Women's Medical Knowledge in Antiquity: Beyond Midwifery

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Introduction

This chapter will argue that women doctors participated in a philosophical tradition of thought in classical antiquity. One might wonder why in a volume on ancient women philosophers, there is a chapter on women doctors. The answer is that there was a significant and widely recognised overlap between medicine and philosophy in ancient Greece.[1] The fact that women had medical knowledge and expertise suggests that they were also involved in the philosophical aspects of the domain. This makes ancient medicine a particular rich field to look for women doing philosophy.

Gathering evidence for women's medical and attendant philosophical expertise is challenging. There are two main difficulties: the lack of direct evidence and the fact that the sources that we do have are written by men. There are no extant writings by women doctors or scientists of this period; it is not clear that they ever wrote anything at all.[2] My proposed solution is to consider carefully the sources that we do have which hint at what women knew and theorised about; this is then, an 'argument from silence'. The second related strategy is to assess other doctors and philosophers' views about women's knowledge in the field of medicine.[3]

In making this investigation, I propose to discover what I can about the nature and content of women's knowledge and theories to do with health and fertility. With respect to the nature of the knowledge, one must not assume that women practitioners were purely practically minded and that only male doctors had an intellectual perspective. There is evidence that both male and female doctors had aspects of theory as part of their practice, and aspects that would seem to us more like nursing or attending to the sick.[4] The second part of the enquiry concerns what female doctors actually thought. A picture can be reconstructed of expertise not only about the female body and its functions and cycles, but also a broader understanding of health,

[1] The overlaps between philosophy and medicine in the period will be discussed in the third section.

[2] For a general account of the debate about women medical writers in the Roman period, see Flemming 2007.

[3] These two techniques are suggested by King (1998: 135). I expand the second one of 'what doctors say about women's knowledge' to include philosophers as well, particularly Plato and Aristotle.

[4] King 1998: 165.

disease, fertility, and their relationship to the natural world. It is possible that women's expertise and knowledge was not confined to female health; there is evidence of a more general understanding of the nature of disease and how to mix and create medicines. Even within the confines of female medicine, it was only from a cosmological perspective that one could hope to make sense of 'what a woman is'.[5] And women's knowledge of the place of reproduction in nature related to the generation of male as well as female children.

Women as doctors in antiquity

The available evidence for female doctors in antiquity includes the Hippocratic treatises on women's diseases, which are among the oldest Greek prose writings we possess.[6] In these works, women doctors are sometimes present in the sick room and a feminine version of the word for doctor (*iatros*) - i.e., *iatraousa* - is employed.[7] Some speculate that these are midwives (*maiai*). We learn more about this particular field of expertise from Plato, who has Socrates give an account of the skills of his own mother, Phaenarete.

> [M]idwives can bring on the pains of labour, and make them milder if they want to? And they can make women who are having a difficult labour give birth? And if they see fit to cause a miscarriage when the embryo is young, they do so? …. And have you also observed this characteristic of theirs: they are the cleverest of match-makers, in that there are no gaps in their wisdom as regards knowing which sort of woman should consort with which sort of man in order to produce the best possible children?
>
> (*Th.* 149c-d, trans. MacDowell)

This passage suggests that *maiai* had a broader basis of practice and theory than modern midwives, including administering drugs, causing abortions and being knowledgeable about theories of reproduction to aid conception. Socrates' implication is that midwives do not just

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[5] The medical texts of this period point out that medical knowledge, crucial for successful practice, involves knowing what a man is (e.g., *VM* 20, 1.620.7-8 L. = Loeb 1.52-3.8-10). For those practitioners that specialised in treating women, it would presumably require knowing what a woman is.

[6] Dean-Jones 1994: 26; 2018.

[7] *Iâtros* and *iâtreuousa* are spelled differently in the dialect used in the Hippocratic works on women's diseases. *Akestridas,* healers*,* is used for women assisting a birth in *Fleshes* 19 (8.614.11 L. = Loeb 8.164). The term is rare in the Hippocratic corpus but occurs in other literature, such as Sophocles *Oedipus at Colonus* 714.

know how to bring about children but can produce the *best* children, suggesting a degree of knowledge and control over the general natural processes that underlie conception.

One piece of physical evidence that women took on the role of 'doctor' (and not just 'midwife') is a funerary monument from the fourth century which reads: 'Phanostrate, a midwife and doctor (*iatros*), lies here. She caused pain to none, all lamented her death.'[8] Striking here is the use of the masculine for doctor, *iatros*. While 'rational' medicine existed before the Hippocratic corpus, the extensive articulation of this outlook which places emphasis on the authority of the disembodied 'doctor' can be seen as a transitional moment, where medicine asserts itself as an intellectual and philosophical subject.[9] This woman is clearly part of that movement. Furthermore, it seems unlikely that Phanostrate was the only female *iatros*; one surviving funerary monument indicates that there were many similar.[10] One can also note that the idea of the medical art aiming to 'cause pain to none' is found in one gynaecological work.[11]

> Do this gently and without violence in order to prevent anything from being unnaturally stretched and thereby provoking an inflammation.
>
> (*Superf.* 8, 8.480.16-18 L. = Loeb 9.324.5-7, trans. Potter)

That a woman doctor was remembered as 'causing pain to none' might indicate her own rational practice, based on the principle of helping nature gently along rather than more vigorous interventions.

Other evidence for ancient women doctors comes from Plato's *Republic* where Socrates argues that women can be rulers of the state. This is something that his audience finds hard to imagine; in order to make it more palatable, he has to begin with an acceptable female job. If a man and a woman can both be suited to be doctors, then they can also be suited to being cultured, warlike and philosophical. Thus, they can both be rulers of the state. The audience readily accepts that women are already doctors (5.454d).[12]

The nature of women's medical knowledge

[8] Lefkowitz and Fant 2005: 266-7.

[9] Holmes 2013.

[10] By the Roman period, surviving monuments of this sort are more numerous (Lefkowitz and Fant 2005: 264-7).

[11] And in the *Epidemics*. See Totelin 2020.

[12] On this passage, see Pomeroy 1978.

There are at least two pieces of evidence that women had theoretical knowledge. The first is that they presented themselves as knowledgeable and the second is that they were treated as competitors by male theoretical doctors. The idea that male doctors in ancient Greece were the real purveyors of the medical art, whereas women doctors are folk healers, without any rational basis for their practice, relying on superstition or the mindless repetition of traditional cures is questionable.[13] Certain medical texts provide evidence of an awareness of the importance of presentation.[14] The performance of being a doctor with a cure would have been crucial: 'For some patients … regain their health simply through their contentment with the goodness of the doctor' (*Praec.* 6, 9.258.11-13 L. = Loeb 1.318.15-18). It seems likely that both men and women doctors would have had to present themselves as knowledgeable in order to convince their clientele. This suggests that women would have at least been able to convince others of having a rational basis for treatment.[15] In the case of curing women of what ailed them because they are women, it would have been harder for male practitioners to convince women patients to trust their knowledge. The female practitioner would presumably add to her theory, the knowledge she has of her own bodily experiences. Plato uses this well-known fact in his discussion of female medical expertise in order to pronounce that: 'Human nature is too weak to acquire skill in matters of which is has no experience' (*Th*. 149c3).

While the profession of theoretical knowledge in the performance of medical practice does not definitely prove that women possessed such knowledge, the way in which their theories were taken seriously as rivals to male positions provides stronger evidence. One problem with using information about women doctors in ancient medical writings is that these women are presented in a negative light so as to convince the clientele of the male medical writers' own

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[13] Lloyd posits that Hippocratic doctors writing about women's medicine desire 'to turn the practice of healing into a *technê*' (1983: 79), assuming that it was not already a *technê*, which in the case of the female medical tradition on which these women built, is unfounded. See Dean-Jones' idea that male 'scientific theories' replaced women's 'traditional therapies' (1994: 27). And Rousselle: 'Male doctors … used logical reasoning to construct a male science of the female body, incorporating all the facts gathered patiently over the year by women who had built up an empirical science' (1988: 25).

[14] King 1998: Ch. 2.

[15] 'In the ancient tradition words were very important; practitioners were expected to present their theories and explanations fluently…when the client needed to be persuaded of the healer's skill' and 'taking the prescribed medication is less important than giving meaning to the patient's experience of illness' (King 1998: 154).

superior knowledge. In this context, we cannot trust accusations of quackery. For example, when the author of *Diseases of Women* 1 remarks that the medicines prescribed by women are 'irritating', this is in the context of them as competitors for the client's attention (*Mul*. 1.67, 8.140.15 L. = Loeb 11.146.9). In another case, male doctors pit themselves against women theorists on the relation between foetal health and the length of gestation. Women hold the view that stillbirths occur at eight months of gestation. One Hippocratic author questions the veracity of these reports.

> You should not distrust women about their giving birth, for they always say the same thing and they say what they know; they are not to be persuaded by either fact or argument to believe anything contrary to what they know is going on inside their own bodies. Although there may be some who wish to assert something different, in fact women who possess judgement and who furnish the most convincing arguments on this subject always say explicitly that they give birth in the seventh month, the eighth month, the ninth month, the tenth month, and the eleventh month, and that of these children, those born in the eighth month do not survive, whereas the others do.
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> (*Oct*. 4, 7.440.13-442.4 L. = Loeb 9.80.21-82.6)

The passage might appear to begin disparagingly, suggesting a certain stubbornness in women who do not listen to fact or argument. However, it also indicates that these women 'know'. Although that knowledge might seem at first to be solely empirical, the passage ends by indicating that this is the basis for theory: 'women of judgement' convincingly argue for their position on the prospects of these children. The Hippocratic author proclaims, with some notable caution, that these women are wrong that only eight-month-old foetuses suffer because some on either side of the eighth month are also in danger. This doctor is quibbling the details but generally accepts the correctness of these women's theory.[16] That theory is of course wrong, but to conclude that male doctors construct rational theories and women do not is too hasty. Consider that in this same work, there is a theory that foetuses fight their way out of the womb rather than the women's body doing the work (*Oct*. 1, 7.436.8-14 L. = Loeb 9.76.15-78.3; *Nat*. *Puer*. 19, 7.506.3-12 L. = Loeb 10.80.26-82-8). On the basis of this view, it is recommended that women be strapped to beds and ladders and bounced up and down during a difficult labour (*Mul*. 1.68, 8.142.20-144.16 L. = Loeb 11.148.17-150.13; *Foet. Exsect*. 4,

[16] For a fuller discussion, see Lloyd (1983: 76-8) and King (1998: Ch.2).

8.514.14-516.9 L. = Loeb I9370-2).[17] Elsewhere, male doctors recommend tying up one or other teste before sex in order to determine the sex of offspring (*Ep*. 6.4.21, 6.312.10-11 L. = Loeb 7.252). It is clear in these instances and others that the theories associated with what women say are often no more arbitrary or folklorish than any others we find in these ancient texts. There is no trustworthy testimony that women did not have a theory and practice just as viable as any others available at the time.

In fifth and fourth century Greece, medical knowledge was considered to require a theoretical basis. This could be articulated as knowing types rather than particulars – i.e., types of people and types of illness – as well as discerning the underlying causes of or principles governing disease.[18] In *Metaphysics* 1.1, Aristotle distinguishes between experience and technical knowledge (*technê*) using a helpful medical example. Experience is judging what would benefit a particular person, such as Callias, who suffers from a disease; technical knowledge is to understand what benefits all persons of a certain type who suffer from certain sorts of disease (981a7-13). Women practitioners were called on to treat any number of different women and would have applied a general theory of what ails them. Thus, both male and female doctors, indeed anyone who treats a number of people, will have this technical knowledge.[19] When Aristotle distinguishes between practical (and technical) knowledge, under which medicine would fall, and theoretical understanding, he takes the latter to be necessary for the former.[20] He also explains that those with technical knowledge in general know the theory (*kata to logon*) and the causes (*tas aitias*; 981b5-6), and so they are also in possession of theoretical knowledge (*epistêmê*) (981b6-8). A key sign of this is the ability to teach others (981b8-10), which women practitioners would have done.[21]

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[17] For an analysis of the passage, see Totelin (2009: 27). For fuller discussion, see Lloyd (1983: 80-1).

[18] *VM* 7, 9 (.584.7-586.2 L.; 1.588.4-590.17 L.); Plato *Rep*. 3.408c6-e2; *Phaedrus* 270d7-1d7.

[19] While male doctors would sometimes treat women's ailments there is less clear evidence of whether women doctors ever treated men. Even if they did not do so systematically, medicine required a theory of the body that applied to all people. Medical women were most often responsible for the treatment of both male and female children.

[20] On theoretical knowledge underpinning as necessary for ethical practice, see especially Henry and Nielsen 2015.

[21] There is no direct evidence about the training of medical women in ancient Greece, but we can infer from later history, that midwifery was a skill passed from woman to woman.

Finding the philosophical content of the ideas that come from women doctors presents numerous challenges, some at the conceptual level and others at the practical. Does the concept of philosophy include what doctors theorised about? If it can be seen that medicine includes philosophical ideas, is it also possible to discover that women doctors developed theories of this kind? Determining whether a doctor is also a philosopher requires an understanding of what is encompassed by 'philosophy'. The concept is hotly debated in fifth and fourth-century Greece. While certain thinkers, such as Isocrates, argued that philosophy must be practical, and include the skills required for contemporary political life, Plato urged that philosophy is the pursuit of abstract truth about reality. Aristotle agreed but included natural knowledge: meteorology, botany and zoology (*PA* 1.5; *Mete*. 1.1). He sees a significant overlap between medicine and philosophy, since both involve the study of nature (*Sens*. 1.436a17-b3, *Resp*. 21.480b21-30).[22]

Within the Hippocratic corpus many writers make the discipline of medical expertise part of, or dependent upon, philosophy. Early philosophical speculation, of which we have only fragments, generally sets out an account of the nature and workings of the cosmos and of human beings as part of, or a reflection of, that cosmos. The Hippocratic works *Fleshes* and *Places in Man* are clearly part of a similar tradition. One of the most famous Hippocratic works, *On Ancient Medicine*, presents a challenge to this view by arguing that medicine ought to supplant philosophy as a way of understanding 'the nature of the human'. And yet, this author is clearly writing about natural philosophy too, and discussing topics, such as what human beings are composed of and how bodies react to the environment. It is this sort of philosophy that one can find in the Hippocratic works and that lies behind much of rational medical practice. A medical practitioner will have a theory of health which presupposes an understanding of the nature of the cosmos.

Since there were women doctors, who worked almost exclusively with the bodies of female patients, it is reasonable to suppose that some, if not most, would have also had a particular understanding of the body and the cosmos into which that body fit. One possible objection is that what women practitioners' thought about while practicing healing arts could not be philosophical because it is not proclaimed in writing. We must first keep in mind that writing about medicine was only one small part of the discipline and practice in antiquity. While various ancient medical writers promote their 'books',[23] other thinkers, including some

[22] Bartoš 2021.

[23] *Dieb. Judic*. 1: 'A large part, I believe, of the medical art consists in being able to examine correctly its writing' (9.298.1-2 L. = Loeb 9.300.1-2).

philosophers of the period, urge what seems somewhat obvious: that one cannot become a doctor by reading about medicine.[24] That women doctors did not write about their theories does not mean that they did not have such theories.

And yet one still might attach importance to written articulation. While the Hippocratic author writes 'the nature of the body is the starting point of medical reasoning' (Φύσις δὲ τοῦ σώματος, ἀρχὴ τοῦ ἐν ἰητρικῇ λόγου, *Loc. Hom*. 2, 6.278.14 L. = Loeb 8.22.1-2), 'the doctor who is a philosopher is equal to a god' (ἰητρὸς γὰρ φιλόσοφος ἰσόθεος, *Decent.* 5, 9.232.10 L. = Loeb 2.286.4-5) and similarly abstract statements, it might be supposed that a women doctor who does not write down such thoughts cannot be thinking philosophically.[25] But if one thinks it possible that the male doctors who did not write (which must have been the majority of them) had a philosophical basis for their practice, then there is no good reason to exclude doctors of the other gender. We ought to be cautious about patrolling the borders of 'philosophy' too strictly since there is a continuing tendency to exclude marginalised groups from the discipline.[26]

In any case, it ought to be accepted that theories and practices do not have to be written down in order to be philosophical.[27] There has been much recent progress towards making philosophical sense of oral traditions. The ethnophilosopher can discover rational ways of structuring individual and social life that count as philosophical, even without any written texts. This technique has been useful in helping to understand African philosophy.[28] When it comes to medico-philosophical theories of women in antiquity, we do not have anything that we can

[24] Plato's *Phaedrus* 268c: 'They would say, I think, that that man is made because he has heard somewhere from a book or happened to fall upon some remedies, and he thinks he has become a physician, understanding nothing of the art', cited in Totelin (2016: 246). See also Aristotle *EN* 10.9.1181b2-6.

[25] For Holmes it is the act of fifth-century medical writing that produces the idea of the body as 'part of inquiry into nature' (2013: 450).

[26] On these difficulties for the modern concept of 'philosophy' as exclusionary and biased, see Dotson 2012 and Haslanger 2008.

[27] The life of Socrates is a case in point.

[28] Outlaw Jr. 2017.

currently listen to.[29] It is clear, though, that an oral tradition existed and clues about its content can be found in the Hippocratic corpus and in works by Plato and Aristotle.

The content of women's medical knowledge

We have no guide written for women by women doctors who specialise in the knowledge of their ailments. This means that we have no direct evidence of what exactly women knew or professed to know or theorised as the basis of their practice. The general technique in this section is to put forward a series of arguments from silence in order to conclude that certain parts of the information we find in works by men about women's medicine came from women. This knowledge falls into four key areas: (i) bodily experience, (ii) theories of the female body, (iii) pharmacology, and (iv) theories of reproduction.

The bodily experience of women

Women hold ultimate knowledge of the frequency and duration of menstruation (*Mul*. 1.6, 8.298.2-4 L. ; *Mul*. 2.24 (133 L.), 9.232.10 L.) – and of various subjective perspectives, such as what it feels like to be pregnant and to experience female varieties of sexual desire or pleasure.[30] Male doctors could only ascertain such facts through 'question and answer' and interrogation (*Steril*. 1, 8.412.17 L. = Loeb 10.336.9, 338.7-8; *Mul* 1.6, 8.30.12-14 L. = Loeb 10.30.18.). It does not seem a stretch to think that there were certain women in the community who were known to have special knowledge of the collective experiences of women.

In the *Historia Animalium* 9(7), not a medical work but a collection of facts useful for the development of scientific explanations, Aristotle sets out a good deal of this sort of information including what period pains, premenstrual syndrome, conception, pregnancy and labour pains feel like (*HA* 9(7).2.582a34, 582b10, 3.583a35, 4.584a2). He refers to women in the plural throughout; although this information could have come from women in his household, it is more likely to have come from women experts.[31] Some women are marked as authorities in

[29] There is scope to compare female medical practices in traditional cultures around the world today.

[30] Dean-Jones 1994: 26-7; 1995. See also Aristotle *GA* 1.20.728a2-9, 2.4.739a37; *HA* 9(7).4.585a11, 584a25*ff*, 585a17*ff*.

[31] Dean-Jones assumes that Aristotle 'would have had access to fewer women's bodies than the Hippocratics…his wife, concubine, and slaves' (1994: 36). But it is much more likely that this information comes from women experts, probably women doctors and *maiai*. Aristotle methods in this treatise is to gathers information from experts, such as herdsmen, fishermen, and beekeepers (Leunissen 2021).

the Hippocratic corpus, for example with respect to the length of gestation (Oct. 4, 7.440.13-442.4 L.). In addition, 'women of experience' (*epistamenêsin*) can instruct about signs of pregnancy (Carn. 19, 8.610.15-16 L. = Loeb 8.160.19-21).[32]

The possibility that Aristotle is informed by women with expertise is strengthened when immediately after this section, he gives several technical terms which he notes are 'what the women call' them – first of all the amniotic fluid which 'the women call the forerunner' (7.586a25), and then the excrement of newborns, which 'the women' call meconium (10.587a30). When he refers to information from 'the women', he implies that there are women experts who hold this sort of knowledge.

When it comes to women's own experiences, these are not mere first-hand accounts, but theories based on shared information. Recall that Aristotle defines medicine as a *technê* in *Metaph*. I.1 on the basis of the ability to specify types of people who suffer from certain ailments; he further specifies that this knowledge counts as theoretical (or scientific) knowledge when the holders of it can teach another. The Hippocratic author of *On Fleshes*, in discussing signs of pregnancy, explicitly acknowledges his debt to the teachings of women, writing: 'It is to the extent that these women have *instructed* me that I know about these things' (ᾗ δέ μοι ἔδειξαν, κατὰ τοῦτο δὴ καὶ ἐπίσταμαι εἰδέναι, *Carn.* 19, 8.610.15-16 L.). In this, there is evidence that medical women had theories which they not only taught each other but which were also available to men who bothered to ask.

Theory of the body

For the Hippocratic writers, male medicine is general medicine; it does not usually focus on the reproductive parts and functions of men.[33] But female medicine is almost exclusively focused on their reproductive functioning.[34] One must not imagine from this that the role of female medicine is being downplayed. The philosophically dense and complicated theories of how humans (and other animals) reproduce are firmly in the province of philosophy at this

[32] This could refer to any woman who has the experience of having been pregnant, for example the courtesans discussed earlier, it seems more likely that this refer to those women who attended and advised them on reproduction.

[33] An exception would be *On the Nature of the Bones*, which describes how semen is produced in the marrow and carried from the head down the spinal column to the penis. See Craik 2015: 229.

[34] Dean-Jones 2018: 248, 252.

time.[35] It is the woman's body that supplies the young with what they are composed of, as this medical writer makes clear: 'So long as a human lives he manifestly has all these elements always in him; then he is born out of a human being [i.e. a woman] having all these elements' (*Nat. Hom*. 5, 6.42.19-44.2 L. = Loeb 6.14.15-17). One writer even proposes that after 'the divine', the nature of women is the most important topic to consider (*Nat*. *Mul*. 1, 7.312.1-2 L. = Loeb 10.192). When it comes to knowledge about women, male doctors were not the experts. For this author at least, women medics were in a privileged position, since they hold the key to the most important type of knowledge after the divine sort.

For Hippocratic medicine, the health of women is fundamentally different from that of men.[36] Male doctors are attempting to take over women's province. While it is tempting to suppose that women doctors are midwives who are only in charge of normal births while male doctors are brought in to deal with any complications, one must guard against this anachronism.[37] This is how modern medicine operates and is a legacy of a division that began in late antiquity and was later fiercely enforced.[38] But it is not a correct way to understand ancient practices. Women practitioners are noted to be present at quite a few of the male interventions, while male medical writers would have had access to births that did not require extraordinary measures.[39] Socrates says that medical women are able to deal with difficult births through to the end.[40] Aristotle states of the female doctor that she must 'not only be able to help over difficult births with her dexterity, but she must also be quick-witted in dealing with contingencies' (*HA* 9(7).9.587a10-12). In any case, there is no reason to assume that men had to come up with some of the life-saving procedures detailed in the Hippocratic writings, in particular the

[35] This is very evident in Aristotle's dialectic with other philosophers and philosophical doctors in his *On the Generation of Animals.*

[36] Dean-Jones 1994: 33.

[37] Blundell 1995: 110.

[38] For a fuller account of this modern bias, see King (1998: Ch. 9). Soranus strictly delimits the domain of the midwife (Temkin 1956: 5-6). By the mid-seventeenth century a woman could be burned as a witch if she dared practice any medicine other than helping with birth (Donnison 1988: 17).

[39] E.g., *Mul*. 1.34 (8.78-82 L. = Loeb. 9.80-82); Aristotle *HA* 9(7).9. See Dean-Jones 1994: 212; King 1998: 180.

[40] Plato *Th.* 149a. See King 1998: 177.

extraction of dead foetuses and the turning of babies being born in awkward positions.[41] Many of these techniques could well have been taken over from women doctor's practices, since women initially had the expertise involved through an oral tradition and their experience of assisting in birth. Indeed, this may be the reason why *On Diseases of Women* II makes clear that during a procedure in which two men are present, it is the woman doctor (*iatreousa*) that must remove the dead foetus and the placenta (*Mul.* 1.68, 8.144.22-24 L. = Loeb 11.150.21-23).

There is ample evidence in these Greek gynaecological works that male doctors are not entirely in control of any aspect of the care of women's ailments or childbirth. Almost all references to examination of the cervix use the feminine participles.[42] Although these Hippocratic works sometimes place the male doctor at centre stage, they also show that women were still partly in charge. Women themselves are said to know about their own bodies and to cooperate in or even initiate the administration of drugs and other treatments. The woman applies most of the medicines on her own, as instructed by the doctor. For example, 'have the patient draw their cervix aside with a finger' and 'have her remove the suppository' (*Mul* 1.13, 8.52.1 L. = Loeb 9.52.18; *Mul.* 1.19, 8.58.13-14 L. = Loeb 9.60.21). While there is the speculation that a sense of impropriety was what led male doctors to insist that women inspect themselves, this may well be anachronistic; it was certainly a trend in the seventeenth and eighteenth centuries, but we have very little direct evidence of such qualms in antiquity.[43] Instead, we find that women's knowledge of their own bodies was respected by male doctors and even trumped their own level of expertise. In one case, the woman, after independent internal self-examination, discovers her own ailment and reports this to the doctor (*Mul*. 1.40, 8.96.16-98.5 L. = Loeb 11.100). There are various mentions of women

[41] *Mul*. 1.68-70 (8.142-148 L. = Loeb. 9.148-54); *Superf.* 7 (8.480.3-12 L. = Loeb. 9.322), *Foet. Exsect*. 1 (8.512-514 L. = Loeb 9.368-70).

[42] E.g., *Mul.* 1.78 (8.188.17-18 L.); *Nat. Mul.* 32 (7.348.20-350.1 L.); *Mul.* 2.144 (8.318.1 L.); *Mul.* 1.37 (8.92.7 L.); *Mul.* 1.88 (8.212.11-12 L.); *Mul* 2.133 (8.290.3 L.); *Superf.* 35 (8.506.8-9 L.). See Totelin 2009: 248-257 for further references.

[43] On these more recent trends, see Doyle 2018: Ch. 1. For speculation about ancient practices, see Dean-Jones (1994: 33-4), who concluded that despite one comment advising male doctors to act judiciously with women and girls, it was common for male doctors to treat female patients and so in general sexual impropriety was not a worry for them.

doctors being present when the male doctor is attending on women.[44] At another point, the male medical writer recommends picking and choosing from the women doctors' medications:

> Try the medicines of the women and have the patient take the most appropriate one.
>
> (*Mul*. 2.4 (113 L.), 8.244.4-5 = Loeb 11.272.19-20)

Women's own knowledge and experience is evident in these works.

Given that male doctors are taking over the treatment and care of women's ailments, it is improbable that they came up with an entirely new set of theories of the female body distinct from those which were already formulated by women. Women preferred to be treated by female doctors.[45] In their attempt to attract women clients, male doctors had to present a medicine that fell in line with women's views of their own bodies, arguably held collectively.[46] Consider how the author of the Hippocratic work *On Diseases of Women* advises on women's ailments.

> Doctors may err in not inquiring carefully about a disease's cause, and in treating them like diseases in men: indeed, I have seen many women perish in such cases. Rather you must question a patient immediately and in detail about the cause; for there is a great difference in the treatment of women's diseases and those of men.
>
> (*Mul*. 1.62, 8.126.14-20 L. = Loeb 11.130.17-23)

The (trainee?) doctor is instructed here to ask the woman herself to supply the causes, rather than to try to discern these himself; knowledge of the basis for women's diseases is still considered to be a feminine area of expertise. Thus, the Hippocratic gynaecological works give us some clues to the views of women doctors and their patients about the rationale behind their treatments.[47] Many illnesses affecting the rest of the body are taken to be connected to the patient being a woman – through two key mechanisms, the need to purge blood from the body on the one hand and the motility of the uterus on the other.[48] The general

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[44] 'The women doctor (*iâtreuousa*) should gently open the cervix' (*Mul*. 1.68, 8.144.22-24 L. = Loeb 11.150.18-19).

[45] King 1998: 169-70; Lloyd 1983: 79-80.

[46] As Dean-Jones puts it: 'The treatment offered to women [by male doctors] … must have been acceptable to them and have squared with their view of their own physiology' (1994: 27).

[47] 'The models of the female body in the Hippocratic Corpus are the product and the common property of society, women as well as men' (Dean-Jones 1994: 37).

[48] King 1998: 179.

idea is that a woman's body retains excess blood which must be periodically voided. This blood can be used up on nourishing a foetus if she becomes pregnant and is converted into milk during lactation (*Nat. Puer*. 3-4, 7.474-476 L. = Loeb 10.36-42). The texture of the female body is much spongier and softer than the male one which allows for the absorption of more fluid (*Mul*. 1.12-13, 8.48-52 L. = Loeb 11.48-54). To ensure health, the doctor must help the female body to discharge the right quality and quantity of blood; if retained, it can cause disease and pain. Thus, therapies concentrate on either bringing about regular menstruation or facilitating pregnancy, as pregnancy uses up the blood and anchors the uterus.[49] Signs of health for a woman include desire for and pleasure in sexual intercourse. [50]

Male medical authorities in Antiquity may have somewhat adapted and changed women's theories or attempted to incorporate aspects of their own theories.[51] However, it is a fair assumption that the basic picture of how women's reproductive systems and interconnected body parts operate was already in place by the time male doctors began to encroach. In terms of the maintenance of health through regular menstruation, it is probably part of a women's collective experience to judge that healthy women tend to have regular periods.[52] Since only women have regular discharges of bloodlike fluid and also gestate and lactate, health was quite reasonably considered to require the regular flow of materials around the body.[53]

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[49] The needy womb can cause extreme physical and psychological illness according to *Virg*. 3 (8.468.9-17 L. = Loeb 11.50.6-7). Where such ideas originally came from is unknown. Emphasis on regulating menstrual cycles and keeping the uterus in place are available in the very earliest medical texts, such as the Kahun or el-Lahun gynaecological papyrus dating from 1800 BCE Egypt, during the reign of a female pharaoh, Soberkneferu (Smith 2011; Bose 2017). Ethnopharmacology tells us that in some contemporary African cultures, medicines and techniques not dissimilar to those described in the Hippocratic treatises persist (Steenkamp 2003: 198).

[50] Thumiger 2017: 247-51.

[51] *Places in Man* 1-2 explains the interconnection of all parts of the body similar to *Mul.* 2.29 (138 L.) (8.312.4-6 L. = Loeb 10.348.5-7): 'All of the parts [of the body] will be involved in the disease to a greater or less degree'. The importance of different complexions is part of the theory in *Aer*. and *VM* and is mentioned in *Nat. Mul*. 1, 2.312 L. = Loeb 10.192.

[52] In some pre-scientific cultures, such as the Rungus of Borneo, menses are viewed by women as fluids that need to be evacuated (Appell 1988). A recent study in the *BMJ* concludes that regular menstruation is indeed a sign of health (Wang et. al. 2020).

[53] King 1986: 60 also thinks it possible that women themselves held a model of the female body in which reproductive function and fluids could affect every other part.

It may be that women were the first to think of the uterus as motile. Some recommended procedures are based on the view that the uterus is attracted to pleasant smells and retreats from the unpleasant.[54] In *HA* 10, using information from women, pseudo-Aristotle says that the uterus can be 'thirsty' (2.635a25). This idea of uterine agency could have been developed by male doctors,[55] but it is just as likely to have originated with women doctors to ground their practices Indeed, the cervix can be felt to recede and move down, and this often coincides with certain parts of the menstruous cycle. Women also experienced uterine prolapse.[56] A theory of the uterus as sentient may strike us as unscientific, but for the ancients, it had a certain logic. Plato says that the uterus is like an animal, as is the penis, presumably because of its self-motion (*Tim*. 91a-c).

Some have felt that the theories about women's health found in the Hippocratic works reveal only male concerns, since they often focus on fertility and recommend sex and pregnancy as cures (*Mul*. 2.6, 10, 18, 19, 22, 24, 26). But it is very possible, indeed highly probable, that fertility was a top priority in the minds of women of this period. Women's province was the care of the home and family; producing healthy children would bring prestige and the sort of power accorded to women.[57] Within the Hippocratic texts, it is evident that women still held the main epistemic authority around these events as the author of *On Diseases of Women* remarks: 'It requires much attention and knowledge (*epistêmê*) to bring a child to term and provide for its nourishment in the uterus, and then to give birth to it' (*Mul*. 1.25, 8.68.15-17 L. = Loeb 11.70.24-6). The knowledge about giving birth to a child is something only a woman could have.

Pharmacology

The Hippocratic writings on women contain more recipes than the entire rest of the corpus combined.[58] Much of the pharmaceutical practice, and the theory behind it, is thought to have

[54] *Loc. Hom*. 47 (6.344-346 L. = Loeb 8.92-98); *Mul*. 2.22 (131 L.) (8.278-280 L. = Loeb 11.310-12); *Mul*. 1.13 (8.50-52 = Loeb 11.52-4).

[55] Manuli 1983 argues that the motile uterus is entirely a male construct designed to control women. It is also possible that women came up with this idea independently, developing many of the complex pharmacological procedures we find in the Hippocratic corpus.

[56] King suggests that this is the origin of the idea of a motile uterus (1985: n. 158). Cf. Dean-Jones (1994: 73).

[57] Lloyd 1983: 84; Dean-Jones 1992.

[58] Dean-Jones 1994: 36; Totelin 2009; 2018.

come from women healers. These doctors must have been party to an extensive oral tradition.[59] There is a tendency to classify the administration of drugs as less scientific and more folklorish than other practices, such as dietetics (Hanson 1991). But there is no strong case for this. In fact, some of the medicines employed would have been effective, particularly as abortifacients, especially pennyroyal and hellebore.[60] Furthermore, pharmaceutical practices show aspects of rational engagement. What the recipes we find in the Hippocratic corpus lack is any detailed account of instruments required and procedures to procure, prepare and apply the medicine. A practitioner with knowledge of an underlying rationale for the use of certain medicines, would have been able to take these very general recipes and adapt them, often finding similar substitutes for certain ingredients.[61] The use of *materia medica*, then, requires the mastery of complex theories of measurement, effective powers and the results of their combinations under various conditions.[62] It may well be that this theoretical knowledge was guarded by women who would pass this on orally to each other. It seems likely that the lists found in the Hippocratic texts indicate that in the background are experienced women practitioners with such knowledge.[63]

In writing these ingredients down without enough instruction, the medical writer might be trying to take over this part of female medical expertise, but he is more likely to be showing off his knowledge – a knowledge gained from female practitioners and those they bought the ingredients from.[64] This display of prowess had potentially very dangerous consequences; many of the ingredients mentioned are highly toxic, particularly 'squirting cucumber' (*ecballium*). In very small quantities, it can have a beneficial effect, but if given without extreme care, this

[59] The Hippocratic gynaecological texts are compilations, which show signs of having been updated via written and oral traditions (Totelin 2009). There are many references to methods used by women themselves (Hanson 1991: 78).

[60] Riddle 1992 argued for the efficacy of many of the drugs, particularly abortifacients, used in the Hippocratic gynaecological treatises. King 1998 refutes his case. Totelin 2009 defends Riddle's general position, emphasising the continuity of many ingredients.

[61] This is convincingly argued in Totelin 2009.

[62] A work attributed to the Hellenistic Cleopatra provided complicated charts of relevant weights and measures, indicating an awareness of the importance of calibration in chemical compounds. See Pseudo-Galen, *De ponderibus et mensuris* 10, in Hultsch (2009: 233-9) and Totelin (2017).

[63] Totelin 2008; 2016; 2018.

[64] See Totelin on 'root-cutters' and 'drug-sellers' (2018: 213).

could well end the life of the woman. If too many women died under the 'care' of a male doctor from his ill mixing, this would only reinforce the need for a more experienced female mixer to intervene.

Knowledge of how reproduction works

It seems probable that women doctors entertained theories about how reproduction works, a matter of great importance to their patients. Compared to men, women were in a better position to judge some aspects of these processes, for they had their own and other women's direct experiences to draw on – experiences of sex and conception. It seems likely that female expertise included a store of information from the collective experience of women about how to aid (or prevent) procreation. The medical texts all agree, at least for humankind, that sex and male ejaculation are necessary for conception. Many also note the need for parallel female seed produced during sex (*Genit*. 4, 7.474-476 L. = Loeb 10.12-14; *Mul*. 1.7, 8.32 L. = Loeb 11.32-34; *Mul*. 1.10, 8.40-42 L. = Loeb 11.42; *Mul*. 1.24, 8.62-64 L. = Loeb 11.64-6). *Diseases of Women*, the text which we have already seen to contain so much information from women themselves, often mentions that in order for conception to occur women need to feel desire for and pleasure in sex (e.g., *Mul*. 1.7, 8.32 L. = Loeb 11.32-34; *Mul*. 1.10, 8.40-42 L. = Loeb 11.42; *Mul*. 1.12, 8.48-50 L. = Loeb 11.48-52). While this is untrue, it reveals an interest in female experience which is sometimes absent from more male-centred accounts. The theory that there are two parallel seeds, both released at sexual climax, shows awareness of female orgasm.

This theory is not necessarily equalitarian, however. In the most comprehensive written account of it we possess, in a work entitled *Generation*, it is said that women always cease to feel pleasure as soon as men do. Here the perspective is a male one, making much use of the first-person plural. It is about what 'we' (as men) experience.[65]

> A man's seed falling into the uterus extinguishes a woman's warmth and pleasure. In fact, a woman's pleasure and warmth leap up at the moment the seed falls into her uterus, but then ceases.
>
> (*Genit*. 4, 7.474.24-476.1 L. = Loeb 10.12.15-17)[66]

[65] One text recommends violent sex for the production of a male child (*Superf*. 31., 8.500.5-7 L. = Loeb 9.344.4-5). For use of the first person plural to signal male solidarity, see Thumiger 2017: 236-7.

[66] The idea that women could not feel pleasure after the male had climaxed is a male-centred perspective. Another description of sex which leaves out the female experience can be found in Plato who characterises desire for physical intercourse as 'giving birth in beauty' which

Another medical text, the pseudo-Aristotelian *HA* 10.1-5, is more women-centred.[67] This author is careful to listen to women, noting their experiences of erotic dreams in particular (*HA* 10.2.634b28, 3.635a34). His own theory depends on this testimony, although he cannot help providing the caveat 'if the women are telling the truth' (*HA* 10.7.638a6), admitting that in fact women hold the upper hand and can either withhold or distort information about their bodies and experiences.

The resultant theory of generation is different from that found in *Generation* because it posits that women have their own independent sexual rhythm.

> For if it is true that the woman too contributes to the seed and the generation, plainly there is need of equal speed (*isodromêsai*) on both sides. Therefore, if he has completed quickly while she has hardly done so (for in most things women are slower), this is an impediment.
>
> (*HA* 10.5.636b15-7)

This theory is disputed by Aristotle in his *On the Generation of Animals*. The counter-theory also requires information from women about their own experiences. In this case, that they can become pregnant even when they feel no pleasure (*GA* 1.19.727b8-11, 2.4.739a29-33).[68]

At the same time, the nature of the female contribution was being debated, and these texts hint that women with expertise about reproduction had their own views.[69] It would be too simplistic to imagine that all women had the same theory of generation.[70] Some portions of the Hippocratic corpus reveal women's concentration on retaining male seed (*HA* 10.2; Cf. *Steril*. 1(214 L.), 8.408-410 L. = Loeb 10.330-332). As the author of *The Nature of the Child* says, this is the

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brings to mind male ejaculation into an attractive partner but not the female experience of satisfying sex.

[67] Dean-Jones (2012) argues that the first five chapters of *HA* 10 ought to be called *On the Failure to Generation* (*Non Genit.*) and are 'embedded *endoxa*' that Aristotle copied out from a medical expert. As Dean-Jones notes, the work pays a 'great deal of attention to women's testimony about their sexual experience' (forthcoming).

[68] Connell 2016: 112-6.

[69] Rousselle's view that the account in the *HA* 10 was a theory held by women seems possible. She perhaps goes too far, however, in declaring that advances in science 'destroyed the traditional basis of reciprocal pleasure in heterosexual intercourse' (1988: 29).

[70] Rousselle assumes that the parallel seed theory found in some Hippocratic works is 'the theory held by women' (1988: 28).

'sort of thing women say to each other – that when a woman is going to conceive, the seed remains inside her and does not fall out' (*Nat. Puer*. 2 (13 L.), 7.490.5-7 L. = Loeb 10.34.19-22). While this is compatible with their contributing their own seed during sex, it does not require it, and some wise women, perhaps those Aristotle spoke to when composing the *GA*, may have had another way to understand what women contribute.

What they are likely to have agreed about, and which no right-minded scientist would deny, is that women provide a generative contribution. *HA* 10 tells the story of a woman who tries to prove this through a zoological experiment.

> There was once a woman who, capturing some singing grasshoppers while they were still young, kept them to see what would occur. And when they had grown, they became pregnant spontaneously. It is clear from these things that every female contributes to the embryo even if this is evident in only one type of animal.
>
> (*HA* 10.6.637b16-20)

Aristotle may have concluded that this theory is inductively invalid.[71] He himself noted two species of fish where no male could be found but thought that there was not enough evidence to come to any conclusions about the possibility of parthenogenesis (*GA* 2.5.741a33-741b2, 3.5.755b22, *HA* 5.11.538a20). In any case, this budding female natural scientist only hoped to show that the female animal contributes something toward generation. Parthenogenesis is an overdetermining case and may indicate a desire in this thinker to counterbalance the idea of the autogenetic male which appears only in myth and never in nature.[72]

In the area of reproductive theory, both matchmaking and related time keeping were associated with women. Matchmaking in the ancient world was undertaken exclusively by women.[73] This explains why Socrates' attempt to say how he matches young interlocutors to sophists (*Th*. 151d) is so amusing: he is playing a feminine role, a source of great hilarity to the Greeks. Bio-medical authors seem to wish to share in knowledge about matching the right

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[71] Aristotle complains that Democritus makes a general conclusion about hybrids on the basis of only one sort, mules (*GA* 2.8.747a23-8). A similar complaint is also found at *GA* 3.5.756a4-6: 'Our friends base their study on a few instances and think the same holds good for all'. And again, later in the *GA* Democritus is accused of assigning 'a cause to apply generally although he has not undertaken an exhaustive investigation of the facts' (5.8.788b10-2). On the general complaint, see Lloyd 1987: 62.

[72] For example, Zeus produces Athena without a woman (Homer, *Iliad* 5.880).

[73] Noy 2013.

men to the right women in order to produce viable children (*Genit*. 7). For the author of *HA* 10, and his female influenced theory, fertility is lessened when the man and woman do not keep the same pace in love making and so do not ejaculate simultaneously (*HA* 10.6.363b7-9).[74] That male and female must be harmonious (*sunarmosthe*) fits other aspects of contemporaneous reproductive theory. Aristotle notes that 'it happens to many women and men that they cannot produce children in union with each other but can when apart from each other' - that is, with other partners (*HA* 9.6.585b9). For Aristotle the combination of female menses and male semen must be correctly balanced or proportioned.[75]

Keeping track of time periods was another sort of knowledge assigned to women. There is a theory, based on several bone artifacts, that counting the days of the menstrual cycle sparked early human interest in abstract numbers and cosmic cycles.[76] This is highly speculative. Yet in the era we are examining not only did women count the timings of their 'monthlies' (*katameniai*), but they were also thereby (to the ancient mind) keeping track of the circular movements of at least one prime heavenly body, the moon. Aristotle links the moon's force on nature to menstruation (*GA* 4.2.767a2-9; Cf. *Oct*. 9, 7.446-452 L.); this is part of the more general effect that the heavenly bodies have on generation (*GA* 4.10.777b17-25). Women also measure the length of human gestation. As part of his philosophical science, Aristotle meticulously documents gestational periods in all animals (*HA* 6.18-31). In the case of humans, women hold the key to this knowledge. Aristotle readily accepts the women's theory of variable gestational periods[77] and asserts it to be a special feature of humankind.[78]

In human affairs, then, time periods, measurements, and calculations of cycles in nature belong to the province of female expertise and can be joined to their knowledge of correct sexual mixing.[79] This may be part of the reason why Plato's rulers (*tois archousi*), who are

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[74] See also *Mul*. 1.17, Loeb 11.58-60.

[75] Aristotle says that 'proper blend' (*summetria*) 'is the reason why it happens that many couples fail to effect generation with one another, but if they change partners, they succeed' (*GA* 4.1.767a23-25). See also *GA* 1.23.723a27-31, 4.2.767a14-26. See Connell 2016: 71-6.

[76] The 40000-year-old Lebombo bone, and a later artefact, show notches that add up to monthly periods of time. See Marshack 1972; Zaslavsky 1992; Darling 2004.

[77] See above p. 4.

[78] *GA* 4.4.772b7-8. See Connell 2016: 85 n. 62.

[79] Female knowledge in this area would also include knowledge about the birth of male children and so is not confined entirely to the female sex.

eugenic matchmakers, combine the expertise of men and women in their ranks (*Rep*. 5.459e7-60a5). Matching the right men with the right women in 'marriages' is, for Plato, a case of timing.[80] If and when knowledge of the correct measurements of time periods for matching and mating people wanes, the whole civilization suffers a decline.

> Not only for plants that grow from the earth but also for animals that live upon it there is a cycle of bearing and barrenness for soul and body as often as the revolutions of their orbs come full circle …. And when your guardians, missing this, bring together brides and bridegrooms unseasonably, the offspring will not be well-born or fortunate.
>
> (*Rep*. 8.546a2-d2)

Female expertise in measuring, mixing and matchmaking continues to hold sway later on in Antiquity, when treatises on alchemy and pharmacology are attributed to women.[81] In that context, women were taken to have the sort of knowledge required to transform through proper blending, which is likened to marriage and procreation.[82] While women doctors often focused on issues of particular importance to women, such as preparing medications which would be dangerous in the hands of others, they also speculated about matters of more general import, such as the cycles and timings of birth and death.

In conclusion, this paper has shown how information from women doctors permeates male medical and biological writings and includes theoretical constructs. In a culture in which a woman's word was worth much less than that of a man, it is striking that on the subject of expertise about the body and nature's cycles, women had a certain authority. Given how ubiquitous women's health and reproduction were, women's philosophical contributions in

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[80] In Plato's *Symposium*, it is crucial that Diotima be a woman since amongst women lies the ultimate knowledge of physical pregnancy and birth, and the cycles of the natural world more generally.

[81] The connection between sexual generation and metallurgy can already be found in Empedocles who likens the mixture of donkey and horse semen to a too dense mixture of bronze and tin (*GA* 2.8.747a34-b3).

[82] Berthelot: 1888. One famous alchemist, Maria, spoke of the 'marriage' of metals (Plant 1970: 131-2; Patai 1982: 177-97). Another alchemist, called Cleopatra, employed reproductive metaphors to explain how materials transform (Lindsay 1970: 256). See Connell 2021.

this field of inquiry were arguably more widespread than in any other area of intellectual activity in antiquity.

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