## Chapter 12: First, do no harm

Had the details of David Reimer’s story been more widely known before the late 90s, it would likely have changed the course of treatment for thousands of other children.[[1]](#footnote-21) For one thing, the kind of electrocautery device that injured him continued to be used for circumcision, and led to total destruction of the penis in an unknown number of other infants and small children too. As recently as 2017, a retrospective paper entitled *Electrosurgery use in circumcision in children: Is it safe?* concluded rather belatedly that the kind of “monopolar” device used for Reimer’s circumcision was, in fact, not safe. The authors added, “We believe that complications from using monopolar diathermy for circumcision are underreported.”[[2]](#footnote-22) The parents and doctors of these mutilated babies found themselves facing the same quandary that the Reimers had; but now, they thought they had a best practice to follow. Informed by the myth of a happy outcome in that case, a 1989 paper in the Journal of Urology[[3]](#footnote-23) was still arguing for making Reimer’s treatment standard under such circumstances:

Four patients who had traumatic loss of the penis were managed after the initial injury with a feminizing genitoplasty. Patient reconstruction ranged from 6 months to 3 years. […] Immediate results were considered to be cosmetically satisfactory in all patients. Followup ranged from 8 months to 23 years […]. The long-term results have been particularly gratifying in 2 individuals who have been observed for more than 18 years. Early feminizing genitoplasty offers an excellent method of reconstruction of the external genitalia in the child with traumatic loss of the penis who is assigned a female sex of rearing.

The Reimer story is of course a single anecdote, not real data. The four patients in this 1989 paper are also too few to draw strong conclusions from, and by now we should be leery of nominally expert claims that an outcome is “particularly gratifying,” which can easily hide the same kinds of methodological and reporting problems Money’s claims did; the only people whose gratification should matter are the patients themselves, and we’d want their unfiltered feedback. Nonetheless, it’s interesting that surgical and hormonal feminization of unambiguously male infants may *sometimes* “work,” even if it’s far from an appropriate best practice for male infants whose penises are destroyed. The reality about how flexible a person’s sex is at birth, in infancy, or even beyond may be more nuanced and dependent on the individual than either John Money or his most vocal opponents would have it.

By the 1990s, narratives about sex determination were shifting, and Money’s theories were falling out of favor. This had a profound effect on the way doctors tilted the field toward declaring intersex babies girls or boys. We can see evidence of that shift when we break down intersexuality by whether respondents were assigned female at birth or male at birth. The pattern that emerges is striking.

Among respondents between 21 and 24 years old who know they’re intersex (so, Millennials, born shortly before the year 2000), it’s 19 times more likely they were assigned female at birth. On the other hand, among respondents between 56 and 74 years old who know they’re intersex (Baby Boomers, born 1945-1963), it’s 8.6 times more likely that they were assigned *male* at birth! The error bars of these curves are fairly large, making the exact ratios uncertain, but the dramatic reversal from majority male to majority female assignment is unmistakable.

From a pediatric surgeon’s point of view, the male default might seem counterintuitive. Gynoplasty is generally considered easier than phalloplasty; as a crude medical maxim from around 1970 held, “it’s easier to dig a hole than build a pole.”[[4]](#footnote-24) It’s true that surgery to create a vagina doesn’t need to result in an externally visible structure that can look convincing at locker room distance, pass a stream of urine that allows one to pee standing up, or (most difficult) produce an erection. This is all, as it were, a tall order. Uncharitably, John Money once referred to an early attempt at phalloplasty as producing a “lump of meat”[[5]](#footnote-25)— though techniques have since improved.

Focusing on superficial impressions also sets a low bar for surgical vaginas, though. As an intersex adult who underwent feminizing surgery put it in an interview, “I don’t look like everyone else does. Not at all.” When asked if her vagina carried sensation, she answered, after a long drag on her cigarette, “There’s always lack of sensation where there’s scarring.”[[6]](#footnote-26)

In any event, this kind of heroic surgical feat would not have been the norm for an intersex Boomer assigned male at birth— indeed, given the multiple surgeries needed, often after puberty, it would be very hard to carry such procedures out without the full understanding of the patient. The key was not starting from scratch. For most Boomers born with ambiguous genitals, the assessment made by doctors was that relatively minor “corrective” hypospadias surgery of the kind William Hammond described in the 19th century, combined with hormone treatment, could “finish the job” of making a penis out of a micropenis or clitoris, well before (the theory went) the infant became self-aware enough to form a fixed gender identity. Regardless of what happened on the inside, any available plasticity in the body was used to tilt the outwardly visible genitals toward unambiguously male, on the assumption that psychological plasticity would cause the child’s sense of self to follow suit.

Perhaps, also, there was a bias in play whereby answering the first question with “it’s a boy” was deemed preferable, all things being equal, to “it’s a girl.” We see powerful evidence of that bias in the frequent infanticide or death through neglect of baby girls, a practice that in recent decades has shifted to include selective abortion of female fetuses. In 1990, Nobel Prize winning economist Amartya Sen shocked the world with his analysis of this phenomenon, suggesting that due to sex-selective abortion and infanticide there were 100 million “missing women.”[[7]](#footnote-27)

On the other side of the coin, perhaps “noisy feminists” of the kind David Gelernter complained about were starting to make doctors uncomfortable with the idea of cutting off clitorises willy-nilly, despite John Money’s oft-repeated claim that it didn’t affect a woman’s ability to orgasm. (This would have been news to the likes of William Acton and John Harvey Kellogg, on their surgical quests a century earlier to eradicate “nymphomania” through clitoridectomy.)

Reporting from Human Rights Watch[[8]](#footnote-28) is in broad agreement with this male default: “US government data compiled from several voluntary-reporting databases […] show that in 2014— the most recent year for which data are available— hypospadias surgery was reported on children 505 times, and clitoral surgery was reported 70 times.” In other words, when surgery is performed on intersex children, it favors “rounding them up” to male by a factor of 7.2x.

Why, then, are we seeing such a dramatic shift toward *female* assignment at birth for younger intersex people? Increasing levels of environmental pollutants that disrupt prenatal hormone levels may be part of the answer. In their 2021 book *Count Down*, Shanna Swan and Stacey Colino argue that these pollutants pose a looming fertility crisis, and have been feminizing us all— leading, among other things, to declines over recent decades in testosterone level and sperm count among men. They also argue that prenatal exposure to endocrine disrupting chemicals may be a driver of increasing levels of gender dysphoria and non-binariness. While these theories can’t be ruled out, the way Swan and Colino reach for biological explanations over cultural ones should give us pause, given the strong evidence we’ve seen in the survey data of cultural contagion (meaning, people being influenced by others). The *Count Down* effect is also unlikely to account for the nearly 180 degree turn in intersex gender assignment that began taking place in 1990 or so.

Something else happened around 1990 that may offer a better explanation: doctors started to change their policies. Furtively performing “corrective” surgery at birth, and keeping children or even parents in the dark about it, at last began falling out of favor. The abstract of that Human Rights Watch article in its entirety reads:

Intersex people in the United States are subjected to medical practices that can inflict irreversible physical and psychological harm on them starting in infancy, harms that can last throughout their lives. Many of these procedures are done with the stated aim of making it easier for children to grow up “normal” and integrate more easily into society by helping them conform to a particular sex assignment. The results are often catastrophic, the supposed benefits are largely unproven, and there are generally no urgent health considerations at stake. Procedures that could be delayed until intersex children are old enough to decide whether they want them are instead performed on infants who then have to live with the consequences for a lifetime.

While it’s still the case that vanishingly few intersex 18 year old Americans know they’re intersex, fewer of them are being operated on or given sex hormones as infants nowadays. This reflects a number of converging trends. One is an acknowledgement, based on hard lessons, that John Money was wrong about gender identity being entirely socially determined. Another is the increasing regard for the agency of the children themselves, a sense that they’re people whose rights to self-determination must be protected even— or especially— when they haven’t yet developed the self-awareness to make their own decisions.

The priority then becomes to leave their options as open as possible, and avoiding early surgery or hormones now seems to many more in line with defaulting to female than to male. A large clitoris really isn’t the end of the world. Biologically, the physical development of a fetus can also be thought of as starting out female, with subsequent male development triggered by the addition of hormones; as English endocrinologist Richard Quinton has put it, “the default blueprint is female.”[[9]](#footnote-30) There’s a degree of flexibility in the timeline for virilization; a micropenis can always be grown or made into a not-so-micro penis later on. As an ahead-of-his-time 66 year old put it in the survey, “I was born both male and female. Raised female until 6 and then surgically aligned to be all male. Have lived male ever since, and identify as male.” Presumably, by 6 years old, this man’s sense of his own gender was clear enough that surgery (and probably hormones) could align him with what he felt he was on the inside, rather than having to face David Reimer’s lifelong ordeal.

The change taking place now is more profound, though, than just a shift from defaulting to male to defaulting to female. The whole notion that the sex binary is absolute, that the requirements of masculinity and femininity are set in stone, and that either/or choices are mandatory is beginning to dissolve. Leaving options on the table for an intersex child means being honest with them from the beginning about their in-between status— “both male and female,” exactly the ambiguity John Money found so horrifying.

Once we abandon the idea that sex must be either/or, we also need to contend with the question of how big the formerly excluded middle really is. How many people are actually intersex? As we’ve noted, this question can’t be answered objectively, because most of the variables determining sex aren’t discrete. It’s like trying to establish how many people are ambidextrous. The only principled approach is to just ask people, and accept that their definitions will vary.

Perhaps the percentage isn’t so important, as long as we recognize that it isn’t negligible. In practice, the only questions we really need to answer are: which infants do we perform sex assignment surgery on, and what pronouns should we default to using with them? Increasingly, the answer to the first question is “none, unless medically necessary” (i.e. except in the very small minority of cases where differences of genital development pose an immediate health risk). And for increasing numbers of young people, the answer to the second question is “they/them,” regardless of how their genitals look. For millions of people, not conforming to the binary no longer means “living apart,” as it might have in the 1960s.

Medical practice is well ahead of government regulation with regard to sex assignment surgery for infants, but laws have started to change too. In recent years, a tiny handful of countries[[10]](#footnote-31)— spurred by intersex activists— have made it illegal for medically unnecessary surgeries to be done at birth, or more broadly, non-consensually. In this view, consent is necessary for such surgeries to be regarded as gender confirmation as opposed to genital mutilation. And newborns can’t give consent. This is consistent with the most basic statement of the Hippocratic oath, which medical students have been taking in one form or another for centuries: “First, do no harm” (*Primum non nocere*). This is the oath David Reimer’s doctors violated catastrophically, not once, but twice.

Non-binary gender identification is also increasingly available on official forms and documents, though here too, official acknowledgement lags a reality in which almost one in twenty young Americans identify as non-binary.

Rosie Lohman, born intersex in Ontario in 2012, embodies many of these historic shifts. Chromosomally, Rosie is XX, but as a result of Congenital Adrenal Hyperplasia, she was born with ambiguous genitals. A team of specialists attempted to pressure her parents, Stephani and Eric, into surgery to “correct” them; this would have included clitoral reduction as well as the creation of a surgical vagina. But the Lohmans didn’t go along with the plan. As a CNN article[[11]](#footnote-33) on their story put it in 2020,

Rosie is now in the process of figuring out her gender identity on her own terms. While she says she still likes to use female pronouns for now and wants to keep her name, Rosie says that sometimes she feels like a boy and other times, nonbinary. “Because I am both!” she said. […] She has one piece of advice for new parents of any intersex baby who might be worried for their future, offered with a smile. “Calm down!”

That it’s possible to be both public and calm about sex and gender ambiguity is very much a feature of our era. A 2019 article in *Teen Vogue* about intersexuality includes the stories of nine “out” intersex teens, Bria (they/them), Banti (they/them), Johnny (all pronouns), Cat (she/her), Anick (he/him), Francis (he/him), Irene (she/her), Mari (they/them), and Danielle (she/they). Most were kept in the dark throughout childhood and experienced shame, isolation, and confusion before discovering online intersex communities and embracing intersexuality as a component of their identity. These experiences are familiar to many LGBTQ+ people, and the language many young intersex people are using is starting to overlap with these adjacent communities.

While I believe that this new embrace of excluded middles is part of a profound and larger shift in the way we think about identity, I also think it’s important to put the rigidity of the 20th century sex and gender binary into a larger historical context. Historians, anthropologists, and social scientists aren’t immune to the powerful biases we all encounter when we view other cultures through the lens of our own categories and assumptions. This leads to a kind of selective blindness, a bit reminiscent of the way we ignore our own noses, despite their occupying a sizeable part of our visual field. For instance, prior to the social strictures of Victorian England, it’s not clear that intersexuality (or any kind of sexuality) was as taboo as it became in the 19th century. A popular drinking song or “catch” by William Lawes (1602-1645) went[[12]](#footnote-35)

See, here comes *Robin* Hermaphrodite,

Hot waters, he cryes for his delight:

He got a Child of a Maid, and yet is no man

Was got with childe by a man, and is no woman.

In South Asia, *hijras* have been long recognized as a third gender, neither male nor female; in India, Pakistan, Nepal, and Bangladesh this third gender is acknowledged by the state on official documents. For thousands of years, traditional Jewish culture has recognized multiple categories of intersexuality, including *androgynos* (אַנְדְּרוֹגִינוֹס), possessing both male and female characteristics, and *tumtum* (טֻומְטוּם in Hebrew, meaning “hidden”), possessing neither. A Jewish commentary on the Old Testament’s creation myth, *Genesis Rabbah*, written sometime between 500 and 300 BCE, asserts that Adam was created *androgynos* by God, with sex differentiation only occurring when Eve was fashioned out of Adam’s rib. Many Native American cultures, too, have long recognized non-binary sex and gender in various forms, with the modern umbrella term “Two Spirit” encompassing a whole range of such traditions. In short, it may be that the cultural invisibility of non-binariness and intersexuality in recent English and American history is actually a historical anomaly— much like the Nuclear Family.

Even so, we should not fall into the opposite error of thinking that the emerging landscape of diverse gender and sex identities and increasingly broad acceptance of them is a historical norm, either. Most traditional societies are organized around sexual reproduction and its material requirements, and tend to marginalize those not involved in supporting this main project. This is because, as we’ll explore in the later chapters of this book, for most people and throughout most of human history, it has been an existential challenge simply to scrape up enough calories to stay alive and propagate. So, “Robin Hermaphrodite,” who may or may not have existed,[[13]](#footnote-36) is celebrated for his extraordinary dual-mode reproductive capacity; but the framing is still very much heteronormative. Ancient Jewish thinking on the subject is framed legalistically, in terms of how marital obligations and patriarchal inheritance laws apply to such cases. *Hijra* communities tend to be marginalized and impoverished; relegated to a low social status, they often depend on survival sex work and are subject to violence and abuse with impunity. For a society to recognize the existence of non-binary and intersex people, in other words, is not the same thing as to accord them status and respect on their own terms. That so many young people are now willingly embracing non-binary identities with the expectation of equal respect and acceptance by peers is a new phenomenon.

Our greater modern understanding of the biological and physiological basis of sex is also new, as is our increasingly powerful ability to manipulate it. Recent years have seen not only continued development of surgical techniques and hormone therapies, but the wholesale minting of new terminology and a burgeoning cultural awareness. Ironically, the very techniques John Money and his collaborators marshalled to try to enforce the sex and gender binary of the 50s are now being used to dismantle it.

1. Per Colapinto, *As Nature Made Him*, “Dr. John Money’s misreporting of his case had resulted in similar infant sex reassignments in thousands of other children.” [↑](#footnote-ref-21)
2. Altokhais, Tariq Ibrahim. *Electrosurgery use in circumcision in children: Is it safe?* Urology annals 9.1 (2017): 1. [↑](#footnote-ref-22)
3. Gearhart, John P., and John A. Rock. *Total ablation of the penis after circumcision with electrocautery: a method of management and longterm followup*. The Journal of urology 142.3 (1989): 799-801. [↑](#footnote-ref-23)
4. [[REF]] [↑](#footnote-ref-24)
5. *Fuckology*, p. 80. [↑](#footnote-ref-25)
6. Colapinto, *As Nature Made Him*. [↑](#footnote-ref-26)
7. Amartya Sen, *More than 100 million women are missing*, in Gender and Justice, pp. 219-222. Routledge, 2017. Original 1990. [↑](#footnote-ref-27)
8. [Link](https://www.hrw.org/report/2017/07/25/i-want-be-nature-made-me/medically-unnecessary-surgeries-intersex-children-us). [↑](#footnote-ref-28)
9. Angela Saini, *Inferior*. [↑](#footnote-ref-30)
10. Map source [link](https://en.wikipedia.org/wiki/File:Protection_of_intersex_children_from_harmful_practices.svg). [↑](#footnote-ref-31)
11. [Link](https://www.cnn.com/2020/01/10/us/intersex-surgeries-gothere/index.html). [↑](#footnote-ref-33)
12. Judith Peraino, *Listening to the Sirens: Musical Technologies of Queer Identity from Homer to Hedwig*. [↑](#footnote-ref-35)
13. While it’s theoretically possible, to be able to impregnate someone else *and* be able to bear a child to term would imply an extremely rare intersex variation; see [Potential autofertility in true hermaphrodites](https://pubmed.ncbi.nlm.nih.gov/28282768/), 2018. [↑](#footnote-ref-36)