

A Failure of Academic Quality Control: *The Technology of Orgasm*

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Abstract

The Technology of Orgasm by Rachel Maines is one of the most widely cited works on the history of sex and technology. Maines argues that Victorian physicians routinely used electromechanical vibrators to stimulate female patients to orgasm as a treatment for hysteria. She claims that physicians did not perceive the practice as sexual because it did not involve vaginal penetration. The vibrator was, according to Maines, a labor-saving technology to replace the well-established medical practice of clitoral massage for hysteria. This argument has been repeated almost verbatim in dozens of scholarly works, popular books and articles, a Broadway play, and a feature-length film. Although a few scholars have challenged parts of the book, no one has contested her central argument in the peer-reviewed literature. In this article, we carefully assess the sources cited in the book. We found no evidence in these sources that physicians ever used electromechanical vibrators to induce orgasms in female patients as a medical treatment. The success of *Technology of Orgasm* serves as a cautionary tale for how easily falsehoods can become embedded in the humanities.

Introduction

Since its publication in 1999, *The Technology of Orgasm* by Rachel Maines has become one of the most widely cited works on the history of sex and technology (Maines, 1999). This slim book covers a lot of ground, but Maines' core argument is quite simple. She argues that Victorian physicians routinely treated female hysteria patients by stimulating them to orgasm using electromechanical vibrators. The vibrator was, according to Maines, a labor-saving technology that replaced the well-established medical practice of clitoral massage for hysteria. She states that physicians did not perceive either the vibrator or manual massage as sexual, because neither method involved vaginal penetration.

This argument has been repeated in dozens of scholarly works and cited with approval in many more.¹ A few scholars have challenged various parts of the book. Yet no scholars have contested her central argument, at least not in the peer-reviewed literature. Her argument even spread to popular culture, appearing in a Broadway play, a feature-length film, several documentaries, and many mainstream books and articles.² This once controversial idea has now become an accepted fact.

¹ See later in the article for a detailed examination of the citations.

² The documentary *Passion and Power* was released in 2007. In 2009 Sarah Ruhl's, *In The Next Room, or the Vibrator Play* followed; a dramatized version of the book was turned into the movie *Hysteria* in 2011, and the

But there's only one problem with Maines' argument: we could find no evidence that physicians ever used electromechanical vibrators to induce orgasms in female patients as a medical treatment. We examined every source that Maines cites in support of her core claim. None of these sources actually do so. We also discuss other evidence from this era that contradicts key aspects of Maines' argument. This evidence shows that vibrators were indeed used penetratively, and that manual massage of female genitals was never a routine medical treatment for hysteria.

Technology of Orgasm represents a failure in academic quality control. The embrace of its false claims shows that the humanities suffer from some of the same problems that have received so much attention recently in the natural sciences and quantitative social sciences. In these fields, high-profile retractions and widespread inability to replicate research results have created doubts about the reliability of peer review.³ The ever-growing pressure to publish, we believe, creates similar problems in the humanities and qualitative social sciences. Yet in some ways these problems are harder to detect in the humanities, where critiques of scholarship usually concern rival interpretations of texts rather than errors in calculation and measurement.⁴ But even when scholars disagree over interpretation of facts, rational discourse requires some agreement about the facts being interpreted.

The success of *Technology of Orgasm* thus serves as a cautionary tale for how easily falsehoods can become embedded in qualitative fields. Even among historians, for whom primary sources supposedly provide a bedrock of reliability, Maines' errors have rarely been mentioned.⁵ The success of her book suggests that academics rarely check each others' facts carefully, especially when repeating stories that they want to be true.

Maines' Argument

Maines' core argument is that Victorian physicians used electromechanical vibrators on women's clitorises to bring women to orgasm as a treatment for their hysteria. According to Maines, male physicians did not think of these treatments as sexual because no vaginal penetration occurred, as she wrote, "[s]ince no penetration was involved, believers in the hypothesis that only penetration was sexually gratifying to women could argue that nothing sexual could be occurring when their patients experienced the hysterical paroxysm during treatment" (1999, p. 10). Vibrators were an improvement over the previous treatments of clitoral hand-massage because they gave women orgasms in five minutes as opposed to the hour it took doctors to achieve the same result. The reduction in treatment time meant doctors were able to see more patients and make more money (1999, pp. 2–4, 9–10).

company Jimmy Jane produced a line of vibrators that was a tie-in to the film in 2011 (Omori and Slick, *Passion and Power*; Ruhl, *In The Next Room*, 2009; Wexler, *Hysteria*, 2011).

³ For an overview of criticism of peer review in the natural sciences see Smith (2010). On replication, see Open Science Collaboration, "Estimating the Reproducibility of Psychological Science."

⁴ There is a huge philosophical literature on differences between quantitative and qualitative disciplines. Humanities disciplines are often described as interpretive, yet the natural sciences also have an irretrievably interpretive dimension. See Bernstein (1983).

⁵ Notable exceptions, which we discuss below, include King (2011) and Rodriguez (2008).

Male doctors were able to give women orgasms in their offices during an era of repressed sexuality because the orgasm was not perceived as an orgasm. Instead, Maines claims that orgasms were “produced clinically as legitimate therapy,” a practice that was made possible because “the role of the clitoris in arousal to orgasm was systematically misunderstood by many physicians” (1999, pp. 7, 9). This misunderstanding arose, says Maines, because of a pervasive “androcentric principle,” which assumed “that only an erect penis could provide sexual satisfaction to a healthy, normal adult female” (1999, p. 10). Physicians instead interpreted the orgasms produced by clitoral massage as “paroxysms,” symptomatically akin to the convulsions that arose spontaneously among female hysterics (1999, pp. 3, 9).

Maines supplements her core argument about the history of medical vibrators with an account of vibrators as consumer appliances. She argues that the electromechanical vibrator was able to become a mainstream consumer appliance in the early 1900s because it was considered to be a medical device, not a sexual one. The vibrator’s sexual uses remained hidden for over two decades until the late 1920s, when stag films began showing women using vibrators for sexual pleasure. As a consequence, vibrators lost their “social camouflage... as a home and professional medical instrument,” doctors stopped using them in their practice, and mainstream companies stopped marketing them (1999, pp. 19–20).

If vibrating the clitoris were indeed a standard medical therapy in the late 19th and early 20th centuries, one would expect direct historical evidence of the practice, either from proponents or critics. Medical discourse at the time was very contentious. Physicians regularly lauded and attacked therapies that used new technologies, especially electrical devices, so historians would expect to find debates about clitoral vibration in medical journals (de la Peña, 2003).⁶ Vibrators were widely promoted for other medical therapies in this era. The American Medical Association was, in fact, quite critical of such vibrator treatments.⁷ Furthermore, any medical procedure that could have been perceived as sexual would surely have attracted the attention of censorious moralists. Yet Maines insists that these treatments were not seen as sexual, so according to her own logic, physicians would have had no reason to conceal the practice. Sometimes absence of evidence is really evidence of absence.

But, as we show below, Maines fails to cite a single source that openly describes use of the vibrator to massage the clitoral area. Furthermore, none of her English-language sources even mentions production of “paroxysms” by massage or anything else that could remotely suggest an orgasm. This lack of evidence by itself undermines the core of her claim. Such practices may well have happened illicitly, but that’s not what Maines claims. She argues that an “androcentric focus... effectively camouflaged the sexual character of medical massage treatments” (Maines, 1999, p. 10). “Physicians, unlike prostitutes, did not lose status by providing sexual services, in part because the character of these services was camouflaged both by the disease paradigms constructed around female sexuality and by the comforting belief that only penetration was

⁶ Discussions of vibrator therapy in general were widespread in this era, e.g., “Health Through Vibration,” 1912; Pilgrim (1903).

⁷ Letter from the *Journal of the American Medical Association* to Adams on February 11, 1915. Historical Health Fraud Collection, American Medical Association Archives, Box 243, File, Lindstrom Smith, Folder 3 (hereafter cited as Health Fraud, AMA). The AMA wrote multiple letters to consumers and doctors, warning them of the inefficacy of vibrators, e.g., Letter from JAMA to Dr. J.M. Donelan, December 16, 1912; Health Fraud-AMA, Box 231, File Hamilton Beach, Folder 3.

sexually stimulating to women. Thus the speculum and the tampon were originally more controversial in medical circles than was the vibrator” (1999, p. 113).

Her argument’s empirical weakness is obscured by the fact that most of the book is actually devoted to tangentially related subjects that ostensibly lend credibility to the core argument. For example, she dedicates as much space to hydrotherapy treatments as to treatments with vibrators (1999, pp. 4, 12–14, 36–37, 41, 44, 68, 70, 72–81, 83). Much of *Technology of Orgasm* focuses on diagnosis and treatment of hysteria before the 19th century, with an emphasis on the period of the Ancient Greeks (1999, pp. 1–2, 8–9, 12–13, 22–33, 50–53, 58, 68–69, 72). Only 32 pages of *Technology of Orgasm* are actually devoted to her core argument about physicians’ use of vibrators (1999, pp. 3–5, 10–11, 13–20, 66, 67–68, 89–100, 109, 113–114, 121–122).

However, the fact that only a quarter of the book centers on her claim does not, on its face, invalidate it. In what follows, we examine in detail the sources she cites in support of her key assertions.

The Empirical Weakness of Maines’ Key Claims

A careful reading of Maines’ text shows that she actually provides very few direct claims of the vibrator’s use for clitoral massage. Mostly, she takes a “wink and nod” approach. She first sets up the suggestion in her introductory chapter that vibrators were indeed used for this purpose, providing a few problematic citations in support (1999, pp. 2–20). But as the book develops, she rarely repeats the direct claims of therapeutic masturbation. Instead, she quotes and cites evidence about gynecological and other types of treatment that, in the context of her thesis, are clearly intended to support her claim. They do not support her assertions, especially when the original sources are examined.

We break down her core argument into three key claims, moving from the specific to the general. First, Maines argues that clitoral massage with a vibrator was not perceived as sexual, because “no penetration was involved” (1999, p. 10). Second, she claims that vibrators were widely used to treat hysteria. And most broadly, she claims that clitoral massage was a standard medical practice, one that persisted into the early 20th century with vibrators instead of manual massage.

We found no evidence to support these claims. Maines provides remarkably few citations in support of them, instead padding her argument with a mass of tangential citations that obscure the lack of support for the core argument. But none of the sources she cites even suggest what she is arguing, at least not to a reader who is not already convinced that these practices occurred.

The most specific claim is that physicians’ vibrators were not used penetratively. This is the cornerstone of Maines’ argument because she argues that the lack of penetration in vibratory treatments is what allowed them to be camouflaged as non-sexual, according to the “androcentric model” of sex. As she explains it, “the androcentric definition of sex as an activity recognizes three essential steps: preparation for penetration (‘foreplay’), penetration, and male orgasm. Sexual activity that does not involve at least the last two has not been popularly or medically

(and for that matter legally) regarded as ‘the real thing’” (1999, p. 5). Because doctors and patients subscribed to this idea, “since no penetration was involved, believers in the hypothesis that only penetration was sexually gratifying to women could argue that nothing sexual could be occurring when their patients experienced the hysterical paroxysm during treatment” (1999, p. 10).

However, the historical evidence demonstrates that penetrative use of vibrators was actually a standard medical practice (*The Physician’s Vibragenitant and Fluid Vibration Brochure*, 1903, pp. 84, 98). Most vibrator companies produced penetrative vaginal attachments, and nearly every vibrator sold to physicians included these.⁸ One of the most popular models, the Shelton, had a carrying case designed to fit its multiple phallic attachments.⁹ Ironically, when Maines argues that massage with vibrators only occurred on the vulva, her sources demonstrate the opposite point: they show that massage occurred inside the vagina.

For example, Maines cites five sources to support a claim that medical vibrators were widely recommended, “especially in gynecological massage” (1999, pp. 18, 134n68). All of these sources describe phallic vaginal devices for electrotherapies. One of the authors, George Benton Massey, noted that bipolar electrodes “for use within the vagina [are] the most commonly employed” (Massey, 1898, p. 330). In addition to drawings of the phallic electrodes, his book contains detailed insertion instructions: “the soaped electrode may be easily inserted without the use of the speculum” (Massey, 1898, p. 57). The other four sources in this footnote also mention internal treatments; three recommend vaginal electrodes (Engelmann, 1887, p. 261; Hayd, 1890, p. 630; Rice, 1909, pp. 33, 55),¹⁰ while two advise intra-uterine electrodes (Cowen, 1900, p. 75; Engelmann, 1887, p. 227).¹¹ Elsewhere in *Technology of Orgasm*, Maines repeatedly cites sources discussing internal vaginal treatments (Maines, 1999, pp. 83–84, 157n80; Smith, 1894, p. G-159). For example, she cites Samuel Monell’s *System of Instruction* twice, which contains multiple descriptions and drawings of phallic attachments for vibrators and electrotherapeutic devices (Maines, 1999, pp. 12, 132n50, 67, 150n1; Monell, 1902, pp. 622, 633, plates 271, 305).¹² Maines even presents direct visual evidence of phallic attachments in her own book, reproducing illustrations that clearly show such attachments (1999, pp. 84, 86, 98, 99, 106).¹³

⁸ Many of the companies offered free or cheap booklets via mail order, for example, Arnold Vibrator Co. See ad in *Chicago Daily Tribune* May 9, 1909, p. 7. Hamilton Beach offered a book for the New-Life Vibrator called *Health and How to Get It*. See *The Evening Standard* (Ogden, Utah), August 24, 1913, p. 16. White Cross Produced a *Health and Beauty* book, featured in many ads. See ad “Vibration Routs Disease,” *Health*, December 31, 1908, p. 258. Better Health Vibrator offered a free booklet. See *The Independent*, March 23, 1914, p. 426. Eureka Vibrator offered a free “Health and Beauty” booklet too. See *Health*, April 1909, p. 200.

⁹ Shelton Vibrator Outfit No. 7 ca. 1906–1917, manufactured in Chicago, IL. Science Museum, London, England, accession A659643. Other companies with phallic attachments for their physicians’ vibrators include: Chattanooga Vibrator (ad in *Medical News*, December 26, 1903, 83, no. 26, p. 14); Shelton Electric Company Vibrator (*The American Journal of the Medical Sciences*, November 1922, p. 154, no. 5, p. 37).

¹⁰ In Maines’ footnote, Hayd’s name is misspelled as “Hoyd.”

¹¹ Note that we consulted the New York edition of Cowen, while Maines cites the London edition.

¹² Another source cited in Maines (150n2) that includes images of vaginal attachments is Wallian (1906, p. plates facing pp. 68, 81).

¹³ This fact was noticed by only one reviewer, discussed below.

The widespread use and marketing of phallic vibrator attachments undermines the theoretical basis of Maines' claim that physicians assumed, absent penetration, that nothing sexual happened during hysteria treatments. Her sources point to a different conclusion. Rather than clitoral treatments leading to the embrace of the medical vibrator, the evidence suggests instead that electrical devices and vibrators with phallic attachments were used regularly for internal vaginal treatments in gynecology. If vibrators were being used to stimulate patients to orgasm, widespread penetrative use would make it difficult for both doctor and patient to ignore the sexual nature of the treatment, according to her argument that "the character of [vibrator treatments] was camouflaged... by the comforting belief that only penetration was sexually stimulating to women" (1999, p. 113).

Maines' second key claim is that genital use of vibrators was a standard treatment for hysteria and related ailments, such as neurasthenia. Again, the sources she cites contradict this claim. Some of her cited sources do not even mention hysteria, while most of her sources on hysteria do not mention vibrators. Even when medical sources did endorse vibration treatment for hysteria, it was rarely a primary treatment, and never recommended for application to the vulva.

The key sources that Maines uses to support her claim that physicians vibrated the clitoris to treat hysteria do not mention using vibrators to treat the disease at all (see Maines, 1999, pp. 4, 127n7). Maines cites the physician Anthony Matijaca as support for her claim that the vibrator was a "capital-labor substitution device" that could reduce the time to produce an orgasm from "up to an hour to about ten minutes." Matijaca said nothing about using vibrators to treat hysteria, but instead recommended that vibrators be used "as a preventative of disease[s] such as gout, deafness and 'female ailments'" (Maines, 1999, pp. 4, 127n7; Matijaca, 1917, p. 134). To be sure, "female ailments" was an umbrella term that could have encompassed hysteria, but using vibrators to treat hysteria prophylactically seems improbable. Another of her key sources in the same footnote, Franklin Gottschalk, is even further from the mark. Gottschalk advocated vibrator treatments for general health purposes, never mentioning specific diseases like hysteria (Gottschalk, 1903, p. 137; Maines, 1999, pp. 4, 127n7).

Similarly, most of the hysteria sources that Maines cites contain no mention of vibrators. For example, in the same footnotes supporting her claim about capital-labor substitution, Maines cites physician Franklin H. Martin. Yet rather than advocating vibrators to treat hysteria, Martin's primary treatment regimen was "1. Rest, 2. Proper Feeding, 3. Seclusion, 4. Sleep." Vibrators are nowhere to be found (Maines, 1999, pp. 4, 127n7; Martin, 1892, p. 225).¹⁴

Maines' sources also provide absolutely no evidence that physicians embraced electromechanical vibrators in order to treat hysteria. Hysteria was just one of dozens of diseases treated with vibrators as Maines herself admits. Texts on medical vibrators "praised the machine's versatility for treating nearly all diseases in both sexes and its savings in the physician's time and labor, *especially in gynecological massage*" (Maines, 1999, pp. 18, 134n68,

¹⁴ Maines similarly cites, in support of claims about genital massage and hydrotherapy, (Griesinger, 1867; see Maines, 1999, pp. 10, 131n42). Griesinger says nothing about massage or hydrotherapy, though he does vaguely refer, on the page cited by Maines, to curing hysteria through "local treatment of the genital organs." In context, this reference is clearly about treating "local diseases," such as ovarian cysts and cervical ulcers (pp. 201–202).

emphasis added). Of the five sources she cites to support this claim, four do not mention electromechanical vibrators at all, and three mention neither hysteria nor vibrators. The one author who discussed hysteria but not vibrators, physician George Betton Massey, did recommend general massage as a treatment for hysteria, but only when done by hand, not machine. All five sources describe in detail the use of electric currents to treat a range of ailments, including dysmenorrhea, constipation, uterine prolapse, and hemorrhoids. None of them mention using vibrators to treat hysteria (Cowen, 1900, pp. 73–74; Engelmann, 1887, p. 251; Hayd, 1890, pp. 628–629, 631–632; Massey, 1898, pp. 71, 183–193; Rice, 1909, pp. 131–131, 140–144).

Furthermore, of the sources Maines cites in support of this claim, only one explicitly recommended using electrotherapeutic devices on the vulva, a 1909 book by female physician May Cushman Rice. However, Rice was not referring to treating hysteria, but rather to the use of high-frequency electrodes to treat vulvitis, inflammation of the vulva. A few pages later, she suggested treating vaginismus (vaginal muscular spasms) by applying internal vaginal electrodes (Rice, 1909, pp. 97, 102). Again, Rice never mentioned hysteria or hinted at anything that could be interpreted as sexual stimulation. As with the other sources we discuss, Rice's work lends no support to Maines' core claims.

Maines' argument ultimately rests on the third, more general claim, that clitoral massage with vibrators was a widespread practice, that "for physicians... the vibrator was a godsend" and they "regarded these therapies simply as routine clinical tasks" (Maines 1999, pp. 67, 114). We show that Maines' sources provide no evidence that clitoral massage with vibrators ever occurred, let alone that it was a common practice. Instead, Maines confounds several types of evidence in her citation to make her argument appear plausible. First, Maines cites numerous works that mention use of massage or electricity on other parts of the body as if these were in fact references to clitoral vibrator treatments. Second, when Maines does cite sources describing gynecological massage, such treatments are nothing like the clitoral massages in her argument. Finally, the plausibility of Maines' arguments rests on her assertion that clitoral massage has a long pedigree, reaching back to ancient times. Helen King has already questioned Maines' evidence on this point from antiquity through the 16th century, but Maines' sources also fail to demonstrate that manual clitoral massage was common from the 17th through the 19th centuries.

Throughout *Technology of Orgasm*, many of the sources cited in support of her argument about clitoral massage actually refer to treatment of non-genital areas. Of the five sources she cites at the beginning of the book to substantiate her claim about physicians vibrating the clitoris, none of them mention the practice (Maines, 1999, pp. 4, 127n7). In *Static Electricity*, Gottschalk instructed physicians to focus on vibrating the spine, while in *Principles of Electro-Medicine*, Anthony Matijaca suggested using vibrators on the spine, head, hips, arms, and neck (Matijaca, 1917, pp. 134–135). Another source she cites by Gottschalk, *Practical Electrotherapeutics*, discussed the use of electrodes to treat urethral strictures. Similarly, in *Electricity in Diseases of Women and Obstetrics*, Franklin H. Martin mentioned examining the ovaries, rectum, heart, and stomach to evaluate patients for hystero-neurasthenia. His examination of the ovaries was decidedly not sexual, but rather a standard procedure that most women still experience when visiting their gynecologists (Martin, 1892, p. 326). Absent from all these works are any instructions for clitoral massage, hints at paroxysms or orgasms, or even a mention of vibrators.

Maines does cite several works by physicians describing pelvic or gynecological massage. On the surface, these sources seem plausible as support for her argument (e.g., Maines, 1999, pp. 18, 134, n68, 67, 150, n1, 70, 151, n8). However, medical sources that describe pelvic and gynecological massage in detail show that the practice was not sexual, did not involve the clitoris, and did not produce an orgasm. The term “pelvic massage” usually meant uterine massage, a treatment frequently used for conditions such as dysmenorrhea or uterine prolapse. For example, a 1901 article in *The Cincinnati Lancet and Journal* described the various forms of pelvic massage:

For classification, pelvic massage may be divided into abdominal massage, where the manipulations are made by the hands placed only on the abdomen; abdomino-vaginal, where one of two fingers are placed in the vagina, holding the uterus and its appendages upwards, where the other hand on the abdomen makes the movements; abdomino-rectal, one finger in the rectum, the other hand over the abdomen. (Southgate, 1901; see also Herb, 1916)

And even these types of massage treatments were controversial. In 1907 Charles Noble and Brooke Anspach, contributors to a volume on *Gynecological and Abdominal Surgery*, cautioned physicians that “deliberate séances of pelvic massage may lead to sexual excitation. It is therefore not recommended for general employment” (Noble & Anspach, 1907, pp. 210–327, 223).

Yet Maines conflates pelvic and clitoral massage throughout the book. In fact, every time that she implies that clitoral massage treatments were occurring, she cites books and articles that mention either general gynecological massage or other massage treatments. For example, Maines argues that Freud was initially a proponent of gynecological massage, saying, “it hardly seems surprising that the man who, notoriously, did not know what women wanted was less than successful as a gynecological masseur” (1999, pp. 44). In fact, the source she cites, the editor’s note to *Freud's Complete Psychological Works*, does not say anything about massage of the genitals (Maines, 1999, pp. 44, 143, n88; Strachey, 1955, p. xi).

In a similar but even more egregious example, Maines twists a quote to make it seem to support her claim about clitoral massage for hysteria:

In 1903 Samuel Howard Monell effectively summarized the demand of physicians since Hippocrates for some simple means of getting results with their hysterical patients: “Pelvic massage (in gynecology) has its brilliant advocates and they report wonderful results, but when practitioners must supply the skilled technic with their own fingers the method has no value to the majority.” For physicians in this line of work, the vibrator was a godsend: “Special applicators (motor-driven) give practical value and office convenience of what to what otherwise is impractical.” (Maines, 1999, p. 67)

On its face, this quote appears to be strong evidence. However, the context of the quote shows otherwise. Maines implies that Monell was discussing hysterical patients; however, nowhere in the book does he mention treating hysteria with pelvic massage. In fact, the quoted passage occurs in a discussion of massage for “fractures, dislocations, and sprains.” Monell

never specified the diseases to be treated by pelvic massage nor how the treatments were to be performed. His full discussion of pelvic massage is more of an aside, amounting to only three sentences, including the two that Maines quotes. The sentence following those quoted by Maines, however, clearly suggests that Monell is discussing massage with penetrative vibrator attachments. Monell insisted “nearly the same is true [the utility of vibrators for pelvic massage] of certain rectal and prostatic conditions in the male.” The plates facing the page illustrate this type of massage, showing an internal vaginal/rectal applicator of phallic shape, which is most likely the “special applicator” referred to in the sentence Maines quotes (Monell, 1902, pp. 591, plates 271, 272). Placed within its context, Monell’s quote undermines Maines’ argument. If Monell was, as Maines’ claims, one of the most prominent promoters of vibrators for pelvic massage, then he probably used them in women’s vaginas, not on their clitorises.

Another source Maines cites is the prominent American gynecologist Theodore Gaillard Thomas, who also “mentioned gynecological massage treatments” in a medical text of 1891. Thomas was, however, referring to a massage treatment for “prolapsus uteri,” which was neither clitoral nor related to hysteria. Besides, Thomas was well aware of the clitoral orgasm as Maines herself mentions earlier in the book: “Theodore Thomas, for example, wrote in 1891 that the purpose of the clitoris was ‘to furnish to the female the nervous erethrism which is necessary to a perfect performance and completion of the sexual act’ and went on to observe that orgasm could be produced by clitoral stimulation ‘outside of intercourse’” (Maines, 1999, p. 55). And Thomas was not even a true proponent of pelvic massage, which he thought “still too new to permit our accepting it without reserve” (Maines, 1999, pp. 70, 151, n8; Thomas & Mundé, 1891, pp. 394–395).

Maines also falsely represents the gynecologist George Betton Massey as an advocate of hand-massage of the vulva for hysteria. In fact, Massey discussed massage for “neuroses,” not hysteria, without specifying where this massage should occur. As with her selective quoting of Thomas, Maines fails to mention that Massey too was a lukewarm proponent of massage, which “becomes of value mainly as a peripheral application and as a means of restoring nutrition” (Massey, 1898, pp. 70, 71). Similarly, she quotes George Herbert Taylor, who “especially recommended his devices for ‘pelvic hyperaemia’ in women, noting that its ‘vibration may be compared to the blows of an infinitesimal hammer, under continuous and very rapid action.’” But this quote does not even refer to pelvic massage, let alone clitoral massage; Taylor is just referring to general massage (Maines, 1999, p. 93; Taylor, 1885, pp. 18–33, 1893, p. 75).

Maines’ account of clitoral vibrator treatments is only plausible if these treatments replaced, as she claims, a prior therapy of manual clitoral massage. Maines argues that doctors adopted vibrators to replace “manual massage of the vulva,” a practice that they found difficult because of the “skills required to properly locate the intensity of massage... and the stamina to sustain the treatment” (Maines, 1999, p. 12). In other words, Maines argues that doctors’ arms and wrists tired from masturbating their patients, so they turned to vibrators to mechanize the process. Her sources do not support the claim that manual clitoral massage was time-consuming and difficult, nor that the practice was widespread through the 19th century, nor that vibrators were used to speed up the process.

In one of her more egregious examples of quoting out of context, Maines claims that “Nathaniel Highmore noted in 1660 that it was difficult to learn to produce orgasm by vulvular massage. He said that the technique ‘is not unlike that game of boys in which they try to rub their stomachs with one hand and pat their heads with the other’” (Maines, 1999, p. 4). Maines is explicitly claiming that Highmore is referring to “vulvular massage,” but the context tells a different story. The quote about the boys game occurs in a discussion of complex motions of the fingers, especially when playing stringed instruments; nowhere does this discussion even hint at massage of the vulva (Highmore, 1660, pp. 76–78).¹⁵

Maines similarly misinterprets 19th century French medical texts to argue for the widespread practice of manual clitoral massage. One of her sources is Pierre Briquet’s well-known 1859 book, which was based on empirical study of 430 cases of hysteria. She claims that Briquet “did not mince words about the sexual etiology of hysteria: he was quite certain it was caused by sexual frustration” (Maines, 1999, p. 37). This claim grossly mischaracterizes what Briquet argued. Much of his book is an attack on the theory that hysteria had sexual causes. He did indeed, as Maines claims, cite “Galen and Forestus on the utility of ‘la titillation du clitoris,’” but only to dismiss the practice as ineffective. Briquet speculated that an orgasm might have a calming effect on a hysteric. But, he insisted, this calming effect did not result from the expulsion of female seminal fluid, the “imaginary liquid” in Galen’s explanation of hysteria’s etiology. In fact, he noted that if Galen’s theory were true, then “masturbation should prevent or cure hysteria, while the contrary is observed” (Briquet, 1859, pp. 137–138; Link-Heer & Daniel, 1990, pp. 198–201; Mai & Merskey, 1981, p. 58). Briquet also insisted that sexual frustration had nothing to do with hysteria (Briquet, 1859, p. 141; Mai & Merskey, 1980, p. 1402). His research led him to conclude that, in the vast majority of cases of hysteria, there was simply no possible connection between the sexual organs and the disease (Briquet, 1859, p. 51).¹⁶

A generation after Briquet, another French physician, Auguste Tripiet, published a treatise on the use of electrotherapy for diseases of women. Maines translates a long passage by Tripiet to justify her claim that genital massage was widely practiced among 19th-century physicians (Maines, 1999, p. 39). As with her other quotes, when viewed in context, this passage does not support her claim. In the passage, Tripiet claimed that “Briquet treated hysteria for some time with masturbation, practiced more or less methodically by his students.” But Tripiet remarked that Briquet apparently “abandoned [the practice] after a short trial [*expérience*]” (Tripiet, 1983, p. 349–350).

However, Maines’ imprecise translations and selective quoting makes it appear that Tripiet actually endorsed Briquet’s supposed practice. She elides a paragraph in which Tripiet expressed surprise at Briquet’s use of this method, given Briquet’s subsequent view of hysteria as “independent of sexual function.” The sentence in Briquet’s text immediately after her quotation shows clearly that Tripiet was not endorsing genital massage. Tripiet continued: “this interpretation of Briquet’s aims... explains at the same time the complete abandonment of the method after a brief period of experimentation.” Tripiet concluded that orgasm (*la crise*

¹⁵ The passage quoted by Maines is on page 78. Thanks for Lindsay Morse for translating this passage and to Pablo Gómez for help interpreting it.

¹⁶ In any case, Helen King shows that this interpretation of Galen was itself based on a misunderstanding of the sources (King, 2011, pp. 217–224).

vénéérienne) “never seems to me to improve the situation of those patients whom I have seen apply to themselves the treatment that Briquet briefly believed in” (Tripier, 1883, p. 350). Tripier clearly rejected genital massage, even though, unlike Briquet, he believed that the uterus was central to the disease of hysteria. Rather than genital massage, Tripier favored electrotherapy, specifically “faradization” of the uterus, that is, application of alternating currents, typically by means of an electrode inserted through the vagina (Tripier, 1883, pp. 349–350).¹⁷ Tripier suggested that genital stimulation could be useful only in rare cases, not as a general practice (Tripier, 1883, pp. 402–403). His rejection of genital massage was thus similar to Briquet’s. In any case, Tripier’s attribution of the practice to Briquet appears to be based on little more than rumor.

Although both Briquet and Tripier rejected clitoral massage, their criticism could be read as implying that the practice did exist in 19th century French medicine. But if it did exist, it would only have been on the margins of French medicine and was certainly never accepted as a legitimate medical practice.

Since genital massage was not a standard medical practice in the 19th century, physicians did not adopt the vibrator to save time masturbating women to orgasm, as Maines claims. As she says the “efficiency gains in the medical production of orgasm for payment could increase income” (Maines, 1999, p. 3). Many physicians did, however, describe the vibrator as a labor-savings device, and Maines quotes a number of these sources as if they were advocating genital massage. But none of these sources mention clitoral massage, orgasm, or paroxysm. For example, Maines quotes the physician Samuel Spencer Wallian, an advocate of vibrator therapy, who insisted that with manual massage, the physician “consumes a painstaking hour to accomplish much less profound results than are easily effected by the other [the vibrator] in a short five or ten minutes” (Maines, 1999, p. 67). But Wallian was discussing time-saving for vibrators in general, in particular for treating “trophic centers” such as the “intestines, kidneys, lungs and skin,” not the clitoris (Wallian, 1906, p. 56). Her other citations on the labor-saving properties of vibrators refer to massage of the spine (Gottschalk, 1903, pp. 137–139), massage using devices other than vibrators (Gottschalk, 1906, p. 282), and old-fashioned manual massage (Martin, 1892, pp. 225–226, 229, 231).

The Reception and Spread of Maines’ Argument

As we noted in the introduction, most readers embraced Maines’ highly problematic story with little critical scrutiny. This is not a case of skeptical academics being ignored by a credulous public; both groups were equally uncritical about the book’s claims. We begin by examining the academic reception of Maines’ book and then survey its spread in popular culture.

Almost immediately, the book won the endorsement of the American Historical Association, which awarded Maines the organization’s Herbert Feis award for “distinguished contributions to public history.” The prize citation praised Maines for her “persistence in pursuing her topic, in spite of general disbelief and at times outrage” (“2000 Annual Meeting Awards and Honors,” 2000). Soon after, book reviews of *Technology of Orgasm* began to appear. The book was reviewed in at least 16 scholarly journals across a wide range of

¹⁷ Note that Maines incorrectly cites pp. 46–47 for her quote. All translations from Tripier are our own.

disciplines, including leading journals in fields from history to epidemiology. The reviews were mixed, but positive overall. Most reviewers were impressed by the apparent breadth and depth of Maines' research, which encompassed primary sources across multiple countries, eras, and languages. One reviewer called the book "exhaustively researched," while a more critical reviewer nevertheless endorsed her research as "admirably assiduous" (Lunbeck, 2002, p. 260; Wosk, 2000, p. 602). Reviewers praised the boldness of her "refreshingly gutsy" claims (Morantz-Sanchez, 2000, p. 382). Reviewers also commended her for writing an academic work "accessible to the lay audience" (Sigel, 2000, p. 755). Some reviewers even saw the book as transformative, with "the potential to radically shift our normative model of sex" (Horowitz, 2000, p. 201).

Not all reviews were positive, especially with regard to the theoretical framework of the book. Most of these critical reviews were by scholars close to the subject matter, especially historians of gender and sexuality. The review in *The Journal of Sex Research* by the sexologist and feminist sex-toy pioneer Joani Blank exemplifies this more nuanced reception. Blank expressed surprise that "no sexologist had ever explored this phenomena [sic]," that is, physician-administered orgasms. She also noted that "apparently" this practice was absent from "the knowledge base of psychiatrists and other psychotherapists" who treated hysteria in the early 20th century, before the diagnosis went out of fashion (Blank, 1999, p. 307).

Blank and other reviewers also questioned Maines' argument that a hegemonic "androcentric bias" persisted until the mid-1960s. Blank, for example, contested the claim that penetrative sex was necessarily androcentric, noting that many heterosexual women "enjoy penetrative sex fully as much as their male partners" (Blank, 1999, p. 308). Women's history scholar Margaret Marsh criticized Maines for ignoring treatments for male impotence and infertility, such as penis pumps and scrotal massages. Such treatments, Marsh suggested, weaken Maines' assumptions about androcentric bias (Marsh, 2000, p. 601). The historian Susan Cayleff also questioned how "repeatedly, androcentrism... is held accountable for men's perception of women's sexual dysfunction." Such a view, Cayleff implied, denies agency to women, while also ignoring a generation of feminist scholarship on the history of gender and medicine (Cayleff, 2001, pp. 544–545). Elizabeth Lunbeck also criticized the one-sidedness of Maines' argument from androcentrism, which, Lunbeck suggested, is a product of the clitoro-centrism of second-wave feminist sex research. Certainly by the 1990s, Lunbeck noted, a more diverse view of female sexuality had come to feminist scholarship, which recognized that there were many varieties of sexual pleasure. Lunbeck alone noticed that the book's own visual evidence contradicts Maines' claims that vibrators were not used penetratively. This evidence led Lunbeck to suggest that Maines' "one-clitoris-suits-all prescription might be as constraining as those of the phallogocentrists she castigates" (Lunbeck, 2002, p. 262).

Yet none of these more critical reviews questioned Maines' core claim, that physicians routinely masturbated female patients to orgasm, both with and without vibrators. Blank, despite her surprise, accepted Maines' factual claims, while suggesting that some physicians knew exactly what they were doing and "were sexually aroused by it." Lunbeck (2002) who pointed out the clear visual evidence of penetrative devices in Maines' own illustrations, did not contest the core argument about "genital massage to orgasm." Marsh was skeptical about the extent of the practice, but affirmed that vibrators and hydrotherapy devices "in fact *had to have been*

sometimes used” to provide women with orgasms as a treatment for hysteria (Marsh, 2000, p. 599). Marsh was the only reviewer to comment that Maines sometimes “quoted out of context” (Marsh, 2000, p. 600). Aside from Marsh, none of the reviewers with historical expertise noticed the pervasively sloppy citation practices in the book.

Book reviewers, however, are not fact-checkers. As historian of science George Sarton pointed out decades ago in a well-known essay, the primary purpose of a book review is to describe a work in relation to its subject area and the author’s aims (Sarton, 1960, p. 151). Furthermore, scholarship is largely built on trust, not skepticism; academics usually take at face value factual claims made by someone with proper credentials (See Shapin, 1994). Reviewers reasonably assume that books published by scholarly presses have gone through a rigorous process of peer review, a point that one reviewer made explicitly (Wunsch, 2000, p. 43).

Nevertheless, it is still unfortunate that not a single scholarly reviewer questioned Maines’ core factual claims. These claims were surprising, even shocking, which is why the book created such a stir. Yet an hour or two in a well-equipped medical library would have been enough to reveal serious flaws in her research. Unfortunately, nothing in the academic reward structure encourages reviewers to check citations or attempt to verify a work’s empirical claims. If reviewers were encouraged to do so, problematic empirical claims might be exposed before they become ensconced in the academic literature.

The subsequent scholarly reception of Maines’ book has been even more uncritical than the reviews. Maines’ research began to be cited almost as soon as her book was published. Google Scholar lists some 427 hits for “technology of orgasm.” Even discounting for spurious results and repetitions, this is an impressive result, not far below the 609 results for Laqueur’s classic *Solitary Sex*.¹⁸

We have examined some 58 scholarly works that engage with *Technology of Orgasm* beyond pro-forma citations, primarily articles in refereed journals but also some academic-press books and a handful of published conference proceedings.¹⁹ Of these works, only two are at all critical, and these two do not question Maines’ core argument.

Although *Technology of Orgasm* is widely cited in the scholarly literature, very few scholars have attempted to extend Maines’ research, even though reviewers praised Maines for opening up a new area of study focused on technologies of sexual pleasure.²⁰ This topic resonates deeply with postwar histories of the sexual revolution and second-wave feminism. But if scholars tried to build on Maines’ work, they would have quickly discovered that the argument was not based on sound evidence.²¹ Instead, the book is widely cited as a standard scholarly work in the history of sexuality, while its argument has become a staple in academic

¹⁸ Search of <http://scholar.google.com> using search terms (Maines “technology of orgasm”) and (Laqueur “solitary sex”), August 13, 2015. Admittedly, Maines’ book has been available for four years longer than Laqueur’s, though the general comparison remains valid.

¹⁹ These works were primarily identified using Google Scholar, and we make no claim to comprehensiveness.

²⁰ Similarly, Maines’ research was also endorsed by the pioneering scholar of women’s history Gerda Lerner, who described *Technology of Orgasm* as the “remarkable work of a young scholar” (2004, p. 18).

²¹ One of us did attempt to build on Maines’ research, which is how we uncovered the problem with her evidence (Lieberman, 2016).

publications, repeatedly summarized as if it were established fact, which, in academic terms, it appears to be.

The absence of new research directly related to *Technology of Orgasm* is striking, especially in the three core fields of the book: history of medicine, history of sexuality, and history of technology. Historians in these fields appear to have little interest in the topic of vibrators or even Maines' larger issue of masturbation as a form of medical treatment. This lack of interest extends to history journals in general, which rarely cite *Technology of Orgasm*. Despite this neglect among historians, Maines has been widely celebrated by scholars in a range of other fields, from law to gaming studies. Many scholars use Maines to provide historical background for present-day topics related to sexuality and technology. In these works, Maines' story is rarely a significant part of the framing of the argument. Yet every time the story is repeated, it becomes more established as scholarly fact, and thus harder to dislodge (for example, Dilevko & Gottlieb, 2004; Marcus, 2011; Parisi, 2013).

More troubling are scholars who build their arguments on the insecure foundation of Maines' research. For example, in the feminist philosophy journal *Hypatia*, the prominent philosopher Jennifer Saul provides a detailed summary of *Technology of Orgasm*, comparing Maines' history of the vibrator to recent debates about pornography. Maines' argument serves as the empirical material for Saul's analysis and is central to her conclusions (Saul, 2006, pp. 51–53, 54). Scholars in the field of psychotherapy have also used Maines to develop new critiques of Freud's work. Starr and Aron argue that Freud's account of his path to psychoanalysis "obscured his association with massage, electrotherapeutics, and the procedure of genital stimulation practiced by his medical colleagues." Starr and Aron treat therapeutic orgasms as established fact, claiming that "the history of this procedure as a treatment for hysteria is well documented in feminist scholarship, the cultural history of sexuality, the history of women in medicine," and other fields. Needless to say, their entire analysis is built on false premises (see also D'Ercole, 2011; Starr & Aron, 2011, p. 374).

Maines has also had an impact on legal scholarship, in part because she participated in legal cases challenging the constitutionality of state laws against sex toys. The first court opinion to cite Maines was *State of Louisiana v. Christine D. Brennan*, a case in the Supreme Court of Louisiana. The court referred to Maines' research in its decision overruling a statute banning sale of sex toys, describing Maines' work "as a matter of accepted historical fact" (*State v. Brennan*, 2000, p. 75).

Maines played a key role in a far more important decision, *Williams v. Pryor*. In this 2002 decision, a federal district court relied heavily on two declarations that Maines submitted for the plaintiffs in a constitutional challenge to Alabama's anti-sex-toy law. The opinion quoted extensively from *Technology of Orgasm* and Maines' declarations. The court relied upon this historical evidence to assert that a fundamental right to sexual privacy existed, a right that covered the sale of sex toys (*Williams v. Pryor*, 2002, pp. 1259, 1283–1284, 1286–1287).²² However, this decision was overturned two years later by the 11th Circuit Court. The circuit court used Maines' own words from *Technology of Orgasm* to counter her statements to the

²² Note that this was the second decision of the district court on this case, the first having been overturned and remanded by the circuit court. The earlier district court decision did not mention Maines. *Williams v. Pryor* (1999).

court about historical attitudes towards sex toys. The circuit court also checked some of the references in Maines' declaration, and "found no support for [Maines'] conclusion" that the Comstock law did not refer to sex toys. The circuit court even chastised the district court for relying on "Maines' litigation-motivated and litigation-tailored assertions," insisting that the district court had fallen short in its "truth-seeking duties" (*Williams v. Attorney General of Ala.*, 2004, pp. 1242, 1247–448).

The circuit court decision in *Williams* is a rare example of a critical response to Maines' factual claims. But this note of skepticism is absent from the four law review articles that drew heavily on Maines to analyze sex-toy litigation (Glover, 2010; Herald, 2004; Holt, 2001; Lindemann, 2006).²³ These articles, which began appearing in 2001, all provide detailed summaries of *Technology of Orgasm*, treating the book's conclusions as established fact. In two of these articles, the authors supplement Maines with sources that are themselves based on Maines' original work (Glover, 2010, p. 559n31; Herald, 2004, p. 17, n103). Thus academic error propagates through citation practices, much like a false rumor that spreads throughout a community, gaining credibility with each repetition.

Academics in other fields should perhaps be excused for their uncritical use of Maines. After all, why should a philosophy professor or law student question the veracity of a widely reviewed and cited source from a major university press? The real responsibility for correcting such errors lies at the feet of those with expertise in the field. Maines' errors are actually well known to such experts. For example, the prominent British historian of electrical science and technology Iwan Rhys Morus forcefully conveyed his skepticism to a reporter from *The Nation*. "I can safely say that I have come across nothing in my researches on late 19th century electricity and the body that lends any support at all to Maines's argument." Another British scholar, Fern Riddell, questions Maines' sources in her popular book on Victorian sexuality: "I have also not yet found a single reference to a specific 'pelvic massage' in any of the books or pamphlets I have read on the treatment of hysteria in Britain... let alone the later use of vibration in this area." Riddell insists that Victorians were well-informed about orgasms and masturbation, so physicians could not have practiced genital massage "without the knowledge that it was a sexual act" (Riddell, 2014, pp. 133–134). Other well-informed critiques have appeared on web sites and blogs (for a summary of discussions on H-NET, see Hall, n.d.).

But none of this criticism has reached the scholarly literature, with two exceptions. The first serious scholarly critique appeared in 2008 in an excellent article by gender historian Sarah Rodriguez. Rodriguez examines female clitoral surgery in the United States at the end of the 19th century. Rodriguez' article punches a major hole in Maines argument. Maines insists that doctors who performed genital massage did not regard the procedure as sexual, largely because they misunderstood the function of the clitoris (Maines, 1999, pp. 9–10). However, Rodriguez shows that American physicians in this era fully understood the function of the clitoris as the key organ of female sexual pleasure. Thus there was simply no way that doctors could have massaged women to orgasm without knowing that they were engaged in a sexual act. Yet Rodriguez only devotes one sentence to contesting Maines' claim that physicians misunderstood the clitoris, and

²³ Note that two of these articles, those by Holt (2001) and Glover (2010), are student comments.

Rodriguez does not point out that her conclusion fundamentally undermines Maines' argument (Rodriguez, 2008, pp. 326, 328, 332).

The most serious challenge to Maines in the scholarly literature was Helen King's 2011 article in *Eugesta*, an open-access journal focused on gender in antiquity.²⁴ King, an expert on ancient obstetrics and gynecology, makes a frontal assault on Maines' argument that genital massage was a staple of medical practice from antiquity into the early modern era. King highlights Maines' sloppy citation practices, including her habit of making "gratuitous use" of references that do not support her claims. King notes that Maines' "book may look authoritative, superficially conforming to the scholarly rules of the game," but that her use of sources, both primary and secondary, raise "serious questions" (King, 2011, pp. 207, 209, 211).

King focuses on Maines' claim that the Greek physician Galen provided "literally the classic description of massage therapy for hysteria" (King, 2011, p. 217; Maines, 1999, p. 24). In contrast, King shows that the key passages of Galen describe a single medical case that he himself had probably not seen, a case that was most likely diagnosed by a midwife rather than a physician. King concludes that the masturbatory therapy hinted at in the text, which Galen described only as "customary remedies," was probably applied by the patient herself (King, 2011, pp. 218, 222, 224).

King also shows that Maines similarly misreads medieval and early modern texts. Genital manipulation was certainly discussed in early modern Europe as a method for expelling "female seed." But the practice was morally controversial, advocated only as a last resort, and usually performed by a female intermediary (King, 2011, pp. 143–144; Schleiner, 1995, pp. 107–159). In any case, King cautions the modern reader not to presume that ancient discussions of genital massage were equivalent to our modern concept of masturbation (King, 2011, p. 232; see also Brogan, 2014).

However, King's powerful critique does not reach into the core of Maines' argument, the claim that physicians routinely massaged and vibrated women to orgasm in the 19th and early 20th centuries. Even though King concludes that "Maines' claims for ancient women's sexual practices are without foundation," King attributes these flaws to Maines' desire to "to provide an ancient pedigree for therapeutic masturbation" (King, 2011, p. 232). Ever the careful scholar, King does not speculate about the accuracy of Maines' argument for the later period.

In the end, Maines' core argument remains uncontested. We have found only one article that takes note of King's critique when citing Maines, a recent study on female masturbation in *The Journal of Sex Research*. The authors of this article acknowledge that "some debate has ensued" as a result of King's research, but they still repeat Maines' claim that physicians used clitoral massage to treat hysteria. Now, however, the authors strip the argument of its certainty, stating that "doctors *may have used* vibrators" in this way (emphasis added). Perhaps this note of

²⁴ This journal is not indexed in Historical Abstracts, the MLA Bibliography, or L'Année Philologique, the most comprehensive index for classical studies.

uncertainty marks the first step in the unmaking of a scholarly fact (Faehs & Frank, 2014, p. 242).²⁵

Popular Reception of Maines' Argument

As noted earlier, Maines' history of the vibrator has been influential among popular as well as scholarly audiences. Her doctors-massaging-women's-clitorises story has been irresistible to the media because it mixes prurience with scholarship. One of the first publications to praise Maines' account was *The New York Times*, which published an article retelling Maines' vibrator story in detail, including images and interviews with Maines (Angier, 1999, p. F5).

Maines was also the subject of buzzy, early press in *The Guardian* and *The Times Higher Education Supplement* (Ives, 1999, p. 6; Maines, 1998, p. 16). *The New York Times* wrote a relatively positive review of *The Technology of Orgasm* a month after the feature story on Maines. This review repeated Maines' story without questioning its main premise, taking issue only with tangential claims, like the fact that Maines misrepresented physicians' knowledge of female sexuality (Boxer, 1999).

Soon after, Maines appeared on her first TV show, the Canadian program, *SexTV*, which devoted an episode to the history of the vibrator (*SexTV's Most Memorable Moments in Masturbation History*, 2005). Very quickly the vibrator story spread throughout sex-advice manuals whose authors sought to reduce the stigma of vibrators by detailing their century-long history (Null & Seaman, 1999). Following in quick succession were summaries of Maines' vibrator story in popular sex histories like James R. Petersen's *The Century of Sex* (Petersen, 1999). As more and more popular authors mentioned Maines' story, it was accepted as fact, and it became perfunctory to include her history of the vibrator in sexual advice books.

Gina Ogden's reference to Maines in *The Return of Desire* is characteristic of these retellings of the vibrator story: "Read Rachel Maines' eye-opening book, *The Technology of Orgasm*, which details how physicians once used an astonishing array of medical devices to bring their patients to orgasm. I am not making this up" (Ogden, 2008). Ogden's insistence that "I am not making this up" shows that popular authors recognized how bizarre Maines' story is. This outrageous aspect has undoubtedly helped the story thrive in popular culture. Journalists refer to stories like these as "too good to check" (Worstell, 2011). And that seems to be the case with Maines' vibrator story. In fact, since the publication of her book in 1999, over fifty sex manuals, popular histories, memoirs, sociology books, and articles have repeated her story as if it were dogma, while many more have cited it.

But perhaps what most solidified Maines' account of the vibrator in popular culture was its retelling on stage and screen. The story first appeared in film in a 2001 Australian documentary on the history of the vibrator, *Turn Me On* (Tom, 2001, p. 18). Six years later an American documentary followed called *Passion and Power: The Technology of Orgasm*. This film recounted the history of the vibrator through interviews with Maines and others, including archival footage of feminist luminaries Betty Friedan and Gloria Steinem (Omori & Slick, 2007).

²⁵ Bruno Latour describes the opposite process, the making of scientific facts, as the removal of the "modalities" around a claim, that is, expressions of uncertainty. (Latour, 1987).

In 2009, *Technology of Orgasm* was launched into high culture with the premiere of Sarah Ruhl's *In the Next Room, Or The Vibrator Play*, at Berkeley Repertory (Nestruck, 2011, p. R1). A year later Ruhl's play was nominated for three Tony awards, lending Maines' vibrator story even more cultural cachet. In 2011 British film *Hysteria* premiered, which presented a fictionalized account of the story of the invention of the vibrator by Joseph Mortimer Granville. In *Hysteria*, Granville treats women diagnosed with the illness by massaging their clitorises with his hand. But his business is so popular that his wrists become tired from all the work.²⁶ He discovers a new product invented by a fellow doctor (an electric feather duster), and he modifies it into a vibrator to use with his patients. The story ends with Granville becoming rich.²⁷ Although *Hysteria* received mixed reviews, it did garner a huge amount of press in reviews and think pieces (Bielski, 2011, p. L1; Cox, 2012; "Good vibrations," 2010, p. IN3; Holden, 2012; Lawrence, 2012). Luxury sex-toy company Jimmyjane produced a line of *Hysteria* vibrators, complete with a doctor's note inscribed with "hysteria" on the packaging ("The Hysteria Giveaway," n.d.). Only one popular article was even mildly critical of the history, by former *Nation* senior editor JoAnn Wypijewski, who interviewed historian Iwan Rhys Morus. Morus, as we noted above, is very skeptical of Maines' account (Wypijewski, 2012, pp. 8–9).

Clearly Maines' vibrator story has captivated the public's imagination, migrating far from its origins in a short, rather disjointed academic book to become the subject of films worldwide, thanks in part to the book's translation into five different languages ("Dr. Rachel P. Maines," n.d.). Why would audiences, both popular and scholarly, be receptive to such a story, which on its face seems so implausible? Our answer to this question must be somewhat speculative. Fundamental to its reception is the book's sex appeal. It tells a scandalous story of transgressed boundaries, of dimwitted doctors providing women with sexual satisfaction. Maines has historicized the doctor-patient fantasy, a staple of erotica.²⁸ Yet, unlike the porn fantasy, Maines' narrative can be discussed without social reproach because of its academic respectability.

Yet the book's appeal isn't just sexual. Maines' story fits narratives of progress in sexual knowledge, allowing readers to see themselves as worldly sophisticates in contrast to the clueless, desexualized Victorians. Physicians look particularly ignorant in this account, having no clue what the clitoris was, let alone an orgasm.²⁹ Maines also portrays women as victims of profit-hungry physicians. Such victim narratives were a staple of feminists critiques of medical care in the 1970s (e.g., Frankfort, 1972). Women have no real agency in Maines' account, as the historical actors are all male physicians, and women's voices are completely absent. However, readers can still view the female patients as heroes who subvert patriarchy by procuring orgasms under the guise of medical treatment. The story is thus paradoxical—women are victims, but the tools used to victimize them bring them orgasms, a delicious irony.

²⁶ *Hysteria*, dir. Tanya Wexler, Sony Pictures Classics, 2011.

²⁷ A subplot involves his patient Charlotte (played by Maggie Gyllenhaal) getting arrested. Granville testifies on the stand that she is a hysteric and she avoids a life sentence. He later falls in love with her.

²⁸ Maines' research has directly inspired pornographic fiction (Wag, 2007).

²⁹ Maines argues that doctors viewed the orgasms they produced through clitoral massage not as a sexual response but as "the crisis of an illness, the 'hysterical paroxysm.'" (Maines, 1999, p. 3) This simplistic view of desexualized Victorians has been thoroughly debunked by historians of sexuality. See, e.g., Gay (1984).

Conclusion

In a nutshell, this is Maines' argument: "Massage to orgasm of female patients was a staple of medical practice among some (but certainly not all) Western physicians from the time of Hippocrates until the 1920s, and mechanizing this task significantly increased the number of patients a doctor could treat in a working day" (Maines, 1999, p. 3). This entire claim is false. There is a bit of circumstantial evidence that a few physicians and midwives may have practiced genital massage before the 20th century, but the evidence does not support the claim that genital massage was ever a "staple of medical practice." When it comes to the second, core part of the argument, that physicians used vibrators to mechanize the process of genital massage to orgasm, there is not one shred of evidence that this practice ever occurred. Of course, physicians may occasionally have used vibrators to satisfy their female patients' sexual needs. It is well known that compassionate nurses sometimes provide sexual relief to disabled male patients, so medically assisted orgasms are hardly unknown (Peace, 2014). But such "treatment" was never a staple of medical practice, nor would it have been viewed as non-sexual.

Our analysis of *Technology of Orgasm* fits into a growing critique of academic research and publishing. Peer review has come under increasing criticism from eminent scholars, who point to the inherent conservatism in a process that permits established scholars to act as gatekeepers for novel ideas (Jaschik, 2012; R. Smith, 2006, 2010). Prominent retractions of peer-reviewed articles are widespread in the natural and social sciences. (Casadevall & Fang, 2012) A recent study found that "a large portion" of peer-reviewed studies in psychology could not be replicated (Open Science Collaboration, 2015, p. 943).

Conservatism in the review process does not appear to have been a problem for Maines, however. In the preface to *Technology of Orgasm*, Maines tells of the hostility she endured for her choice of research topic. She claims that her research was in part responsible for her failure to be reappointed to a part-time teaching position at Clarkson University. Indeed, academic freedom often fails to protect scholars who study sex, especially sexual pleasure (Maines, 1999, pp. xiv–xv). Yet hostility to her topic did not prevent publication of her book by a leading university press with a strong list in history of technology and medicine. The manuscript went through, we presume, the standard rigorous evaluation process of a university press without its flaws being detected. It was reviewed in top academic journals, cited in court cases and peer-reviewed articles, and embraced by the popular press, all because of its apparent academic legitimacy. Perhaps her story of persecution in pursuit of truth gave her some immunity from criticism, especially since skeptics might have feared being lumped with puritanical no-nothings.

Rather than conservatism, the 19-year success of *Technology of Orgasm* points to a fundamental failure of academic quality control. This failure occurred at every stage, starting with the assessment of the work at the Johns Hopkins University Press. But most glaring is the fact that not a single scholarly publication has pointed out the empirical flaws in the book's core claims in the 19 years since its release.³⁰

³⁰ Even Helen King, who has produced the best scholarly critique of Maines' book to date, did not address the central argument that Victorian physicians masturbated women to orgasm with vibrators as a treatment for hysteria.

We believe that *Technology of Orgasm* is not an isolated case. The same pressures to publish that produce flawed research in the natural sciences and quantitative social sciences also exist in the humanities and qualitative social sciences. In the humanities and qualitative social sciences, these pressures encourage narrow, banal, and irrelevant research, often disguised by horrid prose and vapid theorizing (Billig, 2013). But these pressures also encourage sloppy empirical research in qualitative fields as well.

There are few safeguards against flawed empirical research in the humanities. Scholarly publishing rarely involves any sort of fact checking. Peer reviewers and readers for academic presses are not expected to confirm a manuscript's empirical claims, beyond what they already know. Book reviewers likewise rarely examine citations or sources. Far more fact-checking occurs in a typical magazine article than in a scholarly publication, despite complaints from journalists about a decline in the practice (Canby, 2012). Because fact-checking is not a routine practice in scholarly publication, factual challenges to scholarship, particularly in the field of history, are rare, and can be perceived as personal attacks rather than part of the scholarly process. Therefore, scholars have few incentives to question established research. Tellingly, the most forceful criticisms of Maines are found in the popular press and blogs, not in scholarly journals, with Helen King's article as the lone exception.

What results from all this is something akin to Noelle-Neumann's "spiral of silence," that process by which outlandish propaganda can spread despite widespread doubts about its validity (Noelle-Neumann, 1993). Silence lends support to false claims, especially when experts fail to challenge the falsehoods in the scholarly press. Academics end up engaging in groupthink, accepting something as true because everybody else seems to think so, rather than questioning what John Kenneth Galbraith derisively termed "the conventional wisdom" (Galbraith, 1958, pp. 6–17).

We believe that there are several lessons to be learned from this story. First, manuscript reviewers in the humanities should be encouraged to do at least some fact-checking. With so many books and articles now available online, much fact-checking can be accomplished in the home or office, which was not the case when Maines' book was published. Editors and peer reviewers should also encourage critical assessments of established works. Journal editors in particular need to avoid assigning such manuscripts to reviewers who are invested in the work being criticized. Finally, scholars everywhere need to maintain their skepticism, not by rejecting surprising results out of hand, but by critically examining all research and being willing to challenge it when it is found wanting. Unless a spirit of fact checking and fearless critique is built into the culture of scholarly publishing, false historical narratives like Maines' will continue to be published and even praised.

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