormonal treatments have made it increasingly possible to modify sex organs and sexual characteristics. Specifically, rabbinic authorities have rendered opinions about two kinds of people with atypical gender situations: transsexuals and people with intersex conditions.[3] While intersex births are quite rare, they pose pre-

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[2]Ariel Levy, "Either/Or Sports, Sex, and the Case of Caster Semenya," *The New Yorker*, Vol. 30 (2009); Erin E. Buzuvis, "Caster Semenya and the Myth of the Level Playing Field," http://ssrn.com/abstract=1521674, retrieved December 10, 2009; Laura A. Wackwitz, "Verifying the Myth: Olympic Sex Testing and the Category 'Woman'," *Women's Studies Intl. Forum*, Vol. 26, No. 6 (December 2003): 553–560.

[3]Terminology. This paper uses *intersex* to encompass conditions that could be diagnosed medically as *disorders of sex development* (DSD). *Sex change surgery* (SCS) is used to

cisely the kind of dilemma that engenders rabbinic decision-making. While this paper focuses on the pivotal case of persons with intersex conditions, it is equally important to see how rabbis have assigned *halakhic* gender to transsexuals. Due to the aforementioned pressures within Orthodoxy to clarify gender, rabbinic scholars have sought to articulate a decision rule for gender assignment that applies uniformly to both transsexual and intersex situations.

However, a generalized decision rule does not mesh with the biophysical diversity of intersex. In cases of unresolved sexual identity, a leading approach to *halakhic* gender assignment holds that gender should be based on genetic information, that is, genotype. While this genotype formula rests on the undeniable appeal of a modern scientific fact, is it tenable? As I will argue below, this dominant approach to gender assignment is incompatible with Jewish law. As the genotype approach is challenged and revised, the shift in Jewish law and ethics will change how rare intersex conditions, for both children and adults, are handled in Orthodox Jewish communities. Moreover, if gender were to no longer be conceptualized in terms of genetic data, *halakhic* conversations over transsexuality could move into a new phase as well. While this paper does not aim to change Jewish law *per se*, it demonstrates the factual and analytical grounds to reject a formulaic reliance of genotypic gender. At the same time, we can begin to uncover the sociohistorical dynamics that have enabled the primacy of genotypic gender assignment to continue to the present day.

A. Genitalia or Genetics: Jewish Legal Ambivalence over Sexual Ambiguity[4]

In facing gender assignment problems, Orthodox Jewish medical ethicists differentiate between two sexually atypical groups: transsexual adults and people with intersex conditions. On the one hand, Orthodox rabbinical authorities

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refer to *gender reassignment surgery* in order to avoid presupposing that the surgery itself reassigns gender under Jewish law. *Transsexuals* refers, for the purposes here, to non-intersex persons who seek or have obtained sex change surgery. As a default, the paper may assume male-to-female (MTF) changes, which are more prevalent and receive more attention in rabbinic literature. *Halakhic gender* refers to a person's gender assignment for purposes of Jewish law.

[4]A note on sources cited in this article: Responsa are found in *Tzitz Eliezer* (Eliezer Waldenberg's responsa, Jerusalem), *Mishneh Halakhot* (Menashe Klein, Machon Mishneh Halakhot Gedolot, n.p., 5763/2003), *Sheilat Shaul* (Shaul Breisch, Bnai Brak 5756/1996) *Yaskil Avdi* (Jerusalem: Ovadiah Hadaya, 5691/1931). Avraham S. Avraham, *Nishmat Avraham*, second edition (Jerusalem, 5767/2007). "T" refers to a second responsa collection. Even ha-Ezer (EH) and Yoreh De'ah (YD) refer to sections of Jewish law codes.

oppose efforts by transsexual adults to change their sex, whether through surgery or hormonal treatment. No Orthodox rabbinic decisor accepts sexual transition as the proper management of gender dysphoria. Sex change surgery is said to violate biblical law, especially a rule against castration. Sex change surgery also has been said to violate prohibitions on cross-dressing, self-wounding, self-endangerment, and enabling sin.[5] When confronted with a person who had sex reassignment surgery, Orthodox rabbis do not concede *post facto* that a man can become a woman, or vice versa, for *halakhic* (Jewish law) purposes. On the other hand, Orthodox medical ethicists are receptive to surgical interventions for children with ambiguous genitalia or other intersex conditions. Surgery often has been approved because, in the hyperbolic words of the American Academy of Pediatrics, the birth of such children pose a "social emergency." In the United States, parents and physicians typically move quickly to resolve anatomical anomalies and ambiguities—they settle on a sex for their infant. Orthodox rabbis have approved pediatric surgery, by making exceptions to biblical law, and recognized the concomitant gender assignment. This same reasoning applies to adults with intersex conditions.[6]

While surgeries for transsexual adults and intersex children have been judged differently in practice, the Jewish legal sources and reasoning for sex assignment are related. Jewish law scholars tend to assume that a single decision rule, a new formula in Jewish law, can help guide Jewish law decisions towards both transsexual adults and intersex children. However, for the past 40 years, Ashkenazi Orthodox opinion has been divided over whether to apply a genotypic or phenotypic formula.[7] Some Orthodox rabbis have adopted the formula that *halakhic* gender is determined genetically by chromosomal sex, i.e.,

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[5]See Edan Ben-Ephraim, *Sefer Dor Tahepuchot ("The Generation of Perversions")* (Jerusalem: Ben-Ephraim Family, 5764): 43–67, who also cites violations of desecrating God's name, changing the order of creation, causing suffering to one's parents and family, and nullifying the duty to procreate.

[6]Adult surgery for intersex conditions could be approved on the same grounds as for children. In the only adult intersex case I have seen, though, Menashe Klein disapproved of the surgery for health reasons.

[7]The phenotype-genotype distinction is found in Menashe Klein, *Mishneh Halakhot* T VI:47 (letter undated, folume 5763/2003), p. 126; cf. Avraham Steinberg, *Encyclopedia of Jewish Medical Ethics*, trans. Fred Rosner (New York: Feldheim Publishers, 2003), Vol. 4, p. 1037. For the purposes of this paper, sexual phenotype refers to external appearances only, mainly the primary genitalia. Genotype herein refers to other biophysical determinants of sex: genetic and chromosomal sex, but also internal anatomical and physiological features, which might otherwise be categorized as phenotype.

genotype. Conversely, other Orthodox medical ethicists argue that *halakhic* gender should be determined by the external appearance of the genitalia, i.e., phenotypic gender assignment.[8]

The *halakhic* dispute over gender assignment was sparked, in effect, by the *halakhic* guideline first adopted by Eliezer Waldenberg. Over the course of a few years, Rabbi Waldenberg ruled on both an adult transsexual and a pediatric intersex case by using the same decision formula. In a responsum about transsexuals and marriage, Waldenberg ruled in 1967 that sex change surgery would alter a person's *halakhic* gender.[9] As analogous precedents, he invoked two pre-modern responsa that had annulled the marriages of women who had reportedly changed into men by natural causes.[10] Similarly, reasoned Waldenberg, sex change surgery would automatically dissolve a transsexual's marriage, without the need for a traditional Jewish divorce document.[11] Waldenberg's

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[8]For Conservative Judaism, the Committee on Jewish Law and Standards of the Rabbinical Assembly approved a responsum that recognizes gender reassignment through sex change surgery, relying on Waldenberg's phenotype approach (Mayer E. Rabinowitz, "Status of Transsexuals," Committee on Jewish Law and Standards, 2003; available through http://huc/edu/ijso/PoliciesResponsa/.) Leonard A. Sharzer has proposed that transsexuals be assigned *halakhic* gender based on neither genotype nor phenotype, but on psychological grounds (i.e., gender dysphoria syndrome).

For Reform Judaism, since it no longer makes religious distinctions between genders, *halakhic* gender is a theoretical question (Central Conference of American rabbis [CCAR] Responsa Committee, "Circumcision of a Transgender Female" 5769 [2009]). Previously, in 1977, Solomon B. Freehof was "ambivalent and suggested that the rabbis be guided by the attitude of the community," according to CCAR Responsa Committee, "Conversion and Marriage after Transsexual Surgery" 5750.8 (1990). Similar doubts were raised in a 1990 responsum (5750.8), concerning a man who underwent sex change surgery to be female, but subsequently sought to marry as a man. Advising against the marriage, the responsum found that the person had an indeterminate *halakhic* gender, thereby weighing both phenotype and genotype.

[9]Eliezer Waldenberg, *Tzitz Eliezer,* X:25.26.6 (20 Shvat 5727, January 30, 1967).

[10]These cases may have involved 46,XY persons who appear female as children, due to a DSD that suppresses fetal androgen synthesis, but whose phenotype changes during puberty, due to testosterone activity. Cf. Peggy T. Cohen-Kettenis, "Gender Change in 46,XY Persons with 5α-Reductase-2 Deficiency and 17β-Hydroxysteroid Dehydrogenase-3 Deficiency," *Archives of Sexual Behavior*, Vol. 34, No. 4 (August 2005): 399–410.

[11]*Tzitz Eliezer* X:25.26.6 (20 Shvat 5727, January 30, 1967). The responsum also reports the view that an FTM transsexual should say an adjusted morning blessing, "Blessed are You, Our God, King of the Universe, who has changed me to a man." Exactly thirty years later, *Tzitz Eliezer* XXII:2 (January 30, 1997) considers the MTF transsexual situation and quotes again several key precedents. However, here Waldenberg concludes that the law of *androginos* or *tumtum* would apply. Since *androginos* and *tumtum* are cases of

responsum clearly relies on a phenotype decision rule, which he does articulate in the following intersex case.

In November 1970, Dr. Eli Schussheim wrote to Waldenberg, who served as the *halakhic* advisor for a leading Israeli hospital (Shaare Zedek Medical Center), about a pediatric case of atypical genitalia. By all external appearances, by phenotype, the infant had female genitalia. In terms of genotype, though, the infant had been tested and found to be a chromosomal male. In addition, physicians found a single testis, a lump within one of the infant's labia. Schussheim wanted to know if, under Jewish law, this genetically male infant could be raised as female, in line with the medical team's recommendation, and the single testis surgically excised, despite the biblical law against castration. One of the leading figures in Jewish medical ethics, Waldenberg replied that the testis could be removed and the child raised as female.[12] At the heart of his responsum, Waldenberg asserted that the sexual identity of a person, for *halakhic* purposes, should be based on the external appearance of the sexual organs.

> The infant in question, as you described it in your letter, has external organs that appear to be female and has no external indication of male genitalia. It was only special tests that were administered to the infant that revealed that internally there were male cells in its body. Therefore, as I said, my opinion is that if we leave the infant as is, the child would be ruled a female since *the external [sex] organs, visible to the eye, are what establishes the halakhah*. (Incidentally, I heard from a doctor that there are certain hormones common to both males and females and the determining factor [of sex] is which hormones comprise a majority. Therefore, it is clear that *only the actual, external organs, which are different in males and females, determine sex in practice*).[13]

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doubtful, indeterminate *halakhic* gender (cf. CCAR 5750.8), it appears that Waldenberg is taking into account both the phenotype and the genotype. If so, he has shifted from his earlier ruling.

[12]Waldenberg, *Tzitz Eliezer*, XI:78 (11 Markheshvan 5731, November 10, 1970), Jerusalem. At the end of the responsum, Waldenberg added a comment about the law of *androginos*, which he said did not apply to the 46,XY-DSD infant: "A hermaphrodite [*androginos*] may undergo surgery in order to establish one sexual identity. If possible, the male organs should preferably be preserved and reconstructed. However, if circumstances are such that it would be more advisable to transform the child into a phenotypic female, the surgeon may do so" (Steinberg, *Encyclopedia of Jewish Medical Ethics*, Vol. 4 [1980], pp. 122f.; 2003, pp. 469 and 1037).

[13]Translation by Hillel Gray and Joshua Schreier, emphasis added. Cf. Mayer Rabinowitz, *Status Of Transsexuals* (Committee on Jewish Law and Standards of the Rabbinical Assembly, December 3, 2003; http://huc.edu/ijso/PoliciesResponsa/).

With this statement, Waldenberg asserts that *halakhic* gender is determined by the visible genitalia, i.e., the phenotype. Waldenberg's opinion became the emblematic precedent, in Jewish legal discourse, for the view that *halakhic* gender is determined by phenotype. Eventually, the phenotype approach came to be supported by a few other rabbis, including Menashe Klein in 1993.[14]

In the 1970s and 1980s, though, Waldenberg's view met strong opposition. A number of influential Orthodox rabbis disputed Waldenberg's formula for gender assignment based on phenotype. Instead, topnotch Jewish medical ethicists in Israel and the U.S. wrote that rabbinic opinion favored gender determination based on genetic make-up, genotype. Notably, in his award-winning encyclopedia of medical *halakhah*, Avraham Steinberg cites several other rabbinic authorities who reject Waldenberg's phenotype formula.[15] Steinberg declares that, contrary to Waldenberg:

> Others have written that surgery which changes sexual appearance has no effect on the person's *halakhic* status as it is clear that *no biogenetic change has occurred and the change is merely external*."[16]

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[14]Notably, see Meir Amsel, "On sex change surgery [Heb.]," *Ha-Maor*, Vol. 25, No. 2 (Kislev-Tevet 5733/1972): 14–21, who views surgery as a total change in gender, though he also adumbrates the opposing view. Klein elaborates on a position against genotype in *Mishneh Halakhot* (T VI:47). Edan Ben-Ephraim argues strongly for a natal phenotype approach in his 2004 monograph on transsexuality, *Sefer Dor Tahepuchot* ("The Generation of Perversions"), p. 112ff. Ben-Ephraim cites rabbinic opinions in support of phenotype, including a letter appended by Rabbi Asher Weiss. Ben-Ephraim also infers support for phenotypic gender assignment from Hayyim Greinman (*Sefer Hidushim u-Beurim*. Kiddushin EH 44, p. 104.3, s.v. *ve-hineh*), Shaul Breisch (*Sheilat Shaul*, EH 9.1–2), and Yehoshua Neuwirth (oral communication cited in *Nishmat Avraham*, expanded second edition, YD 262.11, p. 326). But see Neuwirth's objection to Waldenberg's reasoning on intersex assignment to female (*Nishmat Avraham* EH 44.2, p.268).

[15]Five sources are cited in Steinberg, *Encyclopedia of Jewish Medical Ethics*, 4: Ovadiah Hadaya; *Yaskil Avdi* 7 EH 4 (an undated responsum from an anthology published in 1931); Avraham Hirsch, "Artificial Transformation of a Male to a Female and of a Female to a Male," *Noam*, Vol. 16 (5733/1973); Aryeh Grosnass, "Extraordinary Incident of a Man Who Changed to a Woman," *Lev Aryeh* 2:49 (undated letter, published 1973); Moshe Steinberg, "Sex Change for Androginos," *Assia*, Vol. 1: 144ff.; Avraham S. Avraham, *Nishmat Avraham* EH 44:2. Grosnass refers neither to Waldenberg nor to genotype *per se*. While Steinberg does not refer to genotype either, he does mention Waldenberg, albeit only in regard to an *androginos*, i.e., a person with both male and female genitalia. Hirsch disputes Amsel but does not mention genotype.

[16]Steinberg, *Encyclopedia of Jewish Medical Ethics*, Vol. 4, p. 1037, emphasis added.

Similarly, Waldenberg's approach was opposed by Abraham S. Abraham, the Israeli author of a multi-volume rabbinic code on medical *halakhah*, *Nishmat Avraham*. In his code, Abraham relies on the preeminent *halakhic* decisor (*posek*) Shlomo Zalman Auerbach, as well as Yosef Shalom Eliashiv, another major Jewish law decisor.[17]

In the United States, the genotypic gender assignment was explicitly supported by Rabbi Moshe D. Tendler and Dr. Fred Rosner, two leading American Jewish medical ethicists in the United States. In his influential Jewish law column for American Orthodoxy's flagship journal *Tradition*, another leading medical ethicist, Rabbi J. David Bleich, also sides with the genotype approach, which he says is "particularly cogent in view of the fact that fertile organs of the opposite sex cannot be acquired by means of surgery."[18] Tendler and Rosner issued an important precedent on genotypic gender in a statement that was favorably reviewed by Rabbi Moshe Feinstein. Feinstein was the leading Jewish law authority in North America, possibly the world, during the latter half of the twentieth century. As Feinstein's son-in-law and a biologist, Tendler worked closely with the prolific *posek* on medical issues. Whereas Feinstein wrote only in a Hebrew interwoven with arcane Talmudic language, Tendler translated his rulings and helped popularize Jewish medical ethics for a broad-

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[17]In *Nishmat Avraham*, an important collection of rulings and opinions on medical *halakhah* by Avraham S. Avraham, Auerbach seems to distance himself from Waldenberg's method (*Nishmat Avraham* 44:2, p. 268), though Waldenberg is reported more favorably, with support from Yehoshua Neuwirth, at YD 262.12 (p. 326).

Eliashiv discusses a patient with AIS symptoms: female genitalia; no uterus, ovaries, or *mons pubis*; and testes inside the abdomen. Eliashiv expresses concern that the patient is a possible male (*safek zakhar*). Were the patient a "possible male," then sexual relations with another male would violate rabbinic law. For our purposes, given his concern with the male aspect (known via chromosomes or the internal testes), Eliashiv clearly is not satisfied with the phenotypic formula for *halakhic* gender (Yosef Shalom Eliashiv, "Plastic Surgery to Determine a Newborn's Sex," *B'shvilei Refua'h*, Vol. 2 [5739/1979]).

Nonetheless, Auerbach and Eliashiv do not refer to the patient's genotype *per se*. Their opposition to Waldenberg is characterized in terms of genetic makeup by Steinberg and Broyde. See also Jonathan Wiesen and David Kulak, "'Male and Female He Created Them': Revisiting Gender Assignment and Treatment in Intersex Children," *Journal of Halacha & Contemporary Society*, Vol. 54 (2007): 5–29.

[18]J. David Bleich, "Survey of Recent Halakhic Periodical Literature: Transsexual Surgery," *Tradition* (1974), p. 96. Broyde reaches a similar conclusion as he rejects Waldenberg's phenotypic approach (Michael J. Broyde, "Appendix: Sex Change Operations and Their Effect on Marital Status: A Brief Comparison" in 'The Establishment of Maternity & Paternity in Jewish and American Law,'" *National Jewish Law Review*, Vol. 3 [n.d.], http://jlaw.com/Articles/maternity_appendix.html).

er audience. Tendler and Rosner's statement was provided to the Association of Orthodox Jewish Scientists and published in their guidebook, *Practical Medical Halacha*. The statement declared that:

> The sex determination of an infant or child with ambiguous genitalia must be based on cytological and genetic (i.e., medical) evidence, not on psychological considerations. *The presence of testes is to be considered an absolute sign of maleness. A genetically male infant must not be surgically modified to permit rearing him as a female.*
>
> His inability to function as the male partner in marital relations is not adequate justification for such a sex change.[19]

During the 1970s, Feinstein did not publish any responsa himself that affirmed the Tendler and Rosner formulation, above, of an across-the-board decision rule for pediatric gender assignment based on genotype. Nonetheless, Feinstein did write a letter in 1985 that ruled against phenotype (i.e., physical appearance), in favor of genotype, for a specific pediatric case. Based on the case description, the situation facing Feinstein may have been virilization of female genitalia, e.g., due to congenital adrenal hyperplasia. His letter deals with the newborn's intersex condition: "Her body by its appearance seems to be the male sex from the outside. However, upon genetic examination of her blood, it appears that she is female." Feinstein hereby affirms the recommendation of the medical team that this newborn be raised female, with the expectation that she would be able to give birth as well.[20]

In short, then, sex should be determined by genotype, according to senior Orthodox *halakhic* authorities and leading Jewish medical ethicists. Furthermore, this guideline apparently determines the sex not only for persons with ambiguous genitalia but also for transsexuals. That is, since a male who transitions to a female (MTF) remains genetically male, the MTF transsexual continues to be assigned the *halakhic* gender of a male.

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[19]Tendler and Rosner, *Practical Medical Halacha* (New York: Rephael Society Feldheim Publishers, 1980), p. 41, emphasis added. "In true hermaphroditism, or when no clearly differentiated gonad is evident, the decision as to the sex identity of the child must be arrived at by careful consultation with competent medical and Rabbinic authorities" (*AOJS Halacha Bulletin* [undated]; http://www.aojs.org/pmh.asp#2).

[20]See also note 58. Moshe Feinstein, "On the circumcision of an intersex newborn female," [Heb.] in *Igrot Moshe*, Vol. 3, prepublication excerpt (New York, 2010). Original translation.

B. The Test Case: "Male" Chromosomes and "Female" Genitalia

Can Jewish law consistently determine the gender of intersex persons by the presence of male or female chromosomes? To discover whether genotypic gender would be a foolish consistency, it should suffice to identify "test cases" in which a person's genotype and phenotype do not match. Generally, people with male bodies have male chromosomes, people with female bodies have female chromosomes. In some intersex conditions, though, a person may have a "sex reversal," whereby genotype and phenotype seem to conflict. These sex reversals put the Jewish law dispute over gender assignment into sharp relief. In female sex reversals, female genitalia are fully or partially manifested with a male (XY) genotype. Such reversals occur with about a dozen intersex conditions. Medically, these syndromes are now termed 46,XY Disorders of Sexual Development. These DSDs are closely related, and it is difficult, clinically, to distinguish among these conditions: "only 50% of 46,XY children with DSD will receive a definitive diagnosis."[21] To test a rigid genotypic assignment of *halakhic* gender, phenotypes should be considered from the 46,XY DSDs with female genitalia (fg), henceforth termed XY/fg.

Female sex reversal can be seen clearly among people who have complete or partial Androgen Insensitivity Syndrome (AIS).[22] AIS reduces or eliminates the usual impact of male hormones, androgens, on the body. Individuals with Complete Androgen Insensitivity Syndrome (CAIS) have ordinary male (XY) chromosomes and female external genitalia. The genitalia include labia and a vaginal canal. The CAIS child does not have internal female reproductive organs; instead, the child may have testes below the surface of the skin, not in a scrotum, perhaps in the abdomen. The testes generate testosterone, which with CAIS is transformed naturally into usable estrogen. Surgery can remove the testes and modify the vagina. In short, as in Waldenberg's case, the CAIS child has a female phenotype, albeit atypical, yet a male genotype. CAIS

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[21]I. A. Hughes et al., "Consensus Statement on Management of Intersex Disorders," *Archives of Disease in Childhood*, Vol. 91, No. 7 (July 2006): 554–563. CAIS, PAIS, and Lipoid CAH are "46,XY DSDs in androgen synthesis or action" and Swyer syndrome is a disorder of gonadal development. This article uses "XY/fg" to refer only to those syndromes where individual have a phenotypic manifestation of female external genitalia. This excludes 46,XY DSD varieties with male or ambiguous genitalia. See Table 5, Hughes et al., "Consensus Statement on Management of Intersex Disorders." While the term *sex reversal* is deprecated nomenclature, it is used herein due to its relevance to the *halakhic* analysis.

[22]AIS covers a continuum of developmental effects, so partial AIS may result in a natal or transitional gender assignment as male.

persons are currently and consistently raised as female, without much surgical intervention or gender dysphoria.[23]

AIS covers a spectrum of phenotypes, depending on the degree of resistance to androgen. With the higher levels of resistance, a child with Partial Androgen Insensitivity Syndrome (PAIS) may be similar to CAIS. But PAIS allows some effect from androgens, so adults with partial AIS may have more masculine secondary sexual characteristics, to match their male (XY) chromosomes. Nonetheless, they may have fully formed external female genitalia.

Besides AIS, there are about a dozen DSD syndromes that can cause female sex reversal.[24] With congenital adrenal hyperplasia (CAH), for instance, persons with male chromosomes may have internal or undescended testes and manifest female external genitalia.[25] With Swyer syndrome, gonadal abnormalities cause delayed puberty and amenorrhea. Swyer syndrome combines a male genotype with unmistakably female genitalia.[26]

Were *halakhic* gender determined by genotype, then all female sex reversal cases, whether due to AIS or Swyer syndrome or another DSD, should be assigned the gender to match their chromosomal sex. That is, every XY person with female genitalia would be classified as a *halakhic* male. Conversely, under Waldenberg's phenotype approach, these same intersex individuals would be classified as a *halakhic* female. Which view is correct? For better or worse, Jewish law lacks a definition of male or female that can answer this question. It goes without saying that before sex chromosome testing became available in the twentieth century, phenotype was the only way to assign gender. Jewish

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[23]A. B Wisniewski et al., "Complete Androgen Insensitivity Syndrome: Long-term Medical, Surgical, and Psychosexual Outcome," *Journal of Clinical Endocrinology & Metabolism*, Vol. 85, No. 8 (2000): 2664. Half of the women had vaginoplasty and most reported satisfaction with libido and sexual function. All reported satisfaction with being a woman.

[24]Marta Berra et al., "Long-term Health Issues of Women with XY Karyotype," *Maturitas*, Vol. 65, No. 2 (February 2010): 172-178.

[25]CAH due to 17-alpha-hydroxylase deficiency includes 46,XY individuals with female phenotypes but without female secondary sexual characteristics (see Online Mendelian Inheritance in Man (OMIM), http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=202110.) With lipoid congenital adrenal hyperplasia, 46,XY individuals are phenotypic females; however, the condition requires medical care from infancy. (See OMIM, http://www.ncbi.nlm.nih.gov/entrez.dispomim.cgi?id=201710.

[26]L. Michala et al., "Swyer Syndrome: Presentation and Outcomes," *BJOG: An International Journal of Obstetrics and Gynaecology*, Vol. 115, No. 6 (May 2008): 737–741. Swyer syndrome is also known as: 46,XY complete gonadal dysgenesis. The condition is often related to a problem with the SRY (sex-determining region Y) gene, but other genetic variations can also cause this syndrome.

law took it for granted that males and females could be identified by genitalia, so it had no need to legally define the sexes. (Jewish law did codify definitions—*androginos* and *tumtum*—for those rare individuals whose genitalia eluded an unambiguous phenotypic assignment.[27]) Fortuitously, Talmudic law did define a category of persons with female genitalia but atypical secondary sexual traits. Known as *aylonit*, this category can assign a *halakhic* gender to the test case, the female sex reversal, without presupposing a priori that either phenotype or genotype are decisive.[28]

To settle the *halakhic* gender for female sex reversals, the first step is to demonstrate that some XY/fg individuals satisfy the criteria for an *aylonit*. According to rabbinic law, a woman is assumed to be an *aylonit* at age 20 if she does not present (i) the rabbinic indicator of puberty, which is pubic hair.[29] The *aylonit* would then be classified in terms of four additional indicia: (ii) pre-pubescent breasts, (iii) difficulty during sexual intercourse,[30] (iv) narrow, pre-pubescent hips,[31] and (v) a thick voice, indistinguishable between a woman and a man.[32] In addition, the *aylonit* is understood to be infertile. These indicia have long been established, based on Talmudic texts, in the authoritative code of rabbinic law, Joseph Karo's *Shulchan Aruch*, which is glossed for Ashkenazi Jews by Moshe Isserles. Ideally, the *aylonit* is expected to present all five indicia. If a person had more feminine characteristics, such as wide hips and a high-pitched voice, she could be designated simply as a female (*nekevah*).

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[27]Charlotte Elisheva Fonrobert, "Gender Identity In Halakhic Discourse," *Jewish Women: A Comprehensive Historical Encyclopedia* (Jewish Womens Archive, 01 2009), http://data.ccarnet.org/cgi-bin/respdisp.pl?file=8&year=5750; Steinberg, *Encyclopedia of Jewish Medical Ethics*, Vol. 4.

[28]For people with male genitalia and atypical secondary sex characteristics, compare the Talmudic category, *saris hamah* (Julian H. Barth and Moshe Zemer, "The Congenital Eunuch: A Medical-Halachic Study," *Jewish Medical Ethics*, Vol. 2 [1995]: 44–50; Sarra Lev, "How the 'Aylonit' Got Her Sex," *AJS Review*, Vol. 31, No. 2 [2007]).

[29]In Talmudic law, puberty is indicated by two pubic hairs. See "Gedolah" in *Encyclopedia Talmudit*, Vol. 5.

[30]The difficulty may be physical discomfort or a lack of desire ("Aylonit," *Encyclopedia Talmudit* [ET], n.d., citing Rashi Yev 80b and Maimonides on mYev 1.1).

[31]According to another interpretation of an ambiguous rabbinic phrase, this criterion may refer to a pre-pubescent *mons pubis*.

[32]ET, citing *Yevamot* 80b. In his gloss on the *Shulchan Aruch* (EH 172.11), Moshe Isserles states that the *aylonit* has the nature or natural qualities of a man (*yesh la teva hazachar*).

Nevertheless, some rabbinic authorities hold that even a single, unambiguous characteristic would suffice to define an *aylonit*.[33]

The *aylonit* indicia can be tested against the phenotypic range of XY/fg conditions.[34] With AIS, women are situated along a continuum of sexual characteristics. The more CAIS reduces the effect of androgens, the more likely an individual would manifest feminine characteristics. Women with CAIS (AIS grade 7) lack pubic hair, a key criterion for the *aylonit*. In addition, the vagina of a woman with CAIS is ordinarily shallow, so intercourse may be painful or difficult, in line with that criterion for *aylonit*.[35] The CAIS phenotype does not necessarily coincide with the remaining *aylonit* criteria. Breast development and hip width are ordinary, though CAIS women might be less feminized due to the usual variability of secondary sexual traits. Historically, CAIS adults include those with quite feminine secondary sexual characteristics, who would certainly have been accepted as *halakhic* women. No rabbinic authority has ever doubted that an adult with feminine breasts, hips, and vagina would be a *halakhic* woman, even though she lacks female internal organs and (possibly) pubic hair.

On the other hand, a woman with Partial AIS (grade 6), as compared to CAIS, could have less development of secondary female sex characteristics, such as breasts, wide hips, and voice.[36] Anatomically, like CAIS, PAIS results in a shallow vagina and, consequently, the possibility of difficult intercourse. But PAIS does entail somewhat more pubic hair than CAIS. Thus, PAIS women could fit four of the five criteria for *aylonit*.

With Swyer's Syndrome,[37] women may readily fit the *aylonit* criteria of scanty pubic hair and minimal breast development.[38] Moreover, due to the

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[33]ET, at footnote 11, with sources cited there.

[34]The author appreciates the detailed advice, especially on the characteristics of persons with 46,XY conditions, in correspondence with Sherri G. Morris and Margaret Simmonds. The views expressed herein regarding these characteristics, and any errors in fact or judgment, are solely the author's responsibility.

[35]Berra et al., "Long-term Health Issues of Women with XY Karyotype," Anecdotal evidence obtained from the AIS Support Group, http://www.aissg.org.

[36]A. L. M. Boehmer, et al, "Genotype versus Phenotype in Families with Androgen Insensitivity Syndrome," *Journal of Clinical Endocrinology & Metabolism*, Vol. 86, No. 9 (2001): 4154f.

[37]Swyer syndrome is also known as complete gonadal dysgenesis (Michala et al., "Swyer Syndrome: Presentation and Outcomes").

[38]Michala et al., "Swyer Syndrome; H. Siddique, P. Daggett, and K. Artley, "Successful Term Vaginal Delivery in a 46,XY Woman," *International Journal of Gynecology & Obstet-*

syndrome's estrogen deficiency, women with Swyer's can lack other secondary sexual characteristics, such as wide hips. Unlike AIS, women with Swyer's typically have a normal vagina and uterus, so they can give birth with assisted reproduction technologies.[39]

Several other DSDs could have individuals who fit some of the *aylonit* criteria. Besides AIS and Swyer's, individuals with male genotypes (XY) could present as females through 10 clinical syndromes.[40] These XY/fg syndromes are more rare, though, and they often have problematic phenotypic and health profiles, so they are not likely candidates for the *aylonit* designation, at least as it was used in historical practice. Still, such sex reversal cases offer further evidence that *halakhic* gender should not be assigned by chromosomal sex.

From the foregoing evidence, it is certain that persons with an XY/fg condition could fulfill some or most of the five indicia of an *aylonit* to a tee. What then is the *halakhic* gender of an *aylonit*? Jewish law is absolutely clear that the *aylonit* is a female. It is true that the *aylonit*'s age of majority is a matter of rabbinic dispute. Well after the default age of majority (i.e., 12 years old), the *aylonit* may be relegated to the status of a girl because she lacks the usual sign for adulthood, pubic hair.[41] But this dispute is unrelated to the consideration of her gender. There is no hint anywhere in rabbinic literature that an *aylonit* could possibly be a *halakhic* male. For those XY/fg persons who ought to be defined as an *aylonit*, Jewish law must recognize her as a female, despite her "male" chromosomes.

Thus, the XY/fg case can prove conclusively that only the phenotype—but not the male genotype—would determine *halakhic* gender for certain intersex people. In short, the test case demonstrates a multi-step equivalence: a given XY/fg (male genotype, female phenotype) is an *aylonit*, who in turn is a *halakhic* female.[42] Since some XY/fg persons would indisputably qualify as

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rics, Vol. 101, No. 3 (June 2008): 298–299; Mary's Story, AISSG, http://www.aissg.org. Of the *aylonit* criteria, women with Swyer may be least predisposed to have a masculine voice or difficulty with sex.

[39]Catherine L. Minto et al., "XY Females: Revisiting the Diagnosis," *BJOG: An International Journal of Obstetrics & Gynaecology*, Vol. 112, No. 10 (October 2005): 1407–1410.

[40]Marta Berra et al., "Long-term Health Issues of Women with XY Karyotype," *Maturitas*, Vol. 65, No. 2 (2010): 174, and Catherine L. Minto et al, "XY Females: Revisiting the Diagnosis." *BJOG: An International Journal of Obstetrics & Gynaecology*, Vol. 112, No. 10 (2005): 1407–1410.

[41]"Aylonit," *Encyclopedia Talmudit*, section 2.

[42]Some rabbinic authorities would classify a Jew with an XY/fg condition as *aylonit* only if she meets all five indicia. In such cases, exemplified by CAIS, the person would be defined as an ordinary, non-*aylonit* female.

aylonit women, only a phenotypic assignment of *halakhic* gender can be correct for this test case.

To be sure, this paper is not the first to recognize that an XY/fg person might be characterized properly as an *aylonit*. For instance, this possibility was specifically mentioned by Menashe Klein, in his 1993 responsum. In her analysis of the early rabbinic *aylonit*, Sarra Lev focuses on Turner's Syndrome but also considers CAIS.[43] Nor is it a novelty that a Jew with an XY/fg condition would be a *halakhic* female. After all, Waldenberg's 1970 pediatric case apparently involved an AIS infant (see above), whom he designates as a *halakhic* female. Still, this test case paves the way for the *necessary* designation of certain intersex individuals as female, against their genotype, due to a phenotype that matches *aylonit* status.

It makes complete sense historically, of course, to infer that any XY/fg person would have been raised as a female in pre-modern Jewish communities. After all, medieval and early modern rabbis had no information about the genotype of persons with an XY/fg condition; they could only examine the manifestly female physical appearance. We can only speculate that the rare Jew with an XY/fg condition would have been designated as an *aylonit*, given situations where she or third parties sought a rabbinic designation. In fact, one XY sex reversal case was *almost* identified as an *aylonit*. Menashe Klein encountered a woman who had begun hormone therapy and, after visiting a physician for infertility, discovered that she had XY chromosomes. Klein was told that the woman's condition was rare ("only one such case exists in history"). She had a functioning uterus, which is not typical for female (XY/fg) sex reversal conditions.[44]After wondering if she might be an *aylonit*, however, Klein avoids the *aylonit* status because she did not have all the aforementioned indicia. He reports that the woman had feminine breasts, voice, and other signs of not being *aylonit*. He does not entertain the possibility that, were it not for hormone therapy, she might have presented more of the classical criteria for *aylonit*.[45]

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[43]Berra et al., "Long-term Health Issues of Women with XY Karyotype," p. 300 n. 17.

[44]It may have been a sex reversal associated with CAH (congenital adrenal hyperplasia) or like the rare case of "a completely normal female phenotype, including uterus and histologically normal ovaries" (A. Biason-Lauber et al., "Ovaries and Female Phenotype in a Girl with 46, XY Karyotype and Mutations in the CBX2 Gene," *The American Journal of Human Genetics*, Vol. 84, No. 5 [2009]: 658–663).

[45]Menashe Klein, *Mishneh Halakhot* T VI:47. Klein may have been reluctant to assign her *aylonit* status for the sake of her marriage. He notes, seemingly relieved, that he was not asked to rule on the *aylonit* question.

Were *halakhic* gender determined by genotype, then Jewish law would require every XY/fg newborn to be raised as a *male*. However, this would contravene both established medical opinion and the Talmudic law of *aylonit*. A genotypic assignment for XY/fg would also overturn centuries of presumed precedents in Jewish communities, which undoubtedly accepted XY/fg persons as females. Therefore, the XY/fg test case demonstrates that, as a general formula for Jewish law, the genotypic derivation of gender is untenable.

C. Over-generalized Genes

If the preceding analysis of Jewish law is correct, then the sweeping genotypic decision rule for sex assignment deserves to be rethought, perhaps retracted. How did this rule come about? To be sure, it makes sense that rabbis would have worked toward some kind of across-the-board decision rule, given the character of *halakhic* thinking and the available medical evidence. Rabbinic thinkers often move toward the abstraction of decision-making principles, building from both existing principles and from discrete cases. For his intersex case, Waldenberg relied on a phenotype principle he had formulated for a 1967 sex change case. While some individual senior decisors (*poskim*) did not articulate an across-the-board formula, a decision rule was derived from their analyses by mediating scholars, such as Steinberg or Tendler. Furthermore, since intersex is so rare and corrective surgery so recent, both the contemporary decisors and the mediating scholars had no clear pre-modern precedents and few actual cases to judge.

Neither the genotypic nor phenotypic approach can lay claim to compelling reasoning or legal precedents. Suffice it to say, neither approach relies on clearcut positions in the Hebrew Bible or the Talmud, the bedrock foundations of Jewish law. Instead, each approach cobbles together a *sui generis* set of analogies, interpretations of *aggadah* (non-legal rabbinic literature), and legalistic arguments. For the genotype approach, key sources include a medieval commentary, by Ibn Ezra, on the prohibition on homosexual relations (Lev. 18:22), which speculates that the verse refers to a vagina-type opening fashioned in a man. For the phenotype approach, key sources include the pre-modern responsa invoked by Waldenberg, cited above.[46]

Given the abstract nature of the debate, then, rabbinic scholars could view the discursive landscape as a dispute between two mutually plausible formulae. For his intersex case, Waldenberg relied on a phenotype principle he

[46]Waldenberg also ponders the hypothetical marriage annulment of Elijah the Prophet, who went to heaven without dying, and a speculative view of the *Minchat Chinuch*.

had formulated for a sex change case. For the genotype principle, mediating scholars like Tendler and Steinberg drew upon *halakhic* decisions by Feinstein, Auerbach, Grosnass, and M. Steinberg. These senior rabbinic judges do not mention genotype *per se*, though they clearly reject a phenotype approach.

However, the mediating Jewish scholars did not fully distinguish these authoritative decisions by the type of intersex syndrome. Had they focused on the medical differences among the cases, they would have recognized that at least two cases (Waldenberg 1970 and Klein 1993) were unusual insofar as genotype and phenotype were naturally mismatched. In these early years, as rabbinic judgments took shape, scientists were still trying to understand intersex variations and treatment outcomes. In 1970, for example, Waldenberg presumably did not know that he was tackling the gender assignment for a CAIS infant, nor could he know about CAIS adult outcomes and its comparative status to other intersex diagnoses. In line with the state of medical knowledge, rabbinic discourse assumed a quite limited number of intersex variations. Neither scientists nor rabbis were aware of the diversity of genotype and phenotype DSD combinations. Conceivably, the problem may have been compounded by the structure of Talmudic knowledge, which seemed to have few categories (i.e., *androginos* and *tumtum*) to line up with intersex conditions.[47] As a result, halakhists over-generalized the biomedical details and assumed that a single decision-rule could work for all cases of intersex or ambiguous genitalia.

Though legal reasoning was not itself decisive, it does appear that Orthodox rabbis and medical ethicists were drawn to the genotype approach because of two policy concerns. First, Orthodox decisions over pediatric intersex surgery were shaped by the concurrent controversy over sex change surgery policy for transsexuals. Regardless of their dispute over genotypic or phenotypic gender, *halakhic* authorities agreed that sex change surgery irreversibly violates biblical law. Orthodox Jewish policy-makers strongly opposed sex change surgery on strictly legal (*halakhic*) as well as broader theological and cultural grounds. Yet only the genotype approach rejects, by definition, the gender reassignment sought by transsexuals. This rejection matches the often harsh tone of rabbinic rhetoric against transsexuality.[48] The Orthodox rabbis

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[47]Orthodox rabbis have been understandably reluctant to apply the problematic status of *androginos* to intersex conditions, except for the rare ovotesticular DSD ("true hermaphrodite"). For a fascinating reliance on Talmudic rather than medical knowledge of the sexual development of the human embryo, see Klein, *Mishneh Halakhot,* T VI:47. 1993 responsum.

[48]Transsexualism is condemned in texts from the 1970s as well more recent discourse, such as: Hanina Yom Tov Lipa Teitelbaum, "On a Contemporary Matter of Arrogance,

who favor genotype avoid the appearance of encouraging or validating *post facto* sex change surgery for transsexuals.[49] Hence, it seems plausible that rabbinic authors disputed Waldenberg's phenotypic assignment in his 1970 pediatric intersex case, in part, because his 1967 analysis had employed the same reasoning to affirm gender reassignment through sex change surgery.

Yet rabbinic scholars may have drawn too hastily the analogy between intersex and transsexual situations. For better or worse, Waldenberg applied the phenotype formula to both an intersex infant (1970) and, apparently, to sex change surgery (1967).[50] It is my conjecture that other rabbis disagreed strongly with the phenotypic outcome for sex change surgery, which accommodates the transsexuals' desired gender reassignment.[51] In opposing the application of surgically modified phenotype to transsexuals, halakhists promoted the general rule of genotype and, then, incorrectly assumed that the genotype rule would work for all intersex conditions. Specifically, the genotypic view overlooked or disregarded the *halakhic* classification necessary for females with XY/fg.

Second, the Orthodox genotypic approach of the 1970s confronted, in effect, another controversial policy: a medical protocol in the U.S. and Europe for XY children. During the 1970s and 1980s, it became accepted medical practice to surgically alter genetically male infants with atypical ("undervirilized" or "micropenis") genitalia and raise them as females. This medical practice was grounded on the idea, espoused by John Money, that gender depends

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Changing from Male to Female and Vice Versa," *Ha-Maor*, Vol. 25, No. 2 (Kislev-Tevet 5733/1972): 10–13; Yigal Shafran, "Nitu'akh le-hakhlafat ha-min (Sex change surgery)," *Techumin*, Vol. 21 (2002/5762): 117–120.

[49]After the fact, Orthodox jurists lean toward compassionate treatment of transsexuals as persons. However, genotypic guidelines would not recognize a transsexual's desired gender for many if not all aspects of religious practice. Conversely, transsexuals could be reassigned to their new gender for all religious purposes, arguably, by applying a phenotypic determination to gender. Nonetheless, later proponents of the phenotypic approach do not. See Ben-Ephraim, *Sefer Dor Tahepuchot ("The Generation of Perversions")*.

[50]It is by no means certain that Waldenberg should be understood as supporting halakhic sex reassignment for transsexuals, given careful readings of his 1967 responsum as well as his 1997 opinion (*Tzitz Eliezer* XXII:2, see fn. 9), which takes a different tack to sex change surgery. See Shafran, "Nitu'akh le-hakhlafat ha-min (Sex change surgery)" and Hillel Lavery-Yisraeli (private correspondence).

[51]For a rabbinic analysis that advocates genotype in opposition to sex change surgery, see e.g., Hirsch (*Noam*, Vol. 16, [5733/1973]). Hirsch's view was well received by Steinberg and Bleich.

less on nature (i.e., genotype) than nurture. In 1975, Money described the core idea: "Gender identity is sufficiently incompletely differentiated at birth as to permit successful assignment of a genetic male as a girl. Gender identity then differentiates in keeping with the experiences of rearing."[52] Money believed that gender is flexible enough to be molded by upbringing, especially if the parents are comfortable with the child's appearance (i.e., phenotype). Gender identity was to be molded by hormonal treatment and surgery on atypical, intersexed, or ambiguous genitalia. Money's policy was accepted by the medical community and popular press. However, some American Orthodox Jewish medical ethicists resisted. Tendler and Rosner clearly insisted that a genetic male ought not be surgically recast as a female. Tendler read in the U.S. press about Money's approach and its acceptance in medical circles. He and Dr. Rosner wrote their *halakhic* opinion on ambiguous genitalia in order to prevent surgeries that would turn genetic males into females.[53] To them, gender is not malleable but tied to genotype.

Incidentally, the Orthodox genotypic gender policy has been vindicated, in part, by the increasing criticism of pediatric surgeries predicated on gender malleability. Since the 1990s, studies showed that genetic males often rejected having been surgically shaped as girls. Indeed, in 1997, it surfaced that Money's most prominent experiment had actually backfired.[54] In a 2006 consensus

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[52]Cited in D. F Swaab, "Sexual Differentiation of the Brain and Behavior," *Best Practice & Research Clinical Endocrinology & Metabolism*, Vol. 21, No. 3 (2007): 431–444. The approach was based on the postulates that "(1) individuals are psychosexually neutral at birth and (2) healthy psychosexual development is dependent on the appearance of the genitals" (M. Diamond and H. K. Sigmundson, "Sex Reassignment at Birth: Long-term Review and Clinical Implications," *Archives of Pediatrics & Adolescent Medicine*, Vol. 151, No. 3 [1997]: 298). For an exemplary article from the period, see: J. Money, R. Potter, and C. S Stoll, "Sex Reannouncement in Hereditary Sex Deformity; Psychology and Sociology of Habilitation," *Social Science & Medicine (1967)*, Vol. 3, No. 2 (1969): 207–216. On the problematic management of XY infants since the 1950s, see also: J. A Greenberg, "Legal Aspects of Gender Assignment," *The Endocrinologist*, Vol. 13, No. 3 (2003): 277 and Suzanne Kessler, "The Medical Construction of Gender: Case Management of Intersexed Infants," in Patrick D. Hopkins, ed., *Sex/ Machine Reading in Culture Gender, and Technology* (Bloomington: Indiana University Press, 1998), p. 20.

[53]Tendler, telephone interview, April 28, 2010. For a general objection to normalizing surgery, see Alfred S. Cohen, "Tumtum and Androgynous," *Journal of Halacha & Contemporary Society*, Vol. 38 (Fall 1999).

[54]The David Reimer ("John/Joan") case involved twin boys, one surgically reconstructed as female following a circumcision accident. However, the surgically altered twin did not accept his assignment as a female, sought medical treatments to reverse the earlier

statement accepted by the American Association of Pediatrics, surgical management of intersex conditions is explained but cast in an ambivalent light.[55] Meanwhile, many intersexed persons themselves have spoken out against early surgery. At this stage, neither gender malleability nor genotype determinism is likely to prevail because proper medical management may vary by syndrome and, possibly, on a case-by-case basis given the person's particular genetic, hormonal, and physiological conditions.

D. Implications of the Test Case against Genotypic Gender Assignment

Implications for transsexuality. If the phenotype of intersex persons becomes more pivotal in Orthodox *halakhic* discourse than genotype, this shift could open up questions about the Orthodox *halakhic* status of transsexuals.[56] Regardless of the gender assignment method, formulaic or casuistic, the *halakhic* prohibition on contemporary sex change surgery is not expected to change. In addition, the test case does not suggest any grounds to modify the *halakhic* disapproval of hormonal or other transitioning between genders. Nevertheless, the test case might reshape rabbinic decisions on the gender identity of transsexuals following sex change surgery. Currently, under Orthodox Jewish law, elective sex change surgery only alters the physical appearance of Jewish transsexuals. But the surgery does not alter *halakhic* gender. Jewish transsexuals continue to be considered the gender of their birth for many purposes: the law does not judge the transsexual by appearances.[57] For this reason, it is

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feminizing treatments, and married a woman. He eventually committed suicide (Diamond and Sigmundson, "Sex Reassignment at Birth").

[55]Hughes et al., "Consensus Statement on Management of Intersex disorders." For instance, the lack of scientific evidence is noted at 556 and 558. The statement was prepared by European and U.S. endocrinologists, then endorsed and republished by the AAP in 2006. On the parental viewpoint: Ellen K. Feder, "'In Their Best Interests': Parents' Experience of Atypical Genitalia," in Erik Parens, ed., *Surgically Shaping Children: Technology, Ethics, and the Pursuit of Normality* (Baltimore: Johns Hopkins University Press, 2006), pp. 189–210. On arguments against early surgery, see: Merle Spriggs and Julian Savulescu, "The Ethics of Surgically Assigning Sex for Intersex Children," in David Benatar, ed., *Cutting to the Core: Exploring the Ethics of Contested Surgeries* (Lanham, MD: Rowman and Littlefield, 2006), pp. 79–96.

[56]As noted above, phenotype is the consensus formula in Conservative Judaism. Technically, this implies that a person who undergoes transition, but not full-scale surgery, cannot change their *halakhic* gender status.

[57]Generally, *halakhic* gender is stable. Under the genotype approach, a male-to-female transsexual (MTF) remains male gender. However, according to some rabbinic opinions,

difficult for a religiously observant transsexual to integrate into a community that follows Orthodox Jewish law.

Conceivably, a phenotypic determination of gender could change the *halakhic* treatment of people who have undergone sex change surgery. Insofar as surgery alters their phenotype, transsexuals might be *halakhic*ally recognized in terms of their newly chosen sexual appearance. This approach would be consistent with Waldenberg's 1967 responsum. From the standpoint of transsexuals, this phenotypic recognition would facilitate their integration within Orthodox Jewish communities.[58]

Nonetheless, it is fair to say, rabbinic authorities could readily distinguish between intersex persons and transsexuals when applying phenotypic gender. Phenotypic gender could be assigned according to a person's condition at birth, as with intersex conditions, and not assigned for surgical or prosthetic alterations, as with transsexuals.[59] Alternatively, phenotypic reassignment of gender might be denied when the external appearances are altered through a violation of biblical law (i.e., castration of functional organs). Were rabbinic authorities to deny individuals the elective capacity to surgically change their *halakhic* gender, their rabbinic judgment would remain consistent with their often strongly worded disapproval of transsexuals. Already, rabbis have chosen to split the application of phenotypic gender, between intersex and transsexual, while staying true to their rhetorical and *halakhic* stance on sex change surgery. Indeed, some Orthodox rabbis have adopted a phenotypic approach to intersex and, unlike Waldenberg, simultaneously rejected a *halakhic* recognition of the surgically modified phenotype of transsexuals.[60]

Implications for intersex cases. Just as a few elite athletes with female sex reversal DSDs have unsettled the binary divide in international sports, such cases

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an MTF, who presents the physical appearance of woman, is expected to behave as a woman in certain social situations. For example, an MTF may be expected to sit on the women's side of the divider (*mehitza*) in a worship space or, likewise, avoid interacting with men in ways forbidden to women. Arguably, insofar as such social behaviors are approved within *halakhah*, the MTF would be properly performing the *halakhic gender* of female, rather than the usual genotypic male assignment.

[58]For example, if an MTF were treated as female rather than male, then there would be no ambivalence or confusion about her sitting on the female side of the *mehitza*, being alone with other women, or touching other women. Likewise, an FTM would be treated as a male with the attendant duties and honors, e.g. counting for a prayer quorum, reading scripture, acting as a witness, and so on.

[59]Ben-Ephraim, *Sefer Dor Tahepuchot ("The Generation of Perversions")*. See also fn. 47.

[60]Ben-Ephraim, *Sefer Dor Tahepuchot*.

imply an unanswerable legal challenge within Orthodox Jewish law. AIS-like syndromes refute any over-generalized, formulaic approach to gender assignment based on genotype. Instead, the test case (XY/fg) may be said to uphold a major Jewish law precedent for the phenotype approach: Waldenberg's 1970 pediatric intersex case. Moreover, the challenge to genotype runs deeper. Notably, the genotypic formula is also refuted by another kind of DSD: people with a male sex reversal. At a rate below 1 in 20,000 male births, individuals are born with female genotype (46,XX) and male phenotype.[61] The disorder is known as XX male syndrome, reported first in De la Chapelle (1972). Rabbinic law has apparently tackled at least one case of an XX person with male genitalia. Rabbi Shaul Breisch handled a pediatric case, an apparent XX sex reversal. The child had internal female organs, including a womb, yet appeared male from the outside, with a penis and testicles. Breisch argues that the child was not an *androginos*, the *halakhic* category for a person with both male and female genitalia, but rather "a full male in every respect."[62] He forbade surgery, recommended by physicians, to align the child's genitalia with the genotype and internal organs. Furthermore, he permitted removal of the female organs, since the male phenotype would be definitive. Speculating that the child might be surgically changed to a female phenotype, against his opinion, he said that future sexual intercourse to impregnate this person constitute a prohibited ejaculation, though not a prohibited homosexual act. Thus, Breisch offers the view that it is the child's phenotype at birth that defines gender, not surgically altered phenotype: "here it is clear and obvious that because he was a born a male his *halakhic* status would remain male in every respect."[63]

It is crucial to note that the prevailing genotype formula cannot simply be replaced, in Orthodox Jewish law, with a uniform phenotypic formula. While phenotype does govern the *halakhic* gender of certain XY/fg people, the phenotype formula should not be applied across the board to all intersex conditions. Indeed, for some DSDs, phenotypic gender assignment may be either contraindicated medically or unstable after puberty.[64] Further *halakhic*

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[61]See E. Vorona et al., "Clinical, Endocrinological, and Epigenetic Features of the 46,XX Male Syndrome, Compared with 47,XXY Klinefelter Patients," *Journal of Clinical Endocrinology & Metabolism*, Vol. 92, No. 9 (September 2007): 3458–3465. The frequency estimate covers three 46,XX phenotypes, two of which are male.

[62]*Sheilat Shaul* EH 9.2

[63]*Sheilat Shaul*, EH 9.4

[64]An unstable sex reversal test case may be found with congenital adrenal hyperplasia (CAH) due to 11-beta-hydroxylase deficiency. By way of illustration, ten Jewish (46,XX)

analysis may show, consistent with biomedical research, that neither genotype nor phenotype is consistently determinative of adult gender. Nevertheless, at a minimum, the test case and the Waldenberg precedent prove that phenotypic gender applies to sex-reversal situations (i.e., XY/fg) where secondary sex characteristics match the *aylonit* status.

After 40 years of a stark choice between phenotypic and genotypic gender, religious Jewish communities stand at the brink of a shift in their normative conception of *halakhic* gender. The assumption of a single gender formula is eroding. Instead, rabbinic thinkers will likely absorb the scientific understanding that human sexuality is complex: its boundaries are blurred and, though rare, its permutations remarkably diverse. In the near future, it seems likely that serious Jewish clinical ethics will adjudicate DSDs by each separate syndrome, quite possibly on a case-by-case basis. Meanwhile, as a test case, female sex reversals prove that phenotype is a primary factor in Jewish law on intersex and must override genotype at times. Specifically, certain individuals with female sex reversal syndromes must be classified as an *aylonit*, as a matter of Jewish law, because of secondary sex characteristics. As an *aylonit*, such an intersex person is uncontestably female under Jewish law, despite her male sex chromosomes. This refutes proponents of a genotypic formula for *halakhic* gender and it affirms Waldenberg's 1970 responsum based on phenotypic gender assignment.

"females were reared as males and diagnosis was often delayed until puberty when breasts developed and menses occurred." See A. Rosler, E. Leiberman, J. Sack, H. Landau, A. Benderly, S. W. Moses, and T. Cohen, "Clinical Variability of Congenital Adrenal Hyperplasia due to 11-beta-hydroxylase Deficiency," *Hormone Research*, Vol. 16 (1982): 133–141. See also Online Mendelian Inheritance in Man, "Congenital adrenal hyperplasia due to 11-beta-hydroxylase deficiency," http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=202010.