Commentary

Sexing the Body
Gender Politics and the Construction of Sexuality

Anne Fausto-Sterling
Basic Books, New York, 2000

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In *Sexing the Body. Gender Politics and the Construction of Sexuality* Fausto-Sterling attempts to answer two questions: How is knowledge about the body gendered? And, how gender and sexuality become somatic facts? In other words, she passionately and with impressive intellectual clarity demonstrates how in regards to human sexuality the social becomes material. She takes a broad, interdisciplinary perspective in examining this process of gender embodiment. Her goal is to demonstrate not only how the categories (men/women) humans use to describe other humans become embodied in those to whom they refer, but also how these categories are not reflected in reality. She argues that labeling someone a man or a woman is solely a social decision. «We may use scientific knowledge to help us make the decision, but only our beliefs about gender – not science – can define our sex» (p. 3) and consistently throughout the book she shows how gender beliefs affect what kinds of knowledge are produced about sex, sexual behaviors, and ultimately gender.

This book has three aims. First, Fausto-Sterling challenges our dualistic thinking about the sex categories and how we use them. In particular she focuses on three pairs of concepts: sex/gender, nature/nurture and real/constructed. She cuts through these false dichotomies, claiming that sexuality is a somatic fact shaped by cultural effects. Throughout the book she explains how the categories used to define sexuality changed over time, thus supporting her argument that human sexuality is neither timeless nor universal. She recalls the feminist historian Joan Scott who argued that historians should not assume that the term "experience" contains a self-evident

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meaning and should always remember the historical context in which a particular "meaning" has emerged. Fausto-Sterling traces the development and construction of the concept of (homo)sexuality in the debates led by historians, anthropologists and philosophers. This helps us to understand how we've arrived at our present arrangements and understanding of human sexual development. But, what's more, she points out how all these debates are built on two-sex model of masculinity and femininity, with scientists looking for evidence of whether human sexuality is inborn or socially constructed. She agrees with those who fall along the social constructionist spectrum (Foucault, Haraway, Scott) that «our bodily experiences are brought into being by our development in particular cultures and historical periods» (p. 20), but she makes the argument more specific by saying that we literally, not just discursively, construct our bodies. To substantiate her claim, she argues that it is necessary to erode the distinction between the physical and the social body.

Second, she argues against current theories of sexual development and attempts to deliver a new theoretical approach to the study of human sexuality. Consequently, her approach cannot be classified as neither essentialist nor constructionist, as she rejects dichotomous categorizations. Her input into the ongoing debate (between essentialists and constructionists) is unique. She is a molecular biologist, a feminist and a historian and, as she puts it, she believes in the material world (humans are biological and thus in some sense natural beings) and in building specific knowledge by conducting experiments, but as a feminist and historian she believes that 'facts' are not universal truths but are socially constructed (humans are social and thus in some sense constructed entities). She asks whether we can «devise a way of seeing ourselves, as we develop from fertilization to old age, as simultaneously natural and unnatural» (p. 25), and recalls feminist theorists who already attempted to deliver a nondualistic accounts of the body (Butler 1993, Grosz 1994), but finds them unsatisfactory. Judith Butler, Fausto-Sterling argues, suggests we should look at the body as a system that simultaneously produces and is produced by meaning, thus she does not allow any biological processes a status that pre-exists their meaning. Unlike Butler, Elizabeth Grosz believes that biological instincts provide that kind of raw material on which sexuality develops. But the raw material is not enough and without human sociality human sexuality cannot develop. But taking the innate at face value, Fausto-Sterling further argues, «still leaves us with an unexplained residue of nature» (p. 25) and she argues for applying, what she calls, developmental system theory (DST) to the study of

human sexual development. DST theorists deny that there are fundamentally two kinds of processes: one guided by "nature" (hormones, genes, brain cell, etc.) and one guided by "nurture" (environment, experience, learning, etc.) allowing us to break away from the dualistic thinking about human development. One example of a theorist who represents systems theory approach is Elisabeth Wilson (1998) who argues for a theory of mind and body which she calls connectionism. In the old-fashioned approach the brain is thought of as anatomical (where the function is located in particular parts of the brain), whereas in the connectionist model the brains' function emerges from the complexity and strength of many neural connections acting at once. What implications this approach could have for studying sexuality? Fausto Sterling elaborates that connectionist networks are usually nonlinear and so even small changes can produce large effects. With regards to the study of sexuality,

> we could easily be looking in the wrong places and on the wrong scale for aspects of the environment that shape human development. Furthermore, a single behavior may have many underlying causes, events that happen at different times in development (p. 27).

Third, Fausto-Sterling stresses that her book is political. She is a social activist devoted to shifting the politics of the body, which she believes are harmful to those who do not fit in the modern rigid sex categories. In order to do that, she believes we must change the politics of science and argues this can be done by studying how scientists create empirical knowledge. Moreover, she argues that the dualistic framework we use in our daily debates (nature/nurture) holds enormous dangers. We had seen in past history how a believer in the "nature" side of things can lead to great tragedies and it definitely never worked to further equality for women. As she puts it: «I am deeply committed to the idea of the modern movements of gay and women's liberation, which argue that the way we traditionally conceptualize gender and sexual identity narrows life's possibilities while perpetuating gender inequality» (p. 8).

Sexing the Body takes us on a journey through the body where Fausto-Sterling confronts the false dichotomies of what is thought of as real (sex/nature) or as constructed (gender/culture). The book is organized into nine chapters, each dealing with different parts of the human body (apart from an opening and closing chapter). Starting from the genitals (chapters 2-4), the brain (chapter 5), sex glands and hormones (chapters 6-7) and finally sexual behavior in rats (to demonstrate how theories about human sexuality are often

derived from rodent experimentation) (chapter 8), Fausto-Sterling persuasively demonstrates how sex is literally constructed and how historically scientific knowledge about anatomy and physiology was gendered. She takes the reader through some complex issues and scholarships in a clear and well-organized manner, in a book that aims to speak to different audiences simultaneously. Fausto- Sterling explains how she in fact wrote two books in one. First part of the book is «a narrative accessible to general audience» (preface). Second part is intended for scholars (nearly as long as the first part) and includes endnotes and an extensive bibliographical section that aims to satisfy the curiosity and advance discussions within academic circles. This makes the book more accessible for the general reader, without doing any harm to its scientific dimension.

In chapter two, Fausto-Sterling traces back in history how the modern medical treatments of intersexuality developed, helping to maintain the two-sex system and leading to a complete erasure of intersexuality from the Western culture (her analysis is limited to Europe and North America). She argues that the fixation with maintaining "correct" membership of humans as either male or female coincided with the battle for social equality between the sexes: «the more social radicals blasted away the separations between masculine and feminine spheres, the more physicians insisted on the absolute division between male and female» (p. 40). In the premodern era in Europe (before 19th century), hermaphrodites were at least culturally acknowledged. Despite the fact the distinction between males and females was always at the core of the juridical and political systems, it was the individual who had the choice to decide with which sex they wanted to be identified with. Today the state and the legal system is still organized around the idea that there are only two sexes, but from the moment biology and medicine gained greater authority "ambiguous" bodies, now deemed as pathological, were literally erased from the public eye. What's more decisions, mostly irreversible, were from then on made arbitrarily by medical practitioners. Fausto-Sterling outlines the history of the classificatory schemas which were in force to help medical practitioners establish whether one was a female or a male. In the Age of Gonads (starting from the 1830s), the honor of definitive powers was offered to the gonads. This system was developed by a German physician Theodor Albrecht Klebs who contrasted "true" with "pseudo" hermaphrodites and declared that "true" ones had both ovarian and testicular tissues in the body (Fausto-Sterling after Dreger 1998). All other combinations (for example penis with ovaries, or

testes and a vagina) could be classified on basis of gonads as either male or female. Since the cases of "true" hermaphrodites were very rare significantly fewer people were counted as intersexual. «Medical science was working its magic: hermaphrodites were beginning to disappear» (p. 38). «The vanishing act», as Fausto-Sterling calls it, was even less flexible in the Age of Conversion (from 1930s). Medical practitioners developed the surgical and hormonal suppression of intersexuality and «found it imperative to catch mixed-sex people at birth and convert them, by any means necessary, to either male or female» (p. 40). Starting from the 1950s, further improvements in surgical technology allowed medical practitioners to "catch" most intersexuals at the moment of birth. Fausto-Sterling argues that, «if nature really offers us more than two sexes, then it follows that our current notions of masculinity and femininity are cultural conceits» (p. 31) and as an intersexual activist she calls for an end to all unnecessary infant surgery.

In next two chapters (three and four), Fausto-Sterling presents a historical overview of theories about the origins of sexual difference that provided the basis for the modern, rigid approach to the treatment of intersexual bodies. She persuasively shows how medical practitioners convince of and perpetuate the idea that children are actually born with gender. For example she debates that the definitions doctors use (to call a child a girl or a boy) are purely social and not medical and presents cases where doctors use only their personal impression to decide that a baby's clitoris is "too big" to belong to a girl. In such cases the clitoris is downsized, even if the child is not intersexual by definition, leading to unnecessary and sexually damaging genital surgeries (p. 60).

> Most intersexual males are infertile, so what counts especially is how the penis functions in social interactions – whether it 'looks right' to other boys, whether it can 'perform satisfactorily' in intercourse. It is not what the sex organ does for the body to which it is attached that defines the body as male. It is what it does vis-à-vis other bodies (p. 58).

The "immediate fixing" remedy of infants born with intersexed genitals ironically emerged from flexible theories of gender (initiated with the study of Albert Ellis in the 1940s).[1] These theories concluded that human sexuality is highly malleable and that nurture is more important than nature in the development of masculinity and femininity. John Money was particularly a

[1] See, Ellis, 1945.

strong proponent of such approach and insisted that early genital surgery is imperative, as the child develops his or her gender identity in connection to the body. Important component of successful treatment was therefore the parents : and later the child's belief that the, in many cases, arbitrarily chosen gender was in fact "what the nature indented". This resulted in medical manuals almost unanimously recommending that parents and children should not receive a full explanation of an infant's sexual status (p. 64). Money's theory was repeatedly challenged by, inter alia, Milton Diamond (1965), who explained that the brain (through hormones) is prenatally gendered, individuals are not psychosexually neutral at birth and healthy psychosexual development is not intimately related to the appearance of one's genitals. Through the 1960s and 1970s many researchers reported on cases of intersexual adults who, once they grew up, rejected the sex which was reassigned to them at birth, and even thought Money's main ideas were discredited, the social constructionist doctrine lingers in practice until today. Diamond called for new treatment paradigms of intersexuality where immediate and irreversible surgeries would be postponed.

In 1993, Fausto-Sterling published an article *The Five Sexes: Why Male and Female Are Not Enough* which she calls a "modest proposal" suggesting that we replace our two-sex system with a five-sex system. This, in fact, radical proposition sparked a huge debate and an outrage not only among medical practitioners, but it also provided an important stimulus for intersexual people to organize and demand change. Since 1993 Intersex Society of North America (ISNA), Hermaphrodite Education and Listening Post and many other support groups were established and continue building coalitions among groups of intersexuals, academics, physicians and psychologists, lobbying to change painful and irreversible treatment practices. She reveals many stories of people who are behind the statistics and provides vast evidence that the current approach instead of preventing psychological suffering actually causes it. And psychological pain is only one of the "side effects" of such surgical interventions. The myth that intersexuals without medical intervention are doomed to life of misery is refuted by more than 80 cases of people who, identified as intersexual, refused to give up their "double" identities and were leading a satisfying life. What Fausto-Sterling hopes to see in the future is the hierarchical division between patient and doctor dissolved, new medical treatment that permits ambiguity, medical interventions aimed only at life-threatening conditions and surgery seen as destructive, rather than imperative.

She argues, following Suzanne Kessler (1990), that to end gender tyranny we need to abandon the two-gender dichotomy and claims to a separate intersexual identity and asks: Can our physical genitals continue to form a basis for deciding the rights and privileges of citizenship? They are not even publicly visible. Fausto-Sterling understands her vision is utopian, but she believes it is nevertheless possible: «the elements needed to make our future more equitable and diverse already exist. We just need to make it happen» (p. 114). Fausto-Sterling continues documenting how culture and politics shape scientific knowledge also in chapter five. This time she turns to a study of the brain which aimed to revel gender differences within its anatomy. She discusses that

> relationship among gender, brain function, and anatomy are both hard to interpret and difficult to see, so scientists go to great lengths to convince each other and the general public that gender differences in the brain anatomy are both visible and meaningful (p. 115).

She gives a detailed account of various methodological and theoretical approaches which different research communities employ to investigate different parts and functions of the brain. The battle of sex difference continues undisrupted and Fausto-Sterling argues that it can last for hundreds of years, because scientists insist on using truths and beliefs taken from our social arena to structure, read and interpret the natural. Perhaps most interesting is the battle for corpus callosum, a very highly variable bit of our brain that has fascinated scientists since 1982. It began with an article in the prestigious journal *Science*, where two physical anthropologists (de Lacoste-Utamsing & Holloway 1986) reported that certain regions of the corpus callosum (CC) were larger in females than in males. «Although admittedly preliminary (the study used nine males and five females), the authors boldly related their results to possible gender differences in the degree of 'lateralization of visuospatial functions'» (p. 118). Both scientists and the popular media pushed the determinism to an extreme, expending the relationship between the CC to basically every aspect of human behavior. But Fausto-Sterling's close examination of many other research reports reveals an alarming number of methodological problems and surprisingly little consensus among different findings. She explains how scientists first turn a three-dimensional object into a two-dimensional sample of tissue (which results in shape distortion and shrinkage). Next they further subdivide it and in the end proceed with their interpretations as if they measured the corpus callosum.

> Instead, interpretation ought to try to work by reversing the abstraction process; here, though, one runs into trouble. Far too little is known about the detailed anatomy of the intact, three-dimensional corpus callosum to accomplish such a task. One is left to assign meaning to a fictionalized abstraction, and the space opened up for mischief becomes enormous (p. 130).

In 1906 corpus callosum was studied with the hopes to understand racial differences and the differences found in brain measurements were completely consistent with "knowledge" about racial characteristics. Until they were disputed as inaccurate. Major objection: extensive individual variations swamped group difference (p. 123). Today the CC is studied with the hopes to understand gender differences. And once again scientists, to support their interpretations, turn to the context of an ongoing debate about the CC reflecting cultural assumptions about the meaning of the subject under study – the meaning of masculinity and femininity. «The social context may change, but the weapons of scientific battle can be transferred from one era to the next» (p. 124).

Fausto-Sterling throughout the book documents how scientists have, over the past century, worked relentlessly to prove that our gender is connected to our body. In chapter six and seven she turns to the chemistry of our body – the hormones. Since 1960 when testosterone and estrogen were acclaimed as the youth hormones they have become the most extensively used drugs in the history of medicine. But the concept of "sex hormones" gained popularity much earlier (around 1908), coincidently during the time when, in the USA and Europe, debates about the rights of homosexuals and women emerged. Fausto-Sterling points out that at the time the idea, that the public sphere was by definition masculine, was so deeply engrained in the social imaginary that many scientists were arguing that women who aspired to citizenship rights had to be masculine. «Physiological functions became political allegory – which, ironically, made them more rather than less credible, because they seemed so compatible with what people already 'knew' about the nature of sex difference» (p. 162). The next phase of hormone research was launched during the 1920s in what came to be called "endocrinological gold rush". She traces the fascinating history of hormone and genetic biology research showing how personal, institutional, financial and ultimately political interests of actors promoting and carrying out research in hormone biology overlapped in intricate ways (p. 177). Each step in the process of isolation, measurement and naming, based on the preexisting cultural ideas about gender, continued to

assign sex to hormones. Fausto-Sterling revels how scientists struggled to reconcile experimental data with what they felt certain to be true about sex differences. Even when they kept finding 'male' hormones in female bodies, they never gave up the idea that hormones are essentially linked to maleness and femaleness. This idea prevailed during the First (1932) and Second (1935) Conference on Standardization of Sex Hormones where definitions of androgen and estrogen were adopted. These not sex-specific steroid molecules (both men and women need both testosterone and estrogen), affecting most, if not all, of the body's organ systems (just to name the brain, lungs, bones, blood vessels and liver) were from then on deemed as 'sex hormones'. Fausto-Sterling argues that this decision has profoundly influenced our understanding of the biological nature of masculinity and femininity.

> Now that the label sex hormones seems attached to these steroid molecules, any rediscovery of their role in tissues such as bones or intestines has a strange result ... these organs, so clearly not involved in reproduction, come to be seen as sex organs. Chemicals infuse the body, from head to toe, with gender meanings (p. 147).

In this struggle to understand the role of hormones in constructing sex difference, Fausto-Sterling concludes: «the time has come to jettison both the organizing metaphor of the sex hormone and the specific terms androgen and estrogen» (p. 193) and insists on calling them "steroid hormones" as they are just that and nothing else. She points out that if we are to understand the physiological components of sexual development we must be looking at the steroids as one of a number of components that are important for the creation of male, female, masculinity and femininity. Only then «we will become able to conceptualize the ways in which environment, experience, anatomy, and physiology result in the behavior patters that we find interesting and important to study» (p. 194).

In chapter eight, Fausto-Sterling clarifies how research on human sexuality paralleled studies on animal sexuality and how the laboratory rodent became the premier model to explore hormones and sex-related behaviors in mammals. She recalls, amongst others, the French embryologist Alfred Jost who studied the development of anatomical differences between male and female fetuses. Fausto-Sterling points how Jost's theory adopted the metaphor of female lack and male presence which mirrored the ongoing debates about women's and men's separate roles in society. In her words:

> From the 1950s through the mid-1960s he referred to females as the neutral or anhormonal sex type. They became females, according to him, because they *lacked* testes, while the testes played the principal role in separating male from female development (p. 203).

Jost's model of sexual development was later imported into the study of behavior. Scientists researching male and female brain difference "discovered" that the "female" brain could only develop in the absence of testosterone. This leap from sexual anatomy (which is easy to observe and measure) to sexual behavior, Fausto-Sterling argues, opened a whole new chapter in research on masculinity, femininity, but also homosexuality, bisexuality and heterosexuality. For example, Frank Ambrose Beach (1947-48) developed a detailed theory of animal sexuality where he argued that neurologically all animals have a bisexual potential. He acknowledged individual variability within each sex, but argued that under some conditions, both sexes could display opposite sexes' mating patterns thus, he claimed, «human homosexuality reflects the essentially bisexual character of our mammalian inheritance» (p. 211). His findings were strengthened by Kinsey's famous survey which confirmed extensive bisexual behaviors in men and women.[2] All this, at the time when public discussions about homosexuality were at their peak (early 1950s). But just as the cold war ideology started to creep in (and as Guy Gabrielson, national chairman of the Republican party wrote «sexual perverts had infiltrated the government and were perhaps as dangerous as the actual Communists» (p. 198)) more conservative readings of animal sexuality started to dominate. «By 1959, a new rodent emerged that was distinctly heterosexual and far more bound by gender roles than were Beach's rats» (p. 211). When in 1959 cold war rhetoric about homosexuality, communism and the family was at its peak new chapter in the history of the manly rat began. William C. Young published an article in which he examined long-term hormonal effects on behavior and found that prenatal exposure to androgens or estrogens had «an organizing action that would be reflected by the character of adult sexual behavior» (Young, 1959, p. 213). This meant that a whole range of adult behaviors could be traced back to pre-birth hormonal chemistry, indirectly implying the finding of a biological basis of homosexuality. This paper, Fausto-Sterling maintains, «shaped the study of hormones and sexual behavior for decades to come» (p. 214). Young's new theory – the

[2] See, Kinsey, 1948.

organizational/activational (O/A) model of hormone activity argued that fetal hormones permanently fixed an individual's behavioral potential as either masculine or feminine and basically explained that femininity and masculinity were mutually exclusive. Whereas earlier researchers emphasized the role of individual variability, physiological complexity and environment in the development of sexual behavior, from then on all eyes were focused on the hormonal causes of gendered behavior, erasing learning and experience from the picture. Despite many other researchers' efforts to stave off single factor-models of development, this fatalistic theory stayed basically intact until the 1970s. In 1972 Money and Ehrhard published their groundbreaking work on biology and sexual development *Man and Woman, Boy and Girl* where, as was mentioned before, they concluded that human sexuality is highly malleable and that nurture is more important than nature in the development of masculinity and femininity. Other researchers followed with theories concluding that masculinity and femininity had an "orthogonal" relationship (varied independently from each other) rather than, as Young implied, being mutually exclusive (p. 222). These shifts paralleled with the growing importance of women's liberation movement and Sandra Bem's (1974) famous idea of androgyny was published the same year as the "orthogonal mode" of sexual behavior. An androgynous person is one that has both feminine and masculine psychological traits, which according to Bem is the best combination for one's healthy functioning in contemporary society.[3] Throughout the 1980s social scientists turned to biology to explain human sexual practices, while biologists found their own research paradigms influenced by new socially accepted definitions of human sexual diversity. And as new and more complicated accounts of human homosexuality began to take shape in public debate researchers working on animal behavior suddenly began to reevaluate their own experiments on rodent sexuality.

Fausto-Sterling argues that, as long as the dividing line between the so-called biologically and socially shaped behaviors remains rigid, it will be difficult to offer satisfying accounts of humans' sexual development. Her solution to these oversimplified (either nature or nurture) debates is to see nature and nurture as an indivisible, dynamic system where many factors play a role. «Some elements are anatomical, some physiological, some behavioral, and some social. They all form part of a unitary system» (p. 230). She points

[3] Foucault called the idea of androgyny "a hermaphrodism of the soul". See, Foucault 1980, p. 43.

out that the modern debates about genes roles too closely resemble what we had seen in the debates with hormones. The oversimplification is on the rise and genes are now thought to be responsible for everything, from homosexuality to shyness. Saying that genes make proteins is the common shorthandness found in many popular reports and thoughts about gens. Yet, Fausto-Sterling reminds, DNA itself does not make proteins, but like hormones, it needs to be in a complex system with other molecules to perform its action. And she concludes: «partitioning genes from environment, nature from nurture, is a scientific dead end, a bad way of thinking about human development» (p. 235). In the final chapter Fausto-Sterling argues that humans take the longest time to mature out of all primates and the longer the period of development the more opportunities for the environment to shape the developing organism. She insists on our understanding of human sexuality as a dynamic system that changes over time. And that the changes that happen in our lives are part of a biocultural system in which cells and culture mutually construct each other. Just like our anatomy is not constant – so are those aspects of human sexuality that derive from our body's structure, function and image. Only once researchers admit the limitations of working within a single discipline they can, she concludes, come up with a more complete theory about human sexuality.

Fausto-Sterling provided extended evidence in this book of how biology is politics, by other means. As we continue debating our politics through arguments about biology we should never «lose sight of the fact that our debates about body's biology are always simultaneously moral, ethical, and political debates about social and political equality and the possibility for change. Nothing less is at stake» (p. 255).

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