102 on the orgasm of the species: female sexuality, science and sexual difference

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abstract

This essay interrogates the assemblage of female sexuality. Drawing on an analysis of Masters and Johnson's anatomical research and primatological research on monkeys, I argue that the female sexuality was the product of encounters between women, machines and monkeys. Orgasm's extra-species life produced a conception of female sexuality as natural in evolutionary and anatomical terms. The set of assumptions that follow this naturalisation of female sexuality through an emphasis on orgasm allow us to further deconstruct notions of female sexuality, naturalness and the politics of knowledge that produce this assemblage. Ultimately, I argue that this focus on anatomy and female orgasm allows us to see the stakes of an anatomically based sexual difference.

keywords

Masters and Johnson; female orgasm; assemblages; primatology; radical feminism

A naked woman reclines on a padded chaise longue in the middle of an examination room at a Maternity Hospital in St. Louis. Her skin is flecked with wires, which are connected to an electroencephalograph machine. A television monitor tracks her brain activity, while other sensors track her heart rate. The researchers, Dr William Masters and his assistant Virginia Johnson, record data as the woman begins to stimulate her vulva with the other machine in the room, Ulysses, the nickname given to a coloscope, 'a long cylindrical plastic mechanism created by Masters and attached to a small camera ... it resemble[s] a baker's rolling pin formed of clear acrylic Plexiglass with an optical eye made of plate glass' (Maier, 2009: 95). Once the machine is inserted, the interior of her vagina and cervix can be seen through Ulysses' optical lens. Seated on a metal office chair at the edge of the chaise longue, Masters, a gynaecologist, watches the changes in the vaginal walls and cervix as the woman comes to orgasm. He and Johnson make note of their observations and the data that the other machines have collected.

These experiments, performed in the late 1950s and early 1960s, were the culmination of Masters and Johnson's research into human sexual response. In addition to this 'artificial coition', they collected data from volunteers engaging in masturbation with and without a vibrator, sexual intercourse in various positions and stimulation of the breasts without genital contact (Irvine, 1991: 58). Masters and Johnson published their results in 1966's *Human Sexual Response*. Using physiological data culled from hundreds of volunteers, they outlined four stages of sexual response for men and women—excitement, plateau, orgasm and resolution. Masters and Johnson were invested in parity between male and female sexual responses for therapeutic reasons. In agreement with decades of sexological literature, they believed that a healthy relationship depended on both members of the couple—man and woman—attaining orgasm during a sexual encounter (Robinson, 1989; Irvine, 1991; Maier, 2009). Science could provide the tools for this orgasmic parity; as Masters and Johnson wrote, 'this text represents the first step, a faltering step at best, but at least a first step toward an open-door policy' (Masters and Johnson, 1966: vii).

While Masters and Johnson's research promoted the importance of orgasm for both sexes, it also reified the notion of sexual difference by producing a model of specifically female sexuality with an emphasis on clitoral orgasm. The sea change that Masters and Johnson produced provides a window into the late twentieth-century assemblage of female sexuality. Following Gilles Deleuze, I suggest we understand the term assemblage to refer to a historically specific way to describe relationships among people, objects and location. Assemblages bring together forces, bodies and inorganic matter. Conceptualising female sexuality in terms of an assemblage shows us both female sexuality's manifestation (as voracious and orgasm-centred) and its territorialisation of objects (Ulysses and other machines) and animals (macaques and other monkeys) in the service of

understanding female sexuality as depending primarily on anatomy, specifically the clitoris. The assemblage of female sexuality, then, is the result of interactions between people, technology and animals. This examination of female sexuality provides us with a way to read female orgasm, which becomes a stand-in for all of female sexuality, as the product of a various discourses and interactions that work together to attempt to naturalise sexual difference. Masters and Johnson's physiological experiments involving women and machines made orgasm legible and therefore made sexual difference visible through graphs, charts and photographs. Primatologists later drew on these findings and their own experiments and observations of monkeys to argue that female orgasm was a cross-species phenomenon. This further underscored the notion that female sexuality was strictly a matter of anatomy and evolution. Lastly, we can also see the naturalisation of sexual difference at work in radical feminism, where these scientific discourses of orgasm undergird political discussions of femininity and sexuality.

making orgasm visible: Masters and Johnson model female sexuality

Using community volunteers from Washington University, film and the aforementioned Ulysses, a glorified dildo that photographed the interiors of women's vaginas, Masters and Johnson attempted to decipher the inner workings of the female orgasm. Orgasm's visibility was key. Not only were women who were unsure if they had ever experienced orgasm ineligible for participation, but the project relied on women who could and would orgasm relatively publicly (Tiefer, 1995). From this sample, Masters and Johnson used film to record intercourse, masturbation and interactions with Ulysses, which took intravaginal photographs. These images were combined with electroencephalograms (EEGs) and electrocardiograms (EKGs), which provided data on brain waves and heart rates that could be used to produce representations of orgasm.

Female sexual response seemed to demand these multiple methods of visualisation because it was deemed elusive. Linda Williams examines the problem of orgasmic invisibility in pornography in *Hardcore: Power, Pleasure, and the Frenzy of the Visible.* Williams links pornographic cinema with *scientia sexualis*, arguing that practices of visibility and categorisation underlie cinematic pornography; further, she argues that this drive towards visibility 'proves elusive in the parallel confession of female sexual pleasure' (Williams, 1999: 49). As pornography made the workings of bodies both more visible and tangible, it also articulated sexual difference by reifying the notion of invisible female pleasure and mysterious nature of female sexuality in contrast to the seeming straightforwardness of male ejaculation, which was emblematic of male orgasm and sexuality. Masters and Johnson's research played into this discourse of an invisible female orgasm.

While Williams chronicles pornography's focus on auditory signs of orgasm, Masters and Johnson employ technology in order to visualise internal physiological manifestations of orgasm, incidentally spawning a new genre of pornography—the beaver film (Johnson, 1999).

Masters and Johnson used several machines to create a window into female sexual response. The EKGs and EEGs portrayed extreme peaks in physiological changes that were mapped onto orgasm, while Ulysses 'witnessed' or rather allowed others to witness vaginal penetration. Extrapolating from this data, Masters and Johnson built a case for a universal type of female sexual response—the clitoral orgasm, which was signalled by uterine contractions every eight-tenths of a second, involuntary facial distortion and near hyperventilation. This orgasm was at the centre of female sexual response and, as we will see, became the most important fact about female sexuality.

Masters and Johnson's focus on the physiological was symptomatic of their emphasis on the pairing of woman and machine. Ulysses' objectivity, quite literally its non-subject position, was Masters and Johnson's tool for understanding female sexuality. Their reliance on machines speaks to their desire for precision and their bias towards mechanical objectivity. Unlike the women used in the study, Ulysses and the other machines could not be swayed by subjective interpretations of truth. Although the women's narratives were used to ascertain whether orgasm had taken place, they became part of a knowledge loop that ricocheted between their statements and the physiological data gleamed in the laboratory. In this instance, it was Ulysses' *approximation* of humanity that was valued; partial physical similitude was coupled with the machine's inability to feel. Ulysses' ability to record but not interpret and to penetrate but not feel were prized above all else. Mechanical objectivity was given precedence over experiential data. Ulysses was emblematic of what Peter Galison calls a machine ideal: 'the machine as a neutral and transparent operator that would serve both as an instrument of registration without intervention *and* as an ideal for the moral discipline of the scientists themselves' (Galison, 1998: 332). In other words, Masters and Johnson used Ulysses' perceived objectivity to argue both for the neutrality of the data recorded and the scientific nature of the project. Since Ulysses did not possess desires or sexuality, their research could be coded as scientific rather than pornographic.

Masters and Johnson's emphasis on Ulysses' status as a machine lent credibility to their research even as it privileged the visual physiological aspects of orgasm. They used photographs from Ulysses, which allowed the various theorised stages of orgasm (excitement, plateau, orgasm and resolution) to be seen and mapped onto specific physiological moments, in tandem with anatomical information and the subjects' words (filtered through Masters and Johnson's sexological expertise). As a result, *Human Sexual Response* was a combination of dense

prose, diagrams, charts and photographs, each of which was geared towards the representation of orgasm.

The dominant theme of the visuals in the book was change over time. Masters and Johnson employed several different techniques to represent this dynamism. Charts, which had no claim to anatomical representation, isolated the movement of organs against time and served to affirm the existence of a physiological change around what one terms orgasm. In effect, they set the stage for the diagrammatic cross-sections of the corporeal locus under investigation because they provide evidence *beyond* the experiential, evidence from instruments that something—orgasm—happened. Diagrams of the breast, clitoris (multi-parous and nulliparous; surgically and non-surgically constructed), vaginal barrel, female pelvis and uterine elevation were provided for each stage of sexual response: pre excitement, during excitement, plateau, orgasmic and and during resolution stages. These drawings were often accompanied by text describing the physical transformations and arrows indicating direction of movement.

The book's text dwelt on details that the images could not capture such as colour variation, texture, smell and sound, the images attempted to present a dynamic process. The images worked to capture a body, but more precisely individual organs, in action. Although their research techniques involved analysing the whole body's response to sexual stimuli, Masters and Johnson's presentation of the data took each organ in turn, moving from external female genitalia to the clitoris then the vagina and finally the uterus. This process of internalisation seemed to locate the orgasm simultaneously inside, outside and on the body. Orgasm became the totality of female sexual response.

Given that orgasm was so central to Masters and Johnson's understanding of female sexuality, it is striking that the photographs that were used to construct their model of orgasm are completely absent from *Human Sexual Response*. There are no internal photographs taken from Ulysses to illustrate physiological changes during orgasm, nor are there images of couples in coitus or individuals masturbating. These images, which allowed Masters and Johnson to see the entire picture of sexual response, are eliminated from the public view. Perhaps their potential kinship with pornography has something to do with this choice, but I argue that this choice also has to do with Masters and Johnson's desire to preserve the myth of expertise. The simultaneous visibility (almost to an excess of detail) and invisibility (the absence of the most relevant evidence) of their data reinforces the scientific status of the research. It has been made public in an inscrutable manner; it is difficult for someone who is not an expert to understand what exactly is going on. Rather than a method of clarification, visuality becomes a tool of mystification. The body and its workings become vexing puzzles, better left to the domain of others (scientists) to describe. Experience cannot be trusted and science, which can, is revealed to be opaque. Even as the orgasm enters the domain of scientific legibility, a certain alienation

from experience emerges and the chasm between what can be articulated and what cannot is exposed. This emphasis on anatomy, mechanical objectivity and scientific knowledge are central components of the assemblage of female sexuality.

By making the clitoral orgasm visible, Masters and Johnson provided a template for understanding female sexuality. In order to produce universal truths about orgasm, Masters and Johnson separated the social from the physiological and created a paradigm for human sexual response. They distilled orgasm to a set of physiological changes and scripted it into a paradigm of procreative heterosexuality. This emphasis on anatomy and function worked to establish a notion of natural female sexuality. Masters and Johnson believed that every body was capable of orgasm, and that achieving it was a matter of understanding physiological principles. Their 1970 follow-up to *Human Sexual Response*, *Human Sexual Inadequacy* outlined treatment plans for couples: 'The educational program is designed primarily to encourage the sexually dysfunctional individual not to attempt to improve upon, but hopefully to return to, the basic physiological patterns of natural sexual responsivity' (1970: 382). Masters and Johnson argued that removing sexuality from its natural context impeded sexual functioning. They saw their therapeutic intervention as removing the psychological and social barriers to sexual performance and 'allow[ing] natural "unfolding" of sexual response within the larger context of an existing interpersonal relationship' (1970: 27). Societal mores had impinged upon natural sexual response, but a return to physiological principles could produce a return to nature, a return to what the body was supposed to do.

There were, however, unintended repercussions to the woman–Ulysses couplings, in particular the disruption of normative ideas of sex. While Masters and Johnson were invested in preserving heterosexual unions by improving female sexual response, their employment of Ulysses offered the potential to complicate what sex could be. The machine was meant to *simulate* sex; real sex was still that what happened between people. But where is the line between simulation and reality? On the one hand, Masters and Johnson were invested in the similitude of the data garnered by using Ulysses to what could go on during heterosexual vaginal penetration: 'In view of the artificial nature of the equipment, legitimate issue may be raised with the integrity of observed reaction patterns. Suffice it to say that intravaginal physiologic response corresponds in every way with previously established reaction patterns observed and recorded during hundreds of cycles in response to automanipulation' (Masters and Johnson, 1966: 21–22). In this statement, Masters and Johnson assumed that Ulysses would produce the same physiological effects as masturbation, which, in turn, they assumed would produce the same effects as intercourse. While this strategy of modelling is commonplace, the interchangeability of orgasm further speaks to the reification of orgasm as universal and primarily physiological. On the other hand, the

introduction of a machine into the sexual equation destabilised the primacy that Masters and Johnson attempted to assert for heterosexual couplings. If the same orgasm could be produced by a machine, what, precisely, was the use of men? Their emphasis on physiology over psychology and other factors privileged outcome over cause; this shift in orientation opened the closet door with regard to ways of thinking about orgasm.

our monkeys, ourselves: primatologists and the evolution of the female orgasm

While Masters and Johnson understood orgasm to be the central physiological event of human female sexuality, their functionalist explanation made it clear that orgasm could be understood as critical to female sexuality in other species. Primatologists, in particular, became invested in universalising Masters and Johnson's model of female sexuality. The notion of the autonomous orgasmic woman was a point of interest in primatology, which was largely influenced by the influx of female practitioners, many of whom identified as feminist, in the 1960s and 1970s (Fedigan, 1994). Sparked in part by second-wave feminism, which sought both to excavate and prioritise female experience, primatologists began to look at the lives of female primates.[1] In this way, primatologists were extending feminism's notions of 'sisterhood' beyond the human to the monkey. Given the emphasis placed on orgasm in women, primatologists were especially interested in determining the degree of homology between monkey sexuality and human sexuality. Although they were using monkeys as research subjects, primatologists' findings were presumed to have implications for humans as primatologists sought to further entrench the orgasm-centred model of female sexuality by endowing it with potential evolutionary significance.

1 Londa Schiebinger and Donna Haraway discuss the relationship between primatology and feminism at length (Haraway, 1990a; Schiebinger, 1999).

Initially, this interest in monkey sexuality spawned a series of investigations into animal behaviour to determine whether it was even possible for monkeys to orgasm. While primatologists had taken note of female primates' copulation patterns, they were not sure if orgasm was part of their sexual response. Since self-reporting was impossible and because orgasm had already largely been conceived of in physiological terms, they turned to anatomical experimentation. Frances Burton, an anthropologist at the University of Toronto, announced her reliance on Masters and Johnson's physiological formulation in the introduction to her 1970 study: 'criterion for orgasm is the phenomenon as it has been observed in female humans, particularly through the extensive researches conducted by Masters and Johnson' (Burton, 1970: 180). In an effort to locate female primate orgasm, Burton conducted experiments similar to those of Masters and Johnson on rhesus monkeys (*Macaca mulatta*).

Rhesus monkeys, which are frequently used in laboratory, are small with brown fur and red buttocks. They are described as 'highly promiscuous' because they are receptive to copulations eight to eleven days of a twenty-nine-day cycle. This period of receptivity, oestrus, occurs during the female's monthly window of fertility and is marked by a reddening of her perineal region.[2] For her experiments, Burton restrained three adult female macaques during oestrus, injected them with tranquilisers, monitored them with an EKG machine and clitorally stimulated and vaginally penetrated them with a 'penis-simulator'. The results varied wildly from animal to animal, yet Burton argues that the animals 'clearly exhibited 3 of Masters and Johnson's 4 copulatory phases: excitement, plateau and resolution' (Burton, 1970: 184). Data, however, showed that two of the monkeys experienced vaginal spasming, which Burton read as orgasmic behaviour. Although an unambiguous orgasm was not achieved, this failure was described as a result of the fact that 'the time of individual copulations probably do not permit sufficient stimulation for achievement of orgasm [*sic*]' (Burton, 1970: 186).

2 Seinfeld, J. (2000) '*Macaca mulatta*', [Online], Animal Diversity Web, *animaldiversity.ummz.umich.edu/site/accounts/information/Macaca_mulatta.html*, last accessed 7 November 2009.

While this experiment reads to contemporary eyes as something closer to animal cruelty than an investigation into pleasure, that fact underscores the manner in which psychology and sociality took a backseat to the centrality of the clitoris in this model of orgasm. The complexities of primate sexuality were not addressed by this research into orgasm; orgasm was measured by uterine contractions and indicated by facial contortions and hand clutching. Burton's experiment confirmed the fact that non-human female primates *could* orgasm. This fact, as Burton noted, was not necessarily important in considerations of primate social life because it seemed unlikely that orgasm could be achieved in the wild—given the short duration of intercourse and the absence of clitoral stimulation. The physiological possibility of orgasm in other female primates did, however, open the door to rethinking primate sociality and potentially reorienting human sociality around female orgasm. The significance of Burton's findings lay in their ability to imagine an evolutionary story that placed sexuality and female orgasm at its centre; Burton wrote: 'Two aspects of primate sexuality seem of particular importance to the development of social bonds: the ability to copulate in the ventral-ventral position ... and the possibility of the female experiencing orgasm' (Burton, 1970: 187). Burton went on to speculate that orgasm would 'intensify social links' and she explained that orgasm in humans might produce a more intense physiological reaction because of the evolutionary pressures on these social bonds: 'As the strengthening of social bonds was adaptive to hominids, cultural values may have selected for biological ability to give and/or achieve orgasm, by the male sustaining intromission for a longer time, and/or the female reaching critical threshold earlier' (Burton, 1970: 188).

Burton used her conclusions to hypothesise about humanity's prehominid ancestry. This speculative jump between monkey and human echoed the general

trend in primatology, which was increasingly called upon to inform debates about human evolution. Primates were imagined to inhabit the 'natural world'. They were not thought to interact with the artifices of technology and culture, so their behaviour was frequently thought of as emblematic of the 'natural disposition' of humans. They were the ideal other, the perfect and absolute savage (Haraway, 1990a). Like Ulysses, who was seen as a recording device with no agency of his own, primates appeared to offer a transparent glimpse of humanity's natural potential. As Burton's experiment showed, the space of orgasm within the rhesus monkeys' own social lives was unimportant, perhaps even non-existent, but the physiological potential and implications for humanity were. Primates occupied a precarious and much inscribed fantasy; they were seen as both reflections and projections of humanity.

Burton's interest in orgasm's interspeciality had a clear link to feminist agendas; her findings allowed her to argue that female sexuality was one of the central mechanisms driving the evolution of sociality. It was unimportant that her female primates did not actually achieve orgasm 'naturally'; what mattered was that they could experience a 'rudimentary' orgasm. These vaginal spasms signalled the beginning of an evolutionary journey that Burton saw resulting in human female orgasms, which served to bond humans to each other. In a reversal of the process that Ulysses enacted, Burton graphed affect onto physiology to imagine the emotional connections that could be produced through orgasm. It might, however, be difficult to imagine that these sedated, restrained, machine-penetrated monkeys would experience connectedness alongside their orgasms (Haraway, 1990b). Burton's essay was, in fact, criticised for its failure to establish a pattern of female primate sexuality that occurred without technological intervention. Though Burton's conclusions were based on physiology, they were intended to have repercussions in the social arena because they reified conceptions of female sexuality as different and separate from male sexuality through an emphasis on the physiological event of orgasm. In order to produce a compelling evolutionary story, however, Burton's findings would need to be replicated outside the laboratory, so that one could prove that female orgasm did take place among monkeys in the wild.

It did not take long for this discovery to emerge. Suzanne Chevalier-Skolnikoff, an anthropologist trained at the University of California, Berkeley, observed non-technologically assisted female primate orgasms among monkeys in captivity and made waves in the anthropological community. She debuted her research at the 1971 Philadelphia meeting of the American Advancement of Science and received hundreds of requests for copies of her paper. Over a short period of time, Chevalier-Skolnikoff published three different papers on the topic and while women's groups did not immediately pay heed to her research it was influential (Haraway, 1990b: 153). Of Chevalier-Skolnikoff's three papers on stump-tailed macaque social behaviour, it was the one published in the

Archives of Sexual Behavior that caused the most excitement. The paper, 'Male-female, female-female, and male-male sexual behaviour in the stumptail monkey, with special attention to the female orgasm', confirmed Burton's preliminary findings, but this was not without complication.

Chevalier-Skolnikoff's findings were unambiguous in their description of orgasm, which she witnessed in female monkeys under observation in the laboratory. Specifically, she observed female monkeys mounting other females and rubbing their genitals against the mountee's back until they climaxed—an event marked by a clutching motion, spasms and a literal 'o' face:

> A pause followed by muscular body spasms accompanied by the characteristic frowning round-mouthed stare expression and the rhythmic expiration vocalization. The mounter remained mounted during the few seconds of orgasm, but no mounted postorgasmic phase was observed. The females generally embraced and made more teeth-chattering expressions accompanied by squeaks for several seconds after the mounting had terminated. (Chevalier-Skolnikoff, 1974: 109)

Chevalier-Skolnikoff's emphasis on the female stump-tailed monkeys' frequent and visible orgasms hewed closely to Masters and Johnson's physiological analysis: she described the female monkey's orgasms as similar to those exhibited by male monkeys and 'essentially identical to the behavior reported by Masters and Johnson (1966) in the human female' (Chevalier-Skolnikoff, 1974: 109). Although Chevalier-Skolnikoff did not elaborate on the details of these 'identical' orgasms, we can infer that female primate 'orgasm' was a conglomeration of behaviours that echoed other behaviours. The fact that Chevalier-Skolnikoff's primate orgasms were mostly recorded as part of activities between female stump-tailed monkeys was incidental to the fact that she had been able to witness the orgasms at all.[3]

Although orgasm was only recorded in female–female interactions, Chevalier-Skolnikoff argued that orgasms in male–female couplings were 'likely', using 'the reaching-back and clutching behavior' in combination with the 'post-ejaculatory phase' as evidence (Chevalier-Skolnikoff, 1974: 113). Although orgasm was never observed in the same way as had been in same-sex couplings, she argued that 'the unmistakable observation of orgasm in female stumptail monkeys during homosexual interactions and strong evidence for the occurrence of female orgasm in this species during heterosexual coitus, suggest that females of at least some of these species also experience orgasm' (Chevalier-Skolnikoff, 1974: 113).

Chevalier-Skolnikoff's desire to describe orgasm as part of a heterosexual reproductive encounter can be read as part of the scientific trend towards adaptationalism. In order for a behaviour to be adaptive, it had to convey recognisable reproductive advantages. This is different from Burton's theory that the selective pressures on the female orgasm originated in the social

3 Chevalier-Skolnikoff described these encounters as homosexual, although she acknowledged the problematic nature of labelling the monkeys homosexual. She argued that the term referred to a genital encounter between monkeys of the same sex.

bond. The emphasis on adaptive interpretations of the female primate orgasm in Chevalier-Skolnikoff's research elides what was actually being witnessed—orgasms between female stump-tailed macaques. Elizabeth Lloyd argues that the decontextualisation of the primate female orgasm from homosexual encounters was caused by a desire to attribute pleasure to heterosexual intercourse; 'otherwise, female orgasm would not be automatically linked to male orgasm and male sexual activity' (2005: 123). We can also read the erasure of these orgasms' same-sex contexts as a heterosexualisation of not only female sexuality, but also humanity. Although primatology attempted to mould monkeys into the image of humanity, monkeys were not taken to be straightforward representations of humanity but rather images of a rawer, more violent and more sexual time. Donna Haraway describes this equation of savagery and monkeys: 'traditionally associated with lewd meanings, sexual lust, and the unrestrained body, monkeys and apes mirror humans in a complex play of distortions over centuries of western commentary on these troubling doubles' (1990a: 11). It follows, then, that primate lasciviousness could be a justification of the presence of these same-sex couplings to primatologists. This, however, locates same-sex relations between the monkeys as primitive and separate from the heterosexual, reproductive impulses that the researchers assumed were behind human female orgasms. In Chevalier-Skolnikoff's research on monkeys, certain behaviours (female orgasm) were privileged, but decontextualised. The fact of orgasm was extracted and later used to explain male–female couplings. The context of the orgasms (same-sex couplings) was discarded in favour of constructing a narrative that could be applied to human societies, many of which considered same-sex couplings perhaps not unnatural, but reproductively unimportant.

In this context, the natural gains another valence. It becomes what has been useful in an evolutionary context. While Masters and Johnson's research facilitated the orgasm's move onto the primate stage by analogising human female anatomy with primate female physiology, the story that gets told is not about physiological capability for orgasm but about orgasmic utility—why do monkeys and humans have orgasms? The focus on presence and evolutionary utility reintroduces questions of the social and psychic. While Masters and Johnson were invested in 'restoring' the body to its non-socially repressed physiological state, Burton and Chevalier-Skolnikoff asked questions about female primates' ability to orgasm so that they could argue that female orgasm played a role in the evolution of human societies. This emphasis on the social role of orgasm partially explains why technology, the dildo in this case, drops out of the story after it establishes that orgasms can occur in monkeys. While the technologically enhanced dildo allowed for the stabilisation of the fact of orgasm, evolutionary stories about orgasm skirted the issue of technology in favour of producing narratives about female orgasms in heterosexual contexts. Both the omission of technology from the scope of the natural and the neglect

of same-sex orgasmic encounters becomes important when we shift our attention to radical feminism and the political implications of this model of female sexuality.

women on the verge: feminist politics and the clitoral orgasm

By the late 1960s, feminists were eager to accept the 'revolution' in female sexuality that this research on female orgasm represented. As Rebecca Jordan-Young argues, Masters and Johnson's research on orgasm occasioned a shift in the understanding of female sexuality. All women were seen as capable of sexual response, not having an orgasm signalled an interruption of natural female sexuality. Jordan-Young writes, 'among their [Masters and Johnson's] most riveting findings ... was their conclusion that men's orgasmic capacity paled beside that of women, whose capacity for multiple sequential orgasms was usually limited by "physical exhaustion alone"' (Jordan-Young, 2010: 111). While Masters and Johnson yoked female sexual responsiveness to a heterosexual therapeutic ideal and primatologists used it to craft evolutionary stories that equated sexual difference with orgasm, radical feminists drew on these discourses of female sexuality to construct a model of a new liberated woman who celebrated her femininity and her sexuality. Although this model of femininity differed from the normative model that Masters and Johnson drew upon and the reproductively centred model offered by adaptationist arguments, it remained grounded in viewing orgasm as the root of female sexuality and maintaining femininity as a particular type of sexual difference, which we see most clearly when we look at the schisms in feminism regarding lesbianism.

Sexual autonomy, specifically the image of an orgasmic woman, was important to second-wave feminism. As Jane Gerhard writes, 'a new generation of feminists envisioned sexual pleasure as empowering, as helping men become more human, and as a route out of patriarchal repression of the body. While pleasure did not mean the same thing to every woman, it nonetheless became synonymous, briefly, with liberation' (Gerhard, 2001: 2). The centrality of sexuality to a particular radical feminist re-visioning of woman is evident in Anne Koedt's passionate disavowal of the vaginal orgasm; in 1968, she called upon women to take control of their sexuality: 'What we must do is redefine our sexuality. We must discard the "normal" concepts of sex and create new guidelines' (Koedt, 2002: 423). As a radical feminist and member of the New York Radical Women, sexuality was a particularly salient issue for Koedt; radical feminism equated taking control of the female body with taking control of orgasm. In her influential essay, 'Myth of the Vaginal Orgasm', Koedt argued that women had been oppressed by the monolithic idea of vaginally centred sexuality. Koedt equated the vaginal orgasm with patriarchy because it catered to male ego, sexual

pleasure and sense of superiority while neglecting women's desires. Insistence on vaginal orgasm was emblematic of the structural inequality between men and women; the clitoral orgasm illuminated the potential for equality. The clitoral orgasm offered a way to conceive of women as autonomous in both sexual and non-sexual ways. Reframing female orgasm around the clitoris allowed feminists, as Gerhard argues, 'to claim a uniquely female form of sexuality that had the potential to transcend the narrow and pathologizing classifications of male experts' (Gerhard, 2001: 99). For Koedt, Masters and Johnson's research held the key to 'transform[ing] this particular aspect of current sexual exploitation'. (Koedt, 2002: 423).

Masters and Johnson's research lay at the centre of this feminist reclamation of the clitoral orgasm because it emphasised anatomic knowledge over societal influences in its model of female sexuality. In an expanded version of her 1968 article, Koedt wrote that disseminating physiological data would combat the previous misinformation spread by American Freudianism: 'Rather than starting with what women *ought* to feel, it would seem logical to start out with the anatomical facts regarding the clitoris and vagina' (Koedt, 2002: 424). Freudian psychoanalysis treated the clitoral orgasm as a symptom of immaturity; mature female sexuality was signified by vaginal orgasm. Additionally, psychoanalysis held that women were 'passive, dependent, and less sexual than men' (Gerhard, 2001: 53). Physiological research on the clitoral orgasm countered that ideology explicitly. As Gerhard writes, 'sexology discovered a responsive, sexually capable and potentially autonomous female body underneath social and expert myths of female passivity' (Gerhard, 2001: 53). Koedt, herself, is explicit about the type of science—anatomy—that underpins the sexually liberated woman: 'Today, with extensive knowledge of anatomy, with Kelly, Kinsey, Masters and Johnson, to mention just a few sources, there is no ignorance on the subject' (Koedt, 2002: 424). Drawing on these sexologists, Koedt sought to re-centre female sexuality on the clitoris. She argued that women's orgasms were clitorally based and that women who claimed to experience vaginal orgasms were confused or had been deceived by patriarchy. In short, Koedt celebrated these scientists' construction of a universal clitoral orgasm and its promise for feminism.

While radical feminism's attachment to the clitoral orgasm was rooted in a perception that physiologically based models of sexuality were not patriarchal, there are ways in which this paradigm was not entirely outside of a patriarchal framework. Here, we must pause and take note of the irony of Koedt's insistence on the myth of the vaginal orgasm in the context of Masters and Johnson. While their research did offer visible, physiological evidence of the clitoral orgasm, we must recall that it did so by using Ulysses and vaginal penetration. Although Masters and Johnson insisted that vaginal orgasms actually had their origins in the clitoris and that there was no difference between the two, Koedt's focus on the primacy of the clitoris erases the importance of this moment of vaginal

penetration to focus on the clitoris. Indeed, given the history I have presented, the dildo can be read as part of a lineage of scientific research, which can also be read as helping to participate in the objectification of women. As exemplary of this, we can look to the vibrator's birth as part of a medical solution for hysteria, which does not particularly challenge that narrative (Maines, 1999). Despite Koedt's attempts to move female orgasm beyond patriarchy, the relationship between sexuality and science makes that a fraught endeavour.

While also problematic because of its potential slippage into essentialism, feminist interest in primatological research and the notion of voracious female sexuality speaks even more clearly to the anti-patriarchal strand that the clitoral orgasm represented. Here, it is important that we acknowledge the ways in which radical feminism's idea of female sexuality was also imagined as natural, that is to say it was seen as the inevitable outcome of female anatomical destiny unbridled by societal repression. Since it was assumed that primates were not subject to the same patriarchal strictures as women, primate female sexuality was imagined to provide a glimpse of an unencumbered human female sexuality, that is to say female sexuality at its most anatomically driven and natural state. In an article on female sexuality, Mary Jane Sherfey describes primate sexual habits as providing a glimpse into female sexual behaviour were it not for patriarchy: 'Having no cultural restrictions, these female primates will perform coitus from twenty to fifty times a day during the peak week of estrus, usually with several series of copulations in rapid success. ... I suggest that something akin to this behavior could be paralleled by the human female if her civilization allowed it' (Sherfey, 1966: 96). Female sexuality was understood by these radical feminists in the 1960s and 1970s as anatomically rather than culturally divined; the clitoral orgasm was simultaneously a sign of liberation from patriarchy and a return to an essential form of femininity.

a lesbian is not a woman: lesbian essentialism and female sexuality

We can see the legacy of this focus on anatomy and the natural by examining the schism within lesbian feminism over femininity and sexuality. In the late 1970s and 1980s, feminism and cultural mores shifted towards understanding femininity as an essential and natural component of lesbianism. Lesbian separatists argued that lesbianism was fundamentally different and more egalitarian than heterosexuality or as Gerhard describes it, 'an emotional and political alternative to heterosexuality' (Gerhard, 2001: 153). The project of cultural feminism took up the valorisation of lesbianism and 'celebrate[d] women's bodies as unique and their sexuality as independent of "male models" of genital sex' (Gerhard, 2001: 158).

This, however, does not mean that lesbian sexuality and female sexuality overlapped discursively. Feminists who argued that lesbianism was a form of uncorrupted femininity often separated lesbianism from the voracious appetites that were seen to be characteristic of female sexuality. Elizabeth Wilson, in her remarks on the infamous 1982 Barnard Conference on sexuality, noted the absence of sex in these articulations of lesbianism and feminism; she mused aloud that 'Perhaps feminism really has done something to lesbianism in confusing it with non-eroticized love between women, so that some lesbians have been attracted to other, more deeply "forbidden" ways of insisting that lesbianism *is* about sex' (Wilson, 1983: 38). Wilson's comments highlight several axes of contention within American feminism in the early 1980s. In a moment when some feminists argued that focusing on sexuality was harmful and that pornography and promiscuity degraded women by reducing them to the status of sexual objects, feminists who were invested in seeking liberation through sexuality were accused of being blind to its pernicious aspects; sex between women had more to do with mutual respect than with eroticism.

According to this logic, women who engaged in sex with men were part of a different economy of desire and practice. The non-coincidence of lesbian and female sexuality, is eloquently pointed out by Monique Wittig in 'The Straight Mind' in 1978: 'it would be incorrect to say that lesbians associate, make love, live with women, for "woman" has meaning only in heterosexual systems of thought and heterosexual economic systems. Lesbians are not women' is clearly manifest in these scientific constructions of orgasm, which as I have argued have been central to conceptualising sexual difference through the assemblage of female sexuality (Wittig, 1992: 32). While Wittig's statements articulate a political movement away from patriarchy, they could also be applied to theorisations of lesbian sexuality vis-à-vis female sexuality. Although both assemblages speak of women, the notion of the lesbian as uncontaminated by the phallus and patriarchy separates lesbian and female sexuality.

The non-overlap between this notion of an uncontaminated lesbian sexuality and the previously articulated idea of natural female sexuality is striking. Both use the concept of natural female sexuality centred on the clitoral orgasm as the foundation for a sexuality that is separate from patriarchy. The discourses differ, however, with regard to masculinity and the presence or absence of men. While radical feminist discourse was hostile to patriarchy, it embraced heterosexuality. This was in sharp contrast to this ideology of an essential feminine lesbian sexuality that was explicit in its exclusion of men and masculinity.

This disdain for masculinity can be partially attributed to historical causes. Sexological literature of the early twentieth century described lesbians as inverts, which is to say their desire for women was coded as masculine and they were described as possessing masculine physical traits (von Krafft-Ebing, 1922).

The invert was the underside to the New Woman, who was independent and sexually voracious (Newton, 1984; Smith-Rosenberg, 1985; Terry, 1999). This masculinisation of women's desire for women both in terms of character and quality (aggressive instead of the prevailing paradigm of feminine passivity) pathologised both female desire and lesbianism. Reclaiming both involved reading this masculinisation of women as a symptom of patriarchal oppression and emphasising the femininity of female desire. In its desire for liberation from patriarchal norms, lesbian feminism articulated a sexuality that was centred on femininity and divorced from masculinity in any form. The form that that feminine sexuality acquired was one that was also implicitly shaped by Masters and Johnson's research and the primatological studies in that it emphasised clitoral orgasm as emblematic of the natural. In this context, this focus on clitoral orgasm meant denouncing penetration as unnecessary and as part of an oppressive masculinity. That was true even when penetration occurred in the form of women wielding dildos.

The notion of a woman who wanted to dominate, worse, penetrate other women was particularly pernicious. Heather Findlay describes this fear of penetrating women in her analysis of the 'dildo wars':

> Some lesbians have debunked the dildo and its notorious cousin the strap-on, calling them 'male-identified.' ... distaste for dildos, especially 'lifelike' ones, is based on the conviction that a dildo represents a penis and is therefore incompatible with 'woman-identified' sexuality ... In the critique of the dildo that has developed in tandem with radical feminist attacks on butch-femme ... which hold that both practices reproduce a 'heteropatriarchy' based on masculine and feminine sex roles. (Findlay, 1992, 564)

In Findlay's description of the tensions at work in these debates, we explicitly see the collapse between patriarchy and the dildo. In addition to symbolising the desire to penetrate, the dildo's status as non-anatomical phallus represented a wilful and gleeful submission to dictates of masculinity and a move away from the feminine sexuality represented by the clitoral orgasm.

A woman with a dildo represented a threat to lesbian feminist modes of sexual intercourse. By suggesting penetration (even in fantastical form), the dildo marks a departure from a feminist ideology that imagined female sexuality as outside of patriarchy and lesbian sex as explicitly non-penetrative. Marilyn Frye neatly summarises the heteronormative assumptions of this position: 'lesbians don't "have sex", because that is a "phallic concept" implying coitus' (Lamos, 1994: 93). Some of these analyses of lesbianism went so far as to displace individual female pleasure and desire with the generalisable desire for community among women—Nett Hart asserted that 'lesbian desire is not directed at individuals but "is for the community formed by the self/mutual love of women" (Lamos, 1994: 93). Bringing these threads together, we can see that the dildo represents the possibility of individual sexual pleasure in penetration,

which operates in tension with the feminist ethos of collectivity; Colleen Lamos argues that the dildo 'rejects traditional feminist claims to a moral superiority based upon supposed female innocence, powerlessness, and purity from which has issued a politics of resentment and vengeance' (Lamos, 1994: 90). This notion of an essential feminine sexuality, then, excluded penetration on the grounds that it was symptomatic of masculinity and a representative of the 'unnatural'.

Woman-centred lesbian feminism, then, theorised a female sexuality that was the antithesis of masculinity in that it did not include penetration, nor did it have any space for a sexuality that was not centred on the clitoral orgasm and an essentialised, natural, that is free from technological and patriarchal intervention, femininity. In some ways, this articulation of femininity, although more politically strident than most, can be seen as an extreme product of the discourses surrounding female sexuality that emphasised anatomy and the natural as essential components of femininity.

from femininity to gender: feminism's move away from anatomy

In many ways, this discussion of anatomy, sexual difference and essential femininity reads as historical. The notion of essential femininity and sexual pleasure, around which second-wave feminism was built, is no longer at the centre of feminism. However, the question of sexual difference remains pertinent, although in different terms. Drawing on assemblage theory, this essay examines some of the ways in which disparate discourses and objects contribute to this notion of essential feminine difference and work in tandem to produce the assemblage of female sexuality. As I have argued, female sexuality, but more precisely orgasm, relied on objects and animals to be acknowledged as an entity unto itself. By discussing the disparate discourses and material objects that have helped to frame female sexual pleasure, I aim to illuminate the complex dynamics underpinning this 'natural fact' and show the ways in which sexual difference is embedded in a range of disparate discourses. It is this latter aspect on which I would like to dwell. In order to discuss contemporary framings of sexual difference, it is important for us to talk about the ways in which the discourses of anatomy and nature continue to inform feminism even as the original object that they worked to consolidate is no longer a source of contestation.

The assemblage of female sexuality that I have described is no longer in the process of becoming; it is an entity that exerts its own force in the world. While feminism has moved beyond the question of female sexual pleasure and even beyond the category of woman, as Robyn Weigman notes, I want to emphasise

that the relationships between epistemology, physiology and politics still work to inform the ways in which we understand sexual difference. Current debates on the institutionalisation of women's studies, for example, still depend on these sets of relations. In her recent book, *Object Lessons*, Wiegman examines '*gender* as a progress narrative in order to discern the practices of transference that underwrite its portability across a range of differently situated critical projects ... *gender* has emerged as the privileged supplement, if not the collectivizing sign, for political attachment in the afterlife of *women*' (2012: 41). Further, in this institutional move towards gender, woman is taken to be a categorical failure, while gender is imagined as an inclusive term (2012: 55). I invoke Weigman's discussion of the shift away from women's studies towards gender studies because it helps us to understand why the production of an essential femininity feels historical while also underlining the stakes of the institutional move towards gender. In the context of the history that I have just outlined, we might read this shift towards gender as an attempt to circumvent the consolidation of the category of woman and its dependence on anatomy. However, we can see in Weigman's critique of this move that this does not actually do anything to displace the primacy of anatomy and, in fact, actually works to reify the idea of woman as particular. Weigman describes this irony: 'in ways that continue to strike feminist scholars as deeply ironic, the turn to men and masculinity threatens to reiterate the social effect of gender norms by rendering the study of women decidedly particular' (2012: 59). While Weigman is describing institutional formations of knowledge, it is clear that the move away from anatomy and essential feminine difference has actually worked to reify these associations. By decentring woman, the concept becomes a foregone conclusion replete with assumptions about sexuality, anatomy and nature. By returning to the time when this assemblage of female sexuality was being consolidated and illuminating the ways in which its parts fit together, I aim to shed light into the ways that we might begin to invigorate the category of woman, not as a space of particularity, but of multiplicity.

In using machines as objective data-gathering devices, Masters and Johnson argued that there was a substance to orgasm beyond women's subjective descriptions. By constructing orgasm as clitoral and universal, they enacted a push towards thinking about natural female sexual response as a matter of physiology. Female primate orgasms were not examined for their significance to primate sexual response, but these orgasms were relocated from the bodies (and lives) of primates and grafted onto the imagined ancestral human female. In creating a link between ancestral humans and contemporary women, scientists foregrounded the possible evolutionary utility of orgasm. Heterosexual female orgasm was naturalised, in this context, because female primates were able to experience it. Feminism's mobilisation of the female orgasm also tells us a great deal about the politics that this linkage of women, nature and sexuality can produce. Ultimately,

we see that what happens when anatomy undergirds concepts of sexual difference in both explicit and implicit ways. This recognition of the overt and subtle workings of sexual difference allows us to see the range of effects this assemblage of female sexuality and its anatomical focus have had and it allows us to begin to imagine the multiplicity inherent in theorising femininity.

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