



The Routledge History of
Sex and the Body
1500 to the Present

Edited by **SARAH TOULALAN**
and **KATE FISHER**

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Sarah Toulalan and Kate Fisher*



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MEDICAL UNDERSTANDINGS OF THE BODY, C.1500–1750¹

Lauren Kassell

What are the differences between the parts of generation in men and women? Helkiah Crooke, a London physician, asks this question in the midst of his 1615 book on anatomy, *Microcosmographia. A Description of the Body of Man*. This is a huge book, running to more than a thousand folio pages and filled with illustrations. It was in many ways a typical anatomical book. Following Andreas Vesalius' groundbreaking work of 1543, *On the Fabric of the Human Body*, anatomies were often printed in a large format and amply illustrated. Anatomy had become the ultimate investigation of nature, laying bare the secrets of God's most wondrous creation. To understand the body of man was complex. The body of woman, and its hidden capacity to generate new life, was an even greater challenge. This is an era when 'generation' – a term that I will use throughout this chapter – encompassed the processes of development and growth as well as the act of reproduction. Sex, gender and sexuality were not defined simply in terms of 'biology'. What it meant for a body to be 'natural' was itself at stake. Emerging discourses of objectivity were tied to constructions of subjectivity.² The differences between men and women and between masculinity and femininity were inscribed and enacted within understandings of the natural world as God's creation. Social relations were regulated by the Church and mediated through notions of patrilineage and patriarchy which informed governance from the state to the family. Questions about sex, generation and sexuality were debated within universities, in legal courts, and by laypeople. By publishing books that exposed knowledge about generation, physicians demonstrated their mastery of the natural world and displayed their prowess as men of learning.³

This chapter considers the major questions that physicians and natural philosophers asked about sex and generation in early modern Europe. Were men and women different in nature or in kind? Were they physically and psychologically distinct? What bearing did their generative functions have on their health? Where did semen, the seeds of generation, come from and did both sexes produce it? Why was sex pleasurable and was it equally so for men and women? What determined whether a foetus was male or female, and why did some children resemble their parents?⁴ These questions were framed in terms of learned debates in Latin books as well as the local politics of sex, generation and medicine. Medical understanding of the body was informed by and enacted through medical practice. The best histories of early modern medicine treat ideas and practices as two sides of the same coin.

Crooke's book provides an ideal case for introducing the history of early modern generation. It was a compendium of leading anatomical knowledge, engaged with the recovery of ancient texts and the rise of experimental philosophy. It has featured as a source for Anglophone historians of medicine, sex and the body. And it was published amidst disputes about the status of vernacular medical knowledge and the politics of women's health in early modern London. These disputes were common throughout Europe, and a convergence of events brought them into the historical record in England. Crooke's *Microcosmographia* did not advance knowledge or change practice, but through it we can survey competing ideas about sex and the body and chart the shifting medical, theological and natural philosophical discourses which produced this knowledge. We can also glimpse moments when the health of men and women was tied to their generative and sexual functions, and when a woman's womb defined her being and became the locus of attention of her medical practitioners.

Anatomical books, the parts of generation and the politics of medicine

Microcosmographia looked much like the other grand anatomical works of the preceding century, with one important difference. It was the first comprehensive anatomy published in English. It described the anatomy of the human body in full, including the generative parts in men and women, with illustrations. This caused a scandal. Who was this bold physician? Crooke had studied in Cambridge, then in Leiden under Peter Paw, a distinguished anatomist, before taking an MD at Cambridge in 1604 and then settling in London. Around this time he began working on *Microcosmographia*.⁵ In 1613 he became a candidate for a fellowship with the College of Physicians, a role that authorized him to practise medicine in the city and entrusted him with maintaining the medical hierarchy. Delayed in part because of his irreverent and litigious behaviour, he would not become a full fellow until 1620.⁶

Medical practice in London was regulated according to a hierarchy based on privilege, knowledge and expertise. This model was established first in the Italian cities, where physicians set up colleges, claiming a professional status like lawyers and asserting their authority over the medical trades. Physicians studied at universities and advised their clients on the management of health and the treatment of diseases. The College of Physicians of London licensed the practice of physic within seven miles of the city. Surgeons and barber-surgeons were trained through apprenticeships and regulated through the guild structure. They treated wounds and fractures and attended the outside of the body. Their status had fluctuated over the preceding centuries, as their place within universities and at royal courts shifted. Throughout the fifteenth century, anatomy had been associated with the manual, lowly work of surgeons. As humanist physicians, prompted by the recovery of ancient medical texts, became more interested in anatomy and began to publish vernacular surgical works, the status of practical knowledge of the body increased. Vesalius' work was part of a trend to promote knowledge gleaned from the senses, particularly sight. Like surgeons, apothecaries were trained and regulated through the guild structure. They ran shops selling drugs and related wares and made up remedies prescribed by physicians, who also oversaw the quality of their drugs. Midwives were regulated by the Church. Numerous practitioners worked outside of, and in some cases in opposition to, the medical hierarchy.⁷ They ranged from illiterate bonesetters to highly educated foreigners, often

practising medicine alongside other trades. In Jacobean London, relations between the physicians and surgeons were in flux, in part over the regulation of midwives. For instance, in 1616 Peter Chamberlaine the Elder and Peter Chamberlaine the Younger, brothers who worked as surgeons and specialized in midwifery, supported an unsuccessful petition from the London midwives to form a college.⁸ Crooke championed greater education for surgeons, and he dedicated *Microcosmographia* to them.

Anatomical instruction had been specified in the surgeons charter of 1540, and the physicians began giving anatomical lectures in 1565. As Crooke notes, a physician was to deliver an anatomical lecture twice a week, partly in Latin, partly in English for the benefit of the surgeons.⁹ The surgeons also organized anatomies for themselves, employing a physician or surgeon.¹⁰ In 1617 the physicians instituted an annual anatomy lecture for midwives, delivered 'in private on the organs of parturition'.¹¹ Knowledge could also be acquired through private study or from the handful of English books on the subject. It seems that dead bodies were opened in Elizabethan and Jacobean London more frequently than is generally considered to be the case.¹² Access to anatomical knowledge was central to the wrangling over status between physicians and surgeons.

In the autumn of 1614 John King, the Bishop of London, sent the College proof-sheets of Crooke's anatomy. In his capacity as licenser to the press, he wanted their advice on whether it was fit for publication. Book IV, 'Of the Naturall Parts belonging to generation, as well in Men as in Women', was a concern. The College discussed Crooke's use of the vernacular, his inclusion of illustrations of the generative organs, and his reliance on other authors. They concluded that the volume should be condemned and recommended that all copies be burned. Failing which, they suggested that two physicians could correct the offending pages. The work on generation by Ambrose Paré, the famous French surgeon, had encountered the same opposition in Paris in the 1570s which Crooke met in London in the 1610s.¹³ The London physicians' objections went unheeded and in the summer of 1615 the whole book was published.¹⁴ It was reprinted the following year and reissued in 1618, 1631 and 1651. In 1616 and 1634 William Jaggard, Crooke's (and Shakespeare's) printer, issued the illustrations in a separate volume, *Somatographia anthropine. Or, A description of the body of man*. As Alexander Read, a surgeon, noted in a preface to this book, the images uninterrupted by text better served the memory and the smaller format could be easily carried to a dissection and used to follow the anatomy.

Crooke answered the physicians' objections in the front matter to *Microcosmographia*. The title page specifies that the work is based on translated material from the recently published anatomies of his Gaspard Bauhin and André du Laurens. Bauhin was professor of anatomy and botany in Basel and du Laurens was professor of medicine at Montpellier and physician to Henry IV. Crooke says that he did not write an anatomy afresh because it was not possible to access the number of bodies necessary to do so in England.¹⁵ In the preface to the surgeons, Crooke defends his decision to publish this work in the vernacular. For him, physic and surgery are sister arts, and anatomical knowledge is crucial to them both. In other countries, he notes, it is common for physicians to write vernacular books to instruct surgeons who cannot read Latin, as well as to instruct them through lectures and dissections.¹⁶ Abroad and in England, Crooke says in a Latin dedication to the king, he has seen physicians display the anatomy of the generative organs and heard them discuss them in the vernacular.¹⁷ In the preface to Book IV he insists that parts of generation are crucial to anatomy. Just as the human body is the epitome of the universe, so human seed is the epitome of the body. Generation is central to the conceit of the book. The life of the

individual is limited, but generation renders it perpetual. Diseases of these parts, especially amongst women, provoke anxiety and are difficult to cure. Without lifting the veils of nature and modesty that conceal these parts, medical ignorance will persist. While acknowledging the commonplace that naughty-minded boys read medical books as sex manuals, Crooke insists that he includes this material not to titillate the prurient reader, but to instruct surgeons in their art, to inform laypeople about their own bodies and to honour God's creation. Even divines, says Crooke, have endorsed his whole anatomy. For those readers who wish to do so, moreover, the book is set out so that Book IV can be separated from the rest and studied in private.¹⁸

Testicles, heat, seeds and hermaphrodites

What do these 'obscene' 60 pages contain? They are divided into two parts: the 'History', which describes the generative parts of men, then women, linking the two with a comparative chapter, and the 'Controversies', which sets out questions about the generative parts. The first part glosses Bauhin and borrows his illustrations. We see images of the testicles and penis removed from a man's body (Table I), situated as part of an open torso (Table II) and details of the testicles and seminal vessels (Table III) and the muscles of the penis and fundament (Table IV). We see a woman's torso, opened to reveal the generative organs and the vascular structure of the breasts (Tables V, VI, VIII), details of her generative organs (Tables VII, IX), a pregnant woman with her womb exposed (Table X, this is the same as on the title page), details of the pregnant womb (Tables XI–XIII), and the wombs of a dog and cow (Table XIV). The first image of the woman's torso, Table V, illustrates Chapter IX, which compares the anatomy of men and women (see Figure 3.1).



Figure 3.1 Helkiah Crooke, *Microcosmographia, a description of the body of man*, 1615, p. 217. Wellcome Library, London.

Crooke, following Bauhin, who follows Galen, describes a homology between the generative organs of men and women. Galen, the second-century Roman physician who had systematized the writings attributed to Hippocrates and rationalized the doctrines of medicine, was the standard point of reference for early modern physicians. Together with Aristotle's works on animal generation and Hippocratic texts on gynaecology, these provided the major works against which new ideas about sex and generation were defined. The homology between the sexes explains the mirror structure of Book IV: there are two chapters on the testicles, one for each sex. Both men and women have testicles, placed differently in the body. The penis corresponds to the vagina and the scrotum corresponds to the womb.¹⁹ The differences are determined by heat, as it affects the conception and development of an infant and as it defines the physiology of the different sexes. Without enough heat to bring the female body to perfection, her generative organs remain lodged within. As Crooke explains:

The Testicles in men are larger and of a hotter nature then in women; not so much by reason of their scituation, as because of the temperament of the whole body, which in women is colder, in men hotter. Wherefore heat abounding in men thrusts them forth of the body, whereas in women they remaine within, because their dull and sluggish heate is not sufficient to thrust them out.²⁰

In this situation, her womb provides the blood from which an infant is formed and the vessel in which to grow it.²¹ Women are imperfect men who, with enough heat, have the potential to transform into men. 'The trueth of this appeareth by manifold stories of such women, whose more active and operative heate hath thrust out their Testicles, and of women made them men.'²²

The second part of Book IV, the 'Controversies', is largely drawn from du Laurens.²³ This sets out questions about the function of the testicles, the workings of the womb, and other differences between the sexes. Question VIII addresses 'How the parts of generation in men and women do differ', the question with which I began this chapter. Here there is a shift in mode from the discursive arguments of the anatomists to the collection of curiosities of the natural historians. Parts idealized or pathological are replaced by extraordinary cases. To answer how the generative parts of men and women differ, Crooke, following du Laurens, recounts a series of cases in which a woman turned into a man. In ancient Rome, a maid turned into a man and, like other monsters, was banished to the island of the soothsayers. In Argos, a married woman turned into a man, grew a beard, married a woman and produced offspring. Pliny, the great Roman natural historian, described a woman in Africa who changed sex overnight. In fifteenth-century Rome, a cardinal reports a case of a woman who grew a virile member on her wedding day. In Vasconia lived a grey-haired, strong and hairy 60-year-old man, who was previously a woman. At the age of 15, she fell, the ligaments between her legs broke, 'her privities came outward, and she changed her sex'. In fifteenth-century Naples, a pair of 15-year-old daughters changed into sons.²⁴ These cases, as the anatomists note, are typically taken to demonstrate that the generative organs in men and women are the same, only differently situated, as we saw explained, following Galen, in Chapter IX above.

This part of *Microcosmographia*, however, provides a different explanation. Following du Laurens, Crooke sets out a contrary position. Anatomically, men have a prostate and women do not. Plus the neck of the womb (vagina) is structurally different from the penis.

Inverting one will never make the other. Nor is the clitoris a reduced version of the penis. The womb is not the scrotum. The ovaries are not the testes. How is it, Crooke asks, that so many anatomists recount cases of the women turned into men? One answer is that some of the stories are fabulous. Another is that these are hermaphrodites, people who have the organs of both sexes, often with one set latent until some sort of accident or crisis. A third answer is that a woman has an enlarged clitoris, making it seem like a penis.²⁵ Whatever the explanation, du Laurens' account of the differences between the sexes departs from Galen and his followers' focus on form and heat and shifts the evidence to observed structures and reason. For him, the explanation of the differences between the sexes is less a question about anatomy and more about metaphysics. Is woman, as she is described in the Aristotelian tradition, imperfect?²⁶

The explanatory frameworks which allow for the vagina to be described as an inverted penis and for a woman who over-exerts herself to suddenly turn into a man have come to be known as the one-sex model. This term was coined by Thomas Laqueur in his controversial book, *Making Sex: Body and Gender from the Greeks to Freud* (Harvard, 1990). Building on work which historicized the body, Laqueur argues that at some point during the eighteenth century there was a major shift in how sex and gender were understood.²⁷ Prior to this the one-sex model dominated, in which males and females were seen as part of a continuum of heat and perfection. This was replaced by a two-sex model, in which the sexes were biologically distinct and women were defined by their maternal function and lesser rational faculties, differences instantiated in wider pelvises and weaker nerves. Through the eighteenth century, parallel arguments were extended to differentiate people according to race and social status. Laqueur's argument is compellingly schematic. The one-sex model has informed a range of readings from the stylistic effeminacy of humanist scholars, to the feminized body of Christ, to boys playing women on the Shakespearean stage.²⁸ Laqueur's legacy has been most enduring amongst modern historians of sex and the body for whom the transition from the one- to two-sex model serves as a sort of creation myth for binary ideas about sex difference.²⁹

Laqueur's critics countered that he was working with a reductive chronology and conflated Aristotelian ideas about function with Galenic ideas about form, producing a unified tradition of homology where there had not been one.³⁰ Aristotle's woman was a receptacle, cool, passive, and filled with blood which, when animated by the hot, male seed was formed into a fetus. She is inferior to man, an imperfect being. Galen's woman was also cooler and weaker but her differences centred on her womb, which, following the Hippocratic writings, made her erratic and lascivious. The Galenic homology was typically depicted in anatomical images of the woman's generative organs, such as in Table VII, which has been taken as the iconic representation of this homology (see Figure 3.2).³¹

Scholars generally concur that major cultural changes in how sex and generation were understood had occurred by the end of the eighteenth century and that these shifts were associated with trends amongst physicians and natural philosophers to see the body as defined by essential, natural attributes. The ways in which different traditions – ancient or modern, medical or legal or cultural – contributed to these shifts, how they are periodized, and whether the body entailed or reflected gender roles continues to be disputed.³² Anatomical practices are increasingly understood as embedded within the local politics of religion, medicine and patriarchy.³³ Historians of early modern medicine have reframed questions about sex and gender to draw attention to the fluidity of the male body,

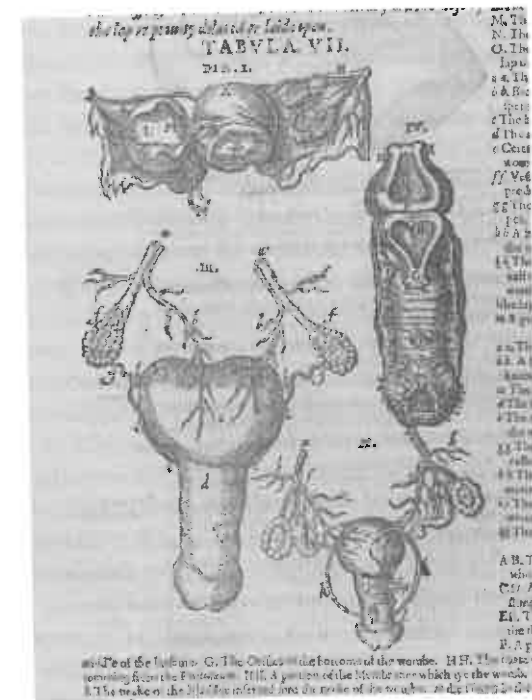


Figure 3.2 Helkiah Crooke, *Microcosmographia, a description of the body of man*, 1615, p. 220. Wellcome Library, London.

demonstrate the creation by men of a textual tradition about women's bodies, and situate medical practices within broader cultures and economies of body work.³⁴ More research is needed on health as it relates to sex, sexuality and the life cycle.³⁵

Crooke makes perennial appearances in historical studies of anatomy, sex and the body. Sometimes he is cited as a voice in support of the one-sex model; sometimes he is cited as a voice against such a model, lauding the perfection of women and dwelling on the inconsistencies in Galenic accounts of the homologies between the generative organs of men and women.³⁶ As we have seen, both are present in his work because of its composite structure; nor, in the passages which can be identified as Crooke's, is he consistent.³⁷ More particularly, attentive scholars have noted that Crooke's work reflects the controversy about sex difference conducted in anatomical works precisely because, as Crooke notes, he draws directly from Bauhin and du Laurens.³⁸ In relation to the generative parts, Bauhin speaks of similarities between the sexes, du Laurens about differences. Bauhin follows Galen, a position which Crooke endorses in part in complaining that Vesalius was too critical of the ancient doctor.³⁹ Du Laurens presents the first unequivocal challenge to the Renaissance notions of correspondence.⁴⁰ Regardless, Crooke's book has served as a mine of information about anatomy, particularly the generative organs, the brain and bodily identity.⁴¹ Most recently, his work has been read as presenting subjectivity as sex-specific. The male body is the epitome of the universe; the female body is defined by the single organ, the womb.⁴² Crooke's work embodies debates about the anatomy of men and women. It speaks, in words and images, whatever modern authors have sought there.

Anatomists' descriptions of the differences between men and women were rooted in their observations of dissected cadavers, guided by their study of medical and natural philosophical texts and, for those who practised medicine, informed by their encounters with their patients. The uterus and the testicles embodied the differences between the sexes, differences defined in terms of generative function and in relation to the rest of the body. The penis and the vagina had secondary functions as conduits of seed. However, the ways in which the uterus and the testicles contributed to generation eluded observation. Similarly, determining pregnancy was the purview of women and midwives, and was done through signs such as missed periods, sore breasts, swollen belly and the motion of the foetus, known as 'quickening'. Distinguishing a true from a false, or 'molar', pregnancy was important. These were caused by a weakness or impurity of the seed, male or female, and other factors which highlighted the links between an orderly marriage and the healthy production of an heir.⁴³ Seed was produced from blood, but explanations varied for how it was produced. Within the Aristotelian tradition, the heart was the seat of physiological processes and semen was a refined form of blood. Galen defined the brain, heart and liver as the principal parts, corresponding to the animal, vital and natural faculties. The liver produced blood, which was refined into seed in the testicles; sometimes, as Crooke notes, Galen included the testicles as a principal part, because they were essential, not to the vitality of an individual, but to the perpetuation of the kind.⁴⁴

Before anatomists derived techniques to see the seeds of generation in the late seventeenth century, they postulated analogies between these hidden workings and visible realms.⁴⁵ They also drew on the writings of physicians, natural philosophers and theologians about the maternal imagination, embryology and monstrosity. Crooke includes Book V, 'The historie of the infant', because he is following du Laurens. Book V focuses on questions particular to the process of generation. The similarities and differences between the sexes are defined by as well as expressed through generation, and accordingly many of the same topics occur here as in Book IV. Children were expected to resemble their parents, and when they did not the theory of maternal imagination was typically invoked.⁴⁶ Through her imagination, a woman imprinted what she saw or felt on her child. Famously, if a woman looked on a painting of a Moor at the moment of conception, she might give birth to a black child; if she was frightened by a rabbit, her child might have a harelip. Monstrous births were extreme examples, often read as signs of providence and discussed in sensational pamphlets and serious works of demonology and natural philosophy.⁴⁷ The case of Mary Toft who, in 1726, reputedly gave birth to 17 rabbits was the subject of medical, natural philosophical and popular speculation about the workings of providence, the natural processes of generation, and the intellectual weaknesses of women.⁴⁸

For Crooke, the differences between male and female bodies are defined in terms of heat, and their differing quantities of heat determine their differing contributions to generation.⁴⁹ That their bodies are different in kind relates to their function, according to which each is perfectly formed. The idea that men and women are equally perfect, following du Laurens, breaks with Aristotle. The purpose of sex is procreative; to this end, men and women are differently suited. Sexual desire is designed to entice people into intercourse. Without it, men would shun such brutish actions, and women would not risk the pain of childbirth. Sexual pleasure is necessary for the preservation of mankind.⁵⁰ Sexual arousal brings heat to the genitals, increased through the friction of the act, resulting in orgasm and the release of seed. Whether women produced seed had been debated

since antiquity. Anatomists, Crooke notes, dispute whether women's seed is fruitful, but he is certain that both sexes produce it. Aristotle described a one-seed model in which the male provided the seed that acted upon the matter, or blood, provided by the female, as rennet coagulates milk into cheese. Galen, following Hippocratic writings, set out a two-seed model, in which both sexes produced seed, albeit of different qualities. Because the testicles of men and women differ in size and situation, male semen is thicker, globular, hot and active, and female semen is cooler, thinner and wetter.⁵¹ In some traditions, seed from the man's right testicle, which lies closest to the liver, the seat of digestion, produces a male child, seed from the left a female child. In other traditions, a female child lies on the left side of the womb and only moves after 90 days.⁵² For the woman's seed to be released, she, like a man, needed to experience pleasure.⁵³ Throughout the early modern period, theories of generation informed legal cases. Some legal courts dismissed accusations of rape when the alleged act resulted in a pregnancy. For women, such as nuns or virgins, who did not have routine sexual pleasure, physicians could argue that illnesses resulting from retained seed could be treated by manual release.⁵⁴ Through the sixteenth century, most traditions concurred that seeds, whatever their source, needed to be nurtured by a woman's blood to grow. Women are colder and moister than men because they have more blood precisely so that they can nurture an infant.

The generations following Crooke would become especially interested in seed, using new experimental practices and innovative technologies (fixing specimens in wax, the microscope) to bear on pressing philosophical questions. In 1651 William Harvey finally published his research on generation, arguing that all organisms come from an egg, '*ex ovo omnia*'. By 'egg' he meant the whole conceptus, constituted by the foetus, membranes and placenta.⁵⁵ His experiments on chickens and deer failed to demonstrate the presence of male or female seed in the uterus after coition in fertile animals. He followed earlier anatomists in studying the development of chicks, and concluded that they form and shape their own matter, rather than developing out of pre-existing parts. He termed this process 'epigenesis', meaning parts budding out of one another. What came to be known as 'preformationism' presented a competing model, in which seed or sperm contained an entire being which simply grew bigger during the generative process. Other questions were debated. Was generation better understood as a form of propagation, leading through the generations to the original man and woman? How was the ability of some female insects to breed without males, known as parthenogenesis, to be explained? Did pangenesis, the idea that any part of an organism could become a new one, make sense? The spontaneous generation of insects occupied Jan Swammerdam, Francesco Redi and others through the 1660s. In 1667, comparing oviparous and viviparous generation, Niels Steno noted that the testicles of viviparous animals contained eggs. The testicles of women, he concluded, are like ovaries. His work was the subject of a priority dispute in the Royal Society in 1672-73 and the existence of human eggs was not visually proven until 1827. From the 1670s, with the consensus that women contributed eggs rather than menstrual blood or semen to generation, what remained of the disputes between the Aristotelian and Galenic models dissipated. Male seed was also investigated and in 1677 Anthonie van Leeuwenhoek wrote to the Royal Society reporting that he had seen what he called spermatozoa through a microscope. By the end of the seventeenth century, it had been established that animals come from animals of the same sort and that males and females contribute not seeds, but spermatozoa and eggs to this process. The nature of the eggs and sperm and their contributing role in generation continued to be debated. 'Spermists'

credited the sperm as the primary agent in generation, with the egg providing nutrition. 'Ovists' treated the sperm as an animating force, nudging the egg awake. From 1749, following the writings of Georges-Louis Leclerc, Comte de Buffon, the term reproduction began to replace generation. Scientific research began to focus less on the processes of growth and development and more on fertilization and inheritance.⁵⁶ Generation had become a subject of experimental inquiry and political economy, but it remained tied to the politics of sex, sexuality and reproduction.

Hysteria, menstruation and the diseases of women

Crooke fashions *Microcosmographia* as an anatomy book to sit beside the major works in the field from Mondino de Luzzi to Vesalius to du Laurens. He also situates it alongside vernacular works, in French and in English. It is time, he suggests, for worthy anatomists to turn their attention westwards to England. His book is the taper at which they might light their torches.⁵⁷ The story which conventional histories of learned medicine tell begins in Italy and moves northwards, climaxing with William Harvey's publication on the motion of the blood in 1628. Medical discoveries followed the path of the Renaissance, beginning with the recovery of the teaching and ideals of classical antiquity, their reconciliation with Christian humanism, and culminating with the rise of modern commerce, political systems, scientific inquiry and cultural expression. These are traditions formed through and documented by big Latin books and the epistolary networks that linked men of learning throughout early modern Europe. Increasingly historians have become attentive to the production of this knowledge, in material terms, amidst questions of politics and patronage, and as expressed across different cultural registers. Crooke prompts us to consider the place of generation in vernacular works and in the economy of medical knowledge and expertise more generally.

From the late fifteenth century, the promotion of vernacular works and the rise of printing were part of the humanist programme. In England, from the 1540s vernacular medical works discussed sex and generation within the conventions of midwifery texts, natural histories and books of wonders. These texts dovetailed with devotional writings and conduct books about Eve, Mary and the roles of women as wives and mothers. The production of books about women's bodies peaked in the 1650s.⁵⁸ Crooke's work was the first comprehensive English anatomy, but, as he signalled in the preface to the surgeons, he was building on John Banister's 1578 *The Historie of Man, sucked from the sappe of the most approved anathomistes*. ... Banister had been an eminent London surgeon, also licensed by the College of Physicians.⁵⁹ His anatomy explicitly avoids the generative organs of women. Book VI is about the instruments of propagation, and reveals 'as much as of the Male may commodiously be spoken' and omits women 'because I am from the begynnyng perswaded, that, by lifyng up the vayne of Nature's secrets, in womens shapes, I shall commit more indecencie agaynst the office of *Decorum*, then yeld needefull instruction to the profite of the common sort'.⁶⁰ Crooke, as we have seen, insists that it is appropriate and necessary to the study of anatomy and to the health of women to include this information. His work would be lame if it lacked this limb.⁶¹ Comparing Crooke and Banister's works provides a simple explanation for why the Fellows of the College of Physicians proposed to censor, ban and burn *Microcosmographia*. It broke with decorum, a decorum that Banister had upheld. Yet in the first decade of the seventeenth century, while Crooke was writing his book, medical, legal and religious men in London were debating the extent to which

women's diseases were caused by their wombs. We cannot be certain whether these debates informed Crooke's work or the College's opposition to it, but it is clear that Crooke was writing in a climate in which learned men talked about women's bodies.

With the recovery of Hippocratic gynaecological texts in the 1520s, women's health became increasingly tied to the uterus and defined in terms of sex, menstruation and childbirth.⁶² Women produced excess blood to nourish the child, initially in the womb and then it was concocted into breast milk. Healthy women menstruated, and regular menstruation was a sign of fertility.⁶³ A woman who was not pregnant periodically excreted excess blood, and with it the foul humours that had accumulated in her body. If this process was impeded, she sickened. Menstruation was a mainstay of Galenic medical theory, according to which a healthy body had the appropriate balance of the four humours: blood, black bile, yellow bile and phlegm. Cases of men who suffered periodic bleeding from the nose, haemorrhoids, or other sources, have been studied as evidence for the natural and pathological definitions of flow in the early modern period. Such cases of 'male menstruation' signal the ways in which gender was understood and enacted in terms of bodies bounded and unbounded.⁶⁴ Practitioners often inquired about the menstrual status of a woman, sometimes too about her sexual activity. And women consulted practitioners about menstrual irregularity, though practitioners sometimes suspected that this was a means of controlling fertility. Just as stopped menses was a sign of pregnancy, so there was suspicion that efforts to provoke menstruation might be intended to prevent pregnancy. Pregnancy, however, was typically defined as beginning when the child quickened, as movement signalled the ensoulment of the foetus.⁶⁵ Unless a woman was pregnant, menstruation was central to her health. Girls on the cusp of menarche were especially prone to diseases such as greensickness, and hysteria typically afflicted older women.⁶⁶

In 1603 Edward Jorden published *Briefe Discourse of a Disease called the Suffocation of the Mother*. 'Mother' was another term for womb, and 'suffocation of the mother' was hysteria, a disease caused by the womb restricting the function of the brain either by wandering from its natural place within the body or by producing noxious humours from retained seed or menses.⁶⁷ A woman with this affliction lost her senses, typically appearing dead, having fits or howling. These were the same symptoms as demonic possession, and practitioners who could not cure the disease through natural remedies often concluded that the patient was bewitched and could only be healed through prayer and fasting, actions which expelled demons from the body. Remedies for the hysterical woman variously attempted to return her womb to the correct location through coercion (tying down the woman), attraction (placing sweet-smelling herbs between her legs) or the expulsion of the retained blood and seed (bloodletting, orgasm). As the *Problems of Aristotle*, a popular collection of medical and natural questions and answers apocryphally bearing the philosopher's name, explained, carnal copulation is healthy because 'it doth ease and lighten the body, cheere the minde, comfort the head and the sence, take away many griefes of melancholy, because it doth expell the fume of the seede from the braine, and it doth expell the matter of impostume [e.g. blockages]'.⁶⁸

Jorden, a physician writing at the behest of the Bishop of London, Richard Bancroft, sets out the evidence that the 'suffocation of the mother' has natural causes. His emphasis on psychological explanations of illness has won him a place in the history of psychiatry. As Michael MacDonald has shown, however, this work also needs to be read as an intervention in the local politics of possession, witchcraft and medicine. Jorden's work was

prompted by the case of Mary Glover, though he does not name her. In 1602 Glover, aged 14, began to suffer from hysteria. When she failed to respond to the treatment of physicians, possession was suspected. Glover became a spectacle, prompting Londoners to debate whether the case was natural, demonic or fraudulent. Ultimately, Elizabeth Jackson was accused and convicted of bewitching Glover, although the judgment was contentious and she was soon released. Numerous physicians testified at Jackson's trial, on both sides. Jorden was amongst them, and he argued that Glover suffered from hysteria, a natural disease. The Bishop of London solicited Jorden's work to settle tensions in the capital about the politics of possession.⁶⁹

Jorden's pamphlet was aimed at a lay audience. It begins by baldly stating that women are subject to more diseases than men. This is because the womb is subject to diseases, and it in turn corrupts the rest of the body. Drawing on the major learned authorities on the subject and on recent accounts by other physicians, Jorden sees the womb primarily as an organ of excretion. It is like a sink or drain through which bodily waste passes. If it becomes blocked, health is compromised. Second, the womb has a reproductive function.⁷⁰ While much of the obstetrical and gynaecological literature produced during the Protestant Reformation portrayed the womb in positive terms, works like Jorden's cast a darker vision about women's bodies and their maternal roles.⁷¹ Jorden's primary concern is not with the function of the womb, but with the 'consent', or sympathy, between the womb and other parts of the body. There are, Jorden explains, two sorts of consent between parts of the body. First, a malignancy creeps from one part to another, and alters the quality of the part. Second, two parts share nothing, but one partakes of the grief of the other, like mutual compassion, as all nervous parts have with the brain. It is the second sort of consent which the womb conveys to other parts, especially the brain, heart and liver. These, as noted above, are the principal parts. Jorden is asking his readers to see the woman's body as subject to her womb. A woman with a diseased womb risks losing her animal, vital and natural faculties; the majority of Jorden's work sets out the dangers of this affliction. The comforts provided by a woman's friends and family, Jorden stresses, are essential to her cure.⁷²

Any physician living in London in the first decade of the seventeenth century would have been aware of the Glover case, and Crooke is no exception. He notes 'A strange case like a possession in Mary Glover of Thames Street' next to a passage explaining that the womb is fixed in the body and causes convulsions by pressing on adjacent organs.⁷³ In the 'Controversies' Crooke does not mention the Glover case, but he echoes Jorden's arguments on 'the wonderfull consent betweene the wombe and almost all the parts of womens bodis'. Crooke begins, following the Hippocratic tradition, with the premise that 'the wombs of women are the causes of all diseases'.⁷⁴ He departs from du Laurens' text, cites English cases and promises to tell his readers more about how to treat a prolapsed uterus in a forthcoming book on surgery which seems not to have been published.⁷⁵ His work on morbid anatomy is informed by and perhaps in dialogue with current concerns about the health of women. For Crooke, like Jorden, a woman's health depended on her womb, which depended on her role as a wife and mother. Mary Glover's convulsing body became the locus of disputes in which physicians exercised their authority to judge whether a disease was natural or demonic. Physicians and divines seem to have concurred that this young woman's body was subject either to the evils of the devil or to the ills of her womb. A further account illustrates the extent to which Glover's body was subject to medical scrutiny.

Stephen Bradwell, another member of the College of Physicians who had been called by the court to examine Glover (and who, incidentally, was Banister's son-in-law), wrote a reply to Jorden. This work was never printed.⁷⁶ Bradwell argued that Glover's affliction was demonic. His argument hinges on details of his careful consideration of Glover's menstrual cycle and her physical symptoms. When the fits began, he notes, Glover had not yet reached menarche. Three months later she began to have regular periods, a sign, according to the Hippocratic writings, that the convulsions would cease. They did not. Jorden, Bradwell suggests, did not know this: 'he is here to understand, that which (perhaps) he never enquired, that *M. Gl.* bodie enjoyed this dew of womanhoode about the end of Julie next after the day of her heaveie visitation [i.e. convulsions]: and from thenceforth continued by orderly periodes, well encreasing measures for a yeare after, that I was privie unto'.⁷⁷ Bradwell also reports on his physical examination of Glover. As she lay on her back, a movement 'began in the middest of her bellie: it moved as if it had beene some living creature, or ones hand within a bed, first obscurelie lifting up the cloathes, and then more manifestly; so did it make the middest of her bellie to lifte upwards, from her back; not arise upward, towards her stomach'.⁷⁸ Such motions were typical signs of demonic possession. Bradwell is suggesting that had Jorden attended to Glover's menstrual cycle or observed the motion of her womb, he would not have judged her disease natural. Here we glimpse a physician enquiring about a woman's menstrual cycle, examining her body, and complaining that his colleague's failure to do so led to an incorrect diagnosis.⁷⁹ For male medical practitioners to examine women's bodies risked breaching decorum, while failing to do so risked malpractice. Female medical practitioners, typically midwives, often examined a woman's body and provided legal testimony in cases where a woman accused of a crime pleaded the belly or was accused of infanticide or witchcraft, searching her body for signs of pregnancy or the suckling of demonic familiars.⁸⁰ Glover was not the accused and there is no evidence that the expertise of women was sought in this case. Glover's body, like the anatomized body, was the object of medical inquiry. This inquiry centred on her womb.

Conclusion

Perhaps the most emblematic image of early modern medical knowledge about generation is the title-page to Vesalius' monumental work of 1543. The anatomist is dissecting a woman, her uterus open to the audience. Through his skill, he can see into the hidden parts of a woman and the wonders of creation. He knows that the woman before him is not pregnant, knowledge which confirms the judgement of the midwives who rejected the woman's claim that she was with child, a circumstance which would have stayed her execution.⁸¹ Crooke's title-page, in contrast, includes paired figures of a man and a woman, the woman is pregnant, neither figure is subject to the hand of the anatomist, and the woman's womb remains closed. In 1631 Crooke prepared a new edition of *Micro-cosmographia*, reissuing the sheets from the earlier editions, with some expanded front matter and a new title-page. This elaborate engraving includes the images of male and female bodies from the original edition, and adds scenes of an apothecary and a surgeon at work at the top and an anatomical scene at the bottom. The seated man in a hat is reputed to be Crooke. Before him is a head, the brain exposed and explained by the anatomist. The brain had long been the princely organ, but by greeting his readers with it, Crooke signals the increasing sense that the brain, as the locus of the soul, was the new frontier of natural

knowledge.⁸² The bodies which Crooke encountered as a student of anatomy and practitioner of medicine were defined as male and female, masculine and feminine, healthy and unhealthy according to their generative function and within a Christian cosmology. Forward lay an era when women, from the perspective of physicians and natural philosophers, were physically delicate and intellectually feeble beings, in contrast to men who were strong and rational. The differences between the sexes had become fixed, objective and natural and medical men needed to find new means to rule women's bodies.

Notes

- 1 This work was supported by the Wellcome Trust [grant 088708] and enriched by the many students who have read *Microcosmographia* with me. Thanks to Karin Ekholm, Mary Fissell and the editors for comments on a draft of this chapter.
- 2 This is the legacy of the works of Michel Foucault, discussed throughout this volume. For the history of early modern medicine, the landmark work on the body is Barbara Duden, *The Woman Beneath the Skin: A Doctor's Patients in Eighteenth-Century Germany*, trans. Thomas Dunlap, Cambridge, MA: Harvard University Press, 1991 [1987].
- 3 Katharine Park, *Secrets of Women: Gender, Generation, and the Origins of Human Dissection*, New York: Zone Books, 2006.
- 4 The best introductions to these questions are Joan Cadden, *Meanings of Sex Difference in the Middle Age: Medicine, Science, and Culture*, Cambridge: Cambridge University Press, 1993; Ian Maclean, *The Renaissance Notion of Woman: A Study in the Fortunes of Scholasticism and Medical Science in European Intellectual Life*, Cambridge: Cambridge University Press, 1980, ch. 3.
- 5 Crooke, *Microcosmographia*, 'Preface to the Chyrurgeons', unpaginated.
- 6 William Birken, 'Crooke, Helkiah 1576–1648', *Oxford Dictionary of National Biography*, Oxford: Oxford University Press, 2004, [http://www.oxforddnb.com/view/article/6775] (accessed 12 April 2012); Margaret Pelling, *Medical Conflicts in Early Modern London: Patronage, Physicians, and Irregular Practitioners 1550–1640*, Oxford: Oxford University Press, 2003, pp. 126–27n.
- 7 For varying accounts of medical hierarchies in early modern Europe, see Laurence Brockliss and Colin Jones, *The Medical World of Early Modern France*, Oxford: Oxford University Press, 1997; David Gentilcore, *Healers and Healing in Early Modern Italy*, Manchester: Manchester University Press, 1998; Pelling, *Medical Conflicts*.
- 8 The Chamberlaines were the family later thought to have originated the secret of the forceps. Helen King, 'Chamberlen family per. c.1600–c.1730', *Oxford Dictionary of National Biography*, Oxford: Oxford University Press, 2004 [http://www.oxforddnb.com/view/article/58754] (accessed 12 April 2012).
- 9 Crooke, *Microcosmographia*, 'Preface to the Chyrurgeons', unpaginated. See also Pelling, *Medical Conflicts*, pp. 69, 102.
- 10 Lynda Payne, 'A Spedie Reformation': Barber-Surgeons, Anatomization, and the Reformation of Medicine in Tudor London' in Gerhild Scholz Williams and Charles D. Gunnoe, Jr. (eds), *Paracelsian Moments: Science, Medicine and Astrology in Early Modern Europe*, Kirksville, MO: Truman State University Press, 2002, pp. 71–92.
- 11 Pelling, *Medical Conflicts*, p. 221.
- 12 Andrew Cunningham, 'The Kinds of Anatomy', *Medical History* 19, 1975, pp. 1–19; David Harley, 'Political Post Mortems and Morbid Anatomy in Seventeenth Century England', *Social History of Medicine* 7:1, 1994, pp. 1–28; Carol Loar, 'Medical Knowledge and the Early Modern English Coroner's Inquest', *Social History of Medicine* 23, 2010, pp. 475–91; Lynda Payne, *With Words and Knives: Learning Medical Dispassion in Early Modern England*, Aldershot: Ashgate, 2007.
- 13 Susan Broomhall, *Women's Medical Work in Early Modern France*, Manchester: Manchester University Press, 2004, p. 233.
- 14 Royal College of Physicians, *Annals*, Bk. 3, 1608–29, trans. J. Emberry and S. Heathcote, 1953–55, 11 November 1614, p. 65; 22 December 1614, p. 65; 3 April 1615, p. 71.
- 15 Crooke, *Microcosmographia*, 'Preface to the Chyrurgeons', unpaginated. For his debt to Bauhin and du Laurens, see also pp. 25–26, 257, [1113].

- 16 Crooke, *Microcosmographia*, 'Preface to the Chyrurgeons', unpaginated; see also pp. 25, 197.
- 17 Crooke, *Microcosmographia*, 'Serenissimo potentissimo ...', unpaginated. The Physicians later held this against Crooke: *Annals*, 21 April 1618, p. 111.
- 18 Crooke, *Microcosmographia*, p. 197.
- 19 Crooke, *Microcosmographia*, pp. 216–17.
- 20 Crooke, *Microcosmographia*, p. 204.
- 21 Crooke, *Microcosmographia*, pp. 198–99.
- 22 Crooke, *Microcosmographia*, p. 204.
- 23 See n. 15 above; Winfried Schleiner, 'Early Modern Controversies about the One-Sex Model', *Renaissance Quarterly* 53, 2000, pp. 180–91 (181).
- 24 Crooke, *Microcosmographia*, pp. 249–50.
- 25 Cathy McClive, 'Masculinity on Trial: Penises, Hermaphrodites and the Uncertain Male Body in Early Modern France', *History Workshop Journal* 68, 2009, pp. 45–68 (esp. 58). Crooke omits the often cited case of Germain Garnier, called German Marie, because he was christened Marie: Ambrose Paré, *On Monsters and Marvels*, trans. Janis L. Pallister, Chicago: Chicago University Press, 1982 [1573], pp. 31–32.
- 26 Rebecca M. Wilkin, *Women, Imagination and the Search for Truth in Early Modern France*, Aldershot: Ashgate, 2008, ch. 3.
- 27 Laqueur's work should be read in parallel with Londa Schiebinger's: 'Skeletons in the Closet: The First Illustrations of the Female Skeleton in Eighteenth-Century Anatomy', *Representations* 14, 1986, pp. 42–82; Londa Schiebinger, *The Mind Has No Sex? Women in the Origins of Modern Science*, Cambridge, MA: Harvard University Press, 1989; Londa Schiebinger, *Nature's Body: Gender in the Making of Modern Science*, Brunswick, NJ: Rutgers University Press, 1993.
- 28 Patricia Parker, 'Gender Ideology, Gender Change: The Case of Marie Germain', *Critical Inquiry* 19, 1993, pp. 337–64; Jonathan Sawday, *The Body Emblazoned: Dissection and the Human Body in Renaissance Culture*, London: Routledge, 1995, pp. 213ff; Janet Adelman, 'Making Defect Perfection: Shakespeare and the One-Sex Model' in Viviana Comensoli and Anne Russell (eds), *Enacting Gender on the English Renaissance Stage*, Urbana, IL: University of Illinois Press, 1999, pp. 23–52.
- 29 See, for instance, Myra J. Hird, *Sex, Gender and Science*, Basingstoke: Palgrave, 2004.
- 30 See especially Katharine Park and Robert Nye, 'Destiny is Anatomy', *The New Republic*, 18 February 1991, pp. 53–57. The debate was rekindled a decade later: Michael Stolberg, 'A Woman Down to Her Bones: The Anatomy of Sexual Difference in the Sixteenth and Seventeenth Centuries', *Isis* 94, 2003, pp. 274–99, published with responses from Laqueur, 'Sex in the Flesh', pp. 300–306 and Schiebinger, 'Skelettestreit', pp. 307–13. For recent advances on this debate, see Helen King, *Midwifery, Obstetrics and the Rise of Gynaecology: The Uses of a Sixteenth Century Compendium*, Aldershot: Ashgate, 2007.
- 31 Laqueur, 'Sex in the Flesh', p. 301.
- 32 On the overemphasis on medical traditions, see Faramarz Dabhoiwala, *The Origins of Sex: A History of the First Sexual Revolution*, London: Allen Lane, 2012.
- 33 Giovanna Ferrari, 'Public Anatomy Lessons and the Carnival: The Anatomy Theatre of Bologna', *Past & Present* 117, 1987, pp. 50–106; Park, *Secrets of Women*.
- 34 For instance, Caroline Bicks, 'Stones like Women's Paps: Revising Gender in Jane Sharp's *Midwives Book*', *Journal for Early Modern Cultural Studies* 7, 2007, pp. 1–27; Sandra Cavallo, *Artisans of the Body in Early Modern Italy: Identities, Families and Masculinities*, Manchester: Manchester University Press, 2007; Harold J. Cook, 'Markets and Cultures: Medical Specifics and the Reconfiguration of the Body in Early Modern Europe', *Transactions of the Royal Historical Society* 21, 2011, pp. 123–45; McClive, 'Masculinity on Trial'; Monica H. Green, *Making Women's Medicine Masculine: The Rise of Male Authority in Pre-Modern Gynaecology*, Oxford: Oxford University Press, 2008; Lisa Wynne Smith, 'The Body Embarrassed? Rethinking the Leaky Male Body in Eighteenth-Century England and France', *Gender and History* 23, 2010, pp. 26–46.
- 35 See chapter 15, 'Bodies, sex and the life cycle', this volume.
- 36 Laqueur, *Making Sex*, pp. 90, 105; Schiebinger, *The Mind has No Sex?*, pp. 170, 178, 187–88; Adelman, 'Making Defect Perfection', pp. 36–39; Stolberg, 'A Woman Down to Her Bones', pp. 279, 282, 286–87.
- 37 E.g. Crooke, *Microcosmographia*, pp. 198–99. I have been judicious in attributing passages to Crooke and have noted his debt to other authors unless there is clear evidence to the contrary.

- 38 Schleiner, 'Early Modern Controversies', p. 181.
- 39 Crooke, *Microcosmographia*, p. 25.
- 40 Schleiner, 'Early Modern Controversies', pp. 183–84.
- 41 See, for instance, Patricia Crawford, 'Sexual Knowledge in England, 1500–1750' in Roy Porter and Mikulas Teich (eds), *Sexual Knowledge, Sexual Science: The History of Attitudes to Sexuality*, Cambridge: Cambridge University Press, 1994, pp. 82–106; David Hillman and Carla Mazzio (eds), *The Body in Parts: Fantasies of Corporeality in Early Modern Europe*, New York and London: Routledge, 1997; Sawday, *The Body Emblazoned*.
- 42 Eve Keller, *Generating Bodies and Gendered Selves: The Rhetoric of Reproduction in Early Modern England*, Seattle: University of Washington Press, 2007, esp. ch. 2.
- 43 Cathy McClive and Helen King, 'When is a Foetus not a Foetus? Diagnosing False Conceptions in Early Modern France' in Véronique Dasen (ed.), *L'Embryon humain à travers l'histoire: Images, saviors et rites*, Paris: CNRS, 2007, pp. 223–38.
- 44 Crooke, *Microcosmographia*, p. 44.
- 45 Thanks to Karin Ekholm for sharing this argument with me.
- 46 Silvia De Renzi, 'Resemblance, Paternity, and Imagination in Early Modern Courts' in Staffan Müller-Wille and Hans-Jörg Rheinberger (eds), *Heredity Produced At the Crossroads of Biology, Politics, and Culture, 1500–1870*, Cambridge, MA: MIT Press, 2007, pp. 61–83; Katharine Park, 'Impressed Images: Reproducing Wonders' in Caroline A. Jones and Peter Galison (eds), *Picturing Science, Producing Art*, London: Routledge, 1998, pp. 254–71; cf. Gianna Pomata, 'Blood Ties and Semen Ties: Consanguinity and Agnation in Roman Law' in M. J. Maynes et al. (eds), *Gender, Kinship, Power: A Comparative and Interdisciplinary History*, Routledge, 1996, pp. 43–64; Justin E. H. Smith, *The Problem of Animal Generation in Early Modern Philosophy*, Cambridge: Cambridge University Press, 2006.
- 47 There is an extensive literature on monsters. See especially Lorraine Daston and Katharine Park, *Wonders and the Order of Nature 1150–1750*, New York: Zone Books, 1998, ch. 5.
- 48 Lisa Forman Cody, *Birthing the Nation: Sex, Science, and the Conception of Eighteenth-Century Britons*, Oxford: Oxford University Press, 2005, ch. 5.
- 49 Crooke, *Microcosmographia*, p. 274.
- 50 Crooke, *Microcosmographia*, pp. 285–86; Cadden, *Meanings of Sex Difference*, ch. 3, esp. pp. 161–62.
- 51 Crooke, *Microcosmographia*, pp. 218–19, 241–46.
- 52 Cadden, *Meanings of Sex Difference*, p. 41, citing Pliny.
- 53 Laqueur, *Making Sex*, pp. 43–52; Thomas Laqueur, 'Orgasm, Generation, and the Politics of Reproductive Biology', *Representations* 14, 1986, pp. 1–41.
- 54 Winfried Schleiner, *Medical Ethics in the Renaissance*, Washington, DC: Georgetown University Press, 1995, ch. 5.
- 55 William Harvey, *Exercitationes de generatione animalium*, London: n.p., 1651.
- 56 These debates and discoveries are set out in a lively fashion in Matthew Cobb, *The Egg and Sperm Race: The Seventeenth-Century Scientists Who Unravelling the Secrets of Sex, Life and Growth*, London: The Free Press, 2006; see also Clara Pinto-Correia, *The Ovary of Eve: Egg and Sperm and Preformation*, Chicago: Chicago University Press, 1997. On medieval theological embryology, see Maaïke van der Lugt, *Le ver, le démon et la vierge: les théories médiévales de la génération extraordinaire: une étude sur les rapports entre théologie, philosophie naturelle et médecine*, Paris: Les Belles Lettres, 2004. On the discourse and politics of the study of eggs and sperm in the seventeenth century, see Cody, *Birthing the Nation*, ch. 4; Keller, *Generating Bodies*, chs 4 and 5. The standard work on eighteenth-century debates is Jacques Roger, *The Life Sciences in Eighteenth Century French Thought*, trans. Keith R. Benson, Stanford: Stanford University Press, 1997.
- 57 Crooke, *Microcosmographia*, pp. 25–26.
- 58 See especially Mary Fissell, *Vernacular Bodies: The Politics of Reproduction in Early Modern England*, Oxford: Oxford University Press, 2004; Fissell, 'Hairy Women and Naked Truths: Gender and the Politics of Knowledge in Aristotle's Masterpiece', *William and Mary Quarterly* 60, 2003, pp. 43–74. On gynaecology, see Green, *Making Women's Medicine Masculine*; King, *Midwifery, Obstetrics and the Rise of Gynaecology*; cf. Special Issue, 'Women, Health, and Healing in Early Modern Europe', *Bulletin of the History of Medicine* 82, 2008. On advice literature, see Randolph M. Bell, *How to Do It: Guides to Good Living for Renaissance Italians*, Chicago: Chicago University Press, 1999. On gender, generation and female sexuality, see also Katherine Crawford, *European Sexualities, 1400–1800*, Cambridge: Cambridge University Press, 2007; Kathleen M. Crowther, *Adam and Eve in the Protestant Reformation*, Cambridge: Cambridge University Press, 2010, ch. 4; Danielle Jacquart and Claude Thomasset, *Sexuality and Medicine in the Middle Ages*, trans. Matthew Adamson, Cambridge: Polity, 1988 [1985]; Robert Martensen, 'The Transformation of Eve: Women's Bodies, Medicine and Culture in Early Modern England' in Porter and Teich, *Sexual Knowledge, Sexual Science*, pp. 107–33; Katharine Park, 'The Rediscovery of the Clitoris: French Medicine and the Tribade, 1570–1620' in Hillman and Mazzio, *The Body in Parts*, pp. 171–93.
- 59 Andrew Griffin, 'Banister, John 1532/3–1599?', *Oxford Dictionary of National Biography*, Oxford: Oxford University Press, 2004; online edn, October 2008 [http://www.oxforddnb.com/view/article/1280] (accessed 13 April 2012).
- 60 Banister, *The Historie of Man*, fols. 85, 88v.
- 61 Crooke, *Microcosmographia*, p. 197.
- 62 King, *Midwifery, Obstetrics and the Rise of Gynaecology*.
- 63 Lisa Wynne Smith, 'Imagining Women's Fertility before Technology', *Journal of Medical Humanities* 31, 2010, pp. 69–79. On menstruation, see Patricia Crawford, 'Attitudes to Menstruation in Seventeenth-Century England', *Past & Present* 91, 1981, pp. 47–73; Bethan Hindson, 'Attitudes towards Menstruation and Menstrual Blood in Early Modern England', *Journal of Social History* 43, 2009, pp. 90–114; Cathy McClive, 'Menstrual Knowledge and Medical Practice in France, c. 1555–1761' in Andrew Shail and Gillian Howie (eds), *Menstruation: A Cultural History*, Basingstoke: Palgrave, 2005, pp. 76–89.
- 64 See especially McClive, 'Menstrual Knowledge and Medical Practice'; Gianna Pomata, 'Menstruating Men: Similarity and Difference of the Sexes in Early Modern Medicine' in Valeria Finucci and Kevin Brownlee (eds), *Generation and Degeneration: Tropes of Reproduction in Literature and History from Antiquity to the Enlightenment*, Durham, NC: Duke University Press, 2001, pp. 109–52; Smith, 'The Body Embarrassed?', pp. 26–46; Michael Stolberg, 'Menstruation and Sexual Difference in Early Modern Medicine' in Shail and Howie, *Menstruation: A Cultural History*, pp. 90–101.
- 65 Jennifer Evans, "'Gentle Purges corrected with hot Spices, whether they work or not, do vehemently provoke Venery': Menstrual Provocation and Procreation in Early Modern England', *Social History of Medicine* 25, 2012, pp. 2–19; Laura Gowing, *Common Bodies: Women, Touch and Power in Seventeenth-Century England*, New Haven: Yale University Press, 2003, ch. 4.
- 66 Helen King, *Hippocrates' Woman: Reading the Female Body in Ancient Greece* London: Routledge, 1998; King, *The Disease of Virgins: Green-Sickness, Chlorosis and the Problems of Puberty*, London: Routledge, 2003.
- 67 King, *Hippocrates' Woman*, ch. 11, esp. pp. 244–46.
- 68 *The Problemes of Aristotle*, 1595, sig. [E7v].
- 69 Michael MacDonald, *Witchcraft and Hysteria in Elizabethan London: Edward Jorden and the Mary Glover Case*, London: Routledge, 1991.
- 70 Jorden, *Briefe Discourse*, fol. 7.
- 71 Fissell, *Vernacular Bodies*, ch. 2.
- 72 Jorden, *Briefe Discourse*, fols. 7ff, 23v–25v.
- 73 Crooke, *Microcosmographia*, p. 225; see p. 251. For similar readings of Jorden and Crooke, see Keller, *Generating Bodies*, pp. 94–97.
- 74 Crooke, *Microcosmographia*, p. 252.
- 75 Crooke, *Microcosmographia*, pp. 225, [1113].
- 76 For an edition of Bradwell's text, see 'Mary Glover's Late Woeful Case, Together with her Joyful Deliverance', British Library, Sloane MS 831, ed. MacDonald, *Witchcraft and Hysteria*.
- 77 Bradwell, 'Mary Glover's Case', ed. MacDonald, *Witchcraft and Hysteria*, p. 102.
- 78 Bradwell, 'Mary Glover's Case', ed. MacDonald, *Witchcraft and Hysteria*, p. 86.
- 79 Roy Porter, 'The Rise of the Physical Examination' in W. F. Bynum and Roy Porter (eds), *Medicine and the Five Senses*, Cambridge: Cambridge University Press, 1993, pp. 179–97.
- 80 Cathy McClive, 'Blood and Expertise: The Trials of the Female Medical Expert in the Ancien Régime Courtroom', *Bulletin for the History of Medicine* 82, 2008, pp. 86–108; Gowing, *Common Bodies*.
- 81 Park, *Secrets of Women*, ch. 5.

- 82 On the solidity of the brain and women's 'nervous bodies', see Martensen, 'The Transformation of Eve'. For representations of the anatomized brain, see also the title-page of Alexander Read, *The manuell of the anatomy or dissection of the body of man*, 1638; Rembrandt, 'The Anatomy Lesson of Dr Joan Deyman', 1656. On Rembrandt, Descartes and this painting, see Sawday, *Body Emblazoned*, pp. 154-57.