



Marie Stopes's Wonderful Rhythm Charts

DOI:

[10.1353/jhi.2017.0033](https://doi.org/10.1353/jhi.2017.0033)

Document Version

Final published version

[Link to publication record in Manchester Research Explorer](#)

Citation for published version (APA):

Doan, L. (2017). Marie Stopes's Wonderful Rhythm Charts: Normalizing the Natural. *Journal of the History of Ideas*, 78(4), 595-620. <https://doi.org/10.1353/jhi.2017.0033>

Published in:

Journal of the History of Ideas

Citing this paper

Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights

Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy

If you believe that this document breaches copyright please refer to the University of Manchester's Takedown Procedures [<http://man.ac.uk/04Y6Bo>] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.





PROJECT MUSE®

Marie Stopes's Wonderful Rhythm Charts: Normalizing the
Natural

Laura Doan

Journal of the History of Ideas, Volume 78, Number 4, October 2017, pp. 595-620
(Article)

Published by University of Pennsylvania Press

DOI: <https://doi.org/10.1353/jhi.2017.0033>



➔ *For additional information about this article*

<https://muse.jhu.edu/article/676148>

*Marie Stopes's Wonderful Rhythm Charts:
Normalizing the Natural*

Laura Doan

In early 1913 Dr. Marie Stopes, a lecturer in paleobotany at University College, London, began to monitor daily changes in her body and mood to determine whether there existed a “normal, spontaneous sex-tide in women.”¹ Aged 32 and already an internationally respected authority on plant life, fossil plants, and coal, Stopes drew on her extensive training and experience in the study of the natural world to make an original contribution to a topic long regarded by male researchers as too “obscure” to examine objectively: namely, the “phenomena of sexual periodicity” in women.² Each month over the course of about two years, Stopes dutifully created a time chart on graph paper with handwritten annotations, entering her assessment of the daily values of her sexual arousal based on close and

The author wishes to thank Judy Klein for helping me to understand the difference between a graph and table, Andrew Fearnley for introducing me to the work of Karl Pearson, and Peter Cryle for giving me an opportunity to present this work to colleagues who share my interest in the discursive construction of normality. I am also grateful for the thoughtful and rigorous responses from two anonymous reviewers.

¹ Marie Carmichael Stopes, *Married Love: A New Contribution to the Solution of Sex Difficulties* (1918; Oxford: Oxford University Press, 2004), 42. Hereafter cited in text by page number as *ML*. The date “1913?” is written in pencil by a British Library archivist; cf. the Stopes Papers, British Library Add MS 58506, fol. 1. This volume contains the original manuscript and typescript of *Married Love*. British Library hereafter cited as *BL*.

² Havelock Ellis, “The Menstrual Curve of Sexual Impulse in Women,” *American Journal of Urology and Sexology* 15 (1919): 173, 174. Biographical details appear in Lesley A. Hall, “Stopes [*married name* Roe], Marie Charlotte Carmichael (1859–1939),” *Oxford Dictionary of National Biography Online*.

methodical self-observation (fig. 1). Using a statistical method called time series analysis, the botanist-cum-sex-researcher placed an x along a horizontal axis to measure the highs and lows from a point designated as a “datum line,” a technique that, she would later argue, made “graphically clear” the regularity of the “fundamental rhythm of feeling.”³ After subjecting her own body to the scientific gaze and recording the most intimate sensory data imaginable, Stopes would eventually enlist others to assist her in achieving one of her many great ambitions: to discover a naturally occurring curve of *normal* sex-impulses and thereby establish as a general law the “Periodicity of Recurrence of desire in women” (ML 39).

A flamboyant, controversial, and extraordinary figure—“one of the most important women of the twentieth century”—Stopes is best known now for her numerous books, pamphlets, and articles on marriage, birth control, motherhood, sex education, sexual health, and eugenics.⁴ Yet in addition to being a popular writer on matters pertaining to sex and sexuality, Stopes was also an excellent scientist who made significant interventions in her areas of specialization, authoring books and articles in learned journals on subjects as varied as carboniferous and cretaceous flora, the “epidermoidal” layer of calamite roots, and the “double nature of the cycadean integument.”⁵ After winning the “gold medal in botany” in her first year at University College, London, she was awarded double honors (first class in botany). Stopes then went on to achieve a string of distinguished accomplishments: “The only woman among five hundred men, Stopes completed and defended her thesis (in German) within the year, becoming the first woman in Munich to take a PhD in botany. In 1904 Stopes was appointed assistant lecturer in botany at Manchester University, another first for a woman. In 1905 she became the youngest doctor of science in Britain.”⁶ In this essay I will consider how Stopes’s understanding of science as a positivist and empiricist endeavor, her adept use of statistical methods, and her championing of citizen participation in confirming “her theory of the normal sexual cycle in women” enabled her to pioneer a new discursive formation of the sex lives of the “ordinary normal man and woman.”⁷ More often seen as an advocate of birth control or eugenic principles and ideals

³ BL Add MS 58506, fol. 3; ML 42, 39.

⁴ Peter Eaton and Marilyn Warnick, *Marie Stopes: A Checklist of Her Writings* (London: Croom Helm, 1977), 9.

⁵ *Ibid.*, 16, 17.

⁶ The excellence of Marie Stopes’s “remarkably successful career” is amply documented in the *Oxford Dictionary of National Biography Online* entry.

⁷ Dr. Jessie Murray, “Preface,” in *Married Love*, 7; H. MacKenna, *Eugenics Review* 10, no. 4 (1919): 236–38, 236.

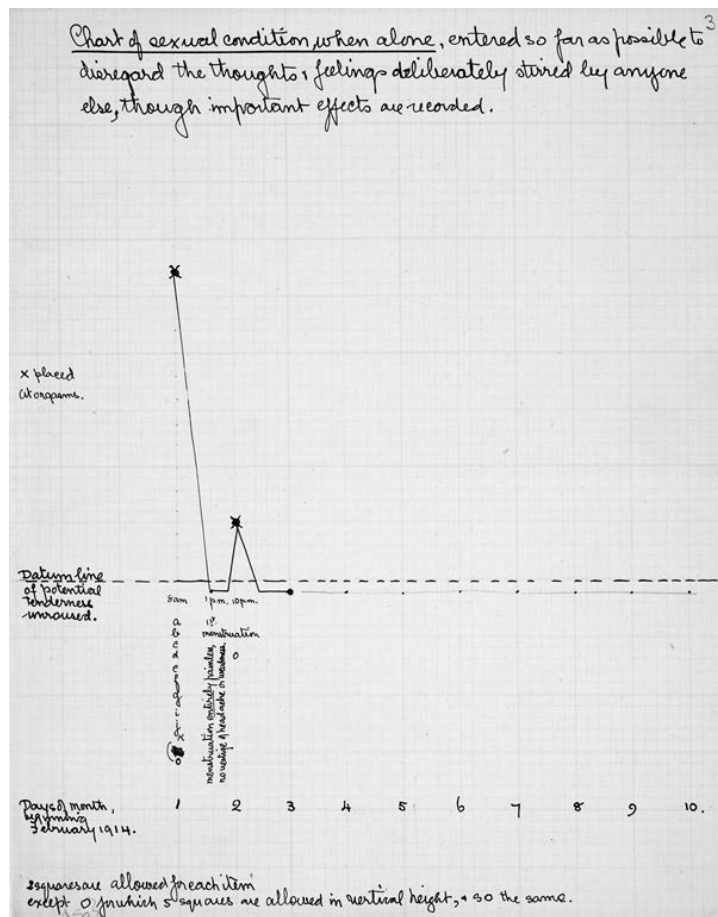


FIGURE 1: Chart by Marie Stopes (1913?). British Library Board, BL Add MS 58506.

than as a distinguished scientist, it has been difficult to grasp how her knowledge and expertise in modern botany gave her an edge over sexologists in configuring and popularizing the normalization of natural human sexual desires.⁸ Presented in simple language “for the ordinary untrained reader,” the botanist’s first excursion into modern sex research, *Married*

⁸ Lucy Bland and Lesley Hall have recently challenged the characterization of Marie Stopes as a “rabid eugenicist”: “There was certainly a strong eugenic strain in her views,

Love: A New Contribution to the Solution of Sex Difficulties, represented not only a major contribution to marital advice but also a textbook introduction to the natural *as normal* (ML 10). In this “definitive founding text of an entirely new genre of marriage manual,” Stopes entered the field not in the usual way, as a physician or psychiatrist, but as a botanist, a pathway regarded since the eighteenth century as respectable and ladylike.⁹ Empiricist methods, she believed, would demonstrate the existence and—more importantly—the regularity of sexual feeling in women.

Stopes’s measurement of the numerical values of women’s “physiological state of stimulation” did not explicitly demarcate the boundaries of a “normal” type of desiring subject (ML 37). Her linkage of “unspoken, unconscious” natural longings with the ideals of a marital love guided by scientific knowledge was more discursively complex (ML 37). Slipping between the multiple meanings of the word “normal,” *Married Love* refers to the sex-impulse as normal in the sense of a type, rule, or standard, a meaning that, according to the *Oxford English Dictionary*, became common around 1840. Toward the end of the nineteenth century, however, the etymology became more complicated, as medical discourse introduced a second—contradictory—meaning to refer to a person diagnosed as “free from any disorder,” mental or physical. We glimpse this contradiction in action in Stopes’s writings when she refers to the “fundamental rhythm of feeling” as normal while also addressing “those in the great majority—who are nearly normal, and who are married or about to be married” and who seek joy in marital union (ML 39; 10; 9). Here the descriptive (mere statistical variation in the measurement of a natural phenomenon) jostles against the prescriptive (a desirable and achievable goal in the measurement of, say, good health against a fictive reference point called average). In this way, as Ian Hacking observes: “One can use the word ‘normal’ to say how things are, but also to say how they ought to be. The magic of the word is that we

but it was modified by her feminist convictions”; see their essay “Eugenics in Britain: The View from the Metropole,” in *The Oxford Handbook of the History of Eugenics*, ed. Alison Bashford and Philippa Levine (New York: Oxford University Press, 2012), 217. Carla Hustak’s careful look at Stopes’s work on the reproductive lives of plants and birth control advocacy sheds new light on the discursive construction of the “natural”; see “The Stories Rocks Can Tell: Marie Stopes’ Evolutionary Narratives of Plant Sex in New Brunswick’s Fern Ledges,” *Gender, Place, and Culture* 21 (2014): 888–904.

⁹ Lesley A. Hall, *Sex, Gender and Social Change in Britain since 1880* (Basingstoke: Macmillan, 2000), 97. See also Sam George, *Botany, Sexuality, and Women’s Writing, 1760–1830: From Modest Shoot to Forward Plant* (Manchester: Manchester University Press, 2007).

can use it to do both things at once. . . . That is why the benign and sterile-sounding word 'normal' has become one of the most powerful ideological tools of the twentieth century."¹⁰

The "magic charm" of *Married Love* is that it does both things at once in saying how nature works but also in saying how men and their wives must heed the regularities of the sex-tide to achieve an "ideal unity" (*ML* 90; 91). These messy entanglements carved out discursive space for yet another cultural understanding of the normal: the modern heterosexual. The emergence of this third meaning raises the epistemological stakes still further.¹¹ In a radical departure from a sexological project deeply uninterested in "normal sexual development" in its pursuit of knowledge of the abnormal, anomalous, pathological, aberrational, or perverse, Stopes tucks her description of the rhythmic patterns of "many, many women" into the pages of a marital advice manual, thereby claiming the "beautiful desire for ideal unity" as the exclusive domain of the average "man and wife."¹² In offering her "little book" to "average, healthy, mating creatures," Stopes's elision of the descriptive and prescriptive associates a natural phenomenon ("how things are") with her vision of the way things "ought to be" between married lovers (*ML* 11). By the 1910s the educated elite would begin to use "normal" to designate a "heterosexual," and before long all three meanings would drift haphazardly, and sometimes illogically, into the collective consciousness.

After the publication of *Married Love* in 1918, Stopes, who saw herself as a "true-born scientific investigator," quickly became something of an "agony aunt" to many thousands of readers, even while continuing to publish academic papers on aspects of coal and paleobotany.¹³ Based at University College, London, the same institution as the leading figures of biometry,

¹⁰ Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990), 163, 169.

¹¹ For a groundbreaking history of heterosexuality, see Jonathan Ned Katz, *The Invention of Heterosexuality* (New York: Dutton, 1995).

¹² *ML* 37; 91; 90. As Havelock Ellis observed: "Histories of gross sexual perversion have often been presented in books devoted to the sexual instinct; it has not hitherto been usual to inquire into the facts of normal development. Yet it is concerning normal sexual development that our ignorance is greatest"; cf. Ellis, *Studies in the Psychology of Sex: Analysis of the Sexual Impulse: Love and Pain: The Sexual Impulse in Women*, 2nd ed., rev. and enl. (Philadelphia: F. A. Davis, 1927), vi.

¹³ Letter from Stopes to LI. Lloyd, 13 May 1919 (BL Add MS 58482, fol. 106); Hall, "The English Have Hot-water Bottles': The Morganatic Marriage of Medicine and Sexology in Britain since William Acton," in *Sexual Knowledge, Sexual Science: The History of Attitudes to Sexuality*, ed. Roy Porter and Mikulas Teich (Cambridge: Cambridge University Press, 1994), 358.

including men such as Karl Pearson, W. F. R. Weldon, and George Udny Yule, Stopes continued to gather data to support her thesis concerning the rhythmic regularity of sexual desire.¹⁴ Keen to apply scientific protocols to further her passionate feminist commitment to sex reform and equal rights for women in the realm of pleasure, she carefully explained her rationale and purpose in gauging the rhythms of the sex-tide and, in so doing, established the legitimacy of investigating female sexual desire. In formulating the expression “sex-tide,” Stopes created a neologism that wonderfully captured the uniqueness of a project at the nexus of biometry and sex research, construing the “manifestations” of “sex-feelings” as observable, measurable, and, above all, natural—as natural as the rhythmic tidal flows of the lunar cycle.¹⁵ To correct what she perceived as the misconceptions of medical practitioners regarding the true nature of women’s sex-feelings, Stopes applied a rigorous statistical approach to the study of the body and populations. Like her colleagues at the epicenter of biometric research in Britain, Stopes used graphical statistics to track fluctuation over time and show what was typical or regular in any given cycle. Periodicity was a popular topic in the early decades of the last century, taken up by economists to illustrate seasonal trends in the market, statisticians to study meteorological data, and, most relevant to my interest in Stopes’s scientific exploration of female sexual desire, biometricians to measure organisms.¹⁶ Measuring orgasms, of course, was rarely—if ever—an activity undertaken by the professional biometrician, whose primary concern was the study of measurement in biology. This point is crucial because in this essay I want to assess the gains and losses in applying biometrical techniques to the study of the rhythms of the sex-impulse in the discursive production of the natural as normal, an approach that could not be more different from that of medically trained sexologists such as Havelock Ellis, a figure at the forefront of sex research in Britain at this time.

Stopes read widely on all aspects of love, marriage, and the family, but always favored the methods of the natural sciences over psychology and was outspoken in her antagonism toward Freud and his followers.¹⁷ In *Sex*

¹⁴ For an account of the life and career of Karl Pearson, see Theodore M. Porter, *Karl Pearson: The Scientific Life in a Statistical Age* (Princeton: Princeton University Press, 2004).

¹⁵ BL Add MS 58506, fols. 19 and 20. Hustak explains that the phrase “sex-tide” “was more than simply a metaphor but, in fact, drew on contemporary scientific discourses on the unities across plant, animal, and human life”; see “Stories Rocks Can Tell,” 897.

¹⁶ Cf. Judy L. Klein, *Statistical Visions in Time: A History of Time Series Analysis 1662–1938* (Cambridge: Cambridge University Press, 1997), 256, 246.

¹⁷ In a 1922 letter to a physician in Bradford, Stopes writes: “I am very much against the

and the Young (1926) Stopes advised readers to steer clear of the psychoanalysts, whose writings she decried as disgustingly obscene and “filthy in the extreme.”¹⁸ This suspicious and hostile attitude toward psychoanalysis is striking in a modern thinker who exchanged work with Ellis and it hampered her efforts to account for the psychosexual dynamics of sexual arousal. Stopes acknowledged Ellis as a world-renowned specialist on the subject of “women’s psycho-physiological life,” but her scientific methods were more congruent with the principles outlined by Pearson, who asserted the power of science to produce an objective knowledge of the “normal human being.”¹⁹ Unlike Ellis, whose writings were (ostensibly) restricted to professionals, Stopes was an enthusiastic believer in Pearson’s argument that “pure science” should be “within the reach of all . . . citizens” rather than being the exclusive preserve of specialists.²⁰ As such, she moved beyond merely educating the public in sexual matters and, in disseminating her findings on periodicity in the fourth chapter of her bestselling advice manual, became a forceful advocate of citizen participation in sex research.

Sexual desire as the stuff of time charts and numbers is my chief concern in considering, on the one hand, the difference methodology makes in constructing the “natural” as “normal” (the latter denoting “an entire distribution of observations, the mean of which was the typical value”) and, on the other, the difference disciplinarity makes in constructing people as normal.²¹ Without question Ellis’s understanding of the psychosexual is unrivaled, but we shouldn’t underestimate the influence of Stopes in linking the natural with the normal. My analysis of the writings of these two leading researchers on the phenomenon of periodicity points to sex research in the early twentieth century as a site in which competing models of scientific inquiry vied for authority. After looking first at Stopes’s innovative use of time series analysis in comparison with Ellis’s two periodicity tables, I will turn to some of the letters Stopes received from her readers, drawn from a vast postal archive housed at the Wellcome Library in London. If, as I believe to be the case, the critical assessment of early sexual science is entering an exciting new phase in the historicizing of sexuality, we need also to explore the multiple cultures of scientific practice, asking with utmost historical specificity what it means to study sex “scientifically.”

parade of unwholesome sex matters particularly by the psychoanalysts”; cf. Ruth Hall, ed., *Dear Dr. Stopes: Sex in the 1920s* (London: Andre Deutsch, 1978), 99.

¹⁸ Stopes, *Sex and the Young* (London: Putnam, 1926), 87.

¹⁹ Ellis, “Menstrual Curve of Sexual Impulse in Women,” 179; Karl Pearson, *The Grammar of Science*, 2nd ed. (London: Adam and Charles Black, 1900), 75.

²⁰ Pearson, *Grammar of Science*, 7.

²¹ Klein, *Statistical Visions in Time*, 208.

STOPES'S CHARTS VERSUS ELLIS'S TABLES

Historians of sexuality take it as axiomatic that the emergence of the study of sex and sexuality in the late nineteenth century constituted a new branch of *science*. In an astute historical survey of early sexology, Chris Waters repeatedly characterizes sexologists as “scientists,” asking “what was the ‘truth’ of sexuality the new science discovered?”²² Eventually, sexology’s evidentiary base and methodological toolkit would expand exponentially as practitioners like Ellis turned to fields such as anthropology, ethnography, sociology, history, classics, and literary studies. Tracing these cross-disciplinary movements “beyond the medical,” co-authors Kate Fisher and Jana Funke observe that, for British and German sex researchers, sexual science ranged “across the natural sciences, human sciences, and social sciences,” freely incorporating “nonmedical views of sexuality, including feminist, social purist, or reformist approaches.”²³ Situating this eclectic field within a broader political and cultural framework adds nuance and complexity to the historiography of sexuality. Yet if, in the early twentieth century, sex was investigated “not just medically but, more importantly, *scientifically*,” we cannot assume as self-evident the cultural meanings of these terms.²⁴

According to Howard H. Chiang, this key transitional moment marked a shift from the “psychiatrization of sex” to the “scientification of sex.” However, while Chiang insightfully analyzes the epistemological consequences of the case-history method in psychiatry, which assessed human behavior as normal or pathological, he overlooks “scientification.” Such neglect is curious in light of a lengthy discussion contrasting a “*statistical metric of normalcy*” against a “*clinical metric of normalcy*.”²⁵ Implicit in this formulation are the two ways of knowing we see in Stopes and Ellis—the scientific and the medical—but we also need critical traction on the distinctive operations of these interrelated discourses. At the start of the last century, even the words “science” and “scientific” were considered so

²² Chris Waters, “Sexology,” in *Palgrave Advances in the Modern History of Sexuality*, ed. H. G. Cocks and Matt Houlbrook (Basingstoke: Palgrave Macmillan, 2006), 41.

²³ Kate Fisher and Jana Funke, “British Sexual Science beyond the Medical: Cross-Disciplinary, Cross-Historical, and Cross-Cultural Translations,” in *Sexology and Translation*, ed. Heike Bauer (Philadelphia: Temple University Press, 2015), 95, 110, 96.

²⁴ Howard H. Chiang, “Liberating Sex, Knowing Desire: *Scientia Sexualis* and Epistemic Turning Points in the History of Sexuality,” *History of the Human Sciences* 23, no. 5 (2010): 42–69, at 47, emphasis in original.

²⁵ *Ibid.*, 52.

varied as to require “clarification,” let alone the word “medicine.”²⁶ In 1907, for instance, the educator T. P. Nunn reserved the term “Science” to denote a “certain body of knowledge,” and “scientific” for the “method or procedure” that produced that knowledge. To come to terms with the heterogeneity of sexual science, we must accept the inadequacy of regarding “science” as beyond explanation.

At the time of Stopes's and Ellis's research on female periodicity, the most influential philosopher of science in Britain was Karl Pearson, whose “extreme” positivist views of science resonate in the writings of the botanist.²⁷ Stopes, like Pearson, insisted on direct observational evidence and used statistical analysis “not to explain but to describe” biological systems through “conceptual shorthand.”²⁸ Stopes seized every opportunity to remind readers of her credentials: on the title page of *Married Love* she lists her various academic and professional qualifications (“Doctor of Science, London; Doctor of Philosophy, Munich; Fellow of University College, London; Fellow of the Royal Society of Literature, and the Linnean Society, London”), and she signs a note at the end as Dr. M. C. Stopes. To suggest she merely adopted the “rhetoric of scientific objectivity as a shield against the dangers of eroticism and pornography” is to seriously underestimate the significance of her achievement: to demonstrate—as a feminist *and* a scientist—the existence of women's sex-tides, a project she regarded as on par with the study of the “wave-lengths of water, of sound, [and] of light.”²⁹ Every inch the scientist, Stopes regarded observation and measurement of a biological phenomenon as a key objective of the natural sciences. For Stopes science was neither male nor female but a means to investigate the rhythms of the sex-tide, since “if its indications were obeyed, [it] would ensure not only [woman's] enjoyment, but would explode the myth of her capriciousness.”³⁰ Empirical science discovers—through induction—the regularities of the observable world that, for Stopes, entailed postulating a scientific law based on the greatest amount of data possible to confirm its existence.

²⁶ Richard R. Yeo, “Scientific Method and the Rhetoric of Science in Britain, 1830–1917,” in *The Politics and Rhetoric of Scientific Method: Historical Studies*, ed. John A. Schuster and Richard R. Yeo (Dordrecht: D. Reidel, 1986), 285–86.

²⁷ Gerd Gigerenzer et al., *The Empire of Chance: How Probability Changed Science and Everyday Life* (Cambridge: Cambridge University Press, 1989), 89.

²⁸ Pearson, *Grammar of Science*, 275, 261.

²⁹ Paul Peppis, *Sciences of Modernism: Ethnography, Sexology, and Psychology* (Cambridge: Cambridge University Press, 2014), 161; *ML* 36.

³⁰ *ML* 36. Peppis contends that Stopes was interested in challenging “male science,” and suggests her charts “lack information typically understood as necessary to verify scientific method and secure scientific authority”; cf. Peppis, *Sciences of Modernism*, 160, 159.

Stopes followed Pearson in seeking to apply statistical analysis and scientific reasoning to establish a “general law deduced from observed data.”³¹ For Stopes and Pearson alike, the “very life-blood of science” is the formulation of a “law in the scientific sense.”³² According to the intellectual historians Peter Cryle and Elizabeth Stephens, there was no shared understanding among statistical thinkers about what a “law” was. Adolphe Quételet, for instance, associated a scientific law with causality, a position John F. W. Herschel and others criticized. Pearson was at the forefront of the shift from causality to correlation, effectively transforming what it meant to speak of a law in the scientific sense.³³ As Pearson elaborates: “classification and generalization have to follow; conceptions and ideas, pure products of the mind, must be formed, before a description can be given of a range of sequences which, by its conciseness and comprehensiveness, is worthy of the name of scientific law.”³⁴ While Ellis was keen to propose periodicity as a scientific fact, he was wholly uninterested in confirming the phenomenon as a scientific law. Time and again Ellis refers to the idea of knowledge as scientific but rarely—in any of the volumes of his mammoth *Studies in the Psychology of Sex*—references a law as scientific, referring more often to law in the juridical sense. For this reason, it is hardly surprising that Pearson held Ellis’s work in low regard, dismissing the sexologist’s discussion of gender variation, for example, as “pseudo-scientific superstition.”³⁵ Ellis, often described as a trained medical doctor, actually “failed to achieve more prestigious qualifications” and was awarded a “licentiate of the Society of Apothecaries, which nevertheless qualified him to practice.”³⁶ As a result, in shaping the discourse of *scientia sexualis* Ellis conformed to the rules of medicine and psychiatry that, as Foucault and others elucidate, accounts for sexology’s abiding interest in the pathological, “probably the most powerful and most consequential collective singular idea that defined medicine.”³⁷ For this reason, Ellis’s methods would

³¹ BL Add MS 58506, fol. 27.

³² Pearson, *Grammar of Science*, 31, 87.

³³ See Peter Cryle and Elizabeth Stephens, *Normality: A Critical Genealogy* (Chicago: University of Chicago Press, 2017).

³⁴ Pearson, *Grammar of Science*, 86.

³⁵ Phyllis Grosskurth, *Havelock Ellis: A Biography* (New York: Knopf, 1980), 171.

³⁶ Jeffrey Weeks, “Ellis, (Henry) Havelock (1859–1939),” *Oxford Dictionary of National Biography Online*. In an 1892 letter to J. A. Symonds, Ellis understands himself as a “medical writer”; letter from Ellis to Symonds, 21 December 1892 (Havelock Ellis Papers, BL Add MS 70524, fol. 91).

³⁷ Michel Foucault, *The History of Sexuality*, vol. 1, *An Introduction*, trans. Robert Hurley (London: Penguin, 1990), 54–55; Michael Hagner, “Scientific Medicine,” in *From Natural Philosophy to the Sciences: Writing the History of Nineteenth-Century Science*, ed. David Cahan (Chicago: University of Chicago Press, 2003), 58. For an account of

always produce a version of sexual knowledge that mapped unevenly onto Stopes's.

Stopes and Ellis both sought to demonstrate the cyclical nature of female sexual desire, but the method of the natural scientist, in recording varying values over a given period of time, generated a very different kind of knowledge of periodicity than Ellis's method. These differences illustrate how marital advice and sexual science were not coextensive, as is often asserted, but were distinct ways of knowing and styles of reasoning. In March 1916 Stopes presented a scientific paper on periodicity to a group of women physicians, featuring many of the ideas and arguments that would appear in *Married Love* two years later. Intriguingly, this earlier version allows a glimpse of Stopes-the-scientist speaking to colleagues in a cognate field. Glossing over the precariousness of an inadequate database, she peppers her talk with vague references to "all my cases" or "cases . . . [of] women of a great variety of type."³⁸ After remarking on four "sample cases," the natural scientist explains how the data she obtained came to be "crystallized into a Law."³⁹ Even so, the strength of her argument rests less on her cases than on one of her charts, an aggregate of the numerous occurrences of the phenomenon, and a method of graphical representation that, compared with Ellis's two tables, points not only to the ways methodology determines and overdetermines the production of the natural as normal but also to a crucial epistemological split.

Far from cribbing "her ideas of periodicity" from Ellis, as one historian claims, the sexologist acknowledged Stopes's contribution as groundbreaking: "I must confess that the question of such a curve had not even occurred to me. Such a failure may seem inexcusable. . . . But, for my own part, I failed to make the search."⁴⁰ He continues: "At this stage enters Dr. Marie Stopes with an attempt, on the basis of new data, to construct a real menstrual curve of sexual desire in women," which he "had been able to construct in the case of men."⁴¹ Excited by Stopes's findings, Ellis decided to try a similar test, uncertain he could confirm the reliability of her conclusions; in so doing, he sought to circumvent a flaw he had discerned in

the involvement of psychiatrists and medical specialists, see Ivan Crozier, "Pillow Talk: Credibility, Trust, and the Sexological Case History," *History of Science* 46, no. 4 (2008): 375–404.

³⁸ BL Add MS 58506, fol. 22.

³⁹ *Ibid.*, fol. 23.

⁴⁰ Lisa Z. Sigel, *Making Modern Love: Sexual Narratives and Identities in Interwar Britain* (Philadelphia: Temple University Press, 2012), 39; Ellis, "Menstrual Curve of Sexual Impulse in Women," 174, 175.

⁴¹ Ellis, "Menstrual Curve of Sexual Impulse in Women," 175.

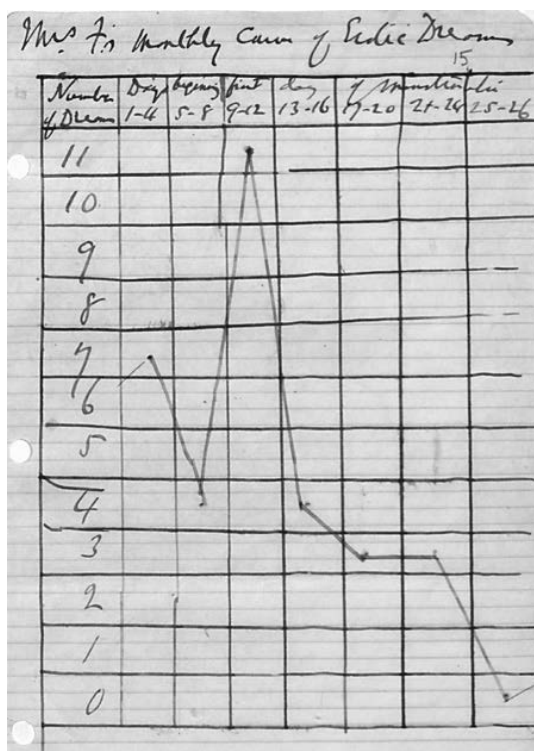


FIGURE 2: Havelock Ellis’s table of Mrs. F (n.d.). British Library Board, BL Add MS 58564.

Stopes’s work. Using the medico-scientific method of the individual case history to create knowledge of a natural phenomenon, Ellis reported on the tabulations of Mrs. F., who kept track of the number of her erotic dreams, and Mrs. A, who counted the number of times she masturbated over the period of a month (fig. 2). Ellis knew that to ascertain the regular recurrence of an “organic sexual impulse,” it was critical to eliminate the influence of “auto-suggestion.” His method, however, measures the sexual impulse by proxy: to confirm its recurrence over a number of days requires a leap of faith of its observability in the individual act. Calculating the instances of an individual’s dreams or autoerotic acts over a total number of days usefully tallies the experience of two informants, but the frequency table solely plots raw data over time. A different mode of quantitative analysis is

required to illustrate the central tendency we now associate with normality, an abstraction that needs to be seen as the “convenient result of an arithmetical operation,” allowing us to imagine the normal as a “‘real’ feature of a population.”⁴²

In contrast, Stopes's statistical method of time series analysis shows a trend by recording differing values over a particular time period. Rather than quantify whether or not an event took place, Stopes attempts to represent graphically the sequentiality of a phenomenon while also gauging its intensity. For Stopes accurate measurement is paramount, as she explains to her specialist audience:

in this case a single square of the charting paper, in a vertical direction, is allowed for, first, the consciousness of desire at all, a second square for strong desire, and a third for very intense, almost uncontrollable desire. Two squares were allowed for the spontaneous occurrence of un-induced orgasms. A square *below* the datum line marks the phases during which the thought of sex is repugnant, and along the datum line itself runs the periods during which spontaneous sex-thoughts do not arise but can be pleasantly induced by extraneous stimuli. The straight lines in between are obtained by merely joining up recorded points.⁴³

Here, then, is the periodicity chart of the average woman—“deduced” from the “observed data” of numerous “cases of healthy women,” whose “wavecrests . . . recur at definite intervals” with high points appearing every two weeks.⁴⁴ Stopes also refers to other more complex charts detailing physiological responses with a frankness that would be absent in *Married Love*, mentioning the “turgidity” of breasts and clitoris, and even the detection of vaginal secretion.⁴⁵ Confident her method represents the “*normal* sex-sequence” of any “healthy, well-fed, middle-class woman of northern European nationality,” Stopes posits a scientific law based on the principles of mathematical probability, which both inscribes and effaces the values of the observant researcher and her “many, many” cases.⁴⁶ Stopes's understanding of periodicity, like Ellis's, is informed by the individual case, but for her the ultimate importance of the case disappears through the application of

⁴² Hacking, *Taming of Chance*, 108.

⁴³ BL Add MS 58506, fol. 26, emphasis in original.

⁴⁴ *Ibid.*, fols. 27, 25, and 28.

⁴⁵ *Ibid.*, fol. 27.

⁴⁶ BL Add MS 58506, fol. 27, emphasis in original; *ML* 37.

the law of large numbers, an epistemological conundrum that scholar Mary Poovey characterizes as the “double paradox of statistical thinking.”⁴⁷ The very individual “on which the average is based . . . is obliterated by the numerical average or aggregate that replaces” her. No matter how exceptional the individual case, Stopes’s collection of data and its graphical representation indicate the normal wave-crests of the average woman, an abstraction in which the case history vanishes.

NORMALIZATION AND CITIZEN SCIENCE

Writing in the *American Journal of Urology and Sexology* in 1919, Ellis would raise questions about the “nature and extent of Dr. Stopes’s data,” even as he judged her findings convincing.⁴⁸ Stopes herself recognized the need for more data to endorse or refute her theory of the Law of Periodicity and called on readers of *Married Love* to become participant-observers by supplying personal information about their lovemaking habits and sexual longings. On the book’s final page she writes: “While I believe that the charts I give of the Law . . . truly represent the fundamental rhythm of average healthy women, it must be remembered that my theory is new, and every well-authenticated case for or against it will be valuable. I invite letters from those who can confirm, qualify, or correct my views from their own experience. To obtain scientific knowledge the largest possible number of individual cases must be studied. All communications will be treated with the strictest confidence” (*ML* 107). This paragraph is highly significant in transforming members of the reading public into active collaborators in the project of normalization and points to a very modern understanding of science as essential to a democratic society, a position congruent with Pearson’s call for the development of “scientific habits of mind” for a “more efficient citizenship.”⁴⁹ Like no other sex reformer or sexual scientist at this time, Stopes celebrated “the close physical union of the final sex-act,” mediated through a scientific discourse, and consequently crafted a style immensely appealing to a wide readership (*ML* 39).

Within weeks of the publication of *Married Love*, Stopes was deluged

⁴⁷ Mary Poovey, “Figures of Arithmetic, Figures of Speech: The Discourse of Statistics in the 1830s,” in *Questions of Evidence: Proof, Practice, and Persuasion across the Disciplines*, ed. James Chandler, Arnold I. Davidson, and Harry Harootunian (Chicago: University of Chicago Press, 1994), 414.

⁴⁸ Ellis, “Menstrual Curve of Sexual Impulse in Women,” 175.

⁴⁹ Pearson, *Grammar of Science*, 9.

with letters from appreciative readers from around the world, eager for the most up-to-date medical information available, reassured by a rhapsodic prose in which the wave-crests of love ripple and billow, and reveling in Stopes's frank and lucid account of human physiology and reproduction. Diligently reporting their successes and failures in heeding Stopes's sound advice on the do's and don't's of sexual relations, conduct, and technique, readers' comfort levels were raised, too, by *Married Love's* fashioning of an epistemology of the physical act of sex as "decent" and "hygienic"—normal sex for the married couple as "clean" because of its status as natural and scientific (*ML* 88; 49). This is evident in a 1922 letter by an academic who felt he could share "the most intimate and cherished secrets" of his relationship with his wife because—as a "scientific worker"—Stopes would "extract" material only of "impersonal and scientific interest."⁵⁰ Women in particular expressed relief and pleasure in no longer feeling "ashamed" of their so-called "animal instincts."⁵¹ Rendering natural sexual desire as normal disrupted (but did not displace) an older discursive formulation that pitted the "primitive"—or "mere animal relief"—against its opposite, "civilized" and "refined."⁵² Stopes's use of time series analysis not only vividly exhibits the periodicity of female sexual feeling but, more importantly, constructs a natural phenomenon as both typical *and* ideal, descriptive and prescriptive.

Soon Stopes's biometrical methods in researching normal sexuality would become widespread, as discerned in this excerpt from a letter she received in 1919 from an Englishman living in Cairo: "Your Rhythm table has opened my eyes . . . and explained many things which were mysteries, and you have earned a world's gratitude for having set out so scientifically a phase of life which has never previously been touched upon. . . . Your table is wonderfully correct from my own experience."⁵³ Some months later, this Englishman's wife also wrote to confirm her "experience of the rhythmic waves . . . is just as you have said. . . . I had never realized why it was that at times one had the greater desire for intercourse while at others one had absolutely none although one's outward relationship remains

⁵⁰ T. C. N., Cambridge, 21 September 1922, Papers of Marie Carmichael Stopes (PP/MCS)/A/190, Wellcome Library, London. I have identified correspondents only by their initials to preserve confidentiality, as requested by the Wellcome.

⁵¹ Mrs. E. C., London, 7 January 1919, PP/MCS/A/68.

⁵² Mrs. M. B., London, 18 November 1919, PP/MCS/A/42; Sec. Lieut. D. A., Cairo, 31 December 1918, PP/MCS/A/15; and Anonymous, Blackpool, 16 September 1918, PP/MCS/A/1.

⁵³ Mrs. A. P. B., Cairo, 26 May 1919, PP/MCS/A/34.

exactly the same.”⁵⁴ To many of its readers, *Married Love* seemed to reveal the truth of women’s nature: the rhythmic waves epitomize the modernity of the scientific fact as “preinterpretive or even somehow noninterpretive.”⁵⁵

Some correspondents went further and sketched the rise and fall of individual sex-tides over a designated period of time, usually in reference to the menstrual cycle. Hand drawn, often on graph paper, these fascinating charts display not the statistical truth of a natural phenomenon but the cultural consequences of ordinary people’s attempts to make sex modern through measurement, their sparse annotations referencing the quotidian. The power of the graph is its clarity and accessibility, qualities frequently compromised by readers’ misunderstanding of Stopes’s purposes. What matters most in these charts is time itself, the everydayness of sex: “menstrual flow 3–5 days, every 26 days”; “day of calendar month”; “days after beginning of menstrual flow”; the “number of unions on any day of the monthly cycle”; “28 days to next period”; and “about four days.”⁵⁶ A notable exception is a rare “diagram of the sexual life of the male” by a skeptical reader who tracks periodicity outside dailiness—using phrases such as “normal track,” “indeterminate period,” “stimulus,” “peak,” and “trough”—to illustrate his argument that Stopes’s “task” was “impossible.”⁵⁷ Conspicuously absent from this chart and the others is a clear explanation of what it is each informant measures or how the baseline was established. The parameters of arousal vary, with no reference to how increments of intensity have been gauged, the charts indicating only the daily occurrence or non-occurrence of an unspecified event. More curious still, apparently unaware or uninterested in the ideological purposes of Stopes’s charts in rendering through positivist-biometrical methods “man and woman” as “ordinary” and “normal,” in their charts readers do not reference Stopes’s key phrase (“level of potential desire”) nor elaborate on the meaning of the baseline from which degrees of deviation have been tabulated.⁵⁸

In a chart from 1918, the correspondent copies Stopes’s format to demonstrate a crest that occurs “after” rather than “before” menstruation, a

⁵⁴ Mrs. A. P. B., Cairo, 27 October 1919, PP/MCS/A/34.

⁵⁵ Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), xii.

⁵⁶ A. J. W., Crewe, November n.d., 1918, PP/MCS/A/8; A. A.-I., Papua, 19 January 1921, PP/MCS/A/8; H. C. L. H., Cambridge, 9 June 1924, PP/MCS/A/127; F. W. B., Albuquerque, 19 July 1931, PP/MCS/A/30.

⁵⁷ B. G., London, 2 June 1918, PP/MCS/A/104.

⁵⁸ H. MacKenna, *Eugenics Review* 10 (1919): 236–38, 236; *ML* 43.

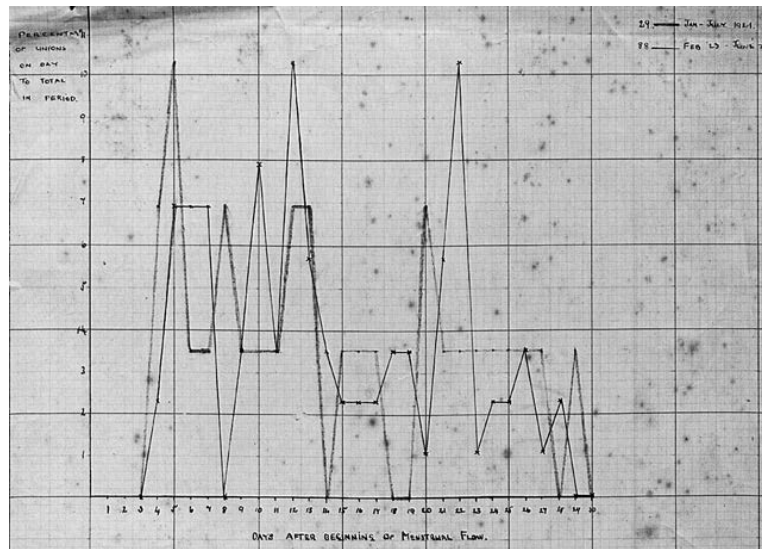


FIGURE 3: Chart of a Reader (1924). The Wellcome Library, London. Papers of Marie Carmichael Stopes, PP/MCS/A.127.

pattern that, as Stopes comments in her reply, places the wife among “not more than 5% of people” (a fact that, statistically speaking, points to abnormality).⁵⁹ Another letter written in 1924 by an Oxbridge don prepares two charts not to map his wife’s interest or disinterest in sex but to count instances of copulation, treating the sex-union as an index of potential arousal. He explains how he tallied “the number of unions on any one day of the monthly cycle, reckoned from the first day after the beginning of the menstrual flow.”⁶⁰ His Chart B (fig. 3), he continues, was “designed to discover whether we experienced any regular periods of passion which led to union. It shows the percentage of unions on any one day in the monthly cycle to the total of the unions in the whole of that period.” Saturated in the discourse of statistics (percentages, totals, and numbers), the data set could not be more precise. Such accuracy notwithstanding, these charts, along with those of other readers, offer compelling evidence of the limitations of Stopes’s singular interest in temporality. In privileging observation

⁵⁹ W. J. A., Crewe, November n.d., 1918, PP/MCS/A/8; letter from Stopes to W. J. A., 9 November 1918, PP/MCS/A/8.

⁶⁰ H. C. L. H., Cambridge, 9 June 1924, PP/MCS/A/127.

of a bodily function over the psyche, Stopes solicited data pertaining not to the how, what, why, or where of the “physiological state of stimulation,” but only *when*, asking, “when in this period is it that a normal healthy woman feels desire or any upwelling of her sex-tides?” (*ML* 37; 41). Yet even as her question pivoted implicitly on the intricate interplay of body and mind—the physicality of “any upwelling” entangled with the emotions, fantasies, or dreams, as Ellis recognized—Stopes constructed sexual feeling as a force or surge measurable across time. Stopes lacked the technology to calibrate sex-feelings, and thus this insistence on ascribing singular importance to what can be observed each day of a calendar month, and therefore measured and charted, precluded a more complex understanding of the human experience of sex.

Pitching her views on marital love to ordinary readers rather than medical and legal professionals, Stopes characterizes her findings as “less a record of a research than an attempt to present in easily understandable form the clarified and crystallized results of long and complex investigations” (*ML* 9). That said, the author of *Married Love* was as passionate in her political aims and objectives as in her commitment to scientific practices. Chart I stresses the paramount importance of synchronicity to prevent marital rape and foster conjugal harmony, while Chart II warns of the unnatural and deleterious effects of modern life on women’s sex-impulses—a critique at once devastating and incisive, if incompatible with the protocols of “objective” scientific investigation. Readers’ charts, on the other hand, quantify—and, more troublingly for the collator of data, quantify something different, for reasons as difficult to pin down as recounting how sexual yearning feels. Correspondents warm to the idea of sex-talk as “scientific,” but their comments demonstrate the powerful aura of scientific thinking more than any clear understanding of the law of periodicity, its rhythmic predictability and regularity, the curves at temporal intervals rising and falling in relation to a baseline. Offering no analysis or speculation on the meaning of their charts, readers’ flat descriptions provide only raw data, their engagement with Stopes’s theory limited to emulating her methods. Eager to configure their experience in terms of variables and distribution, readers seem unaware of how their evidence corroborates Stopes’s theory of the phenomenon, sometimes with unanticipated results. A young husband from Crewe, for instance, assesses female desire in terms of male control: “I have generally waited until the 2nd wave time, and then by caresses and love play tried so to intensify my wife’s longing for connection. . . . If I control it by going slowly I don’t arouse the sensation at all. . . . And it is only going moderately quick that

she feels her nature aroused.”⁶¹ In contrast to Stopes, who compares the physical sensation of sex-hunger to an appetite for food, this citizen-scientist refers to his wife's sex-feeling as hot or cold, depending on the efficacy of his technique and performance. Of primary concern for this sufferer of premature ejaculation is the gratification of his sexual needs rather than the enhancement of sexual pleasure for his partner, an unintended consequence of Stopes's feminist project to democratize sexual knowledge.

The epistolary exchanges between Stopes and her public show that some individuals were prepared to share intimate details of their sexual lives for any number of reasons and not always to confirm the existence of her law. Stopes's success rate in persuading husbands to monitor their wives' natural rhythms for the sake of female sexual pleasure may have been hit or miss, but there is no denying her one great achievement in inviting great swathes of the reading public to overcome reticence and embarrassment in discussing matters pertaining to sex. Gathering this store of information was no small feat, as Stopes admitted in reference to her first chart: “I may say that this comparatively simple record is all that it is feasible to obtain from average women, and that is by no means easy!”⁶² To prove that the “potential presence of desire” was as “perpetual in modern woman, as in modern man,” Stopes solicited and received thousands of personal records of marital experience.⁶³ Whether those individual experiences were exceptional or unexceptional was beside the point. More important was amassing an extensive database on which to establish the validity of her theory. Indeed, exceptions to the rule of average were accepted as inevitable but inconsequential since, in creating a knowledge of the many as normal, the “normal individual”—like the case history—disappears: normalizing the natural reduces the multiple and various experiences of any number of individuals into an entity called a “type.”

THE RARITY OF THE NORMAL TYPE

Convinced she had detected a rhythmic pattern in female sexual desire, Stopes reproduced in *Married Love* two charts to depict the ebb and flow

⁶¹ W. J. A., Crewe, November n.d., 1918, PP/MCS/A/8.

⁶² BL Add MS 58506, fol. 26. That British readers were quick to answer Stopes's request for personal information indicates a time lag between the UK and US. North Americans, as historian Sarah E. Igo writes, responded to mass surveys “in the 1920s” but it “was not obvious . . . that citizens would accept prying questions”; see *The Averaged American: Surveys, Citizens, and the Making of a Mass Public* (Cambridge, Mass.: Harvard University Press, 2007), 3.

⁶³ BL Add MS 58506, fol. 37.

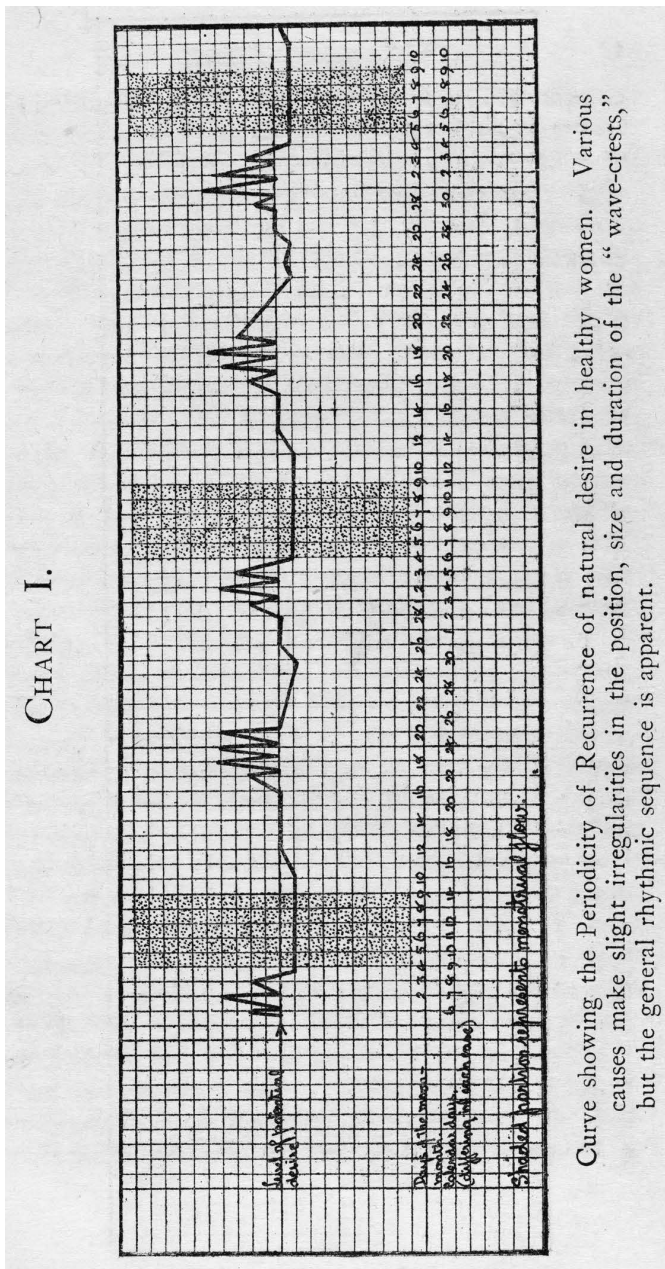
of intensity over a twenty-eight-day period—a hypothesis and method she regarded as wholly scientific. In Chart I (fig. 4) we see the cycles of women’s primitive sex-tides, its caption explaining that the “general rhythmic sequence” of any given woman conforms to a discernible pattern, although, for any number of reasons, there exist “slight irregularities in the position, size, and duration of the ‘wave-crests’ ” (*ML* 43). Stopes describes the second chart (fig. 5) as exemplifying “very prettily” the rise and “slackening of the wave-crests” of an “individual subject.”⁶⁴ Chart II also shows the damaging effects of modern life on sexual feeling compared with the restorative effects of taking in the “Alpine air” (*ML* 44). Situated in the human experience of the everyday, the chart calculates periodicity in relation to the lunar and calendar months, its curve revealing the “depressing effects on the ‘wave-crests’ of fatigue and over-work,” and thereby highlighting Stopes’s anxieties that the frantic pace of modern urban life was wreaking havoc on the natural rhythms of sexual desire. Just as smog clogs the lungs and makes it difficult to breathe, so too do the demands of “city life” sap the sexual vitality of women (*ML* 42). The “primitive sex-tides” of married lovers, she asserts, have been obfuscated by noisome distractions and overstimulation, and consequently natural sex-urges misfire (*ML* 39). To sustain the illusion of objective scientific inquiry, Stopes refers to herself in the third person (“the subject then went to Switzerland for a holiday”), with no indication the values recorded in Chart II were actually her own: “the subject *normally* had a well marked period of spontaneous desire during the three days preceding the menstrual flow, and also a fortnight later in the mid-sestrum.”⁶⁵ Due to “excessive overwork” her “vitality” had been greatly “reduced” and was “barely recognizable,” until she escaped to the Alps. Under the abnormal conditions of modern living, the rhythms of even the most normal of subjects can deviate from the norm. Fortunately, an encounter with the natural world recalibrates the wave-crests with such intensity “that for 5 consecutive days there were repeated, spontaneous, uninduced orgasms.”

These two charts, reproduced at the author’s insistence on adjacent pages in *Married Love*, might easily be mistaken as similar in method; after all, each graphically illustrates the curve of a natural phenomenon through a series of daily measurements from the same reference point.⁶⁶ Yet the

⁶⁴ *Ibid.*, fol. 27.

⁶⁵ *Ibid.*, fol. 27, emphasis mine.

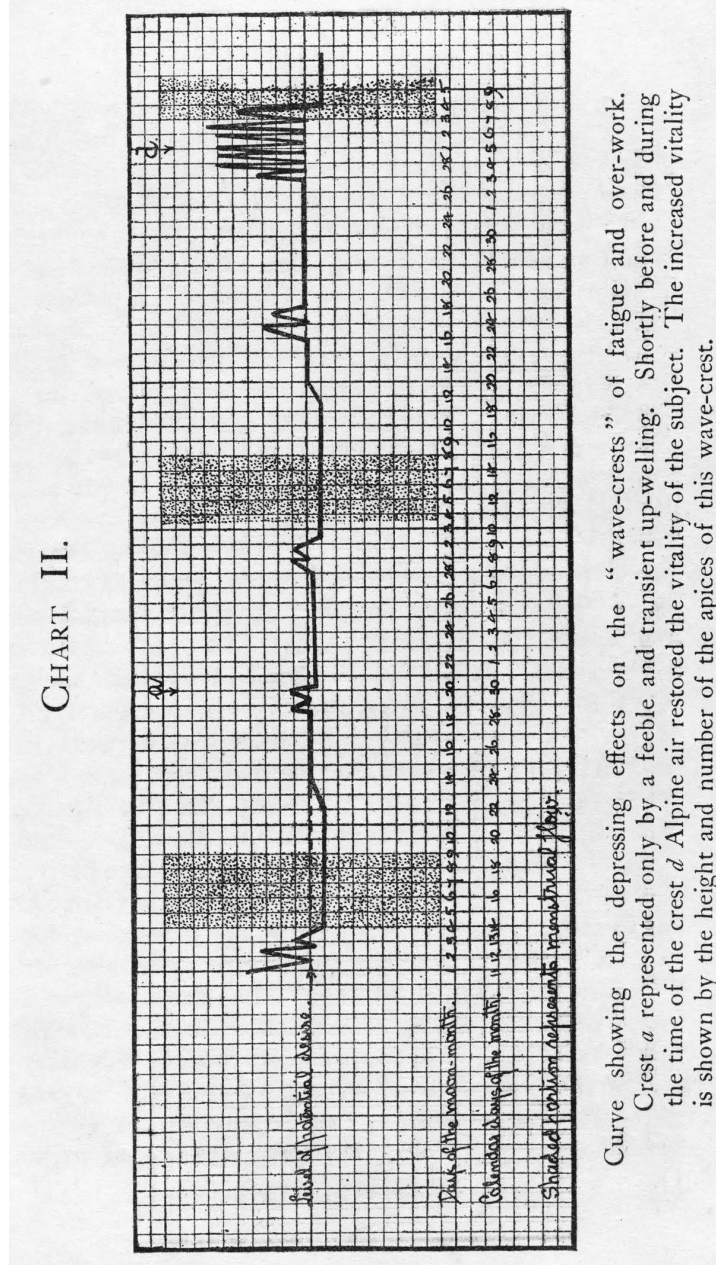
⁶⁶ In the early months of 1918 Stopes worked closely with her publisher, A. C. Fifield, to ensure the correct print layout of the charts in *Married Love*: “To Publisher—This must on *no account* be touched upon, re-drawn, but must be reproduced by direct process”; cf. BL Add MS 58524 and 58506 (typed manuscript).



Curve showing the Periodicity of Recurrence of natural desire in healthy women. Various causes make slight irregularities in the position, size and duration of the "wave-crests," but the general rhythmic sequence is apparent.

FIGURE 4: Chart I from Marie Stopes's *Married Love*, 43. The Galton Institute, London.

CHART II.



Curve showing the depressing effects on the "wave-crests" of fatigue and over-work. Crest *a* represented only by a feeble and transient up-welling. Shortly before and during the time of the crest *d* Alpine air restored the vitality of the subject. The increased vitality is shown by the height and number of the apices of this wave-crest.

FIGURE 5: Chart II from Marie Stopes's *Married Love*, 44. The Galton Institute, London

epistemic consequences of their different methodologies could not be more profound, a point Stopes mentions almost in passing. While the first—a “generalized chart”—is “compounded from a number of individual records, and shows a fair average chart of the rhythmic sequence of superabundance and flagging in woman’s sex-vitality,” the second represents the arithmetical averages “of an actual individual case” (*ML* 42). Chart II then effectively conveys Stopes’s ideological message of the unnaturalness of modern living but the experience of one individual does not a general law make: like the charts of her reading public or Ellis’s tables, Chart II does not—and cannot—depict the powerful rhythms of a “normal sex-sequence.”⁶⁷

Chart I, on the other hand, beautifully illustrates what in female sexual desire constitutes the normal by separating out “individual deviations from the species norm.”⁶⁸ No single “type specimen” is essentially normal; rather the phenomenon is shown as normal “only accidentally” as a “representative sample of the species.”⁶⁹ The normal is everywhere and nowhere, having attained the “paradoxical status” of a “concrete abstraction.”⁷⁰ To execute this conceptual maneuver Stopes-the-botanist comes into her element. She recognizes that the traits of a single specimen only rarely represent a “class of entities,” whether “ideal, typical, or characteristic”; hence the imperative to collect as many individual cases as possible.⁷¹ Yet how is it possible to work out the nature of the normal type when the “range of human variety in relation to sex” is so great?⁷² Stopes sidesteps this difficult question in *Married Love*, but dedicates one section of her 1916 talk to the problem of “variations.” Using “trained judgment,” the investigator conveys the “extent of the normal” by transforming the “infinite complexity of variation” into a specimen of the normally sexed woman; in this way, the “type specimen instantiates . . . a class that itself is the prototype of what is meant by a natural kind: the organic species.”⁷³ Stopes accepts that in nature there will always be “many women on both sides of the normal for whom these [charts] do not at all represent the sex-rhythm.”⁷⁴ Sensations vary from individual to individual but also for the same individual

⁶⁷ BL Add MS 58506, fol. 27, emphasis in original.

⁶⁸ Lorraine Daston, “Type Specimens and Scientific Memory,” *Critical Inquiry* 31 (2004): 153–82, 164.

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*, 158.

⁷¹ *Ibid.*, 164; Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2010), 309.

⁷² BL Add MS 58506, fol. 28.

⁷³ Daston and Galison, *Objectivity*, 315; Daston, “Type Specimens and Scientific Memory,” 164.

⁷⁴ BL Add MS 58506, fol. 28.

under different conditions, as exhibited in the disparities of the two charts. The perception of erotic sensation is subjective but the collection of numerous cases makes it possible to assert the validity of periodicity as a general law.

Approaching *Married Love* as the product of an experienced botanist suggests Stopes's methods as antithetical to those of the sexologist largely uninterested in the "ordinary ranks of mankind" (*ML* 19). Stopes addresses the "majority" and advises the non-normal to consult experts such as the "famous Professor August Forel" to "discover to which type of our widely various humanity he belongs" (*ML* 19). Based on "first-hand observations" and the "confidences from men and women of all classes and types," Stopes's two charts illustrate how to deduce the general from the experiences of the many (*ML* 9). Read together, the two charts operate as a one-two punch against male medical professionals who had long misunderstood the true nature of female sexual desire. As Stopes explicates in her 1916 talk: "I have come across two outstanding types of men, both prevalent in the middle-classes of this country or America, one of these types of men think that women always have sex-desire, and the potentiality of sex-enjoyment; and the other type thinks that women *never* have either. . . . but I have never yet come across either of these man-conceived types of women!"⁷⁵ Here Stopes lays bare her readiness to put so-called objective scientific inquiry in the service of her feminist purposes. Yet the difference between the charts is equally compelling in exposing the paradox at the center of any attempt to normalize a natural phenomenon, since the arithmetical averages of a single specimen rarely match the rhythmic patterns of the ideal. No matter how extreme the variation, in normalizing the natural the individual case is essential and irrelevant, useful and useless.

AHEAD OF THE CURVE

In late 2014 a review of the Wellcome's "Institute of Sexology Exhibition" appeared in the *Telegraph*, headlined: "Marie Stopes's private sex diary on public display."⁷⁶ More titillation than explanation, it described how Stopes recorded her "sexual feelings" on graph paper and counted her orgasms, and showed little understanding of her purpose. To mistake

⁷⁵ Ibid.

⁷⁶ Anita Singh, "Marie Stopes's Private Sex Diary on Public Display," *Telegraph*, November 19, 2014; see <http://www.telegraph.co.uk/women/sex/11241128/Marie-Stopes-private-sex-diary-on-public-display.html>.

Stopes's scientific logbook for a "private sex diary" exemplifies the risks of seeing her as a popularizer of sexual science rather than a popularizer of science. Influenced as much by the mathematician and statistician Pearson as by the sexologist Ellis, Stopes did not, as one scholar asserts, lack "the statistical and numerical grounding that scientific graphs typically require."⁷⁷ Unlike Ellis, whose tables tallied the experiences of two individuals, Stopes's "application of mathematical probability" to human sexual behavior—her method of observing, measuring, and charting her own and others' sensations of sexual yearning—tracked minute changes over time to show what in nature was normal.⁷⁸ And again unlike Ellis, who used "technical language" to appeal "only to doctors, to psychologists, to those concerned with medico-legal matters, and to the handful of thinkers . . . interested in the social bearings of the physical and psychic problems of life," Stopes produced a knowledge of human physiology and sexual love between married partners in language accessible to the general public.⁷⁹ That so many members of her reading public readily imparted—albeit in personal correspondence—intimate details of their sex lives speaks volumes about the aura of scientific investigation, as well as changing attitudes toward marital relations in the late 1910s and into the interwar period. As a standard—and standardizing—guide to proper marital relations, *Married Love* mobilized new understandings of different-sex sexual relations in terms of bodily function, due in no small part to Stopes's unwavering confidence in the power and rigor of scientific investigation, her belief that science alone could shed light on the opacity of desire. This approach, Stopes strenuously argued, was crucial because "very few women have an idea of taking any scientific interest in life," and so the rhythms of sexual desire had gone unnoticed (*ML* 41). Reading *Married Love* not only as marital advice but also as popular science explains, at the very least, the tautological formulation of Stopes's law, which subtly tutors the untrained in the meaning of periodicity as "regular recurrence," the "tendency to recur" at regular "intervals," or the "frequency of a periodic phenomenon."⁸⁰ I believe, however—for scholars with interests in the history of sexual normalization in Britain—foregrounding Stopes as both sex educator and scientist achieves much more. Analysis of her major intervention in the study of female periodicity clarifies her role in expanding sexual knowledge by inviting readers to examine their bodily rhythms and thereby become part of a

⁷⁷ Peppis, *Sciences of Modernism*, 160.

⁷⁸ Poovey, "Figures of Arithmetic, Figures of Speech," 414.

⁷⁹ Ellis's description of his intended readership was in reference to *Sexual Inversion*; see letter from Ellis to F. H. Perry Coste, 3 April 1900 (BL Add MS 70524, fol. 169).

⁸⁰ *Oxford English Dictionary Online*.

great scientific project. For Stopes, “good citizenship” signaled a collectivity of “normal human beings,” a phrase that appears more than a dozen times in Pearson’s influential book on *The Grammar of Science* (1892).⁸¹

Remembering the author of *Married Love* as first and foremost a scientist deeply informed on matters pertaining to the “physiology of animal and plant reproduction” offers a new vantage point on the crucial importance of a scientific discourse invested in the normal-as-typical as well as the normal-as-healthy—not least because sexual science, “under the guise of the medical norm,” became primarily preoccupied with “aberrations, perversions, exceptional oddities, pathological abatements, and morbid aggravations.”⁸² Foucault rightly observes that sex was “incorporated into two very distinct orders of knowledge: a biology of reproduction, which developed continuously according to a general scientific normativity, and a medicine of sex conforming to quite different rules of formation.”⁸³ Less certain is his assertion that “there was no real exchange” between these discourses.⁸⁴ To a greater or lesser extent, the work produced by Stopes and Ellis on female periodicity blurred the boundaries between science, medical science, and sexual science, even as each proceeded independently. Without doubt, Ellis was pivotal in forging a modern understanding of human sexuality, but Stopes’s training in the natural sciences and her mastery of statistical methods proved more adept in configuring sexual desire as normal, suturing together the word’s contradictory and paradoxical meanings.

University of Manchester.

⁸¹ Pearson, *Grammar of Science*, 12, 53.

⁸² Foucault, *History of Sexuality*, 54, 53.

⁸³ *Ibid.*, 54.

⁸⁴ *Ibid.*, 54–55.