

Generative Bodies:
Masculinity and Male Embodiment in Early Modern Medicine, 1450-1800

By

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LIST OF ABBREVIATIONS

- AN Archives Nationales de Paris
- BIU Bibliothèque Interuniversitaire de Santé, Paris
- BLO Bodelian Library, University of Oxford
- BNF Bibliothèque Nationale de France, Paris
- DU* Galen, *De usu partium corporis humani*
- GSM* *Gynaecorium sive de mulierum* (Strasbourg, 1597)
- LCL Loeb Classic Library
- OED* *Oxford English Dictionary*
- TLL* *Thesaurus Linguae Latinae*
- QML* Paolo Zacchia, *Quaestionum medico-legalium* (Lyon, 1661)
- WL Wellcome Library, London

NOTE ABOUT SOURCES AND CITATIONS

Most late medieval and early modern European medical writers were known by multiple different names, usually a vernacular name and a Latin name, each with multiple possible spellings. All authors are cited first by the most common spelling of their name in their native language, if known, followed by the Latinate form in parentheses (i.e. Mondino de' Liuzzi (*Mundinus*); Jacques Dubois (*Jacobus Sylvius*)). Those who principally went by originally Latin names are referred to by their most common Anglicized name, as in the case of Pliny the Elder (*Gaius Plinius Secundus*), Galen (*Claudius Galenus*), and Constantine the African (*Constantinus Africanus*).

Exceptions include those who are commonly known by their Latinate name, such as Albertus Magnus, Paracelsus, and Andreas Vesalius, to avert confusion. The other notable exception to this rule is Avicenna, who contemporaries principally knew by the Europeanized form of his name rather than his Arabic name, Ibn Sina. Finally, I refer to Arnaldus de Villa Nova as such simply in the interest of consistency, as his original Catalan name is spelled in many possible ways.

Book titles have been left in the language of the edition that I used. Very long book titles have been shortened to the first key phrase. I have generally omitted detailed publisher information from primary source citations, limiting publication information to city and year.

Quoted text in English has not been modernized. Non-English spellings of common names are not modernized or Anglicized (i.e. Henri, Jehan, Estienne).

All place names have been Anglicized.

NOTE ABOUT TERMS

This project frequently references some closely related terms, which are nevertheless used intentionally to refer to distinct things. For purposes of this project:

Masculinity refers to the state of occupying a social position associated with men or the social expectations, roles, behaviors, and personality traits that a culture most commonly associates with being a man. It more often refers to the state of being *gendered* as a man, rather than *sexed* as a male person. It is the counterpart to the term **femininity**, which conversely, describes the social roles, behaviors, or traits a culture most commonly associates with being a woman.

The definition of what counts as **masculine** is a purely social attribution. It can describe physical sex or body parts, but the adjective masculine does not only refer to the body or sex, describing, for instance, “masculine” women or “female masculinity,” to borrow Judith (Jack) Halberstam’s terms.¹

Maleness refers to the state of being sexed or physically identified as male, rather than female, and the bodily parts or functions most associated with the attribution of being “male.” This project is most concerned with how this quality has been defined historically, more so than more social or cultural expressions of masculinity. While I argue that ideas about what makes a person “male” is inherently bound up with cultural expectations about masculinity, I use the term maleness to distinguish the physical or bodily traits culturally associated with male “sex” from the social expression or attribution of gender (masculinity).

Male embodiment or **manhood** are also used mostly interchangeably with **maleness** to draw attention to the fact that I am discussing the physical experience of being sexed male or the *physical, bodily* traits associated with being a man, by contrast with the more clearly cultural or social experience of masculinity.

¹ See Judith (Jack) Halberstam, *Female Masculinity* (Durham, NC: Duke University Press, 1998), 1-2.

CHAPTER I: DECENTERING THE MICROCOSM

Hear what's the reason why a man we call
A little world? And what the wiser ment
By this new name? two lights Coelestiall
Are in his head, as in the Element:
Eke as the wearied Sunne at night is spent,
So seemeth but the life of man a day,
At morne hee's borne, at night he flits away.

Of heate and cold as is the Aire composed,
So likewise man we see breath's whot and cold,
His bodie's earthy: in his lunges inclosed,
Remaines the Aire: his braine doth moisture hold,
His heart and liver, doe the heat infold:
Of Earth, Fire, and Water, Man thus framed is,
Of Elements the threefold Qualities.

And as we fitly *INFANCIE* compare
Unto the *SPRING*, so *YOUTH* we liken may
To lazie *SUMMER*, whot devoid of care:
His middle Age to *AUTUMNE*, his decay
To *WINTER*, snowie white, and frostie gray,
For then his vigor failes, his heate is cold,
And like the saplesse Oake he dieth old.²

“What is a man?” is in essence the question posed in the English poet Henry Peacham’s 1612 poetic treatment of the subject, quoted here. Of course, however, Peacham’s concern in this poem is clearly not with men alone. In fact, it is unclear what aspects of the body of “man” described here Peacham regarded as male-specific, and what aspects he regarded as generalizable to all humanity. Even a woodcut image of a male nude [Fig. 1] accompanied Peacham’s poem and the text repeatedly calls attention to the masculine gender of his subject, Peacham described the male body in terms meant to apply to the general human experience of life and mortality.

Like many of his contemporaries, Peacham described man in the title of his poem as “*Homo Microcosmus*,” or “Man, the Microcosm.” As Peacham’s title suggested, “man” did not solely refer to the state of being sexed male, confined to the limits of a masculine-presenting body. Man encapsulated a

² “*Homo microcosmus*” in Henry Peacham, *Minerva Britanna, or a Garden of Heroical Devises* (London, 1612), 190-1. See Fig. 1.

“little world” unto himself because he mirrored, in microcosm, the same order that prevailed over the entire universe. His body possessed the same light, or soul, as that of the Sun, and so reflected the greater perfection of the divine order. The same four elements that composed all physical matter—earth, fire, water, and air—also composed his body and so could be hot or cold or airy just like each of these elements. Man’s body also mirrored the larger ordering of humanity and human life generally, standing in for the universal experiences of growing up and growing old. The message of the allegory: even though man’s body reflected the larger ordering and perfection of the natural world and even possessed a fragment of the more perfect “Coelestiall” element of soul in him, it was just as mutable and corruptible as any other aspect of the changeable, sublunary world of worldly matter. Man’s body had only a finite amount of life-giving “heate” and solar “light” in him. Inevitably, it would extinguish in death, just as the Sun did at the close of each evening, and just as the warmth of spring predictably gave way to the cold of winter.

This poem is representative of long-standing theories of the “microcosm,” or the notion that the human (and almost always, implicitly male) body recapitulated the greater perfection of the universe, or the macrocosm. In early modernity, reflections on the microcosm typically centered the male body as both the ideal and the normative representation of humanity. As early as the fifth century, Democritus (460-370 BCE) had claimed that “man is a universe in little (microcosm)” and Platonic philosophy had long alluded to the harmonic relationship between the body of “man” and the physical universe.³ This figuration of the male body as a “little world,” representing the connection between humanity and divinity, especially flourished in the sixteenth and seventeenth centuries, particularly in works influenced

³ W.K.C. Guthrie, *A History of Greek Philosophy*, vol. 2 (Cambridge: Cambridge University Press, 1965), 471; Donald Levy, “Macrocosm and Microcosm,” *The Encyclopedia of Philosophy*, ed. Paul Edwards, vol. 5 (New York, 1967), 121-125.

by the energetic early modern revival of Neo-Platonism.⁴ Innumerable sixteenth-century titles dedicated to the “excellence and dignity of man” and the “body of man,” which frequently contemplated the body as a reflection of cosmic order, also implicitly assumed the maleness of their subject.⁵

Even works that took a grounded approach to the nature of humanity and the human body operated under the assumption that contemplation of the “the little world” of man’s body—the ideal human form—would reveal higher truths about the order of God’s Creation. Sixteenth- and seventeenth-century medical works sought to represent the body not only anatomically and physiologically, but also philosophically and religiously, meaning that they tended to reiterate the centrality of man’s bodily perfection to the divine or universal order. Andreas Vesalius, for instance, described anatomy as the art of examining man’s body as “a fabric, a piece of workmanship by the Great Craftsman,” that reflected the larger order of divine design.⁶ By “man’s body,” Vesalius too clearly meant the male body, as most of the anatomical plates contained in the *Fabrica* that depict general human systems like the muscles and nerves display these systems on nude male bodies.⁷

⁴ Renaissance Hermeticism and Neo-Platonism especially spurred meditations on the notion of man as microcosm, most famously represented by the frontispiece in Robert Fludd, *Utriusque cosmi maioris*, vol. 1 (Oppenheim, 1617).

⁵ For example of such a title, Pierre Boaistuau, *Bref discours de l'excellence et dignité de l'homme* (Paris, 1559), f. 1r-6v. Maurice Scève’s 1562 poem, *Microcosme*, also portrayed Adam, the stand-in for general human fallenness, as its titular character. Maurice Scève, *Microcosme*, ed. Enzo Guidici (Paris, 1976).

⁶ Earlier, medieval anatomies had expressed essentially the same view. Guy de Chauliac, the fourteenth-century French surgeon, argued that anatomy was not just the study of the human body, but an exercise directed towards “great admiration of the power of God the creator, who so created and composed man’s body in his image.” Guy de Chauliac, *La grande chirurgie de M. Gui de Chauliac*, trans. and ed. Laurent Joubert (Lyon, 1580), 76.

⁷ This view did not veer far from the views of contemporary theologians like John Calvin, who also argued that man deserved the title of a “little world” or a “little universe” unto himself, as God’s “*chef d’oeuvre*,” and that through contemplation of man’s body, “one contemplates the goodness, power, and wisdom of God.” Jean Calvin, *Institution*

Read into this context, Peacham's text offers just one example of an exceedingly common tendency among early modern writers, and their medieval antecedents, to "figure the masculine as the human" and to confound the male body with all human bodies.⁸ Even in texts that did not directly allude to microcosmic theories of the body, sixteenth- and seventeenth-century often texts assumed the maleness of the human subjects they discussed and referred to "men" to discuss both men and women together. Significant linguistic ambiguity further surrounds early modern discussions of male bodies because, unlike in the case of "woman," "man" has been used in most all European languages in a dual sense, to refer to either an adult male human being or to all of humanity regardless of gender.

Contemporary medical theories of sex difference further reinforced this tendency to equate maleness with humanness, as they described the male body as the default body plan and to present female bodies as a slight, derivative variation on that plan. In his influential *Making Sex* (1990), Thomas Laqueur famously argued that prior to the eighteenth century, most educated people viewed male and female bodies as essentially the same anatomically.⁹ According to Laqueur, premodern medical and scientific authorities frequently described the male and female genitalia as essentially interchangeable variations on

de la religion chrestienne, (Geneva, 1561), bk.1, ch. 5, sect. 3, f. 6v. John Donne (1572-1631) similarly suggested in his sermons that contemplation of nature, especially nature as expressed in the body of man, reflected divine design, for, "The world is a great Volume, and man the Index of that Booke; Even in the body of man, you may turne to the whole world; This body is an Illustration of all Nature; Gods recapitulation of all that he had said before, in his *Fiat lux*, and *Fiat firmamentum*, and in all the rest, said or done, in all the six days." *The Sermons of John Donne*, ed. George R. Potter and Evelyn M. Simpson, vol. 7 (Berkeley and Los Angeles: University of California Press, 1959), 272.

⁸ Kenneth Gouwens, Brendan Kane, and Laurie Nussdorfer, "Reading for Gender," *European Review of History: Revue européenne d'histoire* 22, no. 4 (2015): 527.

⁹ Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge: Harvard University Press, 1990).

a single body plan, or “one sex,” implying that male and female bodies differed only by “degrees” rather than “incommensurable difference.” In the one-sex mode, male anatomical parts each had lesser equivalents in female bodies, and so anatomists freely discussed the existence of both male and female testicles and male and female seeds. Only in the eighteenth century did the notion of two entirely distinct sexes, with two distinct, incommensurably different bodies, supposedly emerge. In other words, medical constructions of the one-sex body reinforced maleness as the default state of humanity and constructed femaleness as no more than a state of difference from that default.

This tendency to discuss man in the sense of all humankind, or male bodies as the essential template for all human bodies, raises several methodological obstacles for historians interested in how gender shaped perceptions of male bodies in pre-modernity. Even though references to men and even the “body of man” abound in the historical record, it is a difficult task for the historian to distinguish what traits early moderns regarded as male-specific from those they regarded as statements on the general human condition that applied equally to both male and female bodies. As Kenneth Gouwens and his colleagues have noted, these cultural and linguistic tendencies make it difficult for scholars of early modernity to disentangle thinking about specifically male bodies from generalizations about all humanity, because this habit “at its most vigorous makes men as gendered beings invisible.”¹⁰ Feminist theorists, too, have long noted how the historical figuration of “male body as human body” historically relegated men to a pseudo-neutral position as the immutable and unchanging, universal human, again making masculinity difficult to theorize in gender-specific terms.¹¹

Consequently, relatively few historians have attempted to analyze constructions of male embodiment in early modern Europe. The methodological obstacles that stand in the way of disentangling

¹⁰ Gouwens, Kane, and Nussdorfer, 527.

¹¹ See Patricia Mercader and Laurence Tain, “Avant Propos,” in *L’Éternel Masculin* (Lyon: Presses universitaires de Lyon, 2003), 5-7.

the specific, gendered aspects of maleness from the general human condition led Laqueur and others to foreclose the possibility of writing a history of the male body altogether. Laqueur himself claimed that, “It is probably not possible to write a history of man’s body and its pleasures.”¹² Laqueur especially applied this claim to early modernity because, in the one sex model, the default “sex” and the normative human body was male, maleness being something that premodern people supposedly took for granted. Femaleness, on the other hand, constituted an unstable state of “otherness” that left it open to cultural comment. As Valeria Finucci points out, a one-sex model of being meant that “it was woman’s body, not man’s, that had ostensibly to be constructed and explained,” effectively positioning maleness as an unchanging standard, something outside of culture and thus outside the reach of history.¹³

Most subsequent scholarship on the body in early modernity following Laqueur has thus focused on constructions or perceptions of female bodies only.¹⁴ A body-centered approach has become especially

¹² Laqueur, *Making Sex*, 22.

¹³ Valeria Finucci, *The Manly Masquerade: Masculinity, Paternity, and Castration in the Italian Renaissance* (Durham, NC: Duke University Press, 2003), 13.

¹⁴ For instance, Laqueur argued that the supposed shift from a “one sex” to a “two sex” body in the eighteenth century occurred not due to any purely internal “scientific” discovery about the nature of the reproductive organs or conception, but due to external cultural and political pressures that aligned with the exclusion of women from the newly formed public sphere of republican politics. Taking their cue from broader cultural notions about the “naturalness” of women’s passivity and inherent unfitness for public life, scientific discourses in turn changed how they described women’s bodies, downplaying the essential equality of male and female contributions to conception and increasingly viewing women’s reproductive anatomy as being entirely unlike men’s. This argument lent support to the earlier claims of Londa Schiebinger, who argued that in the eighteenth century, anatomists re-evaluated the character of female sex difference to “naturalize” motherhood as the only appropriate state for women and to justify their non-participation in new liberal democracies, a view expressed in *The Mind Has No Sex? Women in the Origins of Modern Science* (Cambridge: Harvard University Press, 1989), 189–221. This insight also introduced the enticing possibility that early moderns might have thought about sex and the body in radically different ways from

favored in terms of capturing the lived experiences of early modern women and the functions of the body like menstruation, childbearing, and lactation that structured their lives. As has been repeatedly demonstrated, reference to women's supposedly weaker bodies and their association with sexuality and reproduction has historically justified women's social exclusion and oppression.¹⁵ Many studies, for instance, examine how constructions of the female body have tended historically to support cultural views about women's "otherness" from men, on the assumption that, "woman's nature is always culturally 'produced'" presumably, in ways that man's nature was not.¹⁶

Despite the enormous value of body-centered approaches to women's history, however, male bodies have remained comparatively under-examined and the relationship between normative standards of male embodiment, masculinity, and patriarchal social structures have remained relatively under-theorized. Histories of the body have provided a nuanced picture of how views of female embodiment

modern, and—in the view of feminist historians—oppressive, cissexist discourses. Laqueur's arguments have, for instance, proven especially generative among historians interested in the historical treatment of those falling outside binary gender categories. A major site of inquiry in this scholarship is evaluating premodern peoples' relative tolerance or intolerance of gender ambiguity within a purportedly more fluid "one-sex" mode of thinking about gender, as opposed to a more rigid "two-sex" paradigm. See, for example, Patricia Parker, "Gender Ideology, Gender Change: The Case of Marie Germain," *Critical Inquiry* 19, no. 2 (1993): 337-64; Lorraine Daston and Katharine Park. "The Hermaphrodite and the Orders of Nature: Sexual Ambiguity in Early Modern France," *GLQ* 1, no. 4 (1995): 419-438.; Kathleen Long, *Hermaphrodites in Renaissance Europe* (Aldershot: Ashgate, 2006).

¹⁵ As for example, the first part of Merry Wiesner-Hanks textbook on the "female life-cycle," Merry E. Wiesner, *Women and Gender in Early Modern Europe*, 2nd ed. (Cambridge: Cambridge University Press, 2000). See also Patricia Crawford, "The Construction and Experience of Maternity in Seventeenth-Century England," in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes (New York: Routledge, 1990), 23. Sara Mendelson and Patricia Crawford, *Women in Early Modern England, 1550-1720* (Oxford: Oxford University Press, 1998), 148-64.

¹⁶ Park and Nye, 54.

justified women's subjugation. However, the other half of the equation—how views of male embodiment upheld patriarchal domination or shaped the social experience of masculinity—has remained obscured.

This is the case even within the field of “masculinity studies,” which predominantly focuses on masculine gender in its social and psychological manifestations exclusively, with little regard to the gendered meanings attached to male sex or male bodies. Despite a dramatic uptick in the number of histories of masculinity in the last twenty years, historians have focused their attention more on how cultural expectations about gender shaped the social experience of masculinity than it did the physical, embodied experience of *maleness* in the embodied sense. Rarely do they extend the scope of culture to the body as has been the case in women's history. For the most part, historians have focused on what Cathy McClive has called the more “palatably cultural” aspects of masculinity, primarily investigating the various social roles occupied by men in early modern Europe, especially as patriarchs and members of religious and corporate communities.¹⁷ Useful and necessary as this work has been to demonstrating the historicity of masculine gender norms, it overlooks how early moderns understood the real, physicality of manhood, mediated through cultural expectations about gender. By doing so, the field has tacitly assumed that while expectations regarding masculine gender performance have varied significantly over time and in different historical contexts, this performance has happened against the backdrop of an ostensibly acultural, unchanging male body or transhistorical expectations attached to the physical quality of maleness.

¹⁷ Cathy McClive, “Masculinity on Trial: Penises, Hermaphrodites and the Uncertain Male Body in Early Modern France.” *History Workshop Journal*, no. 68 (2009): 45. On social histories of masculinity in early modernity see for instance Alexandra Shepard, *The Meanings of Manhood in Early Modern England, 1560-1640* (Oxford: Oxford University Press, 2003); Scott Hendrix and Susan Karant-Nunn, eds., *Masculinity in the Reformation Era* (Kirksville, MO: Truman State University Press, 2008); Julie Hardwick, *The Practice of Patriarchy: Gender and the Politics of Household Authority in Early Modern France* (Pennsylvania State University Press, 1998).

This project explicitly takes issue with the assumption, present in the wider field of gender history, that the body holds less relevance to the study of men than it does to the study of women—even that male bodies do not have a history. The assertion of an ahistorical maleness seems especially odd when read against scholarship that makes the case for considering nearly everything about humanity—the body and sex and the category of maleness included—as products of culture. Constructivist scholars have not only staked out the body as a valid subject of historical analysis, but asserted that it is impossible to discuss a real, objective body independent of the cultural meanings attached to it. Judith Butler, most notably, proposes that nothing separates the real biological body and its social interpretations, because it is impossible to objectively examine the material body except through the filter of cultural assumptions, particularly assumptions about gender.¹⁸ Even Laqueur himself argued that biological or physical sex is not a historical constant, but just as much a product of culture as its supposedly more socially constructed twin, gender. Determinations of sex always contain within them prevailing cultural assumptions about what different body parts signify about a person.¹⁹ If one accepts these arguments, that the body and sex are both products of their cultural and historical context, why not also open up the (sexed) male body to historical investigation?

This project seeks to do exactly that, by demonstrating that male bodies too properly belong to the fold of history. Following on the suggestion of R.W. Connell, that “the materiality of male bodies matters...as a referent for the configuration of social practices defined as masculinity,” this study accepts as a guiding premise that prevailing cultural values and gendered expectations also shaped constructions

¹⁸ Judith Butler, *Bodies That Matter: On the Discursive Limits of 'Sex'* (New York: Routledge, 1993).

¹⁹ Anne Fausto-Sterling has also proposed that contemporary notions of binarized notion of sex difference, which take for granted that sex is something rooted in the physical body, are intrinsically bound up with “notions about gender and sexuality” that are fundamentally cultural. Anne Fausto-Sterling, *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000), 22.

of maleness and the male body.²⁰ The following chapters sketch out a history of maleness—or normative standards of what made a body male—in European medicine and natural philosophy, roughly spanning the years 1500 to 1800. This study attempts to de-construct early modern representations of maleness as humanness by distilling, first, what it is that early modern people saw as distinctive about male bodies and second, how they connected those distinctions to cultural values like male superiority and patriarchal rule.

This project first seeks to demonstrate that early modern medical practitioners did not always take the male body for granted, as an unquestioned human default or the foundation of a single sex that did not require comment or further specification. Although early modern writers in the fields of medicine and natural philosophy did indeed often describe maleness as the normative human state, this is not to say that they did not have specific bodily features in mind that, for them, confirmed the ideal nature of maleness compared to femaleness. Even the notion of a metaphysical male superiority drew upon a specific conception of what constituted maleness and the cultural values attached to it, which supposedly set men apart from and above women. Very few voices in the sixteenth and seventeenth centuries seriously challenged the overriding principle that maleness was a preferable state or that male bodies were inherently better than female. Contemporaries could, and did, point to any number of bodily differences to support the principle of male bodily superiority. Men's greater heat, their greater physical strength and size, their supposedly greater health, or the possession of externally situated genitalia ranked among the most commonly cited justifications. Early modern medical writers thus also discussed male bodies, as well as female bodies, in sex-specific terms rather than merely as the taken-for-granted default, human body.

Peacham's poem above, for instance, attributes many of these characteristics to the male nude that supposedly stands in for humanity as a whole. The poem references several key features that early moderns regarded as unique to male bodies and succinctly outlines the essential paradigm in which

²⁰ R. W Connell, *The Men and the Boys* (Berkeley: University of California Press, 2000), 59.

contemporaries would have thought about the broader ordering of sex and gender in relationship to maleness. Even though Peacham clearly here meant “man” in the sense of “mankind,” describing the soul, mortality, and the physical composition of the material body as conditions that applied to men and women alike, the invocation of the singular male nude as depicted in the accompanying woodcut, also draws on highly gendered, specifically masculine, assumptions about the character of male bodies.

This project argues that Peacham’s choice of a male body, rather than a female, to represent humankind did not just represent a straightforward imposition of patriarchal values or a poetic generalization about the human condition. Peacham’s choice logically flowed from the system of bodily elements and qualities described in the poem. The male body poses at the center of the universe, in place of the earth, because classical medical theory upheld the greater “perfection” of male bodies’ material composition, compared to female. As evidence of his perfection, he stands between celestial bodies with opposing elemental qualities—the cold, wet moon, overshadowed by the hot, dry sun—implying, as the text goes on to describe, that the perfect balance of all the sublunary elements exists in man’s body. Only “heate” predominates in an otherwise perfectly balanced system, because it supposedly gave the body “vigor” and provided the spark of life that made men stronger and more physically active, just like the hot, active Sun. The system only became unbalanced as heat naturally decreased with age, eventually precipitating in the cold “winter” of death, or the total loss of heated activity and vitality.

In contrast, classical medical theory maintained that the predominance of languid, lifeless cold in women made them “unbalanced” in their elemental composition, due to the predominance of the elements of cold earth and wet water in their flesh. Even though women also had to possess some amount of heat simply by virtue of being alive and they underwent the same process of “cooling off” when they aged, the predominance of coldness in their bodies made them much more prone to elemental imbalance throughout their lives. Contemporary Hippocratic medicine associated coldness with illness and weakness and contemporary medical texts often referenced humoral coldness as evidence of women’s innate moral and physical weakness. Women’s inherent state of imbalance supposedly made them less able to control their

passions, which notoriously varied according to the “flux” of their internal balance of elemental fluids. The predominance of cold even made their digestion less efficient, causing them to produce a surplus of blood, emitted monthly as menses. Early modern medical writers therefore tended to characterize women’s bodies as inherently unstable, variable, and moreover “leaky.” All these things taken into account, Peacham’s description of the elements of the body of “man” is therefore only partly a statement about the nature of humankind generally. That is, the microcosmic male nude depicted in Peacham’s text did not only represent the nature of all humanity. It may also be read as a statement on the greater perfection of the male body specifically. The more heated, self-contained, elementally balanced male body, held up as the more perfect representative of humanity, stands in stark contrast to its lesser, colder female variant.

Observations of this kind form the basis for Chapter II of this project, “Seed Difference as Sex Difference,” which differentiates what early moderns saw as distinctive about male bodies from general statements about all human bodies. In it, I argue that maleness in the physical, sexed sense primarily centered on the paradigm of heat and elemental qualities laid out in Peacham’s presentation of man in microcosm. It begins by examining how medical texts prior to the mid-seventeenth century differentiated male and female bodies. I argue that early modern medical sources inherited a predominately “fluid-centric” view of male-female differentiation from classical medicine, which tended to emphasize the greater heatedness, and hence, greater perfection of male bodies as the basis of male sexual difference. Statements on men’s greater heat especially served to differentiate men’s and women’s reproductive roles, heat giving men a more active role in sex and reproduction and inscribing a more passive role on women. Supposedly, men’s greater humoral heat also made them better able to “cook” their blood into seed than women, meaning that they made a greater contribution to reproduction. Medical texts also frequently attributed the greater perfection of the male seed to the influence of the major organs of the body—the liver, heart, and brain—which each contributed more perfect fluids to the formation of male semen, absent in discussions of women’s reproductive ability.

This “fluid-centric” view emphasized the importance of differences in the humoral physiology of reproduction in men and women, over and above differing genital organs, which medical writers often described as merely superficial differences in the external anatomy.²¹ Chapter II thus in this respect also works to demonstrate that maleness is a constructed category that has changed significantly over time, and is not a timeless, acultural fixture. Chapter II first reveals that what early moderns regarded as sex-specific about male bodies differs greatly from contemporary notions of maleness, which strongly identify male sex primarily with the possession of a penis and testicles rather than humoral qualities like heat or fluids like semen. This stands in contrast to the findings of other historians, who have assumed the singular transhistorical importance of the male genitalia to constructions of maleness. Laqueur’s one-sex argument, for instance, took for granted that pre-modern people would locate sex difference solely in the genital organs, leading him to only discuss sex difference in relationship to genital anatomy. His argument thus centered on genital homologies, or the fact that early modern anatomists tended to transpose male genital organs onto female bodies—for instance, describing the structures now called

²¹ When I refer to fluid-centric thinking as a “model” I do not mean to imply that this was the only way in which male bodies were constructed or understood in early modernity. Early moderns of course also recognized the penis and testicles as important signifiers of manhood. I use the term “model” more as a convenient shorthand for a consistent “motif” or “theme” that existed alongside more genito-centric constructions of the male body. As Karen Harvey has suggested, a framework of multiple “themes” rather than monolithic models perhaps better captures the variety of ways in which early modern people understood the body and sex difference. In this study I only mean to suggest that early modern medical texts often, but not exclusively, discussed an internal physiology of fluids as a unique aspect of male embodiment—one that existed alongside, but was eventually superseded, by ways of talking about the male body that focused more narrowly on genital difference. Karen Harvey, “The Substance of Sexual Difference: Change and Persistence in Representations of the Body in Eighteenth-Century England,” *Gender & History* 14, no. 2 (2002): 205.

ovaries as “female testicles,” or comparing the vaginal canal to an inverted penis—leading him to argue that they saw female embodiment as no more than a slight variation on a male standard.

I propose, however, that such “genito-centric” thinking would not have been the sole way in which early moderns understood male sex difference, nor should historians hastily “attribute a constant gendered meaning to even the most quintessentially male of organs.”²² As a number of scholars have suggested, genito- or phallicentric views of the male body owe a great deal to twentieth-century Freudian and Lacanian psychoanalysis, which attributed transhistorical validity to the male genitals as signifiers of both sexed identity (in the real, physical sense) and masculine power (in the symbolic sense)—views that might not translate back to pre-modernity.²³

Pre-modern constructions of “sex” might have also identified maleness or femaleness in multiple parts of the body other than the genitals alone.²⁴ For instance, the more internally focused nature of humoralism in the context of early modern medicine often gave much greater weight to the inner physiology of the fluid economy, rather than the anatomical “solids” of the body, as the foundation of all embodied experience. Humoralism—the theory that the body is composed of a delicate balance of elemental “humors” that could be hot, cold, wet, or dry—dominated early modern thinking on health, sex,

²² Gouwens, “Emasculation as Empowerment,” *European Review of History: Revue européenne d'histoire* 22, no. 4 (2015): 536.

²³ Patricia Simons, *The Sex of Men in Premodern Europe: A Cultural History* (New York: Cambridge University Press, 2011), 16.

²⁴ Will Fisher has made the case that the beard ought to be considered a more important signifier of manhood than the male genitalia. Will Fisher, “The Renaissance Beard: Masculinity in Early Modern England,” *Renaissance Quarterly* 54 (2001): 155. Joan Cadden has also argued that medieval medical writers recognized multiple markers of male sex, including body heat, hair, beards, and physical fortitude. Joan Cadden, *The Meanings of Sex Difference in the Middle Ages: Medicine, Science, and Culture* (Cambridge: Cambridge University Press, 1993).

and the body generally.²⁵ By contrast with the more modern concern with the “anatomy of solid parts” or the “physiological interplay of organs,” humoralist early modern medical texts expressed a much more thoroughgoing interest in fluid or temperature variations inside the body as the basis of physical differences between male and female bodies.²⁶ As Laqueur himself argued, early modern medical writers understood differences in the situation of the male and female genital organs to be caused by underlying fluid and temperature differences rooted in the humoral economy. Men’s greater “heat” pushed their genitals outside the abdomen while women lacked sufficient heat to undergo the same transformation, causing their reproductive organs to remain inside the body. In a sense, then, pre-modern medical models presented genital difference as merely a side effect of much deeper, more thoroughgoing differences in the fluid composition of male and female bodies.

More important among these deeper fluid or humoral differences was heat. Heat did not only cause the male genitals to protrude outside the body, but directed the development of all mental, physical, and social characteristics generally regarded as masculine. Early modern medical texts frequently referenced men’s greater heat to support the notion that men possessed more “perfect” bodies than their female counterparts and to prop up the notion that men made a greater, more perfect, “spiritous” contribution to reproduction than did women. Classical sources and their early modern inheritors almost unanimously agreed that men’s bodies were not only better formed, but better suited for, and organized around, reproduction because of their greater innate heat. Heat explained what contemporaries saw as men’s greater bodily “perfection,” as evidenced by their greater physical strength, mental and physical fortitude, and the development of externally situated genitalia and physical attributes like a beard. Heat also inscribed particularly “masculine” sexual and reproductive functions onto the male body. Because

²⁵ See Vivian Nutton, “Humoralism,” in *Companion Encyclopedia of the History of Medicine*, eds. W.F. Bynum and Roy Porter (New York: Routledge, 1993), 281.

²⁶ Ulinka Rublack and Pamela Selwyn, “Fluxes: The Early Modern Body and the Emotions,” *History Workshop Journal*, no. 53 (2002): 2.

early modern sources regarded heat as an active, transformative quality—characterized by its ability to “act upon” or cause a change in other qualities—it similarly made male bodies more suited for a more active, projective, externally-directed role in both sexual intercourse and in reproduction, in which they were understood to normatively act upon a passive female subject to initiate conception.

This understanding of heat in relationship to male sexuality and reproductive ability not only justified and explained normative male sexual roles. It also explained differences in the fluid contributions that men and women made to reproduction. Heat played an essential role in the production of semen, understood to be a quintessentially male fluid and prime signifier of male superiority in generation. Even though Galen and the Hippocratic writers claimed that men and women supposedly produced “seed” necessary for conception, early modern writers frequently described the male seed as superior to the female, a formulation that Patricia Simons has termed an “unequal two-seed theory” of sex difference.²⁷ The greater heat of the male seed caused it to have a more active nature, making it uniquely able to inspire growth and transformation in the more passive female seed. The male seed thus made a “formative” contribution because it conveyed the essence of the human form to a developing embryo, whereas the female seed contributed the matter or body of the fetus, which ranked lower as a lesser or merely “material” contribution.

Early modern texts also regarded male seed as a superior, quintessentially male fluid because it drew from the fluid contributions of the major organs of the body, particularly the liver, heart, and brain. The liver, a hot organ, digested food and transformed it into blood, from which both male and female seed formed. Being colder, women could not however completely digest their blood. Women’s “seed” was thus no more than surplus, undigested blood that could not be used elsewhere in the body and drained through the venous system to the female testicles to be emitted as menstrual blood. Men’s seed, however, contained hot, airy vital spirits from the heart that made it especially generative. It also contained cerebral

²⁷ Simons, 16.

moisture or animal spirits from the brain on its path to the testicles, where it gathered in preparation for emission.

For all these reasons, I argue that sixteenth and seventeenth-century medical texts especially emphasized the “generative” qualities of manhood. This is not just to say that early modern medicine simply put a high cultural value on men’s generative ability (though it did), but that the physiological processes of generation shaped male bodies in ways that differed substantially from women. For instance, medical texts did not locate male reproductive ability in a single part of the body like the penis and testicles, but in fact understood to involve all the major organs of the body. Even the testicles had a rather minimal role in the production of semen because it was produced elsewhere inside the body and was only stored there for emission.

Chapter II also operates on the premise that “cultural” assumptions about the character of manhood and masculinity profoundly shaped views of the male body. Much like the womb, which pre-modern medical writers often described as “secretive” or mysterious from their perspective, the inner workings of the male reproductive apparatus—including the function of the testicles, the mechanism of erection, and the composition of the male semen—also remained mostly unknown to sixteenth- and seventeenth-century anatomists and medical theorists.²⁸ Because they could only speculate about the nature of generative processes, medical writers were free to read in their own gendered assumptions about

²⁸ As Jacques Roger has pointed out, the physiology of the male testicles, the penis, and the formation of semen were still just as poorly understood by the close of the sixteenth century as the female organs. The role of the testicles especially “was the subject of much debate. It was generally admitted that the ‘male seed’ was ‘elaborated’ there, a vague and meaningless term, which everyone interpreted as he wished. For some, indeed, the testicles were not part of the generative process. As for the male seed, there was agreement only that it was ‘whitish’ and ‘foamy,’ and that was all. Its origin, composition, and role were all objects of controversy.” Jacques Roger, *The Life Sciences in Eighteenth-Century French Thought*, ed. Keith R. Benson, trans. Robert Ellrich (Stanford: Stanford University Press, 1993), 40.

men and male bodies into their discussions of reproduction. Naturally, they tended to favor theories that aligned with broader cultural values attached to manhood in early modernity, particularly the principle of male superiority. For instance, almost all medical writers of the sixteenth and seventeenth centuries agreed that male bodies were generally more perfect, healthier, and all around better than colder, sicklier female bodies, a view that fit easily within broader, hierarchical views of gender and easily extended to the case of generation, in which men supposedly played a more active role.

Most early modern medical texts agreed that, just as men exhibited greater bodily perfection in all other arenas of life, that fathers also made a more “perfect” contribution to their children than did mothers. Even though premodern medical writers often focused inordinate attention on childbearing as a constitutive aspect of female nature, medical theorists consistently maintained that men, not women, were the fertile sex because they alone could initiate new life. This view that speaks to the importance of fertility to manhood and the exercise of masculine power in early modernity. While most studies have taken for granted that women’s bodies were more profoundly “sexed” because of their association with reproduction, this study suggests that early modern views of the male body were also informed by—even literally constituted by—cultural priorities related to generation. The notion that men had a greater role to play in generation, and that fathers therefore had a greater biological claim to their children than did mothers, supported patriarchy in the most literal sense of the word. It lent biological support to the cultural priorities of the Christian European cultural context, which generally favored male primogeniture, traced inheritance principally through the male line, and privileged the custodial rights of fathers to their children.²⁹ Regional variations and exceptions to legal rules of paternal right of course existed in practice,

²⁹ As Katherine Park notes, “Cultural constructions of the body sustain particular views of society and justify particular social values and social arrangements...thus patrilineal kinship systems tend to produce theories of generation that emphasize the father’s contribution to the fetus at the expense of the mother’s.” Katherine Park, “Was There a Renaissance Body?” In *The Italian Renaissance in the Twentieth Century*, eds. Walter Kaiser and Michael Rocke (Olschki, 2001).

but the principle of patrilineal descent persisted almost universally in canon, Roman, and common or “customary” law jurisdictions of the sixteenth and seventeenth centuries.³⁰ It also conveniently intersected with prevailing political ideologies based on patriarchal rule, which widely set patrilineal descent as the basis of hereditary monarchy and often held up kings as the “fathers” of their people.³¹

The principle of male superiority in generation also helped to assuage and contain some of the tensions inherent to patriarchal social structures. A cultural emphasis on paternity collided with some of the more obvious “realities of conception, gestation, and childbirth, all of which foregrounded the mother’s contribution to generation and the physical tie between mother and child.”³² It therefore served to re-center the role of the father in a child’s formation, even in the face of biological facts that tended to support the greater importance of the mother’s contribution. Assertions about the father’s superior role in generation also got around another obvious problem for patrilineal descent: absent modern genetic testing,

³⁰ As women’s historians and family historians have shown, the picture on the ground was of course much more complex. Patrilineal descent was fraught with exceptions to the rule and opportunities for negotiations within patriarchal structures. Amy Louise Erickson, for instance, has shown that though principles of primogeniture were influential in early modern England, its strictures were applied rather flexibly to female inheritance and women still had an important role in the transmission of property. Amy Louise Erickson, *Women and Property in Early Modern England* (New York: Routledge, 2002). However, legal prescription in most localities strongly favored patrilineal descent. Medical texts also often advised readers on how to have male, rather than female, children, suggesting a general preference for male heirs.

³¹ For a summary of scholarship on the equivalence between fathers and kings in early modern political thought, see Hardwick, *Practice of Patriarchy*, 77, n. 1.

³² Park, *Secrets of Women: Gender, Generation, and the Origins of Human Dissection* (New York: Zone Books, 2006), 25. Giulia Sissa has also eloquently explored the cultural consequences of this model of filiation for ancient Greek notions of fatherhood and the role of the male body in generation, in “Subtle Bodies,” in *Fragments for a History of the Human Body*, vol. 3, eds. Michel Fehrer, Ramona Naddaff, and Nadia Tazi (New York: Zone Books, 1989), 132-57.

men could never know for certain if their children were in fact their own. Thus, even though paternity came with potentially enormous material consequences, through inheritance and other legal obligations, fatherhood had little basis in observable, physical facts, but depended almost entirely on either the word of the mother or presumptions drawn from a social relationship like marriage. The insistence that men had a greater role in conception, and that the functions of generation uniquely distinguished their bodies thus provided biological support to what was, otherwise, almost an entirely social attribution.

Constructed this way, numerous weaknesses plagued paternity. Not only did it depend on the faithfulness of women, whose untrustworthiness formed the punchline in innumerable sixteenth-century jokes and ballads. It also depended on a man's own fertility. An examination of sixteenth- and seventeenth-century discussions of male infertility and impotence speak to the importance of reproductive ability in contemporary notions of the normative male body. Male infertility especially concerned contemporaries because it could disrupt the transmission of power through the patriline—an inheritance structure already constrained by consistently high infant mortality and the enforcement of life-long, monogamous marriage by the Roman Church. The weaknesses of this system were probably especially apparent in the sixteenth and seventeenth centuries, when several European monarchs failed to produce viable male heirs, often with far-reaching political consequences.³³

Thus, even though early modern medical texts described the male body as normatively and ideally generative, they also had to acknowledge that the notoriously weak human body did not always perform as expected. The theory of male superiority in generation could, after all, both work to men's

³³ Most famously, Henry VIII's inability to produce enough male heirs led to the installation of the Catholic Mary, then the Protestant Elizabeth, necessitating a modification of ideologies of kingship, not to mention the official religion in England. France also saw numerous child-kings and regencies in the same period, not to mention an extremely fraught dynastic shift at the end of the seventeenth century, because of a strict insistence on male rulership in Salic Law. See Katherine Crawford, *Perilous Performances: Gender and Regency in Early Modern France* (Cambridge: Harvard University Press, 2004), 5.

credit and against it. On the one hand, it confirmed cultural norms that ascribed to men a greater legal claim on their children. At the same time, though, it opened another troubling possibility that worked against patriarchy: if heirs did not result, did it not make more sense to blame the purportedly more active partner in generation rather than the mere “matter” or “vessel”? Sixteenth and seventeenth-century medical texts thus fully acknowledged the possibility and the consequences of male infertility and dedicated significant therapeutic attention to the male body and to the maintenance of male generativity.

Chapter III, “Too Cold, Hot, Wet, or Dry: Seed Problems and Male Infertility,” picks up on these practical and therapeutic implications of the fluid-centered manhood, as described in Chapter II. It suggests that even though early modern sources described male bodies as ideally and normatively generative, a fluid-centered model also left open the possibility that male bodies might also sometimes prove non-normatively, non-generative. Against the common assumption that early modern people only ever expressed concern for women’s fertility, this chapter thus demonstrates that medical discourses recognized a number of different male reproductive problems. Most sixteenth- and seventeenth-century medical texts explained male reproductive disorders in predominately fluid terms, just as they did the normative state of male fertility. An imbalance in the humoral qualities of the heat, moisture, or spirits, or the flow of these qualities from their respective organs, could result in a wide spectrum of reproductive problems in men.

More importantly, examining constructions of male infertility reveals how gendered expectations related to male sexuality and reproduction may have shaped, and been shaped by, fluid-centered views of normative maleness in early modernity. Although most medical writers took for granted that men as a category were normatively hotter and more generative, they also recognized that individual men might fall short of this ideal balance of fluids. It could be disrupted by any number of factors, including one’s natural disposition, diet, age, exercise, sexual habits, and the emotions. Especially considering that the production of male seed depended on the influence of not one, but three, humoral fluids—heat, moisture,

and air or spirit—an imbalance in any one of these qualities could cause the male seed to be either too cold, too hot, too dry, or too wet to be generative.

Early modern medical texts thus presented male fertility as a state at once normative and integral to male superiority, but also exceedingly fragile. Although medieval texts had long recognized the possibility of male infertility, early modern physicians expressed a much more thoroughgoing consciousness of the social implications of infertility for marriage and masculine authority. Sixteenth- and seventeenth-century practical texts frequently stressed the importance of constant, vigilant bodily self-mastery and moderation for the maintenance of male fertility—an ethic very much in line with a broader cultural emphasis on active, self-regulation through moderation as a “key philosophical or ethical virtue” and structural element of “male subjectivity” in early modernity.³⁴ These texts particularly discouraged indulgence in activities deemed “excessive” as harmful to the integrity of the male body and the balance of the seminal fluids. Renaissance conduct books often framed excess in general as “unmanly” and unbecoming of the social roles occupied by men, especially those in positions of power. Excesses perceived to be especially feminizing, such as drunkenness and sexual indulgence could, from a medical point of view, also be literally feminizing because they supposedly diminished the heat of the body and the quality of the seminal fluids. Not only that, medical texts also often linked normative gender presentation and behavior directly to the economy of the heat and the seminal fluids, further reinforcing the centrality of fertility, and its regulation, to normative maleness.

The fact that Chapter III argues that early modern medicine recognized a spectrum of male reproductive problems stands in contrast to the almost exclusive focus on impotence in previous work on early modern masculinities.³⁵ Because impotence formed a diriment impediment to marriage in canon law

³⁴ Todd W. Reeser, *Moderating Masculinity in Early Modern Culture* (Chapel Hill, NC: UNC Press, 2006), 12.

³⁵ See for example Pierre Darmon, *Le tribunal de l'impuissance. Virilité et défaillances conjugales dans l'ancienne France* (Paris: Seuil, 1979); Angus McLaren, *Impotence: A Cultural History* (Chicago: University of Chicago Press,

and sometimes appeared in cases dealing with the adjudication of marriage, it has often been assumed to be the only recognized male reproductive disorder prior to the modern period.³⁶ A serious examination of the etiology of the disorder, however, reveals that, in premodern medicine, impotence referred to a much wider range of disorders other than what modern readers might call erectile dysfunction. Even though canon law developed a strict legal distinction between impotence—or the inability to have sex—and sterility—or the inability to conceive—medical discourses often treated these as related conditions and categorized both as forms of infertility. The reason for the lack of distinction between impotence and infertility in medicine I argue had to do with the importance early modern humoral theory ascribed to male seed. Seed played a role not unlike that attributed to the hormone testosterone in modern medicine, because it played a central role in the physical operation of the reproductive organs. Deficiencies or disorders of the seminal fluids were thus understood to be the root cause of infertility in the broadest sense because they could not only prevent conception, but also negatively affect sexual desire and the ability to achieve and maintain an erection. Examining the significance of seed to male embodiment is therefore essential to understanding how early modern medicine categorized and treated male bodies that deviated from the generative ideal imposed on them in discourses on the superiority of the masculine heat and male semen.

2007); Jeffrey Merrick, “Impotence in Court and at Court,” *Studies in Eighteenth-Century Culture* 25 (1996): 187-202; the essays in Sara F. Matthews-Grieco, ed., *Cuckoldry, Impotence and Adultery in Europe (15th-17th century)* (New York: Routledge, 2014); Edward J. Behrend-Martínez, *Unfit For Marriage: Impotent Spouses On Trial In The Basque Region Of Spain, 1650-1750* (Reno, NV: University of Nevada Press, 2007); Thomas A. Forster, “Deficient Husbands: Manhood, Sexual Incapacity, and Male Marital Sexuality in Seventeenth-Century New England,” *William and Mary Quarterly* 56 (1999): 723-44.

³⁶ Angus McLaren, for instance, asserted that there was virtually no recognition of male-specific reproductive disorders other than impotence in early modern England, *Reproductive Rituals: The Perception of Fertility in England from the 16th to the 19th Century* (London: Methuen, 1984), 38.

Chapter IV, “Reconceptualizing Male Impotence in Early Modern Medicine,” takes up these insights as they apply to impotence in early modern medicine. This chapter is closely connected to the preceding one because it also examines the practical implications of a fluid-centered model for non-normative male reproductive problems, though it focuses specifically on the etiology of impotence and diminished sexual desire. This chapter proposes that early modern medical texts classified impotence as a reproductive, rather than an exclusively “sexual” problem, because both male infertility and impotence were understood to have a similar cause, originating in imbalances in the seminal fluids. Unlike in modernity, in which sexuality and reproduction can be imagined as separate human activities, with separate medical discourses, early modern medical writers rarely discussed male sexual function independently from reproduction.

The tendency to collapse together sex and reproduction reflected both the moral and cultural priorities of early modern medical writers, as much as contemporary physiological understandings of the male body. Morally, medical texts very clearly regarded heterosexual, marital, reproductive sex to be the only licit outlet for any advice about sexual health they provided. They generally took it for granted that their readers also saw the ideal end-goal of all sex to be reproduction. Physiologically, medical texts constructed sexuality and reproduction as inseparable categories, grouped together under the heading of “generation.”

.” This held particularly true in discussions of male bodies, whose normative functions were understood to be principally generative and directed towards reproduction. The equivalence between maleness and generativity went so far that medical writers quite literally subordinated all aspects of what we might separate out as male “sexuality” to the role of the seminal fluids, such that the operations of the penis were understood to be caused by the inner movement of the seminal fluids. Medical writers often explained erection, for instance, as a function of the seminal fluids, caused when the airy spirits from the heart inflated the penis. They thus often treated impotence as a form of infertility because it stemmed from a fluid defect in the composition of the semen, it being believed that the heat of the liver inspired

sexual desire and that erection occurred due to the inflation of the penis with the airy spirits contained in the semen.

This chapter thus re-contextualizes male impotence as only one category on a much broader spectrum of male reproductive disorders recognized in the early modern period. It argues that early modern literature did not even clearly define the term “impotence” because contemporaries so often read the disorder into a fluid paradigm that reduced both male infertility and other sexual disorders to deficiencies of the seminal fluids. The term impotence could interchangeably refer to male infertility, constructed as an, “impotence for engendering.” It could also refer to several other abnormal conditions of the male humoral body other than erectile dysfunction. Any condition that prevented sex from being potentially reproductive—meaning semination in the womb—could be regarded as a kind of impotence. The term could thus include disorders like premature ejaculation or a total inability to ejaculate, with or without erection, because all three were understood to result from an underlying imbalance in the composition of the seminal fluids.

This fluid understanding of impotence carried over into even early modern discussions of magically-caused impotence. As the chapter section “The Ties That Bind: Magically-Caused Impotence in Early Modern Europe,” discusses, medical and demonological texts often attributed male impotence to the work of witchcraft. These texts also understood impotence magic according to a fluid paradigm of the male body and often collapsed the sexual condition of “impotence” in with general reproductive or generative disorders. Although other historians have interpreted magically-caused impotence as something akin to “magical castration,” or removal of the action of the male genital apparatus, I argue that impotence magic targeted the underlying fluid qualities of a man’s body. Magic that involved the tying of knots supposedly “tied up” or blocked the movement of the seminal fluids to the penis and testicles. So-called “impotence” magic could thus also attack both one’s sexual ability and inhibit the generative faculties.

Chapter V, “Manhood on Trial: Medico-Legal Views of the Male Body in the Seventeenth Century,” next examines how medical experts called to testify in courts of law applied a fluid-centric model of the male body to cases involving impotence, castration, or hermaphroditism. This chapter shows that judicial institutions during the early modern period took an “increasingly prominent role in determining who was and was not a man” based on the physical body.³⁷ Particularly in the seventeenth century, legal courts increasingly came to rely on the testimony of medical experts to provide definitive proof of manhood through physical examinations of the male body. In the 1660s, physicians like Paolo Zacchia developed detailed guides for medical professionals tasked with distinguishing between “men” and “not-men” based on the body and worked to refine otherwise indistinct definitions of impotence and infertility. Legal courts also increasingly scrutinized the male body during legal proceedings according to ever more exacting definitions of sex difference. The ecclesiastical court of the Officialité of Paris, most notoriously, required that men accused of being impotent undergo an invasive procedure known as the *congrès* to demonstrate their sexual ability.

Based on the records of this court, I argue that medical experts at the beginning of the seventeenth century demanded the institution of the *congrès* because only this procedure could accommodate their fluid-based definitions of male sexual function. Experts in these cases repeatedly insisted that manhood depended on “a force and a heat that can only be known through action”—referring to the masculine heat and vital forces believed to be necessary for the creation of generative seed. They found physical examinations of the exterior male body, even the demonstration of erection, insufficient in determinations of impotence because they claimed that true virility depended on these inner flows of heat and seminal fluids, not the state of the “exterior parts,” as contemporary medical consensus held. They thus insisted

³⁷ Edward Behrend-Martinez has reached a similar conclusion in his analysis of Spanish court cases, “Manhood and the Neutered Body in Early Modern Spain,” *Journal of Social History* 38, no. 4 (2005): 1073.

that men in these cases demonstrate their fluid, as well as their physical, functionality through a complete, live performance of their sexual ability.

In this chapter, I argue that institutions like the *congrès*, strange as they may seem from a modern point of view, emerged from, and were logically consistent with, contemporary understandings of the male body. Consequently, the practice of the *congrès* disappeared as those understandings changed over time. While medical writers of the sixteenth and early seventeenth centuries argued that men ought not to take their sexual or reproductive health for granted but had a responsibility to regulate the internal economy of fluids and heat in order to maintain their generativity, later critics of the *congrès* increasingly argued that male sexual or reproductive ability ought to be assumed. These critics argued that male sexual ability should not be questioned or proven, especially not in a public venue like a court of law, and especially not by female litigants. At the same time, medical commentators in these cases also argued that unless a man lacked both testicles or had some other physical injury to the genital parts, he should be presumed “capable of marriage” by default. The relocation of evidence for manhood from the less stable qualities of heat and the seminal fluids to the penis and testicles marked the abolition of the *congrès* by the middle of the seventeenth century and a dramatic decline in subsequent cases citing impotence. This chapter thus closes with the legal and social consequences that stemmed from changing conceptions of male embodiment, as genito-centric thinking increasingly predominated over the older, humoral model in the later seventeenth century.

The sixth and final chapter of this study also picks up with how views of normative male embodiment changed over the latter part of the seventeenth century, into the eighteenth. It again focuses on changes internal to medical and natural philosophical writing, examining how fluid-based conceptions of the male body changed in response to innovations in the fields of embryology and anatomy. These innovations unsettled the dominance of humoralism and increasingly supported an emphasis on the anatomical “solids” of the body over a fluid-centered humoral physiology. For instance, the revival of descriptive anatomy in the sixteenth century led to the discovery of several previously unknown

structures, like the bulbourethral gland or Cowper's gland, in the male genital apparatus. The discovery of specialized structures unsettled the long-standing notion that the testicles had little or no role in the production of semen, and the belief that semen originated from heated blood, spirits, and moisture, derived from the liver, heart, and brain, respectively. An improved understanding of the composition of the muscles and nerves serving the genitals also undermined the notion that the humoral components of the semen caused erection, namely the inflation of the penis with airy "spirits" from the heart, leading anatomists to grant a much wider range of independent action, apart from the physiology of fluids, to the penis.

In the later seventeenth century, anatomical dissection also challenged the notion that women possessed virtually identical "testicles" to men, making external, anatomical differences like the possession of testicles more important to maleness than differences in the fluids they produced. Finally, the discovery in 1677 of tiny, apparently alive "animalcules" swimming in the male semen further challenged the old, humoral notion of three fluids or airy "spirits" composing the seed. This discovery further challenged the tenets of the older, humoral model of semen production and male embodiment and signaled a transformation in medical constructions of normative maleness at the cusp of modernity.

As is probably apparent from the lack of regional specification in these chapter descriptions—other than the brief detour to France in Chapter V—I have taken a broadly European view of the early modern medical landscape in this study. My analysis in these chapters is not restricted to any national frame, incorporating texts by practitioners from England, Italy, France, Switzerland, Spain, the German states, and the Low Countries. This requires some explanation, as other histories of early modern medicine have tended to focus on regional or national medical culture and histories of masculinity in its socio-cultural manifestations have also tended to stress a multiplicity of early modern "masculinities"

which defy trans-regional generalizations.³⁸ While these approaches also have their merits, there are several strong justifications for a trans-European account of medical constructions of the male body in early modernity.

First, medical writing and publishing remained intensely interconnected and relatively unified in content across national borders in early modern Europe. Most physicians who authored medical texts generally shared the same educational foundation, principally based in the works of Galen and Galen's interpreter, Avicenna. They also principally published in the international language of Latin and their works circulated widely among international populations of practitioners connected to publishing hubs in Paris, Lyon, Bologna, and Venice.

Most medical works also exhibited a strong degree of uniformity in ideas and several powerful continuities persisted over time. "Novel" works by contemporary authors rarely appeared in print, as editions of Galen and Hippocrates and accepted medieval authorities dominated the bulk of sixteenth-century medical publishing. That said, even the works of so-called *recentiores*, up to the mid-seventeenth century, rarely strayed from broadly accepted principles rooted in classical medicine. The bulk of physicians' publications in the sixteenth century—even those of noted "innovators" like Vesalius, Fallopio, and Colombo—simply added to "a corpus of information going back to Galen, and differing scarcely at all from it in fundamentals."³⁹ As Andrew Wear reminds us in his survey of medical writing in early modern England, even amidst the numerous disputes that occurred between physicians, surgeons,

³⁸ On multiple "masculinities," see R.W. Connell, *Masculinities* (Berkeley: University of California Press, 1995). A number of early modern historians of masculinity have, following Connell's framework, identified a variety of both "subordinate" and "hegemonic" masculinities. See Elizabeth A. Foyster, *Manhood in Early Modern England* (New York: Longman, 1999), 4-5. Shepard, *Meanings of Manhood*, also distinguished between different models of manhood based on intersecting class- and age-based determiners of status.

³⁹ Linda Deer Richardson, *Academic Theories of Generation in the Renaissance: The Contemporaries and Successors of Jean Fernel (1497-1558)*, ed. Benjamin Goldberg (London: Springer, 2018), 281.

and “empirics” or Galenists and Paracelsians in the sixteenth century, all shared a “great deal of common ground about diagnosis and practice,” which Wear thought it safe to categorize as a common “medical culture.”⁴⁰

The same uniformity may be attributed to vernacular medical works that presumably attracted a more “popular” audience, which proliferated following the advent of print. Vernacular-language works were not necessarily novel productions, even though historians have often approached them as such. Many vernacular medical texts were in fact plagiarized or unattributed translations of existing Latin works that drew from the same overarching medical principles found in the work of more academically inclined, Latin-literate authors. The most popular Latin-language texts by celebrity physicians often enjoyed many vernacular editions that circulated widely, in many different European countries and so cannot be straightforwardly classified as products of a specific national culture. This is something that has been obscured by the preference of many historians for vernacular rather than Latin sources, partly on the assumption that vernacular sources more closely reflected common understandings of health and the body.

While studies of vernacular medical literatures may indeed provide insight into how ordinary people *consumed* information about the body, the actual content of that information does not appear to have differed significantly between Latin and vernacular texts, at least as far as the topic of this study is concerned. Even purely “novel” texts, authentically authored by vernacular-language authors, did not necessarily fall into a separate “popular” stratum of medical knowledge that differed substantially from

⁴⁰ Andrew Wear, *Knowledge and Practice in English Medicine, 1550-1680* (Cambridge, UK: Cambridge University Press, 2000), 6. Peter Murray Jones, “Medical Literacies and Medical Culture,” in *Medical Writing in Early Modern English*, eds. Irma Taavitsainen and Päivi Pahta (Cambridge, UK: Cambridge University Press, 2011), 43.

academic or “elite” medical texts.⁴¹ Even non-physicians unfamiliar with the ancient Greek texts from which early modern medical theory drew, widely accepted the basic principles of humoralism as the prevailing medical ideology up to the end of the seventeenth century. Although a diversity of different practitioners—physicians, surgeons, midwives, apothecaries, healing people, charlatans, empirics, and para-medical professionals—populated the universities, courts, cities, markets, fairs, and small towns of early modern Europe, variety did not necessarily breed novelty. Even amidst the variety of practitioners and approaches that populated the medical landscape, most medical writers of the sixteenth and seventeenth centuries still wrote and thought about the body within a broadly shared paradigm that transcended any simplistic divide between “popular” and “elite” medicine. Most of the assumptions early modern medical writers, academically trained or otherwise, made about the normative operation and construction of the body drew directly or indirectly, knowingly or unknowingly, from classical sources and their medieval interpreters.

My analysis of these texts has largely confirmed this, as both Latin-language and vernacular-language texts almost unanimously discuss male bodies and male sexuality according to the same fluid system of heat, spirits, and moisture. Very few early modern authors questioned prevailing notions about male bodies’ greater heat, perfection, or generativity compared to female bodies. The paradigm of heat appears to have been shared as a nearly universal way of discussing differences between male and female bodies. The basic principles of humoralism resonated even outside of medical writing, as the numerous illustrations and literary references included in this study reveal. I have thus focused my arguments on the general patterns that seem to unite early modern thinking on the character of male bodies, and general

⁴¹ Numerous historians have repudiated a simplistic division between “popular” and “elite” medical texts. Laurence Brockliss and Colin Jones have, for instance, eschew a simple division between elite and popular altogether, and argue for constant interpenetration between a central, academic “core” and a wide “penumbra” of non-university-educated practitioners. Laurence Brockliss and Colin Jones, *The Medical World of Early Modern France* (Oxford: Oxford University Press, 1997), 118.

changes that occurred to the dominance of humoralism, independent of regional variations and specificities.

Finally, I feel that a broadly European scope is justified in writing a history of maleness because medical discussions of explicitly male bodies, disorders, or diseases are comparatively rarer than discussions aimed at women's health during this period. The sixteenth century especially saw expanded interest among male physicians and surgeons in the subjects of gynecology and obstetrics. Consequently, many more monographs and compilations dedicated to the "diseases of women" exist for early modernity than do texts on the "diseases of men." No equivalent field of "andrology," which dealt with men separately, existed and very few titles single out men in a specifically gendered sense as their subject. I have therefore found it necessary to examine a much wider range of sources than any single national context could offer in order to gain a complete sense of how male bodies were discussed across a broad swath of early modern medical literatures.

What follows is a sweeping, but by no means comprehensive, of how pre-modern medicine constructed normative maleness in relationship to contemporary ideas about generation, the superiority of male bodies, and humoral constructions of the male body. Throughout, it grapples seriously with the materiality of the body as a historical construct and as a mirror reflective of larger preoccupations surrounding masculinity and male sexuality. The picture that emerges suggests that far from a transhistorical given, fixed in immutable constructs like microcosm and macrocosm, that the sixteenth and seventeenth centuries were a period of intense discussion and debate not just around masculinity as a social construct, but around the physical construction and constitution of male bodies themselves.

FIGURES: CHAPTER I

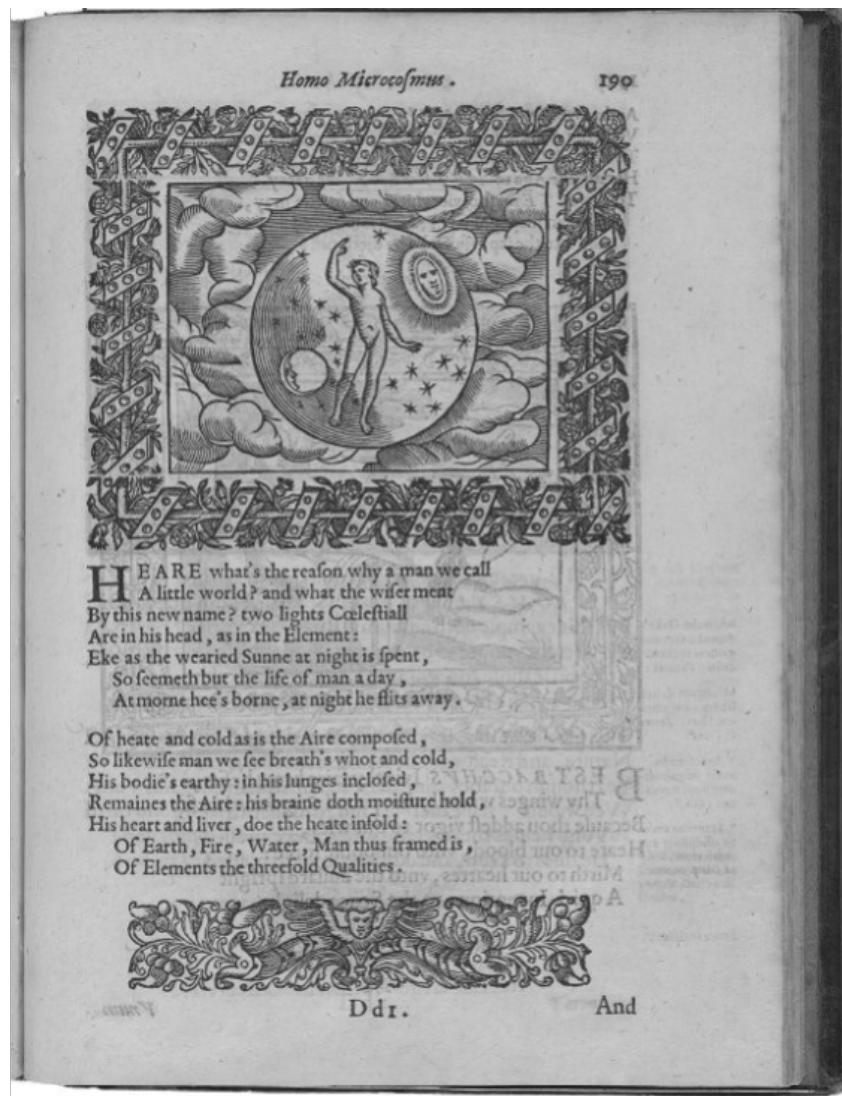


Fig. 1. “Homo microcosmus.” Peacham, 190. Call #: STC 19511. Used by permission of the Folger Shakespeare Library under a Creative Commons Attribution-ShareAlike 4.0 International License.

CHAPTER II: SEED DIFFERENCE AS SEX DIFFERENCE

INTRODUCTION

The English physician Helkiah Crooke's 1615 *Mikrokosmographia*—one of the best-selling English medical texts of the seventeenth century—described male and female sexual difference according to a dualism of fluids. Crooke claimed that women primarily differed from men because, “in Temperament they are colder, whence womens seed is more moyst, thinne and waterish,” and “the seede of the man...is thicker.” The reason for this, Crooke argued, had to do with the ancient physician Galen’s characterization of men as hotter, their bodies consisting, like their seed, principally of the element of “fire.” A man’s characteristic fire, a quality lacking in women’s colder, watery seed, conveyed the “spirit” of life to a developing embryo, “which Nature...doth extract and segregate from the more excellent part of the seed.” Crooke therefore distinguished men from women based on differential contributions to reproduction, arguing that men, by virtue of the greater heat of their temperament and the “spirit” contained in their seed, had a much more efficacious role in the generation of new life.⁴²

The fact that Crooke differentiated men from women based on differences in fluids and temperatures—rather than anatomical difference—is significant because it suggests that early modern medical writers saw male bodies as distinctively defined by differences in their fluid qualities: namely, their possession of greater amounts of heat and generative seed, rather than the genitalia or other physical markers of maleness. Crooke was far from original in making these arguments. As was typical of much of the medical literature of the sixteenth and seventeenth centuries, Crooke’s text heavily relied upon classical authorities—namely, Aristotle, Galen, and the Hippocratic authors—from whom he drew his

⁴² Helkiah Crooke, *Mikrokosmographia: A Description of the Body of Man* (London, 1615), 218.

classification of bodies, seed, and genders according to degrees of hot or cold or quantities of “fire” or “water.” By the time of Crooke’s writing, classical notions of men’s intrinsic hotness and their superior role in generation had been generally recognized by European scholars for thousands of years and had become firmly entrenched in both medical and cultural imaginings of the nature of maleness. The importance of heat, as the underlying principle behind male fertility, masculine embodiment, and maleness itself stands out as the central contribution of the ancient authorities to sixteenth- and seventeenth-century thinking on male embodiment. All the central, classical authorities—even those who proposed that women also produced seed—essentially agreed that men must make a greater contribution than women did to reproduction because men alone emitted truly generative seed. In the view of these classical authors, the humoral quality of heat, present in far greater quantities in male rather than female bodies, set male seed apart and above female seed and set the male role in generation above the female.

Seed did not only determine reproductive ability in men, however. Aristotle, Hippocrates, and Galen all agreed that male seed was distinctively important not only to male reproductive ability, but to maleness itself, even more so than the structural or anatomical differences that set men and women apart. Seed performed a kind of all-purpose function in the body that simultaneously accounted for reproduction, sexual ability, sexual development, and gender expression in men. It was essential to normal reproductive functionality, as well as male sexual differentiation (why men and women’s bodies differed), and even the development of character traits considered to be distinctively male. Rather than looking to anatomical or structural differences between men and women, classical medicine—and its early modern inheritors—centered the axis of sexual differentiation on the fluid economy of seed and heat. For this reason, early modern medicine constructed male bodies as essentially “generative” bodies, not only because medical writers assigned a greater role to men in reproduction, but because they viewed the seed as the principal signifier and determiner of manhood in all its cultural and bodily expressions.

HOT AND MALE, COLD AND FEMALE: THE AUTHORITY OF THE ANCIENTS

According to Crooke, male and female bodies differed in several crucial respects. Crooke identified “heat,” especially as a quality intrinsically associated with maleness. By the time of Crooke’s writing, the notion that men were by nature “hotter” and women by nature “colder” had been long accepted as a foundational aspect of male-female sex difference. Early modern historians have long noted the humoral distinction between “Hot, Dry Men” and “Cold Wet Women,” to borrow the title of art historian Zirká Filipczak’s study of humoralism and gender difference in Western European art.⁴³ Much of this scholarship has focused on the implications of coldness and wetness to the construction of women’s otherness, often portrayed in early modern literary and artistic culture as inherently imperfect, sickly, emotional, or “leaky” due to their humoral imperfection.⁴⁴ However, scholars have not yet fully explored the full import of heat and fluid difference to the construction of maleness—the hot, dry side of the humoral equation. Although scholars commonly recognize the importance of “heat” to early modern ideas about men and maleness, none to my knowledge fully investigate the intellectual origins of this association, its acceptance and interpretation in early modern medical culture, and the full physiological, therapeutic, and cultural consequences of heat- and fluid-based difference for medical models of maleness in the sixteenth and seventeenth century.

This section thus covers already well-treaded ground in that it traces the origins of heat-based models of male sex difference from ancient Greece through to the sixteenth century. While much of this information is well known to scholars of gender and sexuality, this section re-examines much of the same

⁴³ Zirká Z. Filipczak, *Hot Dry Men, Cold Wet Women: The Theory of Humors in Western European Art, 1575-1700* (New York: American Federation of Arts, 1997).

⁴⁴ See, for example, Paster, *The Body Embarrassed*; Paster, “The Unbearable Coldness”; Gowing, *Common Bodies*, 21.

textual tradition with an eye towards modifying several long-standing assumptions about the character of maleness in pre-modern medicine. First, it seeks to dispel the notion that because ancient medical theory treated male bodies as a normative default for all human bodies, that male bodies were not also laden with cultural assumptions about men's supposed greater perfection, both physically and socially, and imbued with extensive elaborations and musings on the character of masculine normativity (and normative superiority), as well as feminine "otherness." Secondly, also seeks to dispel the assumption, present since Laqueur, that premodern medicine exclusively located male-female sex difference in the genital organs and that ancient writers like Galen therefore recognized minimal differences between male and female bodies. Rather, this section demonstrates that all of the most important ancient writers and their later interpreters attributed only minimal importance to the "solid" organs that differentiated men from women, like the penis and testicles, but instead ascribed much greater significance to "fluid" or functional differences between men and women, most notably men's greater innate heat, their ability to produce semen, and their possession of the active, formative role in generation—all closely interrelated qualities strongly associated with normative maleness.

The first in this cluster of male-specific attributes—"heat"—deserves more extensive elaboration because, although it formed the cornerstone of discussions of male-female sex difference, scholars have often glossed over what premodern writers meant precisely when they discussed heat in relationship to male embodiment. The significance of heat to early modern constructions of the male body derived from ancient Greek natural philosophy, which bequeathed to early modern culture a persistent and enduring relationship that equated manhood, male superiority, and male fertility all at once to the quality of "heat." To the pre-Socratics, heat did not only serve as a physical descriptor or a by-product of physical phenomena. Heat also described an essential, structural quality of the universe. It bore a strong association with activity and motion and with the inherently "energy-bearing" element of fire. Many Greek philosophers in fact made little distinction between fire, as a form of matter, and heat, as a form of

energy.⁴⁵ The Pythagorean Empedocles of Acragas (ca. 494 – ca. 434 BCE), for instance, regarded fire as far superior to the other three elements that composed all physical matter in the “worldly” or sublunar universe—water, earth, and air—because of fire’s active, energetic qualities. Unlike the other sublunar elements, which each neatly corresponded to a state of matter—earth to solids, water to liquids, and air to gases—fire was different. It was not clearly associated with a state of matter, but it could “activate” the other elements and cause them to mix into composite physical forms.⁴⁶

The hot, active nature of fire, and its association with maleness, also endowed it with both a higher position in gendered hierarchies and a higher position in the hierarchical ordering of the cosmos. The Roman astronomer Ptolemy (ca. 100-170) adopted Empedocles’ hierarchy of the elements, assigning to fire the highest position in the hierarchy of the physical plane.⁴⁷ In most medieval visual interpretations of Ptolemy’s cosmography, which underwent a significant revival at the end of the fifteenth century, the elements are also stacked cake-like in concentric spheres in order of their superiority. The Earth, composed of the heaviest element of the same name, naturally holds the center, surrounded by successive rings of water, air, and finally fire—the final ring of fire marking the divide between the sublunar and the heavenly or celestial spheres.⁴⁸

⁴⁵ Nicos I. Georgakellos, *Empedocles of Acragas: His Theory and the Exact Sciences* (Newcastle Upon Tyne, UK: Cambridge Scholars Publishing, 2019), 48.

⁴⁶ Georgakellos, 41.

⁴⁷ James Evans, “Ptolemy’s Cosmology,” in *Encyclopedia of Cosmology (Routledge Revivals): Historical, Philosophical, and Scientific Foundations of Modern Cosmology*, ed. Norriss S. Hetherington (New York: Routledge, 1993), 528-544.

⁴⁸ For visual examples of Ptolemy’s cosmology, featuring the sphere of fire, see the printed edition of John of Holywood’s (Johannes de Sacrobosco) influential account of Ptolemaic astronomy, *De sphaera mundi* (Ferrara, 1485). Similar depictions appear in early sixteenth-century arts textbooks, including Gregor Reisch, *Margarita Philosophica* (Freiburg, 1508), lib. vii, tract. iii [Fig. 2]; and Raymond Lull (Reymundus Lullus), *Practica*

Like Empedocles, Aristotle (384-322 BCE) also described fire as having an “ontological superiority” over the other elements in the universe in his *Physics*.⁴⁹ In his opinion, fire deserved the highest position in the sublunar spheres because it was the lightest and purest of all the elements. Its active nature caused it to move “upward,” towards the highest realms of the sublunar spheres, giving it the highest possible position in the hierarchy of the physical plane. Fire tended to move upward because it had much greater ability to move and change than the other elements. Combustive fire represented alteration and growth without limit, continuing so long as it had substrate to burn. Aristotle described fire as pure activity or “actuality,” inseparable from its potential to burn. It burned immediately and continually unless something prevented it, whereas the other elements, such as earth, only contained in them the potential to be acted upon by an external force.⁵⁰ Similarly, fire’s associated quality, heat, implied a “positive predication,” whereas cold constituted a privation or lack.⁵¹ In other words, Aristotle defined fire in its essence as the presence or actualization of something—primarily, heat. By contrast, cold was the lack of something, containing in it only the potential to become hot.

The preferential emphasis that Aristotle placed on heat in the *Physics* translated to his biological views, especially his *Generation of Animals*. Like Empedocles, Aristotle believed that different proportions of the four elements composed all living beings, just like all other physical matter in the universe, and that living beings could therefore be described according to the elements’ four

compendiosa artis (Lyon, 1523), lib. iii, f. XXXVI v., and even later in the century after the publication of Copernicus’s heliocentric theory in 1543, as in Alessandro Piccolomini, *La sfera del mondo* (Venice, 1579), 37.

⁴⁹ Cristina Cerami, “Function and Instrument: Towards a New Criterion of the Scale of Being in Aristotle’s *Generation of Animals*,” in *Aristotle’s Generation of Animals: A Critical Guide*, eds. Andrea Falcon and David Lefebvre (Cambridge, MA: Harvard University Press, 2018), 135.

⁵⁰ Aristotle, *Physics*, 5.6, 230b1-20; 8.4, 255b5-10. Helen S. Lang, “Why Fire Goes Up: An Elementary Problem in Aristotle’s *Physics*,” *The Review of Metaphysics* 38, no. 1 (1984): 91.

⁵¹ Cerami, 135.

corresponding qualities (hot, cold, wet, and dry).⁵² All living beings contained some amount of all four qualities, just as they did all four elements, but heat ranked as the most important by far. What Aristotle called “vital heat” in fact constituted the essence of life itself. He described vital heat as a special kind of heat, distinct from the more volatile elemental heat associated with fire, because of its association exclusively with living things. Vital heat animated living animals and set them apart from non-living beings because it caused the inert, elemental matter that composed the body to grow or move.⁵³ Vital heat, however, naturally diminished over the course of one’s life, as one’s energy and life force faded, explaining the process of aging and death. Youths expended a great deal of heat as they grew and developed, whereas the elderly gradually lost their heat over time, and consequently became less active, precipitating death and decline.

Aristotle also explained differences between and among species in terms of the presence or lack of heat. Even though all living creatures drew their energy and vitality from vital heat, some organisms produced more heat than others, such that some animals could be said to be naturally “colder” on average than others. As in his physical works, Aristotle did not describe heat and coldness as neutral qualities. He ranked hotter animals (like mammals) above colder animals (like fish). He also ranked supposedly hotter male animals above supposedly colder female animals and, by extension, hotter men above colder women. In fact, Aristotle regarded differences in heat to be the origin of sex differentiation and the foundation of the hierarchy of the sexes. Aristotle believed *a priori* that men naturally possessed greater heat than women, and that “male and hot [were] inherently superior to their respective opposites heat and

⁵² Noga Arikha, *Passions and Tempers: A History of the Humors* (New York: Harper Collins, 2007), 5.

⁵³ Vital heat circulated through the body as “heat carrying informing movements” or heat “charged with specific, formative movements.” Gad Freudenthal, *Aristotle’s Theory of Material Substance: Heat and Pneuma, Form and Soul* (New York: Clarendon Press, 1999), 28-9. On classical theories of animal heat, see also Everett Mendelsohn, *Heat and Life: The Development of the Theory of Animal Heat* (Cambridge, MA: Harvard University Press, 1964).

cold”—a view that he shared with several classical philosophers who both proceeded and followed him.⁵⁴ Heat, as the active and vivifying quality in the universe, had many of the same effects on male bodies as it did on other kinds of matter. Supposedly, men’s greater heat made them stronger, healthier, and more physically active than women. Heat also defined normative heterosexual roles for men and women, conveying to men the power to act upon another (as the active, hot partner), while women’s coldness constrained them to be acted upon (as the passive, cold partner).⁵⁵

The same manner of thinking about passive and active roles in sexual intercourse applied to Aristotle’s thought on the roles of men and women in reproduction, which he defined thus: “the male principle is capable of generating in another, the female of generating in herself.”⁵⁶ Men’s ability to “generate in another” arose directly from their possession of greater amounts of heat. In his view, only men made a substantial contribution to generation because only they had enough heat to “concoct” or “cook” their blood into a generative seed or *sperma*. Aristotle explained seed formation as a product of the “concoction” or digestion of the blood—or hematogenesis—in which the vital heat played a central role.⁵⁷ During concoction, the vital heat warmed the excess residue left over from food, a wet, cold, and

⁵⁴ On the gendered nature of qualities of opposites, especially hot and cold, see G. E. R. Lloyd, “The Hot and the Cold, the Dry and the Wet in Ancient Greek Philosophy,” *Journal of Hellenic Studies* 84 (1964): 102.

⁵⁵ On the influence of classical notions of hot-men, cold-women in early modernity, see Zirká Z. Filipczak, *Hot Dry Men, Cold Wet Women: The Theory of Humors in Western European Art, 1575-1700* (New York: American Federation of Arts, 1997), 14-6.

⁵⁶ Quoted in Sophia M. Connell, *Aristotle on Female Animals: A Study of the Generation of Animals* (Cambridge: Cambridge University Press, 2016), 269; Aristotle, *Generation*, 4.1, 764b-765a.

⁵⁷ The terminology “hematogenesis” is not present in Aristotle’s text, but coined by Erna Lesky, *Die Zeugungs- und Vererbungslehren der Antike und ihr Nachwirken* (Wiesbaden: Akademie der Wissenschaften und der Literatur, 1950), 1344-17. “Hematogenesis,” and competing theories of seed formation, “encephalogenesis,” and “pangenesis”

passive component, and made it more compact, dense, dry—effectively burning out unnecessary residues and forming the blood. Then, still in an “impure form,” the blood then traveled through the veins to the heart, where the heat further concocted and refined the mixture into fat, flesh, or seed, depending on the body’s needs at the time.⁵⁸

Aristotle believed that the passage of the blood through the heart caused it to become even hotter and, therefore, fertile. Aristotle thought of the heart not as a pump for blood, but the seat of the human soul and the primary source of animating vital heat, which the arterial blood carried to the extremities as a hot, animating *spiritus*, also referred to as “vital spirits” or *pneuma*. As it passed through, the impure blood took on the hot nature of the heart and became endowed with vital spirits or *pneuma*, “breath” or “hot air.” *Pneuma* was not just “hot air,” however. It conveyed motion to the rest of the body and, in generation, conveyed the principle of motion to otherwise inert matter. Aristotle also described the *pneuma* as “soul heat” and described its nature as analogous to that of the superlunary, divine element of the stars, ether. Even though ether only composed celestial, superlunary bodies, Aristotle implied that vital heat—a sublunary phenomenon—contained something that imitated the divine, unchanging nature of the stars and that, consequently, seed conveyed some element of the divine with it, capable of inspiring new life.⁵⁹

Materially, the action of the vital heat on the blood caused the substance to become “frothy” and filled with air bubbles, much like in heated milk. The heated *pneuma* also gave the seed its final form, causing it to take on a whiter, thinner, and more fluid appearance compared to the blood from which it

are discussed in Heinrich von Staden, *Herophilus: The Art of Medicine in Early Alexandria: Edition, Translation and Essays* (Cambridge, UK: Cambridge University Press, 1989), 288–91.

⁵⁸ Aristotle, *Generation*, 1.18, 725b-726a.

⁵⁹ Connell, 215-16.

originated.⁶⁰ Most importantly, though, the infusion of the heated *pneuma* made the seed fertile, giving it, “vital warmth and capacity to set the process of generation in motion.”⁶¹ Men’s greater heat thus endowed them with the ability to actualize life itself because only they could produce seed, which contained in it “that which causes it to be fertile—what is known as ‘hot’ substance.”⁶²

In Aristotle’s model, female viviparous animals did not, by contrast, produce seed or even anything equivalent to the modern ovum. In fact, they made no true contribution to generation at all.

⁶⁰ “The reason for the whiteness of semen is that the seminal fluid is foam and that form is something white, above all when it is formed from the tiniest of particles, so small that each bubble is individually imperceptible to the eye, as happens when water and oil are mixed together and stirred up.” The connection between foam and the fertility of the seed long preceded Aristotle, who noted that, “even the ancients, it seems, did not fail to notice that semen is foam-like in nature.” Aristotle, *Generation*, 2.2, 735b-736a. According to Hesiod’s *Theogony*, the goddess Aphrodite’s name referred to her birth from a swell of sea foam (*aphros*), which arose when Cronus severed the testicles of Uranus, “and when at first he had cut off the genitals with the adamant and thrown them from the land into the strongly surging sea, they were borne along the water for a long time, and a white foam rose up around them from the immortal flesh; and inside this grew a maiden... Gods and men call her (a) ‘Aphrodite,’ the foam-born goddess and (b) the well-garlanded ‘Cytherea,’ (a) since she grew in the foam.” Hesiod, *Theogony*, ed. and trans. Glenn W. Most, LCL 57 (Cambridge, MA: Harvard University Press, 2018), 19, lines 188-206. This scene is also famously represented in Botticelli’s painting of *The Birth of Venus*, which features the goddess arriving on the shore inside of a shell after emerging from the sea foam/semen.

⁶¹ Aristotle, *Generation*, 1.18, 725a22-27; 2.4, 739a7-13; Joseph Needham, *A History of Embryology*, 2nd ed (Cambridge, MA: Harvard University Press, 1959), 320, 340.

⁶² Aristotle, *Generation*, 2.3, 736b36-37. On the significance of *pneuma* or “vital spirit” in theories of conception and semen formation, see Jennifer Wynne Hellwarth, “Pneuma—Sexuality—Sex Difference: From Arabic to European Philosophy and Medical Practice,” in *The Early History of Embodied Cognition, 1740-1920: The Lebenskraft-Debate and Radical Reality in German Science, Music, and Literature*, eds. John A. McCarthy, et al. (Boston: Brill, 2016), 53-74.

Unlike men, women lacked sufficient vital heat to concoct their blood into semen and so produced superfluous amounts of blood, which accumulated in the womb until it was expelled monthly as menses. If conception did occur, their superfluous blood was not expelled, but remained inside the womb to nourish the developing fetus. Aristotle described the menstrual blood in the womb as cold, passive “matter,” which remained inert until acted upon by the male seed.⁶³ Both male seed and the female matter contained the potentiality to produce a new organism, but only the male seed could actualize this potentiality.⁶⁴ Just as fire in nature could inspire change, making water boil or earthy materials burn, the heated male seed inspired growth and activity when it came into contact with the feminine matter, causing it to achieve its “prior potential” to change and ultimately take on a human “form.” Much as it did during the process of seed production, the vital heat acted on the female matter, being wet, cold, and passive, and activated a secondary process of concoction—the concoction of an embryo, which grew and transformed from inactive matter into its final form or shape, a process initiated solely by the active principle of the male parent.

The body of the resulting embryo was composed entirely from the matter, or the “material principle,” of the mother. However, Aristotle viewed matter as an inferior contribution compared to the male seed because it was the masculine heat that conveyed a “causal principle,” for it had creatively organized otherwise shapeless matter into a complex form. Aristotle also attributed artisanal or creative agency solely to the greater heat of the male parent, as when he compared the formative action of the vital heat to that of a carpenter shaping wood. The carpenter does not provide the material part of his craft, but the “shape and form come to be from his agency.”⁶⁵ Just as “nothing comes away from the carpenter to the matter of the timbers” upon which he worked, Aristotle argued, the seed had a formative, rather than a

⁶³ Aristotle, *Generation*, 2.1, 732a5-12.

⁶⁴ According to Connell, “the male is the agent in what is, for Aristotle, a joint actualization of the prior potential to change or develop into a new animal.” Connell, 163.

⁶⁵ Quoted in Connell, 167; Aristotle, *Generation*, 1.18, 729a-730a.

material contribution to the fetus. The male's seed in no way remained as a part of the embryo itself, but merely set the process of growth in motion. It only contributed the shape and the form of the final product in the same way that the carpenter only indirectly left something of himself on a finished piece of furniture, whose physical form he shaped using his tools. In this regard, the vital heat carried the motion inspired by the father, or "carpenter," and directed the "tool" of the seed, which in turn shaped and formed the new organism.⁶⁶ It was thus the vital heat that made the male seed productive in the first place and caused the male to be the principal contributor in reproduction. The female matter, like the wood in a table, only conformed to an external action upon it, in the case of generation, merely filling in the blanks in the transcendent "form" that the male seed impressed upon it.

Differences in heat not only determined the differing reproductive roles of men and women. It also determined the sexed characteristics associated with men and women. Because it contained the principle of growth, the heated male seed not only initiated, but also directed all of embryological development even after conception. Heat therefore also determined the sex and physical characteristics of the embryo.⁶⁷ In Aristotle's opinion, the womb contributed nothing to the sex of the resulting child. A male fetus only resulted when the matter was more perfectly heated by the male seed. Under normal conditions, the male contribution tended towards a perfect reproduction of itself. Because the male contribution was the only source of form, the fetus normally would be identical to its progenitor—that is, male. Male children normally resulted when the matter was sufficiently heated by the vital heat of the

⁶⁶ Cerami, 137.

⁶⁷ In this regard, he refuted the opinions of earlier theorists like Empedocles, who had claimed that sex differentiation occurred in the womb rather than in the seed. "According to [Empedocles], the seed which enters a hot womb become males, those which enter a cold one, females, and that the cause of this heat and cold is the menstrual flow, according as it is hotter or colder, older or more recent." Democritus also argued that sex differentiation occurred in the womb but depended on which parents' semen prevailed over the other. Aristotle, *Generation*, 4.1, 765b1-7.

male seed. It also directly led to the development of all male sexual characteristics. The greater heat, and thus the greater potential for activity and growth in the male fetus, pushed the genitals outside the body. Later in life, the male's greater quantities of excess heat also "pushed out" the beard and body hair and led to the development of greater strength and intellect.

Female offspring, on the other hand, resulted when the male seed did not sufficiently heat the matter in the uterus, causing it to diverge from the normal path of reproduction. Women lacked sufficient heat to push their genitals outward and so they remained hidden within the body, hence symbolic of female passivity and lack of creative agency. Similarly, women's muscles and bones had a smaller store of heat upon which to draw during growth, much less when it came to developing a beard or extensive body hair. Most significantly, though, women's lack of heat meant that they could not produce generative seed. Their blood could not undergo the process of becoming seed because women lacked sufficient heat to concoct all their excess nutriment, so it was either excreted as menstrual blood or retained during pregnancy to provide nourishment to the embryo.⁶⁸ The menstrual fluid thus developed only as a byproduct of incomplete digestion, lacking in the heated infusion of the pneuma that characterized men's seed, and was therefore non-generative. Aristotle therefore notoriously characterized female children as "misbegotten men," and their development as imperfect and incomplete, because of what they lacked: primarily, the active heat from which they spawned and, thus, the all-important ability of "generating in another."

A model of "reproductive hylomorphism," or differentiation on the basis of reproductive contributions, thus underscored Aristotle's understanding of the sexual difference between men and

⁶⁸ Aristotle, *Generation*, 1.18, 727a1-22.

women.⁶⁹ Being male or female was not a matter of genital reductionism for Aristotle. In fact, he explicitly rejected it, calling “the difference between the sexual parts as between male and female” a “contingent phenomenon” which one must not consider to be a “principle or a cause” in sex difference.⁷⁰ The real difference lay not in the parts, or material structure of the body, but the differing quantities of heat, which determined both the sex of the organism and made it capable of generation. Men not only had a greater role in generation, maleness itself—the “male principle”—was defined by one’s ability to “generate in another,” an innate ability that women lacked. To Aristotle, generative ability was the exclusive preserve of maleness. Generativity was therefore also the primary paradigm he used to describe the physical and physiological differentiation of men from women. In other words, male bodies themselves differed substantially from female because the *telos* or final cause of generation directed their entire development. Most importantly, male bodies differed primarily because of their possession of greater quantities of vital heat, which both allowed them to produce generative seed and shaped the physical appearance and embodiment of manhood. More than anything else, though, the greater heatedness of their bodies and the ability to generate and expel productive seed formed the primary distinguishing marker of men in the reproductive theories of Aristotle.

Aristotle’s theory of reproduction came full circle on this point, connecting seamlessly to his theory of sex difference. To him, men’s greater powers in reproduction made their bodies inherently “generative,” distinguished by the ability to “generate in another.” The bodily features that most obviously distinguished men from women—the penis, testicles, beard, and body hair—did not manifest as merely incidental products of sexual dimorphism, but attested to men’s greater heat and hence, their greater formative, creative, and even divine powers in reproduction. Unlike women, whose imperfect

⁶⁹ This term is borrowed from Devin Henry, who uses it to describe Aristotle’s dualistic model of generation and sex difference. Devin Henry, “Understanding Aristotle’s Reproductive Hylomorphism,” *Apeiron* 39, no. 3 (2006): 272-300.

⁷⁰ Quoted in Connell, 269; Aristotle, *Generation*, 4.1, 765a1-4.

development stopped short of pushing the genitalia out of the body, the outward situation of these external markers reflected the nature of the masculine vital heat, which conveyed with it the ability to act upon and to “generate in another.”

Aristotle’s “two-sex, one-seed” model of male-female difference has often been contrasted against the purportedly more women-friendly “one-sex, two-seed” model handed down from the texts of the ancient Hippocratics (ca. 500-400 BCE). The “one-sex, two-seed” model also had a strong hold on early modern theories of generation and also bears some explanation. In many ways, the Hippocratic and later Galenic explanation of generation and male-female sex difference did differ substantially from one another. The Hippocratic text *De genitura* claimed that both men and women produced seed necessary for conception to occur. Between the two seeds, the male was in general the strongest, but the male did not always produce the stronger and most plentiful sperm. Nor did the male seed always determine the sex of the resulting fetus, as it did in Aristotle’s model. Instead, the Hippocratic model depended on the relative weakness or strength of the two seeds mixed together. If both seeds were weak, a female child would result; if both were strong, a male would result, “the male being stronger than the female.”⁷¹ However, the seed could be either strong or weak regardless of the sex of the parent from which it originated.

The second-century Roman physician Galen of Pergamon also subscribed to and perpetuated the two-seed theory of generation of the Hippocratics.⁷² Galen disagreed with Aristotle that female animals lacked seed and made only a “material” rather than a substantive contribution to their offspring. He insisted that there had to be some kind of female contribution to the embryo during reproduction. Otherwise, he argued, there could be no reasonable explanation as to why children often resembled their

⁷¹ Hippocrates, *De genitura liber* (“On Generation”), in *The Hippocratic Treatises*, trans. Iain M. Lonie (New York: De Gruyter, 1981), 3.

⁷² In fact, Galen so closely conjoined his medicine to that of ancient Hippocratics that they were hardly differentiated in the later tradition of Latin medicine. Hippocrates, *De genitura*, 3.

mothers.⁷³ Galen also described the male and female reproductive anatomies in strikingly similar terms, implying parity between male and female bodies lacking in Aristotle's account of generation. In a famous passage of *De usu partium*, Galen claimed—or at least pondered the possibility—that the male and female genitalia were no more than anatomical inversions of one another or slight variations on a single body pattern. “All the parts of the man are also found in the woman,” he stated, suggesting that the male genitalia were essentially the womb turned outward and vice versa.⁷⁴ Both men and women possessed testicles, explaining how they both produced seed, however, women’s were retained within the body, whereas men’s happened to protrude externally:

There is no difference [between men and women] except one...that the parts of the woman are internal and those of the man external in the perineal region. If you could turn the scrotum inside out it would occupy the place of the womb with the testicles situated on either side; the penis of the male would become the neck of the cavity which produced it, and the skin of the end of the penis that one now calls the prepuce would become the vagina of the woman. Suppose the inverse, that the womb turns out and falls out. Would not its testicles be found below its cavity, would it not envelop them like a scrotum? The neck, until then hidden inside the perineum, in one hour, would it not become the virile member and the vagina of the woman...would [it] not hold the place of what one calls the prepuce?⁷⁵

Galen’s description of the interchangeability of the genital organs articulated in the quoted passage from *De usu partium* above, led Thomas Laqueur in *Making Sex* to characterize prefer his work as a less equitable model for explaining sex difference. Laqueur also viewed Aristotle as less equitable by comparison because he granted an active role in reproduction and generative seed only to men in his

⁷³ Galen, *On Semen [De semine]*, ed. and trans. Phillip de Lacy (Berlin: Akademie Verlag, 1992), bk. II, pt. 1.

⁷⁴ Galen, *De usu paritum (DU)*, in *Oeuvres anatomiques, physiologiques et médicales de Galien*, ed. and trans. Charles Victor Daremburg, vol. 2 (Paris: J.B. Baillière, 1854-1856), 99.

⁷⁵ DU, 99-100.

theories on generation, compared to what Laqueur referred to as the Galeno-Hippocratic “one-sex” model. Aristotle’s description of women’s role in reproduction, after all, left no question that there were two very different sexes, stressing the inherent otherness of women from men, as passive, imperfect, “misbegotten” beings set apart by their lack of heat, their lack of external genitals, and their inability to concoct their blood into seed. Aristotle believed that men and women occupied radically different metaphysical positions because men possessed a more perfect “male principle” in generation and women an inferior “female principle.” He would not have entertained the possibility that male and female bodies were essentially the same, much less that a man was no more than a woman with an inverted womb. In contrast, Laqueur credited Galen with passing down a much more influential (and much more female-friendly) “one-sex, two-seed” model of difference to his successors in Latin Europe, which emphasized the anatomical similarities, rather than the differences, between male and female bodies. Unlike Aristotle, Galen also seemingly ascribed virtually equal roles to each in reproduction because he claimed that women also had testicles and produced seed.

Laqueur is correct that Galenism certainly did have a much greater and longer-lasting intellectual influence than did Aristotelian “two-sex” thinking, as the status of Galen as the foundation of medical education extended well through the sixteenth and seventeenth centuries. The influence of Aristotle never dominated in the fields of biology and medicine as it later did in scholastic logic and philosophy. Galenic works, by contrast, remained the backbone of the curriculum in European medical universities from the eleventh century on. In the eleventh and twelfth centuries, an influx of Latin texts translated from Arabic established Galen as the foremost medical authority in medieval Europe. By the twelfth century, Galenism formed a central part of the curriculum in the newly formed medical universities of Europe, Salerno in southern Italy and later Montpellier in southern France. Most schools taught Galen through the foremost textbook of Galenic medicine, *The Canon of Medicine*, a commentary authored by Ibn Sina

(also known as Avicenna, ca. 980-1037), which formed the central part of the Galenic curriculum prior to the sixteenth century, when printed editions of Galen's complete translated works first appeared.⁷⁶

Even after the assimilation of Aristotelian biology back into the European canon in the thirteenth century, where it experienced a brief revival among scholastic medical writers, Galenism as a medical philosophy had no serious "intellectual rivals" before the sixteenth century.⁷⁷ By the early sixteenth century, Aristotle's male-centric theory of sex difference and generation had in fact fallen into outright disfavor among many medical writers. Many sixteenth-century physicians, especially those writing in the newly revived fields of gynecology and obstetrics, saw Aristotle, at least in his biological works, as an "exponent of misogyny."⁷⁸ The gynecological writer Girolamo Mercuriale (1530-1606), for instance, took

⁷⁶ The *Canon* was first assembled in the eleventh century, translated into Latin around 1170 by Gerard of Cremona, and used extensively by European medical scholars from the thirteenth century through the middle of the sixteenth century. "When the sixteenth century opened, the *Canon* was a ubiquitous feature of the medical curricula of European universities. By the middle years of the century, humanist critics of the Arabs had succeeded in either ending or limiting its use in some places," in favor of Greek-authored texts, although Nancy Siraisi has shown that the *Canon* continued to be republished and commented on until well into the seventeenth century. Nancy G. Siraisi, *Avicenna in Renaissance Italy: The Canon and Medical Teaching in Italian Universities after 1500* (Princeton: Princeton University Press, 2014), 3, 77.

⁷⁷ *The Generation of Animals* came rather late to the Latin-speaking world by way of an Arabic translation, completed by the physician al-Batriq in Baghdad during the Caliphate of al-Mamun (813-833), but only later translated into Latin by Michael Scot in 1217. Peregrine Horden, "Medieval Medicine," in *The Oxford Handbook of the History of Medicine*, ed. Mark Jackson (Oxford: Oxford University Press, 2011), 41.

⁷⁸ Jordan, *Renaissance Feminism*, 31 n. 36. On other refutations of Aristotle's "imperfect male" theory in the sixteenth century, see Ian Maclean, *The Renaissance Notion of Woman: A Study of the Fortunes of Scholasticism and Medical Science in European Intellectual Life* (Cambridge: Cambridge University Press, 1980), 31. Both Maclean and Gianna Pomata have suggested that the eagerness of university physicians to refute Aristotle on this issue points to a kind of nascent feminism in medicine, absent in other academic fields of the sixteenth century.

issue with Aristotle's characterization of women as "imperfect males" or misbegotten men because this model downplayed what he saw as the importance, and the dignity of, conception and childbirth as a fundamental part of women's health.⁷⁹ Most of the same mind as Mercuriale sided almost unanimously with Galen and the Hippocratics on the question of the two seeds because they felt that Aristotle excessively minimized women's role in reproduction and insulted the wisdom of Providence by suggesting that female children were effectively accidents of nature.

At the same time, a revived interest in the humanistic study and recovery of key texts of the Galenic and Hippocratic corpus in the sixteenth century further solidified the dominance of two-seed theory as the principal model of sex difference in early modernity. Sixteenth- and early seventeenth-century anatomies often displayed both male and female testicles and described the function of both as the production of two seeds, both of which were regarded as necessary for conception.⁸⁰ Anatomical illustrations also frequently presented the womb side-by-side with the male genitalia in such a way as to

Giana Pomata, "Was There a *Querelle des Femmes* in Early Modern Medicine?" *Arenal* 20, no. 3 (2013): 326. The question of whether women were "misbegotten" or "accidents of nature" remained a popular subject in medical theses defended in the Paris Faculty of Medicine well into the seventeenth century, however, suggesting that contemporaries still saw the question, even if usually answered in the negative, as at least a valid source of debate. For instance, see the titles "*Est-ne foemina opus naturae imperfectum?*" (1647), "*Est-ne foemina monstrum? Mas imperfectus?*" (1662) and "*Intendit-ne natura foeminarum productionem?*" (1675) in Hyacinthe Théodore Baron, *Quaestionum medicarum quae circa medicinae theoriam et praxim* (Paris, 1752), i.43, i.57, ii.42.

⁷⁹ Girolamo Mercuriale, *De morbis muliebribus*, in *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerpararum affectibus* (GSM), ed. Israel Spach (Strasbourg; Lazarus Zetzner, 1597), 209.

⁸⁰ Jacopo Berengario da Carpi's early anatomical text depicted the vagina in a way that closely resembled a penis, and labeled testicles and "spermatic vessels" inside the uterus, in *Anatomia Carpi, Isagoge breves* (Bologna, 1523), f. 24r, as did the 1541 edition of Mondino de' Liuzzi's (Mundinus's) anatomy, *Anatomia Mundini*, ed. Johann Dryander (Marburg, 1541), f. 25v and f. 31v-32r.

suggest that the two were interchangeable, mirror-image versions of one another. Especially in sixteenth-century woodcuts that copied Andreas Vesalius's strikingly penis-like cross-section of the vaginal canal (1543), it is often difficult to distinguish the male from the female organs at first glance [Fig. 3].⁸¹ Galen's inverted penis analogy also continued to find its way into early modern anatomical meditations on the organs of generation. For instance, the Spanish physician Juan Huarte de San Juan (ca. 1529-1588) noted that if one were to "make an anatomie of a woman":

we shall find that she hath within her two stones, two vessels for seed; and her belly of the same frame as a mans member, without that any one part is therin wanting. And this is so very true, that if when nature hath finished to forme a man in all perfection, she would conuert him into a woman, there needeth nought els to be done, saue only to turne his instruments of generation inwards⁸²

By all accounts, then, Galen's "one sex" view of the bodily equality of the two sexes appeared to remain dominant into the sixteenth century.

Evidence of favoritism for the Galeno-Hippocratic view, over that of Aristotle, in the sixteenth century can also be found elsewhere. Popular, vernacular texts of the sixteenth century also frequently invoked the notion of genital homologies and the two seeds because one-sex thinking conveniently explained certain, everyday aspects of sex and reproduction in a common-sense way. It accounted for why women experienced pleasure during sex (because they also ejaculated seed) and why children usually took after both of their parents (because both seeds contributed to their formation). It also

⁸¹ See Andreas Vesalius, *De Humanis Corporis Fabrica*, vol. 5 (Basel, 1543), 374; copied in Thomas Geminus (Thomas Lambert), *Compendiosa totius anatomiae delineatio* (London, 1545), f. 54v; Juan Valverde de Amusco, *Historia de la composición del cuerpo humano* (Rome, 1556), fig. 29; Jacques Guillemeau, *Les oeuvres de chirurgie de Jacques Guillemeau* (Paris, 1598), and in many other anatomies in the latter sixteenth century.

⁸² Juan Huarte de San Juan, *The examination of mens vvits* (London, 1594), 146. Originally published as *Examen de ingenios para las sciencias* (Baeça, 1594).

explained more unusual occurrences; for instance, why some people were identified as one sex at birth, but later changed into or turned out to be another (because the genital organs were basically reversible).⁸³

All these things together tend to suggest that “one-sex” thinking was alive and well in the sixteenth century, as Laqueur had claimed. However, Laqueur perhaps went too far in suggesting that the Galeno-Hippocratic model was the *only* way in which early moderns described differences between male and female bodies. As a number of historians have pointed out, “one-sex” thinking did not universally dominate in the sixteenth century as much as Laqueur may have thought.⁸⁴ A “one-sex” paradigm especially fails to capture the full range of ways in which early moderns expressed male-female difference, especially considering that the notion of male bodily superiority so conveniently aligned with broader cultural notions about men’s moral and social superiority over women. The notion that men and women’s bodies were essentially interchangeable existed side-by-side with much less neutral, and entirely contradictory, modes of discussing sex difference, which stressed the otherness or inferiority of women’s bodies on the one hand, and the assumed superiority of male bodies on the other. As Laura Gowing has

⁸³ Ambroise Paré recorded one such transformation in the case of Marie Germain, a young girl who was rebaptized as the male Germain after “virile instruments” spontaneously descended from her abdomen. Paré explained that women retained their genital organs inside due to a lack of heat but sometimes, when the heat of youth increased during puberty, women could push their genitals outwards. “Wherefore if with time, the humidity of childhood which prevented the warmth from doing its full duty being exhaled for the most part, the warmth is rendered more robust, vehement, and active, then it is not an unbelievable thing if the latter, chiefly aided by some violent movement, should be able to push out what was hidden within.” Ambroise Paré, *Les Oeuvres d’Ambroise Paré*, 9th ed. (Paris, 1633), 1017-8. Originally published 1573.

⁸⁴ Park and Nye, 54; Gowing, 19. Helen King claims that the one-sex model was embraced only in the aftermath of the Hippocratic editions published at the start of the sixteenth century but used only primarily as a teaching tool or thought experiment. Helen King, *The One-Sex Body on Trial: The Classical and Early Modern Evidence* (Farmham: Ashgate, 2013), 3.

found, common jokes, ballads, and other more ephemeral, non-medical texts presented the womb as something entirely unlike the penis because of its voraciousness for seed and stressed the inherent danger and noxiousness—rather than the reciprocity—of women’s fluids to men’s, suggesting that early modern modes of representing male-female difference did not exclusively favor the Galenic model.⁸⁵

These discussions, however, have tended to presume that two distinct “Galenic” or “Aristotelian” models of generation and sex difference even existed in the first place. Consequently, most of the debate about the existence of “one sex” or “two sex” models of sex difference has revolved around measuring the hold of one or the other over early modern conceptions of sex difference. The timeline of sex difference in early modernity, too, has been defined by an attempt to determine when two-sex thinking ultimately won out over lingering one-sex notions about the essential sameness of the male and female genitalia. Absent from this historiography, however, is a recognition of the essential similarities that united Galenic and Aristotelian characterizations of maleness, their differences on the question of the two seeds aside, and the willingness of early moderns to willingly mix together elements of both.

One-sex thinking also did not dominate in the sixteenth century because it did not even dominate in Galen’s own works. Laqueur’s thesis focused primarily on anatomical sources and descriptions of the male and female genital morphology, especially sources that referenced Galen’s musings on the womb-as-inverted-penis, which supposedly established the essential interchangeability of male and female sex. However, the morphology of the womb and genitals made up only one small piece of Galen’s discussion of sex difference and generation. Like Aristotle, Galen did not regard morphological or anatomical difference as the most important thing distinguishing men and women. He also placed a great deal of weight on the economy of the fluids—particularly differences in seed and heat—than he did on what he regarded as only superficial differences in the genital anatomy, which emerged from deeper differences in the composition of male and female bodies.

⁸⁵ Gowing, 19-21.

Scholars have most likely overlooked the similarities between Aristotle and Galen because Galenic, one-sex, two-seed thinking certainly did have different implications for women than did Aristotle's "misbegotten male" comments. However, the desire to find in Galen alternative constructions of sex difference, or at least evidence of a less openly misogynistic treatment of women than Aristotle's, has tended to obscure the implications of these writers' philosophy on generation and sex difference for men. In fact, the very classification of these two authors into "one sex" and "two sex" camps has tended to depend entirely on how each discussed *women* only, more so than how they discussed both male and female sex difference. Consequently, much less has been said about the implications of these authors' thinking for men and constructions of maleness.

Although historians after Laqueur have tended to see Galen as the representative of the more equitable, gender-neutral one-sex model of the body and generation, Galen did not regard men as no more than a template for a single sex, little physically different from women, which required no further comment. Galen still ascribed certain crucial differences to male bodies that preserved the Aristotelian, heat-based gender hierarchy—a legacy preserved even into early modern "one sex" discussions. The similarities between Galenic and Aristotelian theories of generation and sex difference, as it applied to men, have often been overlooked, as have the consequences of those similarities for premodern discussions of male bodies. Galen in fact agreed with Aristotle in two of his core assumptions about the fluid nature of sex difference and reproduction: that men had a greater role in generation and that the reason for this had to do with the greater heatedness of their bodies. Like most all the classical authorities that had preceded him, Galen accepted unquestioningly the notion that heat was a quality inherently superior to cold. He too associated heat with life, activity, and, most importantly, maleness. For Galen, heat constituted a distinguishing feature of male bodies, as well as the basis of male superiority. Although as a physician, he had less use for high-flying metaphysical categories like male and female "principles" and had a more practical orientation towards reproduction and the body than did Aristotle, Galen frequently digressed into discussion about the intrinsic superiority of the male body. The possession and

physical manifestation of heat confirmed man's superiority because Galen agreed with Aristotle that heat was "the first instrument of nature," the root and motive force behind life itself.⁸⁶

Like Aristotle, Galen also understood the processes of generation to be directed by the vivifying quality of vital heat, on which men had a much greater claim. He fully agreed that, "Aristotle was right in thinking the female less perfect than the male," because, he claimed, "she is colder. In effect, if among the animals that which is hot is the most active, the coldest animal must be more imperfect than the hottest animal."⁸⁷ By extension then, women could not concoct their blood fully into seed. He therefore reasoned that, because women lacked sufficient heat for concoction, the seed they did produce, would be "cooler, moister, and less plentiful than that of males." Most importantly, though, even though Galen agreed with the Hippocratics that women produced their own "seed," he did not make any clear distinction between this supposed female "seed" and menstrual blood. From his description, it is entirely unclear whether Galen imagined female seed to look essentially the same as male semen, or whether he equated "seed" with female ejaculate, with menstrual blood, or with some other internally contained substance inside the womb.⁸⁸ The fact that Galen did not clearly distinguish the female seed from other fluids led many of his subsequent "two-seed" interpreters to claim that female "seed" was, in fact, no more than the undigested, superfluous blood of the menses and therefore less efficacious in generation than the hotter, more digested male seed. As the text of the 1491 *Fasciculus medicinae* explained, both men and women produced "semen," but male semen is "white" while "the semen of women is red" because male semen is "better cooked," suggesting that fifteenth- and sixteenth-century texts equated women's second "seed" with

⁸⁶ DU, 101-102.

⁸⁷ DU, 99.

⁸⁸ The fifteenth-century anatomist Alessandro Benedetti adopted the latter possible interpretation, insisting that the female seed was not the same fluid as female ejaculate, or "that which bursts forth from women in the act of sex...since any such thing is useless and vitiated, differing completely from that which overflows within the vulva without any lust." Alessandro Benedetti, *Anatomice sive historia corporis humani libri V* (Venice, 1498), f. 22v.

nothing other than menstrual blood.⁸⁹ In doing so, later authors effectively maintained the Galenic doctrine on the existence of two seeds, but also adhered to the Aristotelian notion that women contributed only menstrual blood or inferior matter to generation.

Furthermore, Galen maintained that, even if two seeds existed, it was the female seed that was still *acted upon*, as conception could not occur without the stimulating influence of the male vital heat. Galen therefore did not see the two seeds as entirely equal in terms of the contributions they made to reproduction. In his *De usu partium*, he retained the basic Aristotelian formulation that, “The seed of the male is the principal of movement...and the seed of the female contributes with the care for the generation of the animal.”⁹⁰ Galen therefore attributed to female seed virtually the same role that Aristotle had to menstrual blood, as the substance that contributed only the physical matter of the fetus. He therefore maintained that men still had a greater role in generation, even if he believed that both men and women produced seed.

Like Aristotle, Galen also explained why men and women developed different external bodies in much the same terms, especially when it came to the vital heat. Galen did claim that the origin of the seed from either the right or left testicle determined the sex of a child, but he still maintained that this distinction essentially derived from differences in heat. Male children supposedly resulted from the hotter, right side of the testicle or the womb, whereas the less-heated, left side produced female children.⁹¹ He also claimed that male children developed testicles, which protruded outside the body because the greater heat of their bodies pushed them out. Women’s testicles remained inside “due to a lack of heat to descend and project outside.” He saw female reproductive organs as essentially equivalent to moles’ eyes, less

⁸⁹ Johannes de Ketham, *Fasciculus medicinae* (Venice, 1500), f. 19.

⁹⁰ DU, 106.

⁹¹ According to Galen, the vessels feeding the left ovary or testis supposedly originated in the renal artery and contributed impure blood, unfiltered by the kidneys, and less heat to the generation of the female. DU, 108.

perfect than other animals' because they remained inside the abdomen and lacked any obvious utility.⁹²

Far from a benign variation, then, Galen's one-sex "thought experiment," often cited as evidence of a more equitable view of male-female similarities, construed the fact that women's reproductive organs remained inside their bodies as an inability or, in his words, a "*lack*"—the root cause of their retention being a lack of heat.

Tellingly, Galen's comparison between the female reproductive organs and useless moles' eyes immediately precedes his famous "one-sex thought experiment," in which he asks his student to consider what would happen if one inverted the vagina into a penis or vice versa, taken by Laqueur to imply that these organs were essentially reversible. Galen's comparison of the female reproductive organs with moles' eyes, however, suggests that perhaps he did not see the anatomical interchangeability of the genital parts as in any way a statement of men's and women's essential bodily equality. The same applied to the case of the female testicles, which, even if they existed, he argued must be smaller and less perfect than the male testicles, by virtue of women's deficiency of heat.⁹³ Galen thus recognized many more substantial and thoroughgoing differences between men and women than Laqueur recognized, because in Galen's view all external difference emanated from a much deeper, more thoroughgoing source of difference—that is, differential quantities of heat, which both he and Aristotle agreed determined the hierarchy of the sexes. Both Galen and Aristotle therefore ranked the male contribution of seed to reproduction above the female and insisted on the superiority of the male heat over feminine coldness as essential differentiating factors that set male bodies apart from female.

Writers of the sixteenth- and seventeenth centuries inherited and perpetuated the shared assumptions of Galen and Aristotle about the intrinsic superiority of the male heat and seed. Even prior to the appearance of full editions of Galen's works in the 1520s, Avicenna's influential textbook, the *Canon*

⁹² DU, 99-100.

⁹³ DU, 631.

of Medicine had recapitulated all the essential pieces of Galen's model of men's more generative bodies for medieval audiences. It stressed the importance of the heat and generative seed as a differentiating characteristic of men. It also claimed that while both men and women emitted seed necessary for conception, only the male possessed generative power, by virtue of men's greater relative heat, whereas the female made a lesser contribution of a material, which had only the potential to be formed and shaped by the more active male seed. Like Galen, Avicenna maintained that the greater heat of male bodies qualitatively improved the male seed, such that even though both seeds appeared, "fluid and moist, there is more wateriness and terrene substance [cold and wet qualities] in the female blood and female sperm, whereas air and igneity [hot and dry qualities] are predominant in the male sperm." The former provided the metaphorical earth, or the "firmness and rigidity," necessary for the fetus to grow, but the "fire" of the male seed provided "the maturative power" that initiated generation in the first place and therefore took pride of place in the reproductive process.⁹⁴ For both Aristotle and Galen, then, the "notion of physical difference between man and woman was based on a theory of blood, or more precisely, a theory about the different ways blood is transformed in the body," as both agreed on the essential tenets of reproductive hylomorphism and Aristotelian gender hierarchy and argued that women were less able to produce generative seed compared to men.⁹⁵

By way of Galen and his interpreters, even those in the sixteenth and seventeenth centuries who disapproved of Aristotle's "misbegotten male" comments and embraced two-seed theory often still tacitly accepted the notion that only men possessed the active principle in generation because of the greater heat of their bodies and their ability to metabolize semen more efficiently. In other words, even if early modern medical writers agreed that both male and female "seeds" existed, they still saw seed as more

⁹⁴ Avicenna (Ibn Sina), *A Treatise on the Canon of Medicine of Avicenna*, trans. Oskar Cameron Gruner, vol. 1 (New York: AMS Press, 1930), bk. 1, pt. 3, sect. 679, 359.

⁹⁵ Gianna Pomata, "Vollkommen oder verdorben? Der männliche Samen im frühneuzeitlichen Europa," *L'Homme* 6, no. 2 (1995): 66.

representative of the male contribution and assigned a much greater role in generation to men, not women. Early modern medical writers knew of Galen's diminished role for the female seed and often elaborated on it themselves as evidence of the inferiority of the female reproductive contribution.⁹⁶ As Cesare Cremonini, a latter-day defender of Aristotle against Galen, pointed out in 1634, "even Galen admits that [women] are imperfect in generation, because although they have semen, it is nevertheless imperfect and insufficient for generation," suggesting that an awareness of the essential similarities between Galen and Aristotle persisted well into the seventeenth century.⁹⁷

Even those who did not particularly sympathize with Aristotle, as Cremonini did, accepted the superiority of the masculine heat and assigned a more active, formative role to the male seed in generation. The inequality of the two seeds remained a continual through-thread in even the most stridently Galenic texts on generation of the sixteenth century. The passionately Galenic physician Jean Fernel (1497-1558), for instance, maintained that out of the two seeds, only the male "possesses a divine and heavenly heat" capable of initiating the growth of an embryo.⁹⁸ To the Dutch physician Levinus Lemius (1505-1568) too, the fact that women also emitted seed seemed little more than an afterthought because he saw the "virile seed" as "the principal and more virtuous and...the beginning of the action of

⁹⁶ Galen's arguments on this point were reiterated in all of the Latin editions of *Du usu partium corporis* printed in the sixteenth century: "Confestim autem & testiculos debebat foemina habere minores, & imperfectiones, & sperma, quod in ipsis erat futurum, minus, & frigidius, & humidius. Sequuntur enim etiam haec necessario penuriam caliditatis. Non igitur debebat sufficiens esse huiusmodi sperma ad generandum animal...Masculus autem quanto est calidior...que vero est in eis generatio spermatis, ad summum accedens concotionis, principium effectivum animalis facta est." *De usu partium*, ed. and trans. Niccolo da Reggio (Paris, 1528), 411.

⁹⁷ Cesare Cremonini, *De calido innato et semine* (Lyon, 1634), 215.

⁹⁸ Jean Fernel, *The Physiologia of Jean Fernel* (1567), trans. John M. Forrester (Philadelphia: American Philosophical Society, 2003), 547.

movement and generation,” essentially reiterating Galen’s agreement with Aristotle on the role of the male seed as the “principal mover” in generation.⁹⁹

The persistence of this blend of Aristotelo-Galenic thinking comes through in the inconsistent way in which medical writers of the sixteenth century approached the issue of the two seeds. Even in the same passage, writers would often point out that women also produced generative seed and had an active role in the formation of the fetus, while elsewhere insisting that male seed nevertheless held greater power and influence in generation. For example, Gregor Reisch’s *Margarita philosophica* (1503), one of the most frequently used textbooks in the arts curriculum of the sixteenth century, in the same breath affirmed Galen’s view that women contributed “not only passively...but also actively to the generation of offspring,” but then turned about-face to note that, nevertheless,

the semen of the man is found to be of greater activity, for there is fieriness and airiness in it; but wateriness and earthiness prevail in the semen of the woman...because of this it is said that the sperm of the man corresponds with the infant in quality and the sperm of the woman in quantity.¹⁰⁰

Reisch’s comments allude to what Patricia Simons has called an “unequal two-sex theory of sexual difference” that dominated in Renaissance representations of male sex difference. At the same time that Reisch accepted the existence of two seeds, he still applied Aristotle’s ranking of the male and female contribution to his understanding of them, by arguing that the male seed was hotter, more active, and contributed qualitatively—not just materially, (or here, “in quantity”)—to the formation of new life.

Reisch’s contradictory statements on the nature of the two seeds are also understandable in this light, because “unequal two-sex theory” provided a convenient compromise position between the views of

⁹⁹ Levinus Lemnius, *Occulta Naturae Miracula* (Antwerp, 1559), f. 16v.

¹⁰⁰ Gregor Reisch, *Natural Philosophy Epitomised: Books 8-11 of Gregor Reisch's Philosophical Pearl* (1503), trans. and eds. Andrew Cunningham and Sachiko Kusukawa (Aldershot: Ashgate, 2010), bk. 9, ch. 40.

both Galen and Aristotle. It allowed sixteenth-century writers on the one hand to maintain, against Aristotle's infamous "misbegotten man" comment, that women were no less "perfect in their sex" than men, and that they had a purposeful role to fulfill in generation. At the same time, though, the fact of their weaker seed allowed sixteenth-century writers to still maintain male superiority in generation, ranking the material female contribution below the formative male one.

This kind of wavering between Aristotelian and Galenic interpretations is typical of sixteenth and seventeenth-century discussions of the male and female seeds. Physicians and surgeons who wrote for women or about women's healthcare—such as Girolamo Mercuriale—seemed especially torn on the unequal nature of the two seeds. Sixteenth-century gynecological and obstetrical writers in the newly revived field *de morbis mulierum* often felt it necessary to on the one hand, refute Aristotle's views on women's imperfection, but on the other, still maintained that women made a lesser contribution to reproduction than men. The author of the first German-language midwifery manual, Eucharius Rösslin (ca. 1470-1526) for instance, claimed that women's weaker seed indicated not that they were "unperfecter than men"—as Aristotle had, in Rösslin's view, erroneously claimed—only that they had a different "office" to fulfill in generation: that is, the work of nourishment inscribed on them by the womb, whereas men's seed took the more active, creative role.¹⁰¹ Giovanni Marinello, author of an influential 1563 text on gynecology, also seemingly took issue with Aristotle's lack of regard for the female contribution, arguing that "the semen of the woman is no less necessary to engender than that of the man," though he went on to note, in typical fashion, that it was nevertheless still "more infirm and less fecund than that of the man," simultaneously both affirming and denying women's equality with men in reproduction.¹⁰²

¹⁰¹ Eucharius Rösslin, *Der schwangeren Frawen und Hebammen Rosengarte* (Augsburg: Heinrich Steiner, 1529), 47.

¹⁰² Giovanni Marinello, *Le medicine partenenti alle infermità delle donne* (Venice, 1563), f. 52. On Marinello's interpretation of Aristotle and the two seeds, see Antonella Pagano, "La virilità indagata: L'andrologia tra ginecologia e igiene di coppia in un medico del '500," *Medicina nei secoli arte e scienza* 13, no. 3 (2001): 549-76.

Even popular books of secrets and medical recipes in the sixteenth century that otherwise expressed littler concern with grand theories of sex difference thought it important to inform lay audiences that men and women both produced seed for generation, but only the male provided the “efficient cause,” as made evident by its better “heat and digestion, which is greater in the man.”¹⁰³ In contrast, precious few sixteenth-century authors adopted the other logical, but much more controversial, interpretation of “two-seed” generative theories: that women actually contributed *more* to the formation of the fetus because they supplied both seed and menstrual blood—not to mention gestation—and men only the former. Some outliers of course existed, though most come from non-medical texts. The proto-feminist Heinrich Cornelius Agrippa von Nettesheim (1486-1535), for instance, took the intentionally subversive position of claiming that women deserved higher regard than men because “in the procreation of the human race nature has preferred woman to man.” The reason for this, he claimed, stemmed from the fact that women “provide matter and nourishment to the fetus, while the man only minimally, the accidents of the substance,” a radical reversal of dominant Galeno-Aristotelian theories about the nature of the male and female contributions.¹⁰⁴ However, Agrippa’s views do not seem to have been widely accepted either in medical circles or elsewhere and have primarily interested historians because they so clearly departed from the predominant views of his time. The complementarity and homology of the two seeds therefore in no way bred a truly equal view of male and female reproductive roles, nor did the belief in a female seed do much to dispel the lingering notion that men had a greater role to play in generation than women, something that medical authors continually supported by reference to men’s greater heat, their superior seed, and their greater bodily perfection generally.

¹⁰³ Raoul de Monte Verd, *Se[n]suit les fleurs et secrets de medecine* (Paris, 1531), f. LVI v.

¹⁰⁴ Cornelius Agrippa von Nettesheim, *De nobilitate & praecellentia foeminei sexus* (Antwerp, 1529), 513. Arlene Miller Guinsburg, “The Counterthrust to Sixteenth-Century Misogyny: The Work of Agrippa and Paracelsus,” *Historical Reflections/Réflexions historiques* 8 (1981): 5.

Along with an unequal view of the two seeds that drew upon both Aristotelian and Galeno-Hippocratic models, early modern medicine also inherited the notion that men's bodies possessed greater heat and could more perfectly transform blood into seed. Aristotelian, hematogenic explanations for seed production remained current in the sixteenth century, as medical theorists still commonly believed that semen formed from the digestion of the blood, as the vital heat of the body "cooked" it. By virtue of their greater overall heat, only men had the ability to completely digest and refine the superfluities in their blood of all impurities to create seed. Colder women could not "cook" as much seed out of their blood, meaning that they produced much smaller, less perfected, and less heated quantities of it. What they could not cook exited the body separately, as the superfluous matter evacuated during menstruation.

Innumerable examples of this same formulation may be found in sixteenth- and seventeenth-century texts on generation, which repeatedly stressed that even if two seeds existed, the male seed was still better in any number of ways. According to the physician Albert Bortoni, the female seed always appeared more "undigested, watery, thin, and fluid" compared to male seed and therefore it had less power in generation.¹⁰⁵ Helkiah Crooke too reasoned that even though "the seede of the male and female is of one nature, colour and manner of generation," that men were still "distinguished in perfection, for the seede of the male is hotter and better laboured."¹⁰⁶ Eucharius Rösslin also distinguished men from women in this way, on the basis that women's seed did not appear as "firm, perfect, absolute, and mighty" as in men.¹⁰⁷ Nicholas de la Roche too used similar language to distinguish male and female seed in terms of active and passive, more perfect and less perfect, writing that "Both [men and women] have semen, active and passive in the generation of the fetus, both very spiritous, but in the man it is hotter and less thin, because it is more active."¹⁰⁸ All of these statements effectively point to a kind of hybrid Galeno-

¹⁰⁵ Alberto Bortoni, *De Morbis muliebris Liber*, in *GSM*, 389.

¹⁰⁶ Crooke, 52.

¹⁰⁷ Rösslin, 47.

¹⁰⁸ Nicholas de la Roche, *De morbis mulierum curandis* (Paris, 1542), reprinted in *GSM*, 62.

Aristotelian theory of generation that at once preserved the notion that both men and women produced seed, while at once upholding the inequality and essential inferiority of the female contribution, much in line with Galen's own assumptions about the superiority of male bodies.

Although Laqueur tended to deemphasize the reach of Aristotelian theories of generation into early modernity, the old Aristotelian definition of men as those who “generated in another,” or actively imposed their form on another, still strongly informed the thinking of even two-seed Galenists of the sixteenth century. The Aristotelian notion that men generated “in another” frequently appeared in early modern medical works, even those that depended most heavily on Galen. For instance, the Scottish physician and mathematician Duncan Liddel, who otherwise discussed male and female bodies and seeds as roughly symmetrical, Galenic terms opened his 1608 chapter on generation with a starkly Aristotelian statement of male superiority in generation: “the man has the power of generating in another (*in alio*) and semen, from which the motive principal is supplied; the woman begets in herself and supplies the field and the material principal,” suggesting that the essential tenets of Aristotelian reproductive hylomorphism had a long reach into the seventeenth century.¹⁰⁹

Differences in heat, generativity, and seminal production also continued to underscore how early moderns described male and female differences in material form. In other words, seed difference also informed sixteenth-century notions of sex difference in that it also undergirded explanations as to why men and women possessed different physical bodies. Physicians of the sixteenth century, much like the classical sources they drew upon, also used seed difference and differential reproductive roles to explain the material differences that existed in the physical “solid” structures of male and female bodies. Much as their classical predecessors, early modern medical tracts located the essence of male-female difference not so much in terms of morphological or genital difference, but in terms of their differing reproductive roles and fluids. For example, in 1612, the surgeon Germain Courtin still thought it necessary to ask how one could “know the male from the female”? The distinction, he concluded, extended beyond the mere

¹⁰⁹ Duncan Liddel, *Ars medica, succincte et perspicue explicate* (Hamburg, 1608), 114.

possession of different genital parts, but had to do with the different contributions that each made to reproduction. Men possessed more heat with which to better concoct their blood into semen, so the production and emission of generative seed defined their reproductive role. Conversely, women's bodies differed because the feminine principle demanded that they have parts suitable "to receive the semen ejected by the male" and nourish it with menstrual blood over the course of gestation.¹¹⁰ Courtin thus argued that men and women differed "not only in the genital parts, but in all parts of the body"—the one distinguished in seed-centric terms, by the functions of generating semen and the other in womb-centric terms, by the functions of passively receiving and nourishing the male contribution.¹¹¹

Other medical texts of the sixteenth century similarly subordinated the material form of male and female bodies to their differential functional roles in reproduction. The physician Rodrigo de Castro also pointed out that although women did produce seed too, "the man differed from the woman" primarily in the possession of "differing body parts, which in [men] pertain to the emitting of semen, and in [women] to receiving and nourishing the fetus." In his view, Nature had obviously intended the penis to emit seed into the womb, and therefore, for the man's body to act on the woman's. Even if women possessed analogous, internal ejaculatory vessels, much more of women's reproductive function obviously centered on the retentive, nourishing operations of the womb.¹¹² Vesalius too argued that, despite the homological similarities he noted between the male and the female testes that pointed more towards a one-sex interpretation, men and women's bodies clearly differed in terms of their generative functions, the one primarily receptive and the other primarily active and formative. Even if both sexes produced seed, their anatomical structures differed in terms of both form and function, for the Creator had thought it fit, he

¹¹⁰ Germain Courtin (d. 1579), *Leçons anatomiques et chirurgicales de feu m.e Germain Courtin*, ed. Estienne Binet (Paris, 1612), 271-2.

¹¹¹ Courtin, 274.

¹¹² Rodrigo de Castro, *De universa mulierum medicina* (Hamburg, 1603), 102. The text in brackets clarifies the gendered referents in the Latin text.

wrote, to give women “parts suitable for receiving semen,” and to men, “parts for excreting it,” the difference between the passive and the active partner in reproduction clearly distinguished in their anatomical structures.¹¹³ Differences in form between structures for emitting and structures for receiving for Vesalius and his contemporaries mirrored and confirmed the unequal nature of the fluid contributions that men and women made to generation. In sum, then, the interchangeable structures of the male and female genital organs mattered less compared to figures like Courtin, Castro, and Vesalius compared to differences in the different fluid, reproductive functions those organs fulfilled.

Seed difference did not only inform these theoretical or anatomical explanations for sex difference in early modernity. In some cases, early moderns regarded seed as the essential differentiating factor in real cases in which the sexed identity of a person was in question, in some cases being clearly preferred to genital markers. Cathy McClive has found that in cases of hermaphroditism in the sixteenth and seventeenth centuries, physicians and surgeons used the ability to produce and expel generative seed to establish maleness in ambiguously sexed bodies, apparently regarding fluid difference as a more important signifier of maleness than the possession of male genital organs alone. In fact, many medical professionals apparently regarded the presence of male genital organs as “insufficient or at least uncertain proof of embodied masculinity.”¹¹⁴ Ambroise Paré, for instance, defined a male-dominant hermaphrodite as one which possessed not only male genitalia, but, “expels seed,” demonstrating reproductive and sexual functionality, thus strongly identifying maleness and male embodiment with key male reproductive functions and fluid expulsion, rather than the possession of a penis and testicles alone.¹¹⁵

Like Paré, other medical writers also regarded fluid expulsion and the demonstration of reproductive functionality to be the decisive factor in determining the maleness or non-maleness of ambiguously sexed bodies. In another 1601 case, the physician Jacques Duval used a similar seed-centric

¹¹³ Vesalius, 527.

¹¹⁴ McClive, “Masculinity,” 50.

¹¹⁵ Paré, 1573.

criteria to exonerate successfully Marin (formerly Marie) le Marcis of charges of sodomy, brought on the grounds that Marie had posed as a man in order to have sexual relations with another woman. Duval, upon examining Marin/Marie found a “hardness” inside the vulva that he claimed was a penis. For Duval, though, the most important differentiating factor was not anatomical, but functional, depending on the ability of Marin le Marcis to produce and expel seed. A further physical examination revealed not only the existence of a “virile member, quite large and firm,” but one that produced indisputably masculine seed by comparison with less concocted women’s seed, appearing “not watery, nor fluid, or serous as is woman’s seed.” If Marin had been truly a woman, Duval later argued in his 1612 *Traité des hermaphrodites*, he would not ejaculate true seed, but only a “smelly substance, which is nothing like genital seed,” for, Duval wrote, “man is entirely semen [*homo totus semen est*].”¹¹⁶ His findings led him to declare to the Parlement of Rouen that Marin was, in fact, a man and could legally contract a marriage with a woman for no other reason than that he demonstrated reproductive functionality. Even his opponent in the case, Jean Riolan the Younger, found that he could not dispute the production of semen as evidence of le Marcis’s maleness, even if his genital organs remained concealed in the abdomen.¹¹⁷

Possession of a penis and testicles thus did not constitute the exclusive criteria by which sixteenth- and seventeenth-century medical writers defined what it meant to be male in the physical, embodied sense. Laqueur’s emphasis on anatomical homologies took for granted that premodern thinkers would locate sex difference solely in the genitals and hinged the definitions of “one-sex” and “two-sex” bodies on the degree of difference or sameness ascribed to structures like the male and female “testicles” or the womb-as-inverted-penis. However, a closer examination of sixteenth- and seventeenth-century discussions of sex difference, generation, and hermaphroditism reveals that these sources did not

¹¹⁶ Quoted in McClive, “Masculinity,” 54.

¹¹⁷ Quoted in McClive, “Masculinity,” 54. Kathleen Long, in her analysis of the case, similarly found that Duval privileged “generative ability,” as evidenced by the ejaculation of semen, as well as the presence of male genitalia in his assessment. Kathleen Long, *Hermaphrodites in Renaissance Europe* (Aldershot: Ashgate, 2006), 91.

associate the state of being male exclusively with the genitalia. Fluid qualities like masculine heat and the ability to produce true or better seed than women most stand out in early modern accounts of male-female difference. These findings counter the assumption that, in the one-sex mode, male bodies served as the template for both men and women and that early modern sources thus had little to say about specifically male physical features, seeing as male genital structures supposedly existed in modified form in both male and female bodies. Rather, the discussion above suggests that early modern medical writers identified an alternative axis of difference altogether—one that fell along differences in the fluid composition of male and female bodies rather than the structural form of the genitalia, which they regarded as no more than superficial outward manifestations of deeper, fluid difference. Even if men and women did both possess, say, testicles, medical thinkers of the sixteenth and seventeenth centuries did stress some differences between male and female bodies—principally those related to the fluid composition of the body, rather than in the “solid” organs of the genitalia. For most, the quality of heat, and with it, the ability to produce seed and generate “in another,” outweighed the situation of the genitalia when it came to describing the essence and physical nature of maleness.

Thus, while most scholars have looked to Galen, Aristotle, and their early modern interpreters with the assumption that they would locate sex difference in the genital anatomy—either in genital homologues, following Galen, or in completely different sets of organs, following Aristotle—this section has shown that premodern medical theorists located male sex difference not only in body parts, but in the heat, the seminal fluid, and in the functional role played by men in reproduction. The importance ascribed to reproductive fluids and functions further diminished the importance of the penis and testicles as signifiers of maleness compared with other organs of the body more strongly associated with the internal, humoral process of seminal production. As the following section will show, many early modern medical writers therefore ascribed a great deal of significance to the liver, heart, and brain as the crucial male reproductive organs which directed male reproductive processes and sexual function.

THE THREE-ORGAN MODEL: THE HEART, LIVER, AND BRAIN AS MALE REPRODUCTIVE ORGANS

As this chapter has shown so far, Galen and Aristotle contributed to the sixteenth century a model of manhood that stressed the importance of seed as a quintessentially male fluid and the importance of heat to its formation. Simultaneously, I have argued that their works, and the works of their early modern interpreters, de-emphasized the male genitalia as the most important signifiers of maleness. Perhaps surprisingly, given the emphasis of classical authorities on generativity in descriptions of maleness, even the testicles held a rather minimal place in premodern discussions of male sex difference. Despite the stress that classical authority placed on men's greater generativity, and the greater efficacy of their seed compared to women's, the testicles held an uncertain and ambivalent place as the principal male reproductive organs in classical and early modern medicine. Neither Aristotle nor the Hippocratics believed that the testicles generated male semen, and Galen attributed only limited reproductive efficacy to the testicles. This stands in stark contrast to the modern Western medical consensus, which holds that the testicles and accessory glands alone direct the generation of spermatozoa, now known to compose the reproductive portion of the seminal fluid.¹¹⁸

Some scholars—most notably, Patricia Simons—have already pointed out that early modern sources subscribed to “unequal two-seed” theories that positioned seed production as a distinguishing aspect of maleness, above and beyond possession of a penis and testicles. However, no scholar to my knowledge has examined the deeper physiological consequences of unequal two-seed thought, or, how fluid- or seed-centric theories of maleness also vested other, non-genital organs with “sexed” qualities. In the absence of any notion of the hormonal or endocrine function of the testicles or the associated seminal apparatus, classical medicine instead located the primary processes of seed production, and the primary site of male-female difference, elsewhere, in the non-genital organs of the body. By the sixteenth century,

¹¹⁸ Ettore Caroppo, “Male Reproductive Medicine: Anatomy and Physiology,” in *An Introduction to Male Reproductive Medicine*, ed. Craig Niederberger (Cambridge: Cambridge University Press, 2011), 1-2.

most educated medical authorities taught that male seed did not originate in the testicles. Rather, the testicles merely collected, stored, and provided the means for expulsion of the fluid contributions of the liver, heart, and brain, which supplied the generative portion of the male semen.

What I call the “three-organ model” of the male body deserves a closer examination because it so clearly differs from modern genito-centric views of the male reproductive system, which primarily associates male fertility with the fluid production of the testicles and related glands only.¹¹⁹ With the exception of only the Ph.D. thesis of Amy Lindgren, which describes medieval views on the role of the heart-liver-brain triad in male reproductive physiology, to my knowledge the role of these three organs in constructions of pre-modern maleness had otherwise gone unmentioned.¹²⁰ More than likely, the importance of these organs to manhood has been overlooked because, from the modern perspective, these organs are not obviously “sexed” in the way that the penis or testicles presumably are.

Examining the role of these three organs in constructions of maleness, though, is important because it reveals just how much pre-modern definitions of manhood differed from modern, genito-centric models, which identify maleness almost exclusively with the possession of a penis and testicles. One might argue that modern, testicular or penile constructions of male fertility also carry with them gendered, culturally informed assumptions about manhood and normative masculinity. However, the “three-organ model” of the sixteenth century was undoubtedly a product of culture because it existed purely in the realm of the theoretical. No empirical evidence existed that proved that the liver, heart, and brain had anything to do with male seminal production, and yet sixteenth- and early seventeenth-century

¹¹⁹ As Caroppo notes, the “three-organ model” does not entirely contradict modern medical understandings of the body, as the brain is today believed to make a hormonal contribution to spermatogenesis. Of course, however, premodern medical texts did not describe the influence of the brain on sperm production in terms of hormones or glands. Caroppo, 2.

¹²⁰ Amy Lindgren, “The Wandering Womb and the Peripheral Penis: Gender and the Fertile Body in Late Medieval Infertility Treatises,” Ph.D. diss. (University of California-Davis, 2005), ii.

medical writers insisted that these organs principally directed male-specific reproductive processes. In this respect, theorizations about the role of the heart, liver, and brain constitute a clear instance in which premodern writers clearly projected their cultural assumptions about the nature of maleness onto male bodies, combatting the historical assumption that early moderns exclusively reserved their culturally-informed comments for examinations of female bodies. Much has been said about how Renaissance anatomists freely read cultural meaning into the mysterious and inaccessible organ of the womb but, as three-organ theorizations reveal, in reality, all human generative processes, both in male and female bodies remained mysterious and mostly inaccessible to medical writers and theorists of the sixteenth and early seventeenth centuries. Even if men's genital organs were outwardly situated, premodern medical writers did not necessarily understand the male physiology of generation any better than they did internal organs like the womb and, similarly, projected their own theoretical interpretations onto male bodies.

Why did the liver, heart, and brain become the principal organs onto which medical writers projected these interpretations? In short, the origins and nature of that quintessentially male fluid—semen—remained mysterious to premodern medical commentators. Because semen was an inert fluid that somehow inspired life, premodern theories of generation reasoned that semen must originate from or have some affinity with the life-giving organs of a man's body. The action of the heart, liver, and brain in the formation of semen could not, however, be directly observed even in dissection because it occurred deep inside the living body, inside the blood vessels. Nor could it easily be proven or disproven. In men, the links among the three organs were merely speculative, and their contributions of heat and “spirits” were invisible, vaguely defined qualities. Like the notion that men were “hotter” than women, and produced more generative, spirituous seed, medieval and early modern medical writers accepted that these three organs directed male sexuality and generativity, even though no concrete evidence existed to support any of these claims. In fact, the sixteenth century saw the first cracks in the “generative, three-organ” body model, as the revival of anatomical dissection could not find a clear connection between these three organs and the male genitalia. Nevertheless, the notion that the liver, heart, and brain created seed and directed male fertility persisted well into the seventeenth century.

The fact that premodern medicine associated the male seed with the most important organs of the body speaks to the cultural importance of generativity as a constitutive aspect of maleness. Along with the notion of the masculine heat, the “three-organ” model further solidified the notion that male bodies possessed greater innate “generative” ability compared to female. Just as heat suffused the whole of the male body, the three-organ model inscribed generative power onto all the essential organs of the male body, rather than the genitals alone—elevating maleness to something more than “just” a matter of the lesser, shameful genital organs. Although of course women also possessed the same “principal” organs as men, medieval and early modern discussions of female reproductive ability tended to reduce women’s reproductive role to that of the womb exclusively and did not regard the principal organs as important to the production of the female seed. The three-organ model can thus be understood yet another way in which premodern medicine constructed the male body in relationship to broader notions of male superiority.

Like the notion of masculine heat, and a superior male seed, the three-organ model owed its origins to classical theories of generation, which tended to view the testicles as accessory organs in seed production. Aristotle, for one, denied that the male testicles produced seed, or had much of a function at all. In his view, semen developed from blood digested by the liver, infused with vital heat and “spirits” from the heart. Most of the process occurred inside the blood vessels, not the testicles. The accumulated blood only passed through the testicles in transit to the penis.¹²¹ However, he believed that the testicles did play an indirect role in hematogenesis because they helped to regulate and balance the quantity of heat in the body. In his view, human testicles protruded outside the abdomen because they functioned like stabilizing weights on a loom that weighed down the heart—the organ most strongly associated with the

¹²¹ Aristotle, *Generation*, 1.4, 717a30-37. “The formation of seed, in Aristotle’s, is largely completed in the blood vessels before they reach the genitalia. The testicles are not an integral part of the spermatic duct system, and the ductus deferens mainly provides a kind of transit lounge or passage for the discharge of seed; the testicles do not contribute in any way to seed formation itself.” Von Staden, 291.

distribution of vital heat throughout the body. By stabilizing or “weighing down” the heat of the heart, they ultimately reduced the amount of blood converted into seed, so that the “desire [for copulation]” would not be too “violent or speedy.”¹²² Aristotle therefore reasoned that castration caused sterility not because removal of the testicles *directly* interrupted the production of semen—by severing the seminal vessels—but indirectly: because their loss would slacken the heart, cool the body, and thus diminish the masculine heat necessary for the digestion and concoction of blood in the liver.¹²³

Galen too saw the regulation of heat—rather than the direct production of semen—as the principal contribution of the (male) testicles to reproduction. Galen also believed that semen primarily formed from blood in the veins and arteries, not the testicles. In Galenic physiology, the liver digested food into blood using its innate heat, which continually flowed down to the extremities as venous blood, supplying the body with nutritive or “animal” spirits. Galen did not recognize the connection between the venous and arterial systems of blood and did not know that venous blood is continuously circulated back to the heart. Rather, he saw both as separate systems that each produced their own kind of blood—a view that remained authoritative until William Harvey demonstrated the connection of the venous and arterial systems in 1628.¹²⁴ In Galen’s view, the liver produced blood that supplied the extremities through the

¹²² Quoted in Connell, 289; Aristotle, *Generation*, 1.4, 717a30-37. Aristotle claimed that the external location of human male testicles made humans more sexually moderate, compared to animals with internal testicles, like birds, reputed to be sexually insatiable.

¹²³ Aristotle, *Generation*, 1.4, 717a35-37.

¹²⁴ Galen in fact explicitly denied that blood produced in the liver circulated back to the heart, a view held by the ancient Erisistratus (ca. 304 – ca. 250 BCE), against whom he wrote: “You will reply that...the blood is prepared in the liver, and is thence transferred to the heart to receive its proper form and last perfection; a statement which does not appear devoid of reason; for no great and perfect work is ever accomplished at a single effort, or receives its final polish from one instrument. But if this be actually so, then show us another vessel which draws the absolutely perfect blood from the heart and distributes it as the arteries do the spirits over the whole body.” From Galen, *De Placitis Hippocratis et Platonis*, vi; quoted in William Harvey, *An Anatomical Disquisition on the Motion of the*

veins with nourishment from digested food or “natural spirits.” The heart separately produced arterial blood, infused with vital spirits, which communicated motion and activity to the body and, in the case of seed, generativity. The hot, digested venous and “spiritous” arterial blood accumulated in the testicles in preparation for emission, but the testicles made no independent contribution to the fluid of the semen, which derived entirely from the combined contributions of the venous and arterial blood.

Galen agreed with Aristotle that the testicles did not produce seed themselves, but mainly served to gather blood produced elsewhere. He did, however, find Aristotle’s claim that the testicles only served to weigh down the heart anatomically absurd and reasoned that they must have some function in the preparation of semen. Rather than stretching out the vessels and passages running from the heart, Galen observed in his dissections that the testicles were filled with bunched up coils.¹²⁵ Because these coils lengthened the amount of time the accumulated semen spent in the testicles, he suggested that they probably had at least some role in further heating and preparing the semen prior to emission. The heat of the testicles, he argued, worked to transform semen from a red, blood-like substance into something “whiter and whiter until in the very last [coils], that end in the testes, it has been made absolutely white.”

For Galen too, castration also proved that the testicles primarily supplied heat, though not semen directly, to the male body. Although Galen disagreed with Aristotle about the status of the testicles as weights on the heart, he agreed that the removal of the testicles certainly cooled the body, “robbing it of strength and heat, as well as sexual desire.”¹²⁶ Galen reasoned that because castrated men are suddenly “chilled, as though deprived of a second source of innate heat, and all their strength collapses as if they

Heart and Blood in Animals (De motu cordis), in *The Works of William Harvey*, trans. Robert Willis (Philadelphia, PA: University of Pennsylvania Press, 1989), 33. Harvey proposed that this missing vessel alluded to by Galen was in fact the aorta.

¹²⁵ Galen, *De semine*, 129. Galen also claimed that the example of animals with internal testicles (like the cock) disproved Aristotle’s theory about their weighted nature. Galen, *De semine*, 22-3, 121.

¹²⁶ Galen, *De semine*, 121.

had grown old,” the testicles must, in addition to the heart, be “a source of strength for animals” and “pour forth a large amount of heat to the whole body.” Like Aristotle, Galen therefore also saw the testicles primarily as a source of heat rather than an instrumental reproductive organ. It was the loss of heat that came with castration, rather than the physical removal of the testicles themselves, which explained for Galen why castrated men developed the effeminate characteristics of colder women.¹²⁷

Other classical sources also denied a direct role for the testicles in seed production. They instead located the origin of semen in the brain—a process that Erna Lesky termed “encephalogenesis,” in contrast with the blood-based “hematogenesis” of Galen and Aristotle.¹²⁸ Although Aristotle had centered the human life force on the heart, and therefore gave it a more important role in the formation of seed, other philosophers equated the life force or human personality with the head and therefore ascribed significant generative powers to the brain. Indeed, Greek myth abounds with examples of “head-births,” most notably Athena’s birth from the head of Zeus, pointing to the significance of the head or the brain in reproduction.

The notion that the male brain had a special affinity with generation also enjoyed widespread acceptance among ancient scientific authors. Pythagoras (ca. 582-500 BCE) may have embraced encephalogenic theory as early as the sixth century BCE. He described male seed as a “clot of brain containing hot vapor within it.” During conception, the sperm supposedly descended from the father’s brain, down the spine, and formed the brain of the new fetus in the womb.¹²⁹ Like the Pythagoreans, Plato (ca. 423 – 347 BCE) also described a direct pathway through the spinal column that supposedly delivered

¹²⁷ Galen, *De semine*, 125-7.

¹²⁸ Lesky, 1344-17.

¹²⁹ “The germ is a clot of brain containing hot vapor within it; and this, when brought to the womb, throws out, from the brain, ichor, fluid and blood, whence are formed flesh, sinews, bones, hairs, and the whole of the body, while soul and sense come from the vapor within.” *Diogenes Laertius: Lives of the Eminent Philosophers*, vol. 2, ed. and trans. R. D. Hicks, LCL 185 (Cambridge, MA: Harvard University Press, 1925), 344.

semen from the brain to the testicles. In the *Timaeus*, he described the brain and the spinal marrow in men as the portion of the body endowed with the “divine seed,” or a “universal seed-stuff for every mortal kind,” from which the rest of the body developed during generation.¹³⁰ The Hippocratic text *De genitura* also espoused the encephalogenic view and claimed that the “sperm of the human male” came mostly from the brain, not the testicles. According to the Hippocratics, the fluid component of semen consisted, not of blood, but “the most potent and richest part of the humor” of the whole body (a theory Lesky referred to as “pangenesis”).¹³¹ However, the moisture of the brain composed the principal part of the seed so that, when stimulated and made frothy by the heat, it descended to the testicles through blood vessels that directly connected the brain to the testicles. Both *De Genitura* and the Hippocratic *On Airs, Waters, and Places* cautioned that wounds to the head or cutting the so-called “juvenile veins” in the

¹³⁰ The Creator “divided the marrow itself, in His original division, into...shapes which should belong to the several kinds of Soul. And that portion of the marrow, which was intended to receive within itself, as it were into a field, the divine seed He molded in the shape of a perfect globe and bestowed on it the name of ‘brain.’” *Plato: Timaeus. Critias. Cleitophon. Menexenus. Epistles*, trans. R. G. Bury, LCL 234 (Cambridge, MA: Harvard University Press, 1929), 191-3. For Plato, “The same word ($\muνελός$) was applied to the brain and its fluid contents, which are a continuation of the spinal marrow and usually considered one with it.” Many Greek and Latin literary texts through the Renaissance thus often used “marrow” metaphorically to refer to male sexual desire or sexual being. For classical literary deployments of the marrow, see Patricia A. Rosenmeyer, “Tracing the Medulla as a Locus Eroticus,” *Arethusa* 32, no. 1 (1999): 29, n. 27; Joshua Katz and Katharina Volk, “Erotic Hardening and Softening in Vergil’s Eighth Eclogue,” *Classical Quarterly*, 56, no. 1 (2006): 169–74; For a global perspective on beliefs in encephalogenesis, see Weston La Barre’s book-length study of the brain-marrow-semen connection, Weston La Barre, *Muelos: A Stone Age Superstition about Sexuality* (New York: Columbia University Press, 1984), as well as Françoise Héritier-Augé, “Semen and Blood: Some Ancient Theories Concerning Their Genesis and Relationship,” in *Fragments for a History of the Human Body*, vol. 3, 159-75.

¹³¹ See Von Staden, 288–91.

neck, as Scythian men supposedly did, would invariably cause sterility and impotence because it would sever this seminal pathway between the brain and the testicles.¹³²

By the time of Galen, there thus existed three possible explanations for the origin of male seed—hematogenesis, encephalogenesis, and pangenesis—none of which identified the testicles as the principal reproductive organs in men.¹³³ In the opinion of all of the principal ancient authorities, the testicles only stored or prepared semen in its final stage, and supplied heat to the body, if they did anything to it at all. Three other organs of the body besides the testicles seemed to have a greater claim on male generativity in these descriptions: the liver, the heart, and the brain. The liver, a “hot” organ, supposedly transformed food into blood through digestion, making it essential to the process of hematogenesis.¹³⁴ The heart, also hot and airy, then filled that blood with vital “spirits,” which communicated motion to the limbs and, in the case of seed, activated the motion and growth of an embryo. The Hippocratics also added the brain to the list even though most classical theorists described the brain as a cold, moist organ, making it an odd addition to theories that relied on men’s supposedly greater innate heat. However, subsequent interpreters who wished to combine Hippocratic encephalogenesis with Aristolo-Galenic hematogenesis apparently did not see the cold influences of the brain as out of step with notions of male hotness. The brain, after all,

¹³² “To me it appears that the semen is altered by this treatment, for there are veins behind the ears which, if cut, induce impotence.” Hippocrates, *On Airs, Waters, Places*, trans. Émile Littré and Francis Adams (London: Wyman and Sons, 1881), bk. VI, ch. 108-9. “Those on the other hand who have had an incision made by the ear, can indeed have intercourse and emit sperm, but the amount is small, weak, and sterile. For the greater part of the sperm travels from the head past the ears into the spinal marrow: now when the incision has formed a scar, this passage becomes obstructed.” Hippocrates, *De Genitura*, 2. Jacquart and Thomasset suggest that these so-called “juvenile veins” actually refer to the jugular veins, but the referent is otherwise unclear, Danielle Jacquart and Claude Thomasset, *Sexuality and Medicine in the Middle Ages*, trans. Matthew Adamson (Princeton: Princeton University Press, 1988), 43.

¹³³ All three terms are borrowed from Von Staden, 288–91.

¹³⁴ Siraisi, *Medieval and Early Renaissance Medicine* (Chicago: University of Chicago Press, 2009), 106.

bore a strong association with thought, intellect, and sensation and so it only made sense that it contributed something to generation, which Aristotle and others had so often described as a “creative” process in men, akin to artisanal creation.

Furthermore, the notion that the brain had some influence over the male seed made sense in that, like the heart, it seemed to have a “spiritous” influence over the rest of the body. It held an important place, along with the other principal organs, in the Platonic division of the soul into three embodied parts: the rational soul, seated in the brain, the vital soul, seated in the heart, and the vegetative soul, seated in the liver. The rational soul—which Plato regarded as incorporeal and immortal—governed the two lesser souls, while the vital soul governed the passions or “spirit,” and the vegetative soul controlled desire.¹³⁵ Galen also described each of these organs as performing soul-like operations in the body, albeit in purely material terms. All three directed the movement of blood and animating “spirits” throughout the body, which inspired thought, motion, and in the case of generation, desire. The liver, as the principal nutritive organ, was responsible for the creation of blood from chyle and thus the sensation of appetite (both sexual and nutritional).¹³⁶ The heart and brain infused the blood with vital and animal spirits, respectively, which communicated sensation and motion to the extremities—and, presumably, to embryonic matter during generation as well [Fig. 4].

Notably, all three of these ancient accounts of seed production—the Hippocratic, Galenic, and Aristotelian—associated these three organs (or at least the heart and brain) specifically with the production of the male, not the female seed. Just like the male seed, Galen believed that female seed originated from the blood, which was processed in the liver. In fact, it was entirely composed of superfluous blood and nothing else, because it was excreted as menses. Women’s lack of vital heat in general necessarily made them unable to complete the digestion of their blood in the liver. Nor did their seed contain spirits from the heart, as it was composed only of venous blood rather than “spirits”

¹³⁵ Plato, *Timaeus*, 69b-72d.

¹³⁶ Siraisi, *Medieval and Early Renaissance Medicine*, 106.

contained in the arteries. Female seed thus made only a “material” rather than a “spiritous” contribution to the embryo. Furthermore, Galen did not describe parallel heated “coils” for the preparation of semen in the female testicles. His comments on the internal anatomy of the testicles and castration only concern the male testicles, suggesting that he saw the physiological origin of seed as a question specific to male bodies. The Hippocratic texts too clearly discussed encephalogenesis only in relationship to the male, but not the female seed. They specified that the brain only played a role in the creation of the “sperm of the human male,” that emission of semen made men specifically feel weak because it derived from the brain, and that only the male Scythians became sterile by cutting the juvenile veins.

Medieval medical writers who drew upon Galen and the Hippocratics further emphasized the role of the liver, heart, and brain as exclusively male generative organs, over and above those of the penis and testicles. Though in ancient thought hematogenesis and encephalogenesis had arisen from distinct philosophical traditions, medieval medical texts tended to amalgamate these theories of seminal origins together indiscriminately. Frequently, medieval texts treated the contributions of all three organs—the liver, heart, and brain—as equally necessary for the creation of specifically male seed rather than centering on a single organ. Isidore of Seville (ca. 560 – 636) for instance, claimed that semen was produced both hematogenically (“through a decoction of food and of the body and spread through the veins” in the liver, described as “the seat of voluptuousness and concupiscence”) and also composed of fluid from the spinal cord.¹³⁷ By the thirteenth century, even Albertus Magnus (1200-1280), a staunch Aristotelian and the leading figure of so-called “scholastic” medicine, agreed that, although seed principally derived from blood that had passed through the liver and heart, the brain also more than likely contributed something to the final product.¹³⁸ Both of these comments suggest that medieval texts did not

¹³⁷ “Isidore of Seville: The Medical Writings,” trans. and ed. William D. Sharpe, *Transactions of the American Philosophical Society* 54, pt. 2 (1964): 45, 48.

¹³⁸ Albertus Magnus, *Questions Concerning Aristotle's On Animals*, trans. Irven M. Resnick and Kenneth F. Kitchell, Jr. (Washington, D.C.: Catholic University of America Press, 2008), bk. 15, q. 14, 460.

recognize hematogenesis, encephalogenesis, or pangenesis as incompatible theories, but freely mixed together parts of all three into a kind of “medieval synthesis” of the views of Aristotle, Galen, and the Hippocratics.

Early sixteenth-century physicians also adhered to this medieval synthesis, which unified the three theories of seed production into a single, three-organ system. By 1508, Gregor Reisch perceived no contradiction at all between what had previously been quite distinct views on the origin of seed. As he observed:

Some claim that the semen is derived from the liver, some from the brain, and yet others from all the members [of the body], and their opinions are not contradictory if we understand the semen to descend from the liver principally, from the brain for the most part, and from all the members originally.¹³⁹

Even later in the sixteenth century, the physician Jean Fernel was willing to step away from a strictly Galeno-Aristotelian, hematic view of the origins of the male seed. Although he agreed with Aristotle that seed probably did not come from all parts of the body, as the pangenetic texts claimed, Fernel conceded that the material probably came from both the blood vessels as well as the three “principles” supplied by the liver, heart, and brain.¹⁴⁰

The willingness of sixteenth-century physicians to accept both hematogenesis and encephalogenesis drew on a medieval interpretation of classical sources, not the authority of the ancients themselves. The synthesis of these two theories came about due to the infusion of medieval Arabic translations and interpretations of classical medicine into the medical school at Salerno in the twelfth and thirteenth centuries, particularly Avicenna’s *Canon* and the translations of Arabic texts made by the eleventh-century physician and monk Constantine the African (ca. 1015-1087). Avicenna agreed with

¹³⁹ Reisch, lib. IX, cap. XXXVII.

¹⁴⁰ Fernel, 535.

Galen that seed developed out of the blood, but he also claimed that certain veins connected the testicles to the spinal cord, supplying the semen with cerebral moisture.¹⁴¹ He also put more emphasis on the contributions to seed production made by the major organs than Galen and Aristotle had, describing seed as something more like a composite solution of several different fluids, rather than simply super-heated blood. Rather than merely digesting the blood, for instance, Avicenna claimed that the liver made a fluid contribution of “appetite” to the seed, which created the sensation of sexual desire. The heart infused the blood with “spirits” that made it generative, but their dry, “windy” nature also filled the penis with air, stimulating erection. Finally, the brain also sent down its “humor” into the mixture of spirituous blood, providing the fluid portion of the semen.¹⁴²

Constantine’s *De Coitu*, an influential Latin translation of an Arabic manual on male sexual hygiene, contained a similar, though much more detailed, description of the three seminal elements Avicenna had listed.¹⁴³ Like Avicenna, Constantine regarded appetite from the liver, “winds” from the heart, and moisture from the brain as essential to both the fertility of the seed and to male sexual ability. During the process of seed production, the liver provoked the release of the appetite. The appetite then

¹⁴¹ Avicenna, *Canon*, vol. 1, pt. 1, sect. 5, 105-6.

¹⁴² Avicenna, *Canon*, vol. 3, pt. 20, sect. 1, 1-2.

¹⁴³ The original Arabic author of *De Coitu* is unknown, as Constantine did not credit his sources. Renaissance scholars thought of Constantine as a plagiarist because of this tendency of his and so usually attributed his works to either Isaac or Haly Abbas. For instance, the title of 1515 Lyon edition of Constantine’s works (*Omnia opera Ysaac*) is attributed to the North African Jewish physician, Isaac Isra’ili ben Solomon (ca. 832-932). Mark Jordan, “The Fortunes of Constantine’s Pantegni,” in *Constantine the African and ‘Alī Ibn Al-‘Abbās Al-Magūsī: The Pantegni and Related Texts*, eds. Charles Burnett and Danielle Jacquot (New York: Brill, 1994), 286-87. Enrique Montero Cartelle has traced the original authorship of *De Coitu* to neither of these, but rather to the tenth-century Arabic physician Ibn al-Gazzar, “Sobre el autor árabe del *Liber de coitu* y el modo de trabajar de Constantino el Africano,” *Medizinhistorisches Journal* 23 no. 3-4 (1988): 213-23.

infused itself with a windy, airy “spirit” from the heart that gave seed its spirituous and frothy quality, as well as its generative quality “from which a human being is made.”¹⁴⁴ The movement of inner fluids did not only determine generativity, however, but also influenced the movement of the genitals, the operation of which Constantine subordinated to the operations of the other organs. Erection, for instance, occurred when the movement of the appetite caused spirit to become displaced in the heart and travel “through the arteries to the penis.” The windy spirits then stimulated erection by inflating “the hollow of the penis and by filling up [the penis, it] grows erect, hard, and rigid.”¹⁴⁵ At the same time, the warming feeling of arousal conferred by the combination of appetite and spirit further heated the whole body and stimulated the brain to liquify its humor, or moisture, endowing the seed with its fluid, seminal composition, and forming the medium in which it would flow out of the body. The final mixture of semen then descended “through the veins which are behind the ears,” down the spinal cord, into the kidneys, then into the testicles, and out through the penis.¹⁴⁶

The widespread popularity of *De Coitu* inspired several similar texts on reproduction by Salernitan medical authors of the thirteenth century. The anonymous *Liber minor de coitu* (ca. 1250) also identified the liver, heart, and brain, and the contributions of each organs as essential prerequisites for male generativity and sexuality, as did the widely copied gynecological texts attributed to Trotula of Salerno.¹⁴⁷ In the section on male sterility, Trotula similarly argued that men could neither generate nor become erect without the influence of heat from the liver, “spermatic humidity” from the brain, and

¹⁴⁴ Constantine the African (Constantinus Africanus), *De Coitu*, in Faith Wallis, ed., *Medieval Medicine: A Reader* (Toronto: University of Toronto Press, 2010), 512-3.

¹⁴⁵ Constantine, *De Coitu*, 512.

¹⁴⁶ Constantine, *De Coitu*, 511-12.

¹⁴⁷ Anonymous, *Liber Minor de Coitu: Tratado Menor de Andrologia Anonimo Salernitano*, trans. Enrique Montero Cartelle (Valladolid: University of Valladolid Press, 1987), 87.

“spirit” from the heart—a formula practically verbatim with that found in *De Coitu*.¹⁴⁸ Even outside the scholarly hub at Salerno, medical writers in Europe of the thirteenth and fourteenth centuries appear to have fully accepted the three-organ model of male generativity, describing semen as a product both of the heated blood and the fluid influences of the other major organs—especially the brain. Other influential practical medical texts like Gilbert of England’s *Compendium Medicinae* (ca. 1230), Bernard de Gordon’s *Lignum medicinae* (ca. 1305), Guy de Chauliac’s *Chirurgia* (ca. 1365), Johannes de Tornamira’s *Clarificatorium* (ca. 1365), and Giovanni Michel Savonarola’s *Practica* (ca. 1440) also all identified the three organs and their fluid contributions, above and beyond the penis and testicles, as central to both male reproductive and sexual functionality.¹⁴⁹

Although most medieval anatomies preferred to represent the body textually rather than visually, the three-organ model of male generativity can also be detected in the rare late-medieval illustrated anatomies of the male reproductive organs that do exist. Several medieval anatomical diagrams of the nine Galenic “simple systems” of the body depict the male reproductive system in a highly schematic fashion, as a series of lines connecting the testicles to circles representing the liver, heart, and brain. One thirteenth-century English manuscript, Ms. Ashmole 399, housed in the Bodleian Library represents the male sexual apparatus as a single vertical line extending from the testicles to a circle, representing the

¹⁴⁸ Trotula of Salerno (attributed), *The Trotula: A Medieval Compendium of Women's Medicine*, ed. and trans. Monica Green (Philadelphia: University of Pennsylvania Press, 2001), 115.

¹⁴⁹ See Gilbert of England (Gilbertus Anglicus), *Compendium Medicinae* (Lyon, 1510), f. 287r; Bernard de Gordon (Gordonius), *Practica seu Lignum medicinae* (Lyon, 1491), pt. 7, ch. 1; Guy de Chauliac (Guido), *La grande chirurgie de M. Gui de Chauliac*, trans. and ed. Laurent Joubert (Lyon, 1580), 76; Johannes de Tornamira, *Clarificatorium super nono Almansorio* (Lyon, 1490), f. CXLIII v.; Giovanni Michel Savonarola, *Practica maior Ioannis Michaelis Sauonarolae* (Venice, 1547), f. 257v.

brain [Fig. 5].¹⁵⁰ The line branches off on either side to two other circles, representing the heart and liver. The penis is also represented as a dangling outgrowth on the center line—implying its functional connection to the three-organ seminal system. The image in Ms. Ashmole 399 is accompanied by the text of the Pseudo-Galenic treatise on generation, *De Spermate* which notes that “The sperm of men descends from all the humor of the body [*sperma hominis descendit ex omni humore corporis*].”¹⁵¹ Other kinds of medieval anatomical illustrations also displayed the viscera of the body connected by a continuous vertical line, which appears to extend from the brain, through the heart and liver, and down to the genitalia, such as in the zipper-style illustration of the male genitalia connected to the brain via the “spermatic vein,” depicted in a copy of Henri de Mondeville’s *Chirurgia* (ca. 1314) [Fig. 6].¹⁵²

Anatomical illustrations in this style reflected a broader conceptualization among medieval medical writers of men’s bodies as inherently and specifically “generative.” Rather than focused narrowly on the penis and testicles, men’s reproductive ability encompassed the operations of all the major organs of the body. Just as the quality of “vital heat” was diffused throughout the body, so too was male generativity a function of the whole body.

¹⁵⁰ Pseudo-Galen, *De Spermate*, in BLO Ms. Ashmole 399, f. 24v. See also Charles Singer, “Note on a Thirteenth-Century Diagram of the Male Genitalia,” *Proceedings of the Royal Society of Medicine* 9 (1916): 212-214; Christoph Ferckel, “Diagramme der Sexualorgane in mittelalterlichen Handschriften,” in Karl Sudhoff, “Weitere Beiträge Zur Geschichte Der Anatomie Im Mittelalter. Aus Dem Institut Für Geschichte Der Medizin in Leipzig. VI.” *Archiv Für Geschichte Der Medizin* 10, no. 5 (1917): 251-63. An almost identical, slightly earlier image may be found in Cambridge, Gonville and Caius College, Ms. 190/223, f. 4v. See Ynez Violé O’Neill, “The Fünfbilderserie—A Bridge to the Unknown,” *Bulletin of the History of Medicine* 51, no. 4 (1977): 538-49. Another depiction from the Pisan “Codex Roncioni” depicts the testicles supplied by a “via medulla” or marrow channel, presumably meant to connect to the spine. Pisa, Biblioteca Universitaria Ms. 735, f. 2r, in Ferckel, 263.

¹⁵¹ BLO Ms. Ashmore 399, f. 26r. See also the English translation of the text of *De spermate* in Päivi Pahta, *Medieval Embryology in the Vernacular: The Case of De spermate* (Helsinki: Société Néophilologique, 1998), 161.

¹⁵² Henri de Mondeville, *Chirurgia*, in BNF Ms. Fr. 2030, f. 11v.

In contrast, discussions of women's reproductive ability focused almost exclusively on the womb. Side-by-side with medieval representations of the male generative organs as heart-liver-brain-testicles, such as the image in Ms. Ashmole 399, representations of the female reproductive body (and indeed, the female body altogether) focused almost exclusively on one part of the body: the womb, without any explicit or implicit connection to the other major organs of the body.¹⁵³ Pre-Vesalian representations of the nine Galenic systems typically only ever depicted women's bodies to illustrate the uterus, nearly always depicted during pregnancy. Although depictions of male bodies rarely centered on the male reproductive organs (as in the liver-heart-brain-testicles schematic), male bodies were not solely represented in sex-specific ways, as women were. Unlike female bodies, anatomical texts frequently used male figures to represent systems generalizable to all humankind, such as the venous, skeletal, and muscular systems.¹⁵⁴ The *Fasciculus medicinae* for instance features a cross-section of the womb of a "Pregnant Woman." As is typical of this kind of illustration, the Pregnant Woman is the only female figure in the text, alongside a "Zodiac Man," depicting the influence of astrological signs on parts of the body, as well as a "Disease Man," "Wound Man," and "Vein Man"—all of these figures are clearly male, but intended to represent phenomena incident to all human bodies.¹⁵⁵ Sixteenth-century anatomies,

¹⁵³ A separate diagram of the womb is contained in BLO Ms. Ashmore 399, f. 13v.

¹⁵⁴ This is typical of so-called "Fünfbilderserie" images in pre-Vesalian anatomical drawings, which always depict the simple systems of the body in obviously male bodies, unless they are specifically intended to display the womb, in which case a female figure is used. Karl Sudhoff first identified images of this style, representing "Vein Man" and "Bone Man," from as early as the twelfth century, in "Graphische Darstellungen innerer Körperorgane," *Archiv für Geschichte der Medizin* 7, no. 6 (1914): 363-78; O'Neill, 538. Examples can be found in Munich, Bayerische Staatsbibliothek, Clm. 13002, f. 2v (ca. 1165), as well as in BLO Ms. Ashmole 399, f. 18r-22r (ca. 1292). Eight such figures can also be found in WL Ms. 290, f. 49v-52r (mid-fifteenth century), followed by a single "Pregnant Woman" image on f. 52v.

¹⁵⁵ Written at the end of the fifteenth century, the illustrations in the *Fasciculus* only repeated what had long been a typical mode of representing human bodies. "Zodiac Man" and "Wound Man" represented treatment regimes that

Vesalius included, also perpetuated the tendency to represent the female body solely in relationship to the womb. The Vesalian *écorché* figures, which highlight general human systems like the muscles and veins in the works of Vesalius were all male and Vesalius and subsequent anatomists typically only depicted women with the abdomen alone to expose the womb [Fig. 7]. Nevertheless, even though female bodies were often represented as being specifically intended for reproduction, and reduced to the functions of the womb, male bodies were depicted as being generative in a more totalizing sense, because all their organs were directed towards the functions of reproduction, rather than just one.

The other consequence of representing male bodies as inherently “generative” meant that medieval medical writers regarded reproductive and sexual ability as virtually inseparable in men. Male bodies were inherently “generative” because the three-organ model rendered the penis and testicles merely accessory organs, which conveyed the seminal fluids produced in other organs, rather than sexual organs in their own right. As Amy Lindgren has shown, a great number of late medieval fertility treatises followed Avicenna and Constantine by discussing the liver, heart, and brain not just as “principal organs” in the Galenic sense, but the principal male generative organs, over and above the penis or testicles, which ultimately were described only as “passive conduits for the products of the man’s generative processes.”¹⁵⁶ Although most late medieval medical writers denied Aristotle’s notion of the testicles as non-functional as too extreme, Galen too had relegated the testicles to a relatively minor role, in that they only prepared or further cooked seminal materials that had been formed elsewhere in the body.

Even more so than the testicles, the penis attracted little comment among medieval adherents of the three-organ model. Lindgren claims that late medieval medical treatises regarded the penis as “peripheral” to the other generative organs of the body, in that it had no independent muscular or nervous motion of its own. In fact, the penis did not even figure as the locus of male sexuality, the functions of

could be applied to all bodies, just as the Fünfbilderserie-style images portray body systems, like the bones and veins, common to both men and women.

¹⁵⁶ Lindgren, ii.

which depended on seminal flows elsewhere in the body. Supposedly, the penis only became erect when air from the heart, displaced by heat from the liver, filled its hollow interior. Prior to the revival of anatomical dissection in sixteenth century, anatomists commonly described the penis as having two channels, rather than a single urethra, one of which connected to the bladder and the other to a bloodless artery, which filled it with either the “appetite,” as described by Constantine, or “spirits” or “winds” from the heart. The notion that “winds” filled the penis during erection can be found repeated in numerous practical medical surgical texts from throughout the late medieval period, including in that of the fourteenth-century French surgeon Guy de Chauliac whose surgical works—reprinted as late as 1580—claimed that, “in [the penis] there are two canals or principal passages, that is, of sperm and of urine,” one of which filled with air during arousal.¹⁵⁷ Leonardo da Vinci’s anatomical sketches from the late fifteenth century also feature a two-channel penis with a duct for both semen and air. In a cross-sectional study of the organ, for instance, Da Vinci depicted the penis as having two channels, one for urine and one for semen, and elsewhere suggested that erection resulted when air—not blood—from the arteries filled the hollow seminal channel in the penis [Fig. 8].¹⁵⁸ Rather than ascribing any muscular or nervous independence to the penis, these medical theorists rather subordinated its functions to the internal movement of the seminal fluids derived from the three organs, especially arterial “wind.”

¹⁵⁷ Chauliac, *La grande chirurgie*, 79. The fourteenth-century surgeon Mondino de' Liuzzi similarly claimed that the penis was a mostly hollow organ, being “entirely full of holes or hollows, filled with air generated in the arteries.” Mondino de' Liuzzi (Mundinus), *Anathomia corporis humani* (Venice, 1493), reprinted in Ketham, *Fasciculus medicinae*, f. 57. Cambridge, Gonville and Caius College, Ms. 190/223, f. 4v also depicts the penis with two channels.

¹⁵⁸ Kenneth David Keele and Jane Roberts, eds., *Leonardo da Vinci: Anatomical Drawings from the Royal Library, Windsor Castle* (New York, 1983), fig. 14. Further discussion of this image can be found in Kenneth D. Keele, *Leonardo Da Vinci's Elements of the Science of Man* (New York: Academic Press, 1983), 244.

The notion that the fluid contents of the semen directed sexual activity is another common theme in pre-sixteenth-century anatomical imagery, along with the stress on the three organs. For instance, another of Da Vinci's early sketches, "Coition of hemisected man and woman" (ca. 1492), depicts the movement of the male genitalia as dependent upon the flows of fluid qualities from elsewhere in the body [Fig. 9]. As in the sketch mentioned above, the penis is portrayed with two channels. The seminal channel, however, connects not just to the arteries (which also snake directly up to the heart), but also directly to the spinal cord. The spinal cord is shown as a continuous tube running from the brain, through the testicles, where it intersects with the artery from the heart. It then travels out through one of the outlets in the penis, depositing fluid into the uterus of the woman.¹⁵⁹ Both Denis Noble and Kenneth Keele concur that Da Vinci almost certainly based this drawing on the teachings of Plato in the *Timaeus*, which described semen as originating in the brain, and passing to the testicles through the spinal marrow.¹⁶⁰ Another work upon which Da Vinci drew substantially, that of fifteenth-century anatomist Alessandro Benedetti, also expressed the Hippocratic notion that "the greater quantity of the material of generation...is drawn from the brain."¹⁶¹ Da Vinci appears to have drawn on Mondino's *Anathomia* as well, which also presupposed the influence of "spirits" from the heart and humor from the brain on both seed production and erection. Implicitly then, in the image of the hemisected man and woman, it is the

¹⁵⁹ See Keele and Roberts, 16A, 69-70. See also Edwin M. Todd, *The Neuroanatomy of Leonardo da Vinci* (Park Ridge, IL: American Association of Neurological Surgeons, 1991), fig. 60 and 61, 128.

¹⁶⁰ "This drawing of Leonardo follows Plato's description so literally that it is difficult to avoid the conclusion that Leonardo was illustrating what he read in the *Timaeus*." Da Vinci elsewhere cited Hippocrates on encephalogenesis: "Hippocrates says that the origin of our semen is derived from the brain and from the lungs and testicles of our forefathers." Keele, *Elements of the Science of Man*, 245-6. See also Denis Noble, et al., "Leonardo da Vinci and the Origin of Semen," *Notes and Records of the Royal Society of London* vol. 68, no. 4 (2014): 391.

¹⁶¹ Benedetti here incorrectly ascribes the encephalogenic opinion to Galen, writing "*Galeo teste*," but probably in fact drew this statement from a pseudo-Galenic work like *De spermate*. Alessandro Benedetti, *Anatomice sive historia corporis humani libri V* (Venice, 1498), f. 22r.

fluid contents of the semen—both the airy spirits from the arteries, as well as the cerebral fluid from the spine—that both supply the testicles with seminal matter and that keep the penis erect with their fluid pressure.

Da Vinci's sketches are obviously anatomically inaccurate, as are the schematic line-and-circle depictions of the male genitalia system found in older medieval texts. There is only one duct in the penis, the spinal cord does not connect to the testicles, and there is no “bloodless” artery full of air or spirits that connects to the penis. However, the creators of these illustrations never intended them to be realistic representations of the organs, nor did medieval physicians prioritize naturalistic anatomical illustration in their practice or even as the best teaching tool for learning anatomy. Very few medieval texts of anatomy even included illustrations of the body's interior. While surgeons who consulted texts like Mondeville's *Chirurgia* may have had occasion to cut into a living body's interior, physicians—the principal consumers of academic medical texts—did not concern themselves with the state of the internal organs so much as the exterior of the body and the regulation of health through external means, such as dietary habits. Nor were anatomical illustrations meant to train physicians or students in the dissection of real bodies, as sixteenth-century anatomical works did. Most anatomical illustrations aided physicians-in-training to visualize and recall the teachings of Galenic anatomy rather than encouraging their actual application through dissection. Consequently, they tended to uncritically replicate the teachings of Galen, Avicenna, and pseudo-Galenic works like *De spermate*, which preached the supremacy of the liver, heart, and brain in semen production, presenting these organs as connected to the testicles by direct pathways, regardless of whether those pathways existed.

The revival of anatomical dissection in Italy in the early sixteenth century significantly undermined literal visual interpretations of the three-organ model like those featured in Da Vinci's sketches. Observation of actual bodies yielded little evidence to support the existence of material pathways for fluid to travel from the brain or liver to the testicles. Standards of anatomical illustration—especially after the publication of Vesalius's *De Humanis Corporis Fabrica* in 1543—also increasingly prioritized naturalistic representation that recorded actual observations of real bodies, over stylized,

imaginative depictions based on authoritative texts. Consequently, the pathways that previous anatomical texts had presumed to exist between the major organs and the testicles generally fell out of medical illustrations of the sixteenth century. More “genito-centric” renditions replaced them, focusing on the penis and testicles and their connections to the immediately surrounding viscera, rather than on the male genitalia in relationship to the most valued “principal” organs of the body.

Even in the early sixteenth century, Da Vinci’s sketches attest to these changing modes of representation in anatomical illustration generally, and of male bodies specifically. As Denis Noble has pointed out, both the inaccurate sketch of the cross-sectional penis and representation of the penis in the act of coitus most likely date to the 1490s, before Da Vinci began to supplement his anatomical drawings with observations based on the dissection of actual bodies. He made several corrections to both of these studies in the first decade of the sixteenth century. A later, much more realistic 1508 drawing of the male reproductive system focused exclusively on the anatomy of the penis and testicles, rather than placing these organs in the context of the whole body of a man [Fig. 10]. He eliminated the non-existent second duct of the penis and the pathways connecting it to the spinal cord and the heart. He also included a more detailed rendition of the male genito-urinary organs, including the vas deferens and seminal vesicles, entirely absent in other illustrations that privileged the other principal organs over those specific to the pelvic region.¹⁶² Da Vinci also corrected his previous assertions about “winds” and erection in notes made sometime between 1506 and 1513, concluding from his observations that the

flesh [of the penis] is not supplemented by wind but by arterial blood. I have seen this in dead men who have this member erected, for many die thus, especially those hanged. Of these I have seen the anatomy, all of them having great density and hardness, and being quite filled by a large quantity of blood which has made the flesh inside very red inside, and in others outside as well as inside. And if the adversary says that such a large quantity of flesh has grown through wind

¹⁶² See Keele and Roberts, figs. 14, 64-5

causing the enlargement and hardness as in a ball with which one plays, such wind gives neither weight nor density but makes flesh light and rarefied.¹⁶³

In other words, Da Vinci's direct observations of real bodies led him to reject certain key elements of the three-organ model of male sexual physiology, particularly the role of "wind" from the heart, rather than blood, as the cause of erection.

Da Vinci's change in understanding roughly coincided with a general shift in thinking among sixteenth-century anatomists away from a three-organ, three-fluid model of male generativity towards one that focused on the localized position and operation of the penis and testicles alone. Even though Da Vinci never published his notebooks in his lifetime, several other anatomists of the early sixteenth century appear to have reached some of the same conclusions independently. The surgical illustrations in Hans von Gersdorff's 1517 *Feldtbuch der Wundartzney* present the male body in a naturalistic fashion and do not imply any direct connection between the male genitalia and the other major organs of the body, other than the bladder.¹⁶⁴ The plates in the 1541 edition of Mondino's anatomy, updated by the anatomist Johann Dryander, also represent the male reproductive organs in the naturalistic style that became typical of sixteenth-century anatomies post-Vesalius. Unlike in medieval anatomies, Dryander portrayed the male genitalia as a part of a separate genito-urinary "system" in its own right—a standard representational choice in modern anatomy [Fig. 11]. It features the pathways between the kidneys, bladder, and urethra, along with the testicles, and the blood vessels connecting them to the vena cava. The heart, liver, and brain do not have any place in this "system," which is excised from the rest of the body altogether and presented in isolation. Two years later, Vesalius similarly presented the "male organs of generation"

¹⁶³ Quoted in Keele, *Elements of the Science of Man*, 350.

¹⁶⁴ Hans von Gersdorff, *Feldtbuch der Wundartzney* (Strasbourg, 1517), f. XIII r.

embedded in the viscera, but only in relationship to the bladder, kidneys, and vena cava.¹⁶⁵ Another plate, much like Mondino's, also presented the male genitalia removed from the body, together with only the vessels connecting them to the urinary organs and the vena cava—a style of representation copied in numerous texts from the second half of the sixteenth century [Fig. 12].

Dissection and changing standards of anatomical representation in the sixteenth century thus tended to downplay the notion of a literal, anatomical relationship between the male genitalia and the three principal organs. Most anatomical texts, following Vesalius, adopted a more clearly “genito-centric” means of representing male bodies visually. However, changes in anatomical representation do not seem to have directly corresponded to or inspired broader changes to theories about the origins or physiology of male seed. Vesalius himself declined to comment on his omission of the heart, liver, and brain from his account of the male “generative organs” and did not draw any conclusions as to whether the semen originated in the testicles or elsewhere. Indeed, he explicitly avoided entering theoretical “controversies” on the subject in favor of a purely descriptive account of the male genitalia.¹⁶⁶ His contemporary, Charles Estienne, despite providing a detailed anatomy of the testicles and accessory glands like the vas deferens, epididymis, and seminal vesicles, also did not draw any new conclusions about the physiology of semen formation in his 1545 text. Like Vesalius, he merely described the function of the testicles vaguely, as that of heating and “preparing” blood supplied from an unspecified location elsewhere in the body.¹⁶⁷ Thus, although the sixteenth-century revival in anatomy failed to support the older, three-organ system, the anatomists themselves did not necessarily expound on the theoretical implications of their findings.

¹⁶⁵ Vesalius, 370, 372.

¹⁶⁶ At the beginning of his chapter on the male genitalia, Vesalius wrote that “If I pass over the controversies of others and begin a description of the organs, I shall set down many things that disagree with their teachings, and if I try to prove my case with detailed arguments my account will falter and grind to a halt.” He ultimately decided to pass over controversies he mentioned, such as the function of the testicles or the origin of semen. Vesalius, 521.

¹⁶⁷ Charles Estienne, *De dissectione partium corporis humani* (Paris, 1545), 193.

Outside of anatomy, the notion that the fluid contributions of the liver, heart, and brain had a powerful influence over the male generative and sexual faculties also persisted largely unchanged in medical scholarship of the sixteenth century. Despite innovations in the realm of experimental anatomy, which eradicated some erroneous beliefs about the structure of the penis and testicles, the medieval “three-organ” view and its proponents continued to dominate thinking on male sexuality and generation. Although medical historians have often lauded the revival of observational anatomy as a revolutionary turning point, the effect of sixteenth-century anatomical findings probably had rather limited reach. Da Vinci’s observations, after all, never saw publication in his lifetime. The Latin works of Vesalius and Estienne, too, even though they received vernacular translations—Vesalius especially through the English physician Thomas Geminus—only a limited number of people would have had access to these immense, richly illustrated, and expensive folio volumes, accessible only in the holdings of large educational institutions or wealthy collectors. In any case, even the authors of these texts did not directly comment extensively on the theoretical implications of depicting the male organs separately from the heart, liver, and brain.

Furthermore, anatomy aside, the general thrust of medical education, writing, and publishing in the sixteenth century tended heavily towards the traditional rather than the novel. The education of physicians in the sixteenth century, as before, stressed mastery of Galenic principles over practical knowledge of the body’s inner structures. Galen and other classical medical texts also continued to dominate medical publishing, even in the age of print. Most “innovation” in the field of sixteenth-century medical publishing consisted not in works dedicated to original “discoveries,” but in the textual recovery, commentary, and re-printing of classical texts deemed authoritative. Even Vesalius’s anatomy can be understood as an extended commentary on Galen’s works. As Ian Maclean and others have noted, physicians of the sixteenth century hesitated to release original works in print. Most medical printed works of the sixteenth century—especially those produced for academic audiences at medical universities such as Paris or Bologna—did not contain works by so-called “*recentiores*,” or contemporary medical

authors, but noted classical authorities, like Galen.¹⁶⁸ The persistence and continued popularity of these works in print meant that challenges to essential doctrines like the heart-liver-brain triad went mostly unchallenged.

Nor did the development of print in the mid-fifteenth century mean that medical works of the thirteenth, fourteenth, and fifteenth-century works remained forgotten in the realm of manuscript. The expansion of medical publishing in the sixteenth century led to the publication of many medieval works, which also enjoyed a reputation among physicians as “authoritative.” For instance, the twelfth-century Salernitan text, the Trotula—complete with its pronouncements on the importance of the three organs to male fertility and sexuality—received several reprints, including in the 1547 Aldine compilation *Medici Antiqui Omnes*—a collection of texts of ancient medical authority—and in the *Gynaecorium sive mulierum* (1566 and 1597), a compilation of authoritative works on gynecology and generation. The work of noted thirteenth- and fourteenth-century physicians also continued to receive multiple reprints, and continued to be cited as authorities, throughout the sixteenth century. Most of the better-known medical authors of previous centuries—including the “three-organ” proponents Gilbert of England, Albertus Magnus, and Giovanni Savonarola—saw numerous editions of their texts cited, re-published, plagiarized, and translated into vernacular languages in the sixteenth century. Among these included innumerable texts attributed to Albertus Magnus and Arnaldus de Villa Nova, as well as Bernard de Gordon’s fourteenth-century *Practica*, which underwent republication in various languages in 1509, 1515, 1542, 1574, 1598, and 1617, and still received citation “as authoritative in the sixteenth-century medical faculties of Vienna and Paris.”¹⁶⁹ Even medieval surgical texts continued to receive reprints and

¹⁶⁸ Ian Maclean, “The Reception of Medieval Practical Medicine in the Sixteenth Century: The Case of Arnau de Vilanova,” in *Learning and the Marketplace: Essays in the History of the Early Modern Book* (Leiden: Brill, 2009), 87-88.

¹⁶⁹ Luke E. Demaitre, *Doctor Bernard de Gordon: Professor and Practitioner* (Toronto: Pontifical Institute of Medieval Studies, 1980), 185-188, x. Similarly, the fifteenth-century physician Giovanni Michel Savonarola saw

translations. The French translation of Guy de Chauliac's *Chirurgia*, as late as 1580 repeated the medieval three-organ model of semen production to vernacular audiences:

the sperm feels the effects of the nature of the heart, the liver, and the kidneys: and by the nerves, which (for pleasure) descend from the brain to the testicles, the brain in this communicates with them and consequently all the body. The semen thus, following this, descends from all the body, not in quantity, as in vigor.¹⁷⁰

By no means, then, did the three-organ model fade into obscurity all at once, but persisted well into the sixteenth century, even though anatomical evidence undermined its key supports.

Thus, even though anatomical observation challenged the three-organ origins of the semen, the sixteenth-century view on male “generative” bodies overall still closely followed the views of ancient and medieval authors, which prioritized the heart, liver, and brain as the principal male reproductive organs. Medieval innovations, such as the synthesis of Galenic hematogenesis and Hippocratic encephalogenesis, continued to be accepted even though they appeared to contradict Galen’s actual teaching. The pseudo-Galenic medieval text, *De spermate*, for instance, continued to appear in re-prints of Galen’s authentic works despite suspicions about its authenticity. It reiterated to sixteenth-century audiences that, “the

Latin editions of his *Practica*, which included a long chapter on the three male generative organs, republished in Venice alone in 1502, 1518, 1519, 1547, 1559, 1560, and 1561, along with several vernacular texts attributed to him. Rudolph M. Bell, *How to Do It: Guides to Good Living for Renaissance Italians* (Chicago: University of Chicago Press, 1999), 303. As an example of the continuities that spanned late medieval and sixteenth-century vernacular medicine, Monica Green has found that Eucharius Rösslin’s *Rosengarten*, one of the most popular midwifery texts of the sixteenth century, was not an original work at all but largely a translation of Savonarola’s fifteenth-century Latin text. Green, “The Sources of Eucharius Rösslin’s ‘Rosegarden for Pregnant Women and Midwives’ (1513),” *Medical History* 53, no. 2 (2009): 168.

¹⁷⁰ Chauliac, *Chirurgie*, 76.

sperm of men descends from all the humor of the body” and acquired its generativity from the fluid contributions of the major organs—not just from the digestive heat of the liver.¹⁷¹ For example, even the conservative physician Jean Fernel willingly modified Galen on this point, writing in his 1567 *Physiologia* that the male seed was not solely a product of the blood, as Galen believed, nor produced in the testicles, but derived principally from the humoral contributions of the brain, heart, and liver.¹⁷²

Three-organ thinking also continued to have therapeutic significance well into the sixteenth century, as practitioners continued to explain male sexual and reproductive disorders in terms of fluid defects located in the three principal organs. The 1521 and 1543 editions of Baverio Baviera’s medical *consilia* recounted a case of male impotence, which the attending physician, citing Constantine, attributed to a defect of the principal members, especially a “bad complexion of the heart” and a lack of “spiritous winds necessary for erection”—suggesting that practitioners should look to these organs, rather than just locally at the testicles and penis, to cure male sexual complaints.¹⁷³ This formula remained so common that as late as the 1660s, the Roman physician Paolo Zacchia still suggested that if a man could not become erect or emit semen, the problem probably stemmed from a humoral defect in either the liver, heart, or brain, the contributions of each he regarded as necessary to both the formation of generative semen and the ability of a man to have an erection.¹⁷⁴

¹⁷¹ Galeni opera omnia VIII (Basel, 1542), 200. The treatise was first printed in the 1502 edition of Latin translations of Galen by Girolamo Suriano and also included as an authentic work of Galen in *Catalogus illustrium Medicorum* (Strasbourg, 1530), 64. It was reprinted several times with the Latin Galen in the sixteenth century, often as the third book of Galen’s *De semine*, appearing as such in editions as late as 1638, despite suspicions about its authenticity. Pahta, 15.

¹⁷² Fernel, 535, 543.

¹⁷³ Bavarius de Bavariis, *Consilia Baverii* (Pavia, 1521), f. 65v.

¹⁷⁴ Paolo Zacchia, *Quaestionum medico-legalium tomus posterior, quo continentur liber nonus et decimus necnon decisiones sacrae Rotae Romanae ad praedictas materias spectantes (QML)* (Lyon: Sumptibus Ioannis-Antonii Huguetan & Marci-Antonii Ravaud, 1661), *QML*, bk. 9, tit. 3, q. 2, 43-44.

The sixteenth century also saw an explosion of practical, therapeutic texts in the vernacular, which further disseminated the “three-organ” model beyond academic Latin texts directed at university-trained practitioners. Although the nature of the association among the three organs remained mostly speculative or metaphorical, the three-organ model remained a commonplace means of explaining male generative processes in newly popular texts on generation directed at vernacular reading audiences.¹⁷⁵ The author of the first vernacular-language midwifery manual, Eucharius Rösslin, for instance, adapted Giovanni Savonarola’s three-organ discussion to describe three “mines” that supposedly existed in the body of man—the liver, heart, and the brain—which continuously smelted seed from the masculine heat.¹⁷⁶ The famed sixteenth-century surgeon Ambroise Paré also adhered to the medieval, three-organ model of seed production, which he reproduced in his popular French-language texts on surgery and general medical topics. Echoing the claims of Constantine the African, he claimed that there existed “three things necessary for generation,” or, more precisely, the three things necessary for seed production, all of which were located elsewhere than in the testicles. These included:

first, a humid and benign excrement, which mostly comes from the brain. The second, winds full of vital spirits, which proceed from the heart, which cause the distension and erection of the genital parts. The third is a concupiscence and natural appetite, which derives from the liver and from there spreads to the genital parts.¹⁷⁷

Although the evidence of dissection undermined any literal connection between the three organs, this model remained central to sixteenth-century medical constructions of “generative” male bodies.

¹⁷⁵ Even outside texts published by practitioners like physicians and surgeons, the importance of the three organs to the physiology of fluids was apparently known to vernacular audiences. The poet Henry Peacham, for instance, included a witty rhyme in his 1612 account of “Homo microcosmus” that explained the importance of the three organs thus: Man’s “braine doth moisture hold, / His heart and liver, doe the heate infold.” Peacham, 190 [Fig. 1].

¹⁷⁶ Rösslin, 45.

¹⁷⁷ Paré, 687.

The three-organ model more than likely persisted in the face of contrary evidence because it upheld broader cultural assumptions about the nature of manhood. In the first place, it fit neatly with the persistent notion, inherited from classical authority, that men made a greater contribution to reproduction and had a stronger claim on the processes of generation than did women. The supposition that men's bodies contained greater heat than women partially explained this. It followed that if heat made male bodies superior to female bodies, that it would also endow male seed with greater powers than female seed. The three-organ model further supported the notion that male seed possessed uniquely generative powers because it implicated all the major life-giving organs of the body in its production. Whereas female seed existed as no more than undigested venous blood descended from the liver, male seed existed as a composite production that, along with heated blood, also contained active, motile "spirits" from the heart and cerebral moisture from the brain. The male venous blood was not only better heated and digested in the liver—because of men's greater heat in general—it also took on more "soul-like" or "soul-inspiring" properties because, unlike the female seed, it contained both vital spirits from the heart and animal spirits from the brain.

Three-organ thinking thus confirmed and supported the prevailing notion that male seed had a more important role in the initiation of new life than did the female contribution. As the Spanish anatomist Montserrat asserted in 1551, two materials for generation, one bloody and female and one seminal and male existed in the body. The menstrual blood came from the digestion of nutriment only, whereas semen came from all parts of the body, especially the arteries and the brain, and so carried a "great abundance of vital spirit" to "to the place of generation, which is the womb," where it mixed with the menstrual blood to inspire conception.¹⁷⁸ The notion that male seed came not just from the lesser process of digestion, but from the spirituous influences of the noble organs of the heart and the brain thus further served to elevate the male seed and the male role in generation above that of the female.

¹⁷⁸ Bernadino Montana de Monserrate, *Libro de la Anathomia del hombre* (Valladolid, 1551), f. LIX v.

Along with differences in heat, the influence of the three organs constituted yet another, closely related way in which sixteenth-century physicians discussed male sex difference in generative terms. Frequently, they explained the difference between male and female seeds by reference both to the masculine heat and to the fluid contributions of the major organs to the male seed. As Symphorien Champier wrote in 1533, only the male seed normatively appeared as a “watery, buttery, fatty substance, in many ways like the substance of oil,” because of the influence of the “noble parts” and their contribution of vital spirits and heat. The seed supposedly became generative when it absorbed some of the spiritual, moist air from the heart, which “lay shut up” in glandular “hailstones” or air bubbles in the seed. The presence of these air bubbles signaled the formative and active nature of the seed, which was imbued with “a large amount of strong spirit” and therefore the power to initiate growth and motion in a fetus and so “to form a perfect and vigorous young.” If the substance were instead thin and watery, like female seed, Champier reasoned that both the spirituous hot air and the generative power would promptly “evaporate,” rendering it infertile. By contrast, the female seed was not only colder but less spirituous (lacking the contributions of the heart) and less fluid (lacking the contributions of the brain).¹⁷⁹

The three-organ model also entrenched the view that male bodies alone were quintessentially generative and seed-centric because it explained male sexual function as a phenomenon inseparably tied, and subordinated to, the action of the three seminal fluids in ways that the female body was not. Male sexuality was uniquely “generative” not just because only men produced truly generative seed. Male sexuality was entirely determined and directed by the generative, or “spirituous” nature of their seed, which provoked erection and ejaculation—phenomena that had no analogue in female bodies. Even though anatomists of the sixteenth century demonstrated that the penis was not hollow or two-channeled, and increasingly portrayed the male genital organs as a separate, self-contained “system,” the fluid influence of the three organs remained the preferred explanation for male sexual physiology, especially

¹⁷⁹ Symphorien Champier, *Periarchon* (Lyon, 1533), 50.

erection.¹⁸⁰ Most sixteenth-century medical writers continued to describe erection as the result of “spiritous” inflation with air or the hydraulic pressure of seminal fluid on the penis. Paré, for one, argued that spirit, heat, and moisture were necessary not just for male fertility, but for sexual intercourse in the first place, as vital spirits supposedly inflated the penis in erection, and the liver supplied sexual desire in the first place.¹⁸¹ The physician Levinus Lemnius similarly informed his readers that, other than God’s favor, a man necessarily needed:

two things by which one can accomplish the venereal act and which greatly helps to engender children: The first is the genital semen which comes from the brain and from all the body and the part of the liver, true office and worker of the blood. The other is the spirit proceeding from the heart by the arteries: by the force of which the penis erects and becomes stiff, and by the impulsion of which the material of the semen is pushed and sent forth.¹⁸²

In other words, male sexual ability depended directly on male reproductive ability. The humoral fluids that composed the male seed also directed male sexual action, more so than any independent muscular or nervous action of the penis or accessory organs.

Medical writers also commonly explained the expulsive power of the penis and ejaculation in terms of the fluid pressure created by spiritous air from the heart. Anatomical research of the sixteenth

¹⁸⁰ Believers in the two channels of the penis had their holdouts, though. Thomas Vicary’s 1577 anatomy stated that the penis was composed of two “passages, or principal issues, that is to say, one for the sparme, and another for the vryny,” Thomas Vicary, *Anatomie of the Body of Man* (London, 1577), 88. The 1643 edition of Johannes Schenck von Grafenberg’s medical observations, originally published around 1600, still claimed that the penis was composed of two channels, in “the virile glande...one of which serves for urine the other for the excretion of semen.” Johannes Schenck von Grafenberg (Johannes Schenckius), *Observationum medicarum rariorum, libri VII* (Frankfurt, 1643), 505.

¹⁸¹ Paré, 687.

¹⁸² Lemnius, *Occulta*, f. 26v.

century did not unseat fundamentally Galenic explanations for bodily motion and animation as the action of “vital spirits” traveling around the body through the arteries. Prior to William Harvey’s observations of the circulation of the blood in 1628, most physicians believed that the heart did not pump, but rather pulsated and “bubbled,” sending motile, active spirits, to the extremities through the arterial blood on an “as-needed” basis. Alessandro Benedetti—whose works still circulated widely in the early sixteenth century—claimed that the bubbling processes of the heart could in fact be best observed when the aorta was cut and “the spirit spurts forth with the impulse of dilation,” or when, “in the same manner semen spurts forth in coitus, a certain proof of the aforementioned bubbling.” In the same way that the heart’s “spirits” communicated motion and action to the rest of the body, it also supposedly infused the semen with the power to inspire motion into inert matter, causing both the growth of an embryo and, prior to that, the inflation of the penis and expulsion of semen. In Benedetti’s view, the “spirituous” nature of semen caused both the seed to become fertile and also propelled it out of the body by its own volition, “for in coitus spirit precedes the semen; by means of the spirit the semen is propelled in spurts.”¹⁸³

The “spirituous” nature of the seed and its affinity with the heart also explained why male ejaculation appeared to be so much more violent than female. According to Jean Riolan, the accumulation of spirits in the seed caused ejaculation. The penis only pushed “it out as needed, like a syringe,” but the seed itself moved by its “own impulse.”¹⁸⁴ According to Fernel too, once the seed accumulated in critical quantities, the winds erect “the penis and open up the paths by which we ejaculate seed straight out and with vigor.” Hence, wrote Fernel, “the seed, wonderfully propelled and swollen with the richness of spirit, can hardly be contained in its vessels, but is constrained to spring outside with great delight.” In men, the great quantity of spirit contained in their seed caused semen to be expelled “with a sort of leap,”

¹⁸³ Benedetti, f. 21v.

¹⁸⁴ Jean Riolan the Younger, *Manuel anatomique et pathologique*, trans. François Sauvin (Paris: Gaspar Meturas, 1661), 159.

whereas ejaculation took place only “in a more leisurely fashion in women.”¹⁸⁵ The action of the generative fluids—especially the “spirit” of the heart—thus further explained and re-inscribed the notion that men possessed the more active, generative role in reproduction onto the male body.

In sum, despite the currency of “one-sex” theories of sex difference in the sixteenth century, early modern medical writers did discuss male bodies in some ways that were sex-specific—that is, in ways that were not generalizable to all human bodies, even if the male genitalia supposedly existed in modified form in both male and female bodies. Although most historians following Laqueur have focused on the social or cultural meanings attached to male organs like the penis or testicles, the findings of this chapter indicate that premodern medical theorists in fact more strongly identified maleness with the humoral fluids of the heart, liver, and brain, which directed both male sexual and reproductive processes, more so than the anatomical “solids” of the genitalia. Medical writers of the sixteenth century inherited a complex of older theories that constructed male bodies as the only essentially “generative” bodies due to fluid differences between male and female bodies. All the essential classical authorities on generation, even Galen, agreed that male bodies were hotter and therefore more strongly associated with activity (including sexual activity) and life (including the initiation of new life during reproduction.) Most medical practitioners of the sixteenth and seventeenth centuries instead located the main axis of sexual differentiation not in the incidental “solid” differences between the male and female genitals, as Laqueur’s one-sex conception presupposes, but on deeper, fluid differences that suffused the whole body and the major organs.

Physiologically, these fluid differences served to explain why men produced supposedly better, more generative seed and made more significant contributions to reproduction. Even though Galen claimed that both men and women produced seed, men’s greater heat made them supposedly better able to produce more generative seed compared to women’s colder, material contribution. Not only that, but

¹⁸⁵ Fernel, 565.

male seed also reflected the “spiritous” influences of the heart and brain. The vital spirit of the heart not only made male seed generative, but it also directed all male sexual function, including erection and ejaculation. The “seed-centric, three-organ” model thus further supported the notion that male bodies, more than female, were innately “generative” because it subsumed even sexual action to the fluid qualities of the seed and located male reproductive power not just in the genitals alone, but in all the body, such that even the functions of the essential organs were directed towards that of generation.

Although this chapter has principally concerned how sixteenth-century medicine defined male-female difference in fluid or “generative” terms, seed-centric thinking did not only influence theories of sex difference in the abstract. It also provided a practical paradigm for the treatment of male-specific sexual and reproductive complaints like infertility and impotence. As the next chapter will explore in greater detail, early modern medicine did not only construct maleness as a quality intrinsically associated with generativity and reproductive function. The emphasis on seed as a quintessentially male fluid and generativity as something normatively associated with maleness meant that premodern medicine could also imagine the possibility of male infertility and expended a good deal of therapeutic energy in its treatment.

FIGURES: CHAPTER II



Fig. 2. The “sphere of fire” in Reisch, lib. vii, tract. iii. Used by permission of the Library of Congress, Rare Books and Special Collections Division.

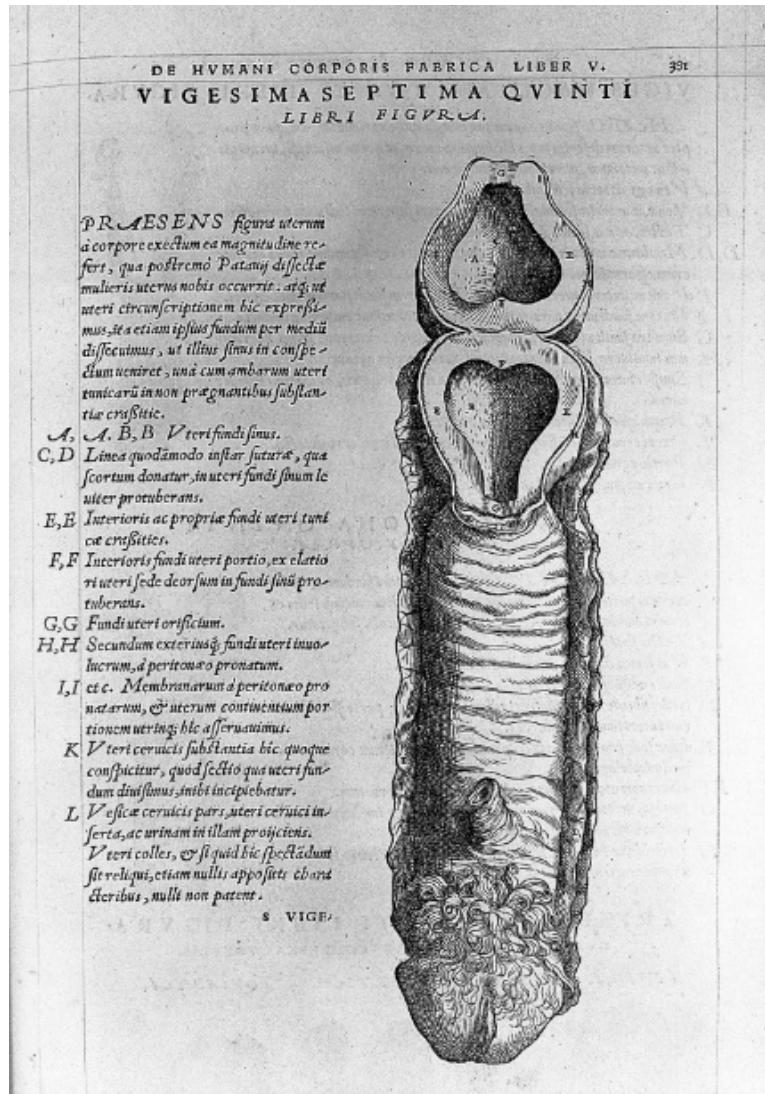


Fig. 3. Cross-section of the uterus. Vesalius, 381. Credit: Wellcome Collection. Attribution 4.0 International (CC BY 4.0)

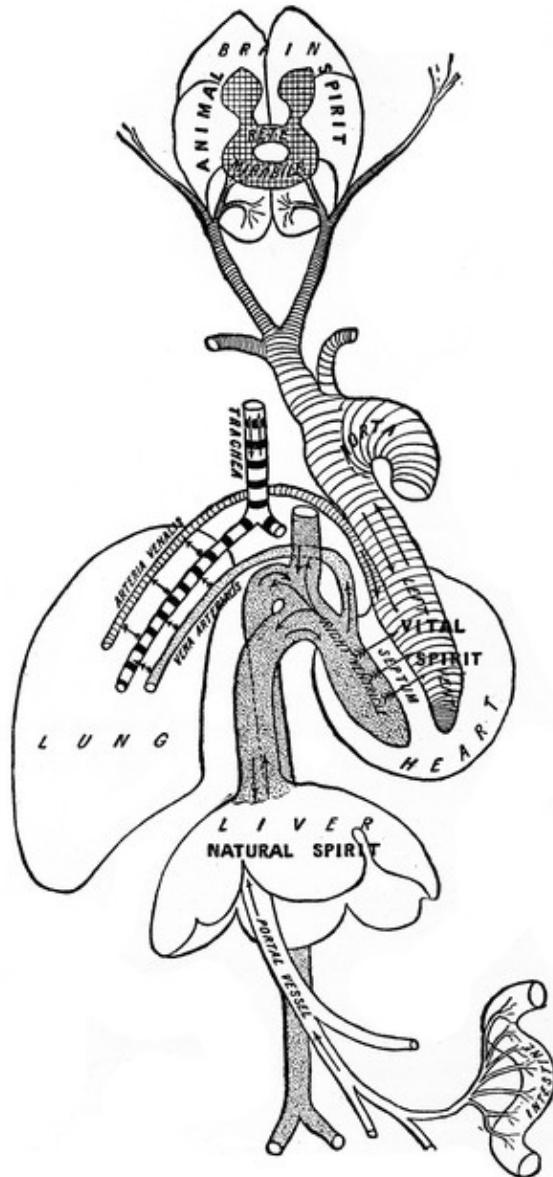


Fig. 4. Galen's "Physiological system," featuring the spirituous contributions of the three organs. From Charles Singer, *The Evolution of Anatomy: A Short History of Anatomical and Physiological Discovery to Harvey, Being the Substance of the Fitzpatrick Lectures Delivered at The Royal College of Physicians of London in the Years 1923 and 1924* (London, 1925). Public domain. Credit: Wellcome Collection. Attribution 4.0 International (CC BY 4.0)

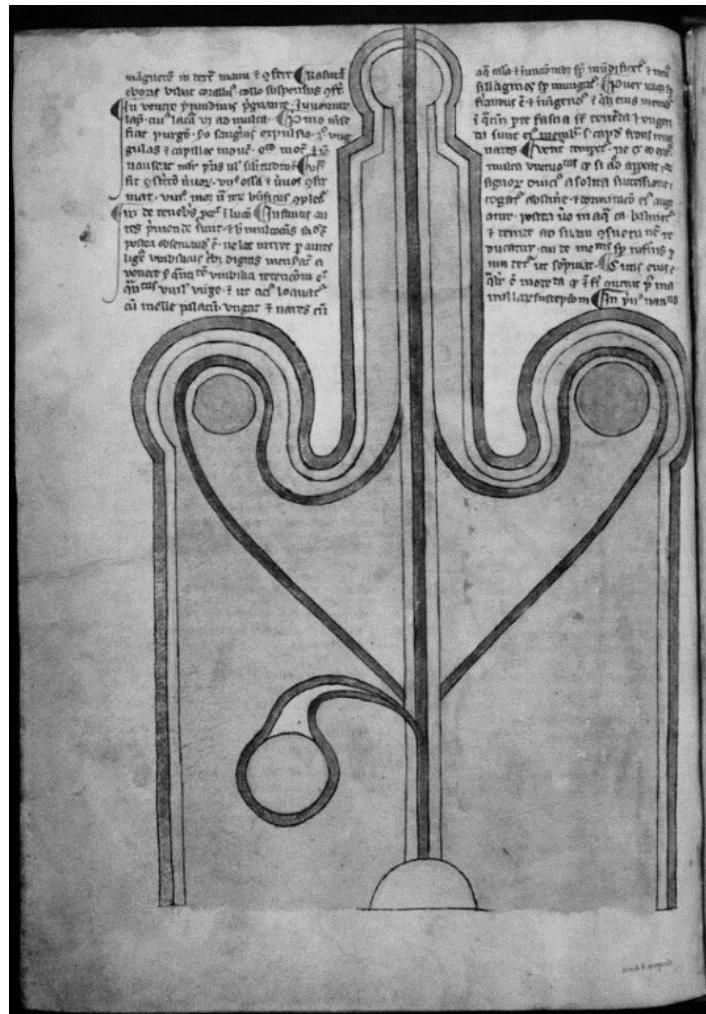


Fig. 5. Depiction of the male reproductive system. BLO Ms. Ashmore 399, f. 26r (ca. 1292). Photo: Bodleian Libraries,

University of Oxford, 2018.

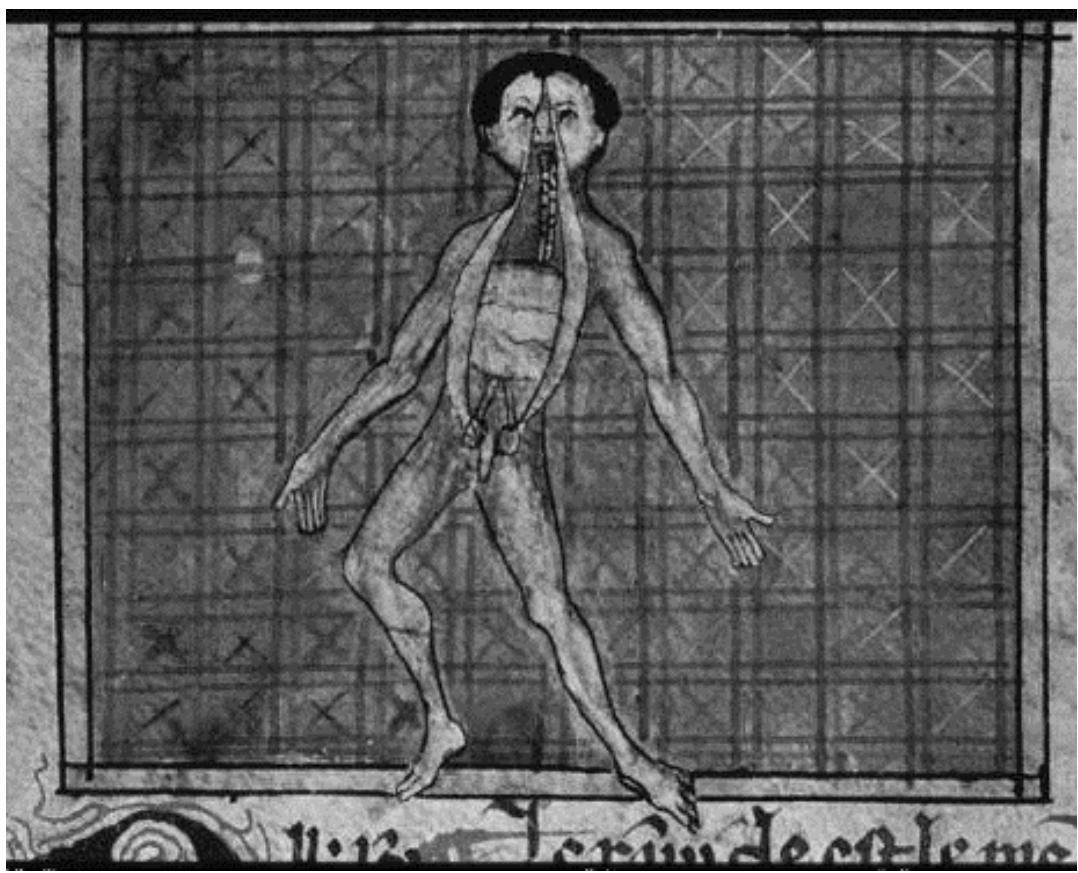


Fig. 6. The male genitals connected to brain via a “spermatic vein.” Henri de Mondeville, *Chirurgia*, BNF Ms. Fr. 2030, f. 11v (ca. 1301-1400). Courtesy of the Bibliothèque Nationale de France, Department of Archives and Manuscripts.

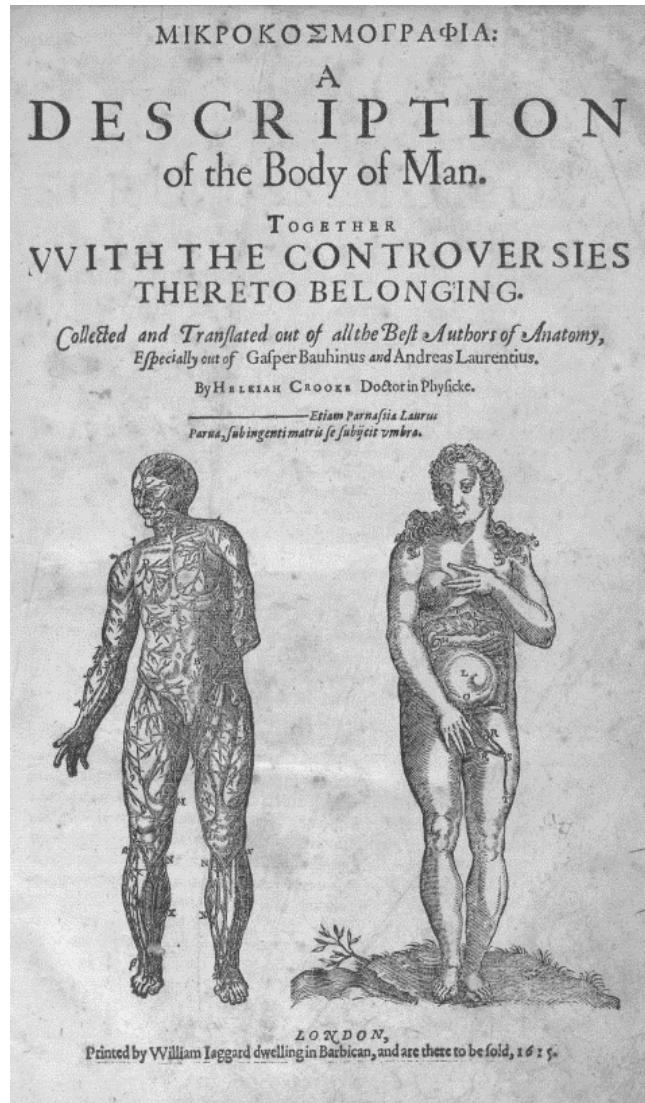


Fig. 7. Title page of Helkiah Crooke, *Mikrokosmographia* (London, 1615), featuring a male écorché with veins exposed and a female figure with only the abdomen exposed to reveal the womb, in typical fashion. © The British Library.

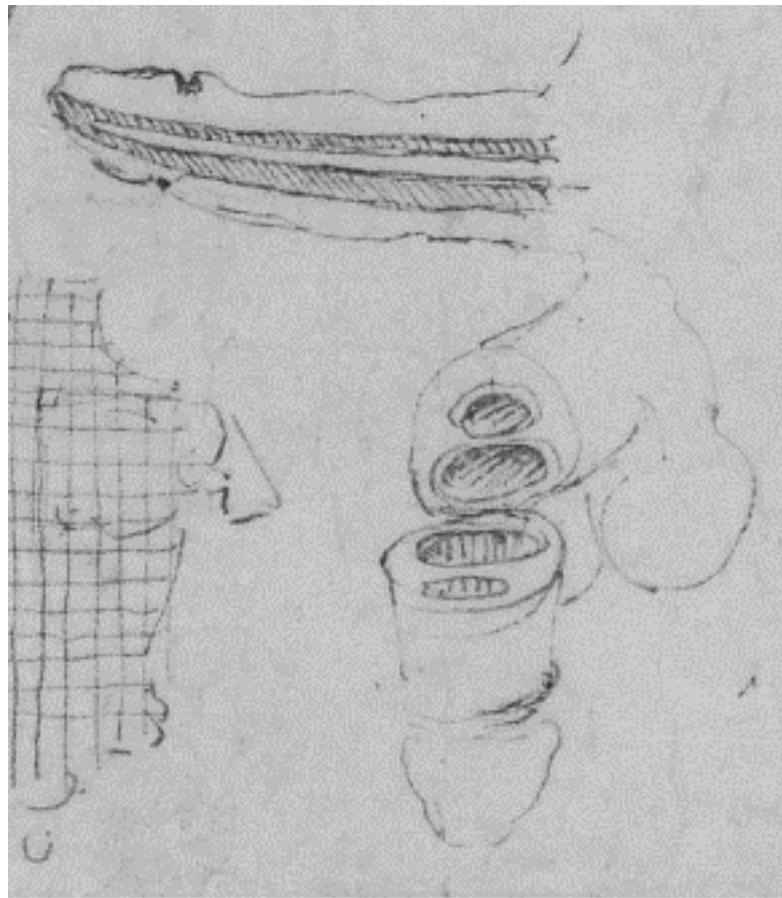


Fig. 8. Detail of hemisected penis with two channels. Leonardo da Vinci, "The hemisection of a man and woman in the act of coition c.1490-92," RCIN 919097. Royal Collection Trust / © Her Majesty Queen Elizabeth II 2020.



Fig. 9. Detail from Leonardo da Vinci, "The hemisection of a man and woman in the act of coition c.1490-92," RCIN 919097.

Royal Collection Trust / © Her Majesty Queen Elizabeth II 2020.

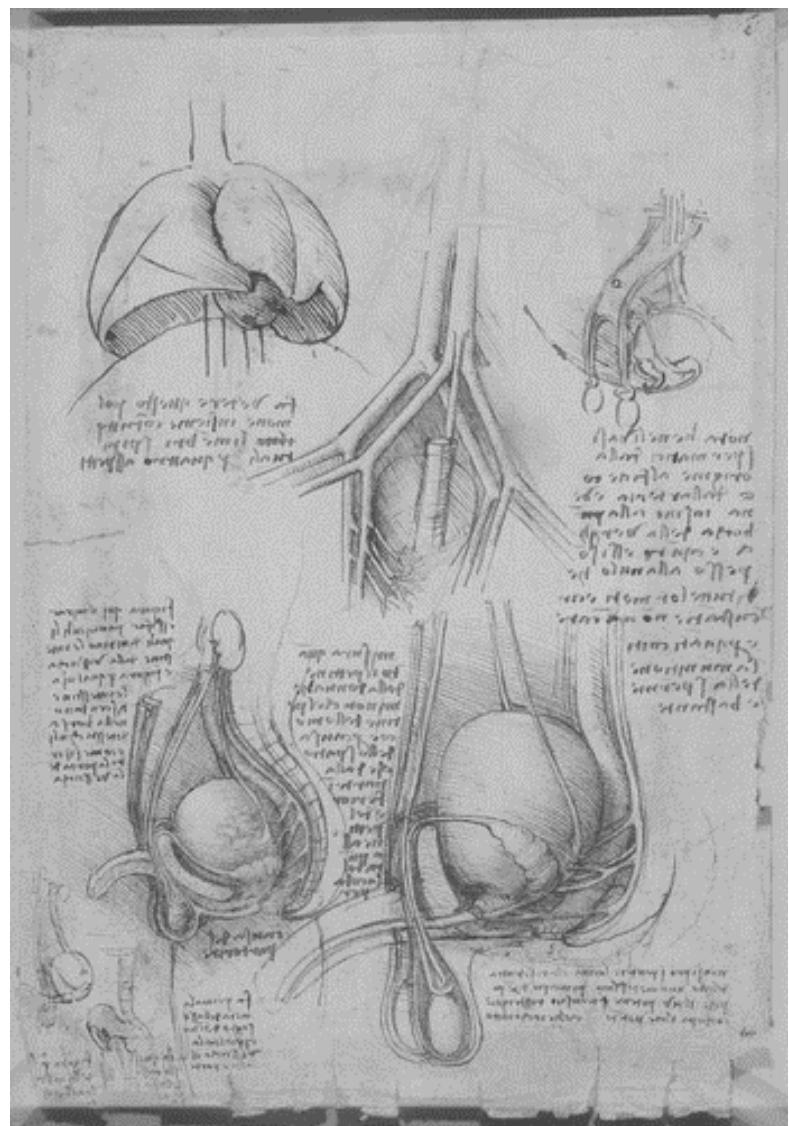


Fig. 10. Detail from Leonardo da Vinci, "The male genito-urinary system c.1508," RCIN 919098. Royal Collection Trust / © Her Majesty Queen Elizabeth II 2020.

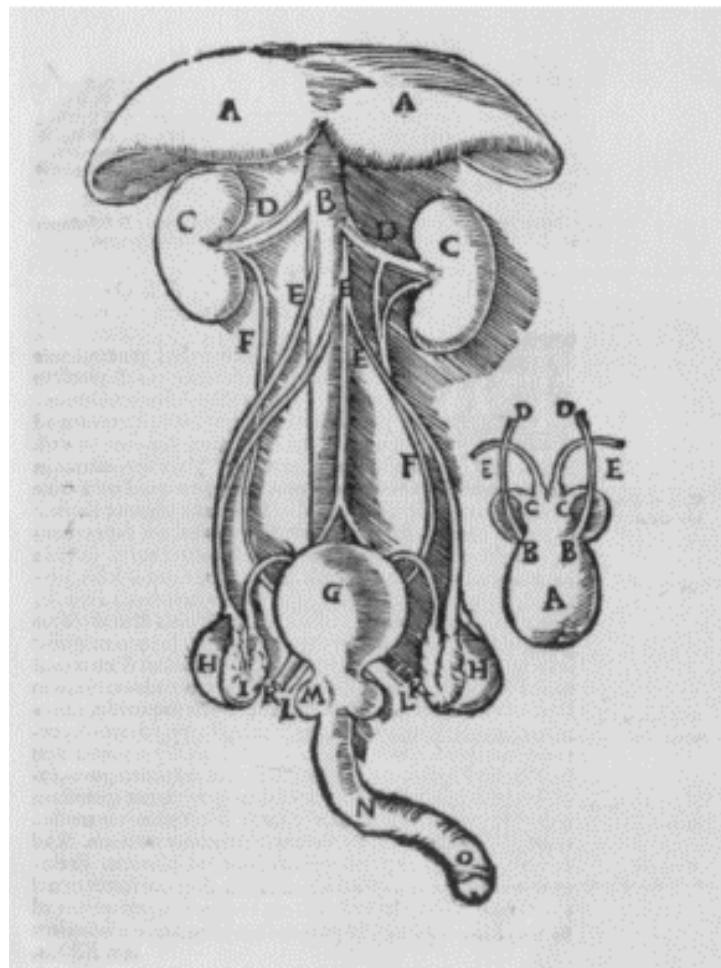


Fig. 11. Male genito-urinary system. Mondino de' Liuzzi (1541), f. 25v.

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FIGVR.

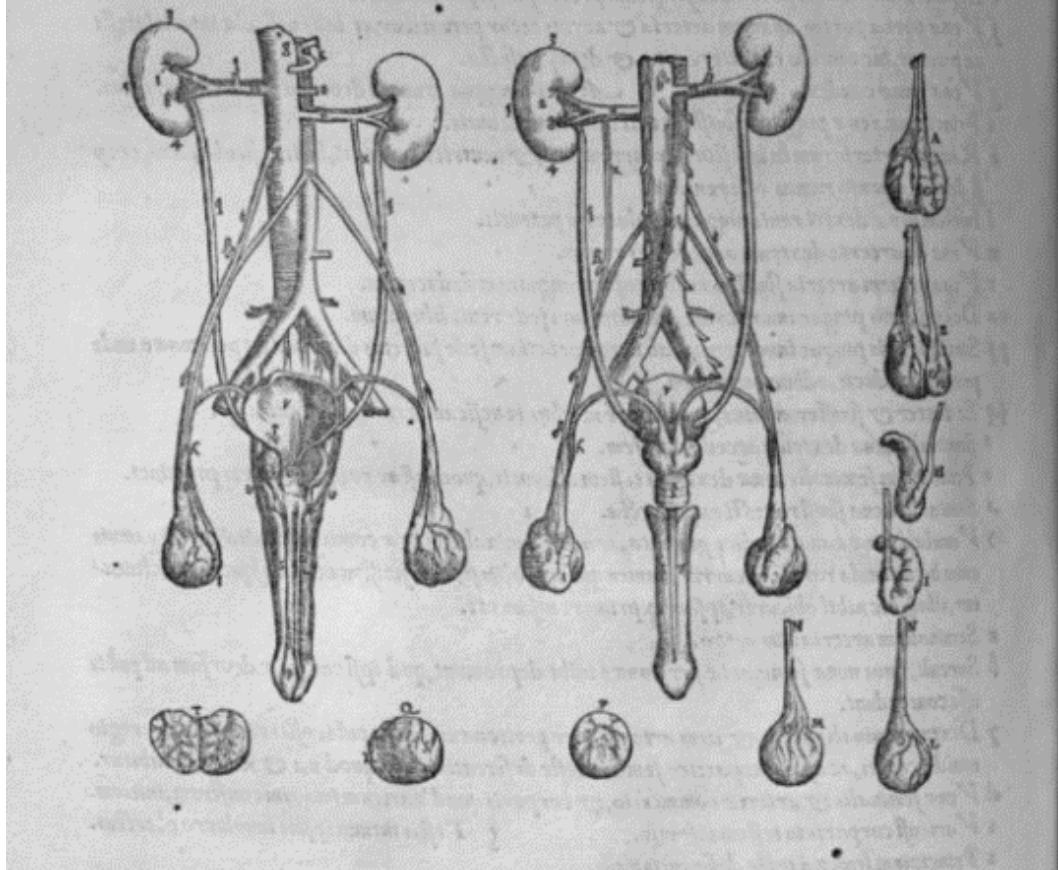


Fig. 12. Male genito-urinary system. Vesalius, 374.

CHAPTER III: TOO COLD, HOT, WET, OR DRY: BALANCING THE FLUID MALE BODY IN EARLY MODERNITY

As the previous chapter showed, sixteenth-century discussions of sex difference inherited several strands of thought, which stressed the superior generativity of male, over female, bodies. Sixteenth-century medical writers did not only construct this superiority, or generally describe male-female sex difference, solely by reference to the genitalia. They frequently deployed a “fluid-centric” model that stressed differences in the composition of the male and female seed, which marked the differential contributions of men and women to reproduction, or reproductive hylomorphism. Male seed was better cooked by the innate heat of male bodies and imbued with active, motile “spirits,” qualities that distinguished them as uniquely able to “generate in another.” These differences were not only narrowly focused on the semen, however. “Generativity” was a quality that suffused the entirety of the male body because male semen was believed to originate from the blood and in the major organs of the body, especially the heart, liver, and brain. Furthermore, the fluid pressure and movement of the spirituous portion of the semen directed both male reproductive and sexual functions because erection and ejaculation were also explained in fluid, seed-centric terms.

While the previous chapter focused on outlining the basic contours of this generative, fluid-centric model of the male body, this chapter examines the practical and therapeutic consequences of fluid-centric thinking for the treatment of male sexual and reproductive disorders. In other words, it focuses not on how medical texts described the normative male body—the subject of the previous chapter—but how medical texts approached male bodies that diverged from that norm. This chapter thus turns from theory to therapeutics. That is, it turns away from normative statements about maleness and male bodies in early modernity to how contemporaries of the sixteenth and seventeenth centuries explained and managed the non-normative, the diseased, or the unregulated male body in relationship to fluid and seed-centric theories about the character of maleness. An exploration of the non-normative or the non-generative male

body casts further light onto how early moderns thought about and constructed male bodies in distinctive and sex-specific terms from women's bodies. This chapter also reveals the practical contexts in which theoretical notions of the masculine heat or influence of the three organs manifested, particularly in regard to male reproductive and sexual problems. I argue that this model opens a window onto how early modern medicine not only constructed male and female difference in relation to generation, but how male infertility and reproductive problems were commonly discussed in relation to broader notions of a normatively generative, fluid-centric male body.

As we have seen, this notion of male superiority in reproduction comfortably accorded with longstanding notions about the superiority of men in general. The notion of a superior male "generativity" had another side to it, however, as superiority also entailed recognition of responsibility when things went wrong. Even if early modern authors lauded the greater perfection of the male body and the male generative faculties, they also recognized that male bodies—and by extension, male fertility—also existed in a delicate balance of humors and temperaments that required careful moderation and regulation. Even though early modern practitioners described male bodies as normatively generative, they also recognized that male generativity could also be easily compromised. The complicated humoral physiology of seed production especially could breed any number of deficiencies or problems in the male body, particularly seeing as it implicated major organs like the heart, liver, and brain. Because male generativity depended on a multitude of fluids—the heat, the spirits, and the moisture—and on multiple internal organs—the heart, liver, brain, and to some degree the testicles—many different kinds of fluid imbalances could undermine a man's generative ability.

Seed-based differentiation made it possible for early modern practitioners to discuss not just male and female bodies, but male and female reproductive problems and therapies, separately and in sex-specific terms. As we have seen, even if two seeds existed, early modern medical practitioners and theorists on generation placed more weight on the importance of male seed in reproduction. Consequently, they more often described male infertility as a defect of the seed. Early modern medical

writers frequently distinguished between the causes of male infertility, usually as a defect or a deficiency of seed, and female infertility, a defect of the womb. When it came to therapeutic discussion of diseases like infertility, most practitioners—in line with prevailing notions of seed-based difference—differentiated between men’s and women’s reproductive roles in parallel terms, as passive and active, receptive, and formative. Practitioners tended to differentiate between female sterility, which they viewed primarily as a disorder of the womb, and male sterility, which they viewed as a disorder of the seed. A defect in generation therefore could be caused by either of two sex-differentiated causes: a woman’s inability to nourish or the man’s inability to produce fertile seed. The sixteenth-century physician Jacob Rueff, for instance, followed this logic when he defined sterility along sex-differentiated lines, which he called a condition “not only of bearing children in women, but of emitting generative seed in men”—a formula that neatly aligned with the Aristotelian distinction between women as “generating in themselves” and men as “generating in another.”¹⁸⁶

Rueff’s distinction between the functions of bearing and emitting translated directly into how physicians conceived of and treated male and female fertility problems separately. The fact that women made a lesser contribution of seed to generation meant that practitioners generally saw it as less important to explaining women’s role in reproduction. The regulation of the female seed hardly figured into therapeutic treatments for sterility in women—a curious gap between theory and practice, considering that so many writers insistently sided with Galen on the question of its existence. Consequently, early modern medical writers focused their therapeutic attention more on the retentive and nourishing functions of the womb and the menstrual blood in cases of infertility, in accordance with a view of female reproductive ability as inherently passive, receptive, and nourishing. In contrast with womb-centric discussions of women’s fertility, discussions of male reproductive bodies almost always revolved around the quality of the seed, the influences of the three organs, and their respective contributions upon it. This accorded with a common view of male generativity as inherently active, formative, and creative, and therefore making a

¹⁸⁶ Jacob Rueff, *De conceptu et Generatione Hominis* (Zurich, 1554), 61.

superior contribution to reproduction. If anything, this demonstrates that even if most medical authors stressed the Galenic view of the similitude and homological structures of the male and female body, and even accepted the existence of both male and female seeds, the “one-sex, two-seed” model did not totally preclude discussion of male bodies in terms that were sex-specific and distinct from female bodies.

The realization that early modern medicine recognized a number of male reproductive disorders directly combats the assumption among many historians that early moderns only ever expressed concern about women’s fertility. Jacques Gélis, the author of one of the first studies of fertility practices in early modernity, went so far as to claim that women bore exclusive blame for all reproductive failures in early modernity and were “generally held responsible if no children appeared.”¹⁸⁷ Other scholars have embraced this assumption, if only by omission, as most extant studies of fertility or reproduction in early modernity have focused primarily on how these discourses shaped female-specific experiences related to menstruation, lactation, or pregnancy, with scarce mention of how men fit into contemporary concerns about generation.¹⁸⁸ The predominance of “one sex” thinking in current “body studies” scholarship, has perhaps also foreclosed investigation into the relationship between male embodiment and male generativity, or male-specific causes of infertility, by perpetuating the assumption that disorders of the two “seeds” or the “testicles” would not be meaningfully different in men than in women.

This chapter, in contrast, demonstrates that early modern medical discourses not only recognized male-specific reproductive disorders that could lead to infertility, but urged men to carefully regulate their own fertility by maintaining a consistent balance between the three seminal fluids. As the following section will discuss, male generativity both serve as a theoretical support for patriarchy or for more general notions of male superiority and had practical consequences for early modern constructions of the male body. It shaped not only how contemporaries viewed normative, ideally generative manhood, but

¹⁸⁷ Jacques Gélis, *History of Childbirth: Fertility, Pregnancy and Birth in Early Modern Europe*, trans. Rosemary Morris (Boston: Northeastern University Press, 1991), 15.

¹⁸⁸ See Chapter I, n. 14 for examples from this strand of early modern women’s studies.

how they viewed non-normative, non-generative manhood. The principle of male superiority in generation, after all, cut both ways. The fact that early modern medicine theorized male bodies as normatively generative also meant that men, too, had a stake in ensuring their own reproductive ability. If men initiated reproduction in the first place, it followed that when reproduction failed to occur, one might suspect some kind of problem with the man involved. In fact, some medical writers apparently even took the greater generative powers of the male seed to mean that men were *more* likely to be the cause of infertility than women. The famous sixteenth-century Swiss physician Felix Platter, for one, claimed that defects of generation were “more often said to be in men than in women, because the man supplies more in this act than the woman,” in reference to Aristotle’s claim that men contributed the formative substance of an embryo, whereas women only provided the inferior nutritive matter.¹⁸⁹ This chapter therefore examines the therapeutic consequences of classical theories of generation, which posited the superiority of the male reproductive contribution.

Fluid-centric, three-organ constructions did not only find their way into abstract accounts of generation and male-female difference but translated into therapeutic approaches to male fertility and sexuality. Early modern therapeutic approaches to male infertility tended to stress the importance of regulating bodily heat and balancing the fluid qualities of the seed, something that barely registered in discussions of female fertility. Even though in theory many authors upheld a sex-symmetrical “two-seed” view of male and female bodies, when it came to practical problems related to reproduction, they clearly differentiated between the causes of infertility in sex-specific terms, discussing women’s infertility as a womb-centric affliction and men’s as a fluid-centric one that depended on the internal balance of the seminal fluids. Because classical medicine had so insistently centered heat in the production of seed, it also followed that a deficiency of heat or some other kind of humoral imbalance in the seed, stemming

¹⁸⁹ Felix Platter, *Ordinarii praxeos medicae tomii tres* (Basel: Johannes Schroeteri, 1625), 534. Originally published 1608.

from the fluid contributions of the three organs, must be at fault in men's infertility. Medical writers thus often attributed male infertility to an underlying deficiency of masculine heat, or an imbalance in the fluid or spirituous contributions of the heart and brain to the formation of male seed that could have widespread consequences for one's entire bodily health.

Treatments of male and female reproductive disorders also differed in that sixteenth- and seventeenth-century practical texts placed greater stress on the importance of constant, vigilant bodily self-mastery and moderation for the maintenance of male fertility. As Lisa Smith has argued, the early modern period saw the growth of a pathological discourse that increasingly emphasized the importance of men controlling their bodies and maintaining a humoral equilibrium to maintain their health and their gender identity, as uncontrollable bodily flows and fluxes were more associated with unbalanced, immoderate women.¹⁹⁰ This advice closely aligned with a broader cultural emphasis on active, self-regulation through moderation as "key philosophical or ethical virtue" and structural element of "male subjectivity" in early modernity.¹⁹¹ Medical practitioners especially discouraged men from indulging in activities deemed "excessive," as harmful to the integrity of the male body and the balance of the seminal fluids. Renaissance conduct books often framed excess in general as "unmanly," in that it was unbecoming for the social roles occupied by men, especially those in positions of power. Excesses

¹⁹⁰ Lisa Smith, "The Body Embarrassed? Rethinking the Leaky Male Body in Eighteenth-Century England and France," *Gender & History* 23, no. 1 (2010): 26–46. Gail Kern Paster similarly argued that power was inscribed onto lower-class female bodies by imposing shame over bodily flows like menstruation, lactation, urination, and defecation, such that the "leaky" female body formed the negative counterpart to the controlled, self-contained masculine body. Gail Kern Paster, *The Body Embarrassed: Drama and the Disciplines of Shame in Early Modern England* (Ithaca: Cornell University Press, 1993).

¹⁹¹ Reeser, 12. Leah D. Thomas has also explored how practices of "physical regulation" of the male body intersected with masculine gender norms in early modern portraiture, see "Manifesting Manhood: The Regulation of the Male Body in English Portraits, c. 1587-1595," M.A. thesis (University of North Carolina-Chapel Hill, 2014).

perceived to be especially feminizing, such as drunkenness and sexual indulgence could, however, be literally feminizing in the humoral mode, because they supposedly diminished the heat of the body and the quality of the seed.

Furthermore, medical texts also often linked normative gender presentation and behavior directly to the economy of the heat and the seminal fluids, further reinforcing the centrality of fertility, and its regulation, to normative maleness. An investigation into these sources is thus also revealing when it comes to better understanding the construction of normative maleness in early modernity. As is often the case in histories of masculinity, manhood was often constructed in the negative spaces of sources. That is, sources more often defined the normative, by its very nature as a taken-for-granted standard, in relation to what it was *not* than they did by explicitly explaining what it *was*. Early modern medical texts certainly exerted much more effort defining non-normative disorders of the male body than they did describing its normative state. Perhaps even more so than theoretical texts explicitly concerned with the nature of normative maleness, the contours of fluid-centric manhood are more clearly discerned and explained in texts concerned with what were understood to be disorders of the fluid male body, in cases where bodies very clearly departed from the assumed norm.

BALANCING THE MALE BODY IN SIXTEENTH- AND SEVENTEENTH-CENTURY THERAPEUTICS

As I argued in the previous chapter, the notion of a male seminal superiority, founded on the tripartite influence of the liver, heart, and brain, far outlasted contradictory findings in the realm of anatomy. Although from the beginning of the sixteenth century, anatomists failed to find any evidence of a direct connection between the male genitalia and these three organs and focused their representations of the male reproductive anatomy more narrowly on the penis and testicles, the three-organ model remained the preferred means of explaining the physiology of the male sexual and reproductive apparatus among medical practitioners of a practical orientation through the seventeenth century. Later sixteenth and seventeenth-century practical and therapeutic writers, however, continued to emphasize the importance of

the three seminal fluids of heat, spirit, and moisture to normative maleness, especially when it came to treating male reproductive disorders like infertility and impotence.

This chapter focuses primarily on texts concerned with remedying disorders or imbalances of the male seminal fluids. This includes several different genres of practical medicine, the publication of which expanded significantly during the age of print. First among these are treatises on gynecology and obstetrics, a field that gained new legitimacy in the sixteenth century following the revival and translation of key Hippocratic texts and the works of Soranus.¹⁹² Even though this genre of text specifically targeted the treatment of “diseases of women,” works in this category such as midwifery manuals often discussed sex and generation more broadly, including male reproductive disorders. Some of the most important examples in academic medical circles—such as the texts in the compendious *Gynaecorium*—were still published in Latin, but many slimmer, vernacular treatises also circulated in English, French, German, and Italian. Included among these were popular vernacular midwifery manuals by Eucharius Rösslin, Jacob Rueff, Jean Liébault, Giovanni Marinello, Louise Bourgeois, and Jane Sharp, as well as general texts on sex and generation by vernacular-language authors including Ambroise Paré, Laurent Joubert, Jean Liébault, Nicholas Culpeper, and Helkiah Crooke.

The second category includes more general, popular treatises of medicine or books of medical advice, which were increasingly popular among non-academic, vernacular audiences by the end of the sixteenth century and exploded in popularity during the seventeenth. This includes works of hygiene or “physick,” surgical manuals aimed at general audiences, and books of secrets, all of which very often included advice on the regulation of male sexual and reproductive health.

¹⁹² This new legitimacy is reflected in the inclusion of sixteen recent works (from the sixteenth century) by the publication of the cumulative 1597 edition of the *Gynaecorium sive de mulierum*. On the *Gynaeciorum libri*, see Helen King, *Midwifery, Obstetrics and the Rise of Gynaecology: The Uses of a Sixteenth-Century Compendium* (New York: Ashgate, 2007).

Finally, this chapter will also examine herbals, dietaries, and even recipe books and works of domestic cookery—all genres that underwent a significant revival beginning at the end of the fifteenth century, following the humanist recovery of botanical and pharmacological texts of *materia medica* like those of the ancients Pliny the Elder, Dioscorides, and Theophrastus Priscianus.¹⁹³ In the sixteenth and seventeenth centuries, innumerable vernacular texts that freely combined cookery and recipes with health-related advice proliferated, introducing the basic principles of Galenic humoralism and herbal remedies to wider audiences, and with it abundant advice on herbal cures for male reproductive problems.¹⁹⁴

Despite the diversity of approaches represented in these sources, all these sources operated within essentially the same basic, humoral framework as Latinate, academic texts more firmly founded in Galenic or Hippocratic medicine. I therefore do not call out to finer distinctions between these genres in the body of my argument. Virtually all understood normal male sexual and reproductive function to depend on the humoral quality of the semen, formed from the separate fluid influences of heat, spirit, and moisture. However, these texts tended to treat the balance of these fluids less as a given, normal part of being male that inscribed a more active role in reproduction on the male seed, and more as a delicate balance that had to be carefully maintained and preserved through practices of health.

¹⁹³ See the popular sixteenth-century translations of Dioscorides's *Materia medica* by Jean Ruel (1516) and Pietro Mattioli (1563). Theophrastus's *De Historia Plantarum* also received multiple sixteenth-century editions and commentaries after the publication of the first Latin edition in 1483. Most sixteenth-century herbals and medical texts draw their authority from Dioscorides, who discussed only plants with medicinal uses, whereas Theophrastus attempted a more general outline of the history of all plants. Cristina Bellorini, *The World of Plants in Renaissance Tuscany: Medicine and Botany* (New York: Ashgate, 2016), 112.

¹⁹⁴ As both Angus McLaren and Jennifer Evans have demonstrated, literature on the use and consumption of fertility-promoting recipes abounded in England of the late sixteenth and early seventeenth centuries. McLaren, *Reproductive*, 54. Jennifer Evans, *Aphrodisiacs, Fertility, and Medicine in Early Modern England* (Rochester, NY: Boydell Press, 2014), 3.

Because they understood male reproductive function to depend on the influences of three fluids and three organs, these texts acknowledged that male fertility was exceedingly fragile and could be easily undermined. The fluid model therefore made it possible for early modern texts to recognize and describe a wide range of male-specific reproductive disorders that could manifest from an imbalance in any one of these fluids. I have here used the more capacious term “reproductive disorders” to discuss male infertility or sterility because early modern medicine recognized many more disorders in men than these terms alone can capture. Even though sixteenth- and seventeenth-century texts did use the terms “sterility,” or “barrenness,” most texts further differentiated among many different fluid causes of infertility in men and identifying the cause of the disorder was essential for determining the treatment regimen one should follow.

In most cases, medical writers attributed male infertility to a lack of sufficient vital heat to properly “cook” the blood into seed. However, deficiencies in the other fluids might also impede male fertility. For instance, too much moisture from the brain might cause the seed to become too watery relative to the other fluids, or cause involuntary, non-productive emissions. Too little moisture might cause a man to be entirely unable to ejaculate. In the same way, too much spirit from the heart relative to the other fluids might make the seed too “dry,” along with causing involuntary erections without emission. Too little spirit would make erection impossible, resulting in impotence. Even heat, usually regarded as the most essential quality for male sexual and reproductive function, might be excessive, causing an excessive build-up of seed and with it, dangerous levels of sexual desire that could compromise one’s fertility and overall health long-term. It is therefore more apt to suggest that early modern medicine recognized a spectrum of fluid-based male “reproductive disorders” that encompassed even more apparently “sexual” disorders like impotence and priapism.

Expanding an examination of male infertility to include a spectrum of male reproductive disorders challenges the assumption, common in both the historiography and in popular assumptions about the period, that early moderns only ever expressed concern about women’s fertility. Medieval

practical medicine, however, had long recognized that sterility could manifest as a condition of “either sex.” The author Muscio whose Latin translation of the ancient Soranus’s gynecological works featured prominently in the late-sixteenth century *Gynaecorium libri*, claimed that

Sterility is a problem common to men and women that can usually originate from multiple causes [...]. Sterility happens when either the male or the female has some physical disease, sometimes in the whole body, sometimes in those body parts which are necessary for conception,

identifying sterility or infertility as concerns that applied equally to both men and women.¹⁹⁵

Many medieval medical texts had echoed Soranus’s assertion, insisting that infertility could just as easily have been the fault of men or women. The Trotula, a popular twelfth-century compilation gynecological texts, instructed readers that “conception is impeded as much by the fault of the man as by the fault of the woman,” and listed ways to identify the causes of infertility in either spouse.¹⁹⁶ Despite its title, pseudo-Albertus Magnus’s *De secretis mulierum*—also frequently reprinted in the sixteenth century—included a section on male-specific impediments to conception alongside female, making a point to note that “the male is often the cause of infertility.”¹⁹⁷

¹⁹⁵ Quoted in Cristina Santos Pinheiro, “The Ancient Medical Sources in the Chapters About Sterility of Rodrigo de Castro’s *De universa mulierum medicina*,” in *The Palgrave Handbook of Infertility in History*, eds. Gayle Davis and Tracey Loughran (New York: Palgrave Macmillan, 2017), 298.

¹⁹⁶ Green, *Trotula*, 113; *Trotulae curandarum aegritudinum muliebrium*, in Aldo Manuzio, ed., *Medici antiqui omnes* (Venice, 1547), f. 73r.

¹⁹⁷ Pseudo-Albertus Magnus, *Women's Secrets: A Translation of Pseudo-Albertus Magnus' De Secretis Mulierum with Commentaries*, trans. Helen Rodnite Lemay (New York: State University of New York Press, 1992), 137. Originally composed in the late thirteenth or early fourteenth century. Erroneously attributed to Albertus Magnus, this text was an enormously popular source on sexuality and human reproduction and survives in eighty-three manuscripts. It also spurred more than fifty editions in the fifteenth century and seventy in the sixteenth century, including the Lyon, 1580 edition upon which Lemay based her translation. Vincent de Beauvais’s encyclopedia had

Late medieval therapeutic compendia, or collections of practical medicine—a genre that strongly informed sixteenth-century therapeutics’ approach to the subject—also maintained that both men and women could suffer from disorders that prevented reproduction. Influenced by Arabic medical encyclopedias like Avicenna’s and the dominance of Galenic theories in the medieval university, this genre of practical text covered all ailments of the body, structured “from the head to the foot.” Due to encyclopedic scope of these texts, they often included a side-by-side discussion of both male and female infertility, implying a certain degree of symmetry between male and female conditions. For instance, the Montpellier physician Bernard de Gordon’s immensely popular *Practica seu Lilium medicinae* (ca. 1305), an encyclopedia of diseases with their symptoms, causes, and treatments, categorized sterility under a common gender-neutral heading, as an affliction “of either sex [*de utroque sexu*].”¹⁹⁸ Such implicitly egalitarian designations were typical of headings in medieval medical encyclopedias that discussed infertility.

Even though medieval practical compendia insisted that both men and women could suffer from infertility, they did not describe the causes of male and female infertility in the same way. More often, medieval practical texts read infertility through the lens of reproductive hylomorphism, defining female infertility as a deficiency in the passive functions of the material contribution and male infertility as a deficiency of the active contribution. Medical compendia tended to describe female infertility as a disorder of a single organ, characterized by the inability of the womb to retain and nourish the male seed. Following the Hippocratic *De Genitura*, most medieval texts viewed female fertility as a function of the womb’s ability to receive the seed released by both the male and the female and then close up like a jar

also referred to impediments to conception “*ex parte maris, an foemina*,” while Johannes de Tornamira in 1365 wrote on the causes of sterility “*ex parte mulieri et ex parte viri*.” Vincent de Beauvais, *Speculi maioris Vincentii Burgundi praesulis Beluacensis*, vol. 4 (Venice, 1591), 396. Johannes de Tornamira, *Clarificatorium super nono Almansorio* (Lyon, 1490), f. CXXXVII v.

¹⁹⁸ Bernard de Gordon, pt. 7, ch. 1.

and retain it for the entire period of gestation. If the womb was “more open than normal,” allowing some of the nutriment to escape, the body of the fetus would not have sufficient matter to be fully formed.¹⁹⁹ Female infertility might also occur if the womb was too slippery “slippery, defective, or harmful,” to “retain all the semen,” deposited into it.²⁰⁰ Vincent de Beauvais, among others, claimed that prostitutes had especially slippery wombs (*matricem habent oblimatam*) from frequent intercourse, something that he believed made them universally barren because the seed simply slid back out.²⁰¹ The *Trotula* concurred that “there are some women who are useless for conception” either because they were too fat, and the womb was too closed, or their womb was too slippery and unable to retain the seed.²⁰² In either case, female fertility depended much more on whether the womb was open or closed than the quality of the female seed.²⁰³

In contrast, men’s fertility depended upon a range of activities: the production of adequately heated, generative seed, as well as the closely related ability to grow erect, and to emit semen into the appropriate vessel. Serving as, in the words of Hildegard of Bingen, “merely a vessel for conceiving and bearing children,” women’s fertility corresponded with their role as the passive provider of matter and nourishment in conception, whereas men’s reflected their responsibility as the active, creative contributor to the very soul of the embryo.²⁰⁴ That men supposedly took responsibility for the more active process of

¹⁹⁹ Hippocrates, *De genitura*, I.6, pt. 1, pg. 3.

²⁰⁰ Pseudo-Albertus Magnus, *Women’s Secrets*, 116.

²⁰¹ Vincent de Beauvais, 396.

²⁰² Green, *Trotula*, 95.

²⁰³ The notion that a woman’s womb could be too “slippery” to retain seed lasted long throughout the sixteenth century. The anatomist Realdo Colombo in 1559 still noted that conception could be inhibited either if the man’s semen was itself “poorly concocted” or if “the place in the woman is too humid and slippery, as in prostitutes, who are not content with a little [semen], but day and night are irrigated by a shower of men.” Colombo, 246.

²⁰⁴ Hildegard of Bingen, *Scivias*, trans. Mother Columba Hart and Jane Bishop (New York: Paulist Press, 1990), 80.

“generating in another,” rather than passively conceiving, introduced many more opportunities for problems to emerge.

On top of this, medieval accounts of generation and sex difference commonly understood men’s generativity to depend on not one, but three separate fluids and organs. Practical medical texts therefore enumerated many different possible fluid deficiencies that might result in male reproductive problems and differentiated among them according to their fluid cause. Constantine the African, for instance, wrote at great length on what he identified as four imbalances that could lead to a humoral distemper of the male seed, in descending order by frequency of their occurrence: excessive coldness, excessive dryness, excessive moisture, and excessive heat. Coldness especially indicated that the heat that normatively set more generative male bodies apart from female, and the more generative male seed apart from the female seed, had been compromised. He reasoned that, if a man became too cold, he would not be able to completely concoct his blood into seed in the liver. He would thus have little generative material to contribute and, moreover, have little “appetite” for sexual activity anyway and would probably be impotent.²⁰⁵

While lack of heat might have manifested as simple infertility, owing to a simple lack of semen, Constantine also grouped together many other deficiencies of that could impede not only conception, but productive sexual intercourse altogether, treating all as equally detrimental to male fertility. Men who became too moist, for instance, would produce abundant seminal fluid, taken from the moist humors of the brain, but their semen would lack sufficient “spirit” to make it generative. In many cases, men with excessively moist bodies would also be prone to spontaneous, uncontrollable emissions without erection, making semination in the womb more difficult.²⁰⁶ Men who were too dry would achieve erection very easily, because an abundance of spirit would continually inflate the penis. However, they would lack

²⁰⁵ *De Coitu*, 513.

²⁰⁶ *De Coitu*, 512.

sufficient moisture to emit seminal fluid, something that would also obviously prevent reproduction. Men who were too hot were also often too dry, making them especially lascivious and prone to sexual activity, but entirely unable to seminate because their heat too quickly “burned up” all their generative matter.

The practical and therapeutic angle of *De Coitu*, and its long legacy in succeeding texts on generation, suggests that treatment for male reproductive problems was common in medieval Latin Europe. Not only did the Constantinian “three-organ” model work to explain the normal operations of seed production in men. It also functioned to explain non-normative disorders of the male sexual and reproductive apparatus and contributed to a proliferation of conditions that could render men unable to reproduce normally. Many other medieval texts adopted and repeated these four categories of male reproductive problems, as outlined by Constantine. Constantine’s four-spoked “Goldilocks” account of male generativity, as either too cold, too dry, too moist, or too hot, constituted the spectrum across which medieval texts of practical medicine made evaluations of male generative ability. The *Trotula* for instance, explained that “Sterility On the Part of the Man” could occur due to any number of reasons and, like Constantine, enumerated many possible fluid imbalances that could make a man either infertile or incapable of normatively reproductive sexual intercourse, either due to “defect of the spirit impelling the seed, or from a defect of spermatic humidity, or from a defect of heat.”²⁰⁷ As the text noted, a lack of heat or spirit could prevent erection, but defects of the seed could also make the seed too watery to be retained by the womb, or too dry for emission altogether.

Medical writers of the sixteenth and seventeenth centuries also tended to attribute male reproductive and sexual problems to a wide range of deficiencies or imbalances rooted in the humoral physiology of seed production. This accorded with the Galeno-Aristotelian view of male generativity as inherently active, formative, and creative, and therefore making a superior, and much more complicated, contribution to reproduction. Like their medieval predecessors, most texts of practical medicine focused

²⁰⁷ Green, *Trotula*, 115.

on female fertility on the womb alone, and its ability or inability to retain the male seed. If anything, the sixteenth-century revival of Hippocratic gynecology, which focused almost singularly on the womb as the origin of all female diseases, centered discussions of female fertility more squarely on the womb alone. Even in early modern texts that accepted the Galenic theory of the two seeds, it was the humoral balance of the womb—or its adequacy as a nurturing container—rather than the humoral quality of the female seed that more often determined a woman’s fertility. Female sterility was most often characterized as a defect of nourishment, construed as any defect of the womb for “attracting and grasping” the male contribution of seed, rather than a defect of the woman’s seminal contribution.²⁰⁸ The physician Alessandro Massaria for one regarded the womb as “the principal place where women’s sterility obtains” and the most likely cause of suspected infertility was if it failed to appropriately “retain the semen [meaning the male semen] deposited in it,” further emphasizing female fertility as a primarily passive act of reception and retention.²⁰⁹

In contrast, early modern medical texts tended to attribute male reproductive disorders to more general imbalances or deficiencies in the seminal fluids, rather than the operations of a single reproductive organ like the womb or the testicles. As the literary physician René Bretonnayau (fl. 1583) expressed it in his long poem on “Sterility,” infertility in the man occurred primarily due to causes that stemmed from humoral imbalances present in the whole body, particularly those that interfered with the processes of seminal digestion and the composition of the semen, such as “Some long languor / Of the governing members of the brain and heart,” which Bretonnayau claimed, along with the liver, worked to

²⁰⁸ Christopher Funcke defined the inability of the uterus for “attracting and fostering the seed” as “promoting infecundity.” Christoph Funcke, *Theses de sterilitate muliebri* (Paris, 1615), cap. x.

²⁰⁹ Alessandro Massaria, *Praelectiones de morbis mulierum* (Leipzig, 1600), 225. Also published as *De Morbis Fœmineis, the Womans Counsellour: Or the Feminine Physitian* (London, 1657).

cook the blood into semen. “Thus,” he wrote, “if the members tarry this essence / Nothing can come of it but a vain semen,” particularly if the fault arose from excesses of that

...Which is too cold, too dry, too humid, or too hot.

For this would not cause a great fire which illuminates,

But [one] strangely furious, which spoils and consumes.

Or, crippled and cold, the seminal vessels

Will be blocked or full of winds or covered in sand or water.

If either there is no oil in the vital lamp

Or if the humor, in abundance, extinguishes it and quenches it

...Either from the blood, or the stomach, or even from the sweat

Which plunders the spirits of their natural treasure...²¹⁰

Physicians like Bretonnayau thus recognized many more fluid imbalances inhering in any one of three organs that could compromise a man’s fertility, making him either unable to fulfill an active sexual role or to produce adequately generative seed. For the most part, sixteenth- and seventeenth-century medical texts retained the same four-spoked categorizations of male reproductive disorders that was found in Constantine and the encyclopedic tradition. Bretonnayau’s attribution of male sterility to excesses of temperature encapsulated the essential humoral paradigm in which medical writers categorized male reproductive disorders, most often attributed to “distempers” in the seed that resulted from the male body being “too cold, too dry, too humid, or too hot,” such that the functions of seed metabolism and the functions of the vital organs supplying it were harmed.

While earlier, medieval discussions of sterility were often buried in compendiums that dealt systematically with all diseases of the body, usually sequestering diseases of the generative organs off in the final chapter on diseases of the “lower body,” the subject of male fertility received much more specialized attention in the sixteenth century. The sixteenth century saw the publication of many more

²¹⁰ Rene Bretonnayau, *La Generation de l’homme et le Temple de l’âme* (Paris, 1583), f. 30r-31v.

specialized medical treatises that focused on sex and reproduction, many of which were published in vernacular languages and reached much wider audiences. Midwifery treatises like Eucharius Rösslin's 1513 *Rosegarten* and its many editions and translations did not only instruct midwives in obstetrical procedures, but also included information about how both men and women could improve their reproductive prospects. Vernacular treatises on general medical topics were also dominated by the subject of generation. So-called "books of secrets" or "books of questions"—both exceedingly popular medical publications among lay audiences of the sixteenth and seventeenth centuries—typically included extensive advice about how to improve one's fertility, determine one's fertility if it seemed to be lacking, or ensure that one had only male children. Advice for both men and women could be found among these topics and both men and women were avid consumers of texts preferring fertility advice.

Sixteenth-century medical writers editorialized about male infertility more frequently. While the headings of medieval medical encyclopedias had taken for granted the existence of both male and female forms of sterility, as implied by headings that addressed sterility "*ex parte mulieri et ex parte viri*," sixteenth-century vernacular medical writers more often found it necessary to dispel popular beliefs that apparently framed infertility as a female-specific condition. Many of these texts, which presumably reached a more general audience than their weighty Latinate predecessors, actively discouraged their readers from prejudicially blaming sterility on women only and extended the condition to men as well. The argument seemed to almost be a commonplace among most of the more widely read medical texts of the sixteenth and seventeenth centuries and a necessary prologue to almost any chapter on reproductive problems. Most of these statements echoed the age-old principle of male-female complementarity in infertility, as a condition of either sex, as for instance where the French physician Jean Liébault declared

that “Sterility comes as much from the part of the man as that of the woman,” before proceeding to describe the causes of both separately.²¹¹

Even texts that explicitly identified themselves as works on “diseases of women”—a very popular genre in early modernity—dedicated substantial space to male sexual and reproductive health. Although historians have focused on how these texts discussed women’s bodies in relationship to their social roles, quite a bit can be gleaned from these texts about the male body and the nature of manhood in the sixteenth century. Sex and reproduction were, after all, generally very popular topics in vernacular medical works targeted at the layperson in the sixteenth and seventeenth century, so it is unsurprising that these texts were written with male audiences in mind as well.²¹² As Cristina Santos Pinheiro has noted of Rodgrigo de Castro’s *De universa mulierum medicina*, one of the most influential gynecological texts in early modernity, “male diseases and the welfare of men are mentioned often,” and Castro included separate remedies for both male and female sterility.²¹³ By way of example, the texts compiled in the 1579 *Gynaecorium sive de mulierum*, a pan-European collection of writings on gynecology and obstetrics by some of the most influential medical practitioners of the sixteenth century, gave substantial space both to

²¹¹ Jean Liébault, *Trésor des remèdes secrets pour les maladies des femmes* (Paris, 1585), 186. The majority of Liébault’s text is taken without attribution from Giovanni Marinello’s Italian text, *Le medicine partenenti alle infermità delle donne* (Venice, 1563). See Valerie Worth-Stylianou, *Les traités d’obstétrique en langue française au seuil de la modernité* (Paris : Librairie Droz, 2007), 497.

²¹² Piero Camporesi, *Bread of Dreams: Food and Fantasy in Early Modern Europe*, trans. David Gentilcore (Chicago: University of Chicago Press, 1989), 113. Finucci, Manly Masquerade, 93. On Renaissance Italian popular medical manuals, which often dedicated significant space to advice on reproductive issues, see Bell, *How to Do It*.

²¹³ Rodrigo de Castro, *De universa mulierum medicina* (Hamburg, 1603); Cristina Santos Pinheiro, “The Ancient Medical Sources in the Chapters About Sterility of Rodrigo de Castro’s *De universa mulierum medicina*,” in *The Palgrave Handbook of Infertility in History*, eds. Gayle Davis and Tracey Loughran (New York: Palgrave Macmillan, 2017), 298.

“diseases of women” and those of men.²¹⁴ Luis de Mercado’s contribution to the compilation, *De affectionibus mulierum*, argued that barrenness did not only occur in women and treated both the “Sterility of Men” and the “Sterility of Women” in separate chapters with separate sex-specific therapies.²¹⁵ Nicholas de la Roche similarly divided his chapter on sterility, reprinted in the *Gynaecorium*, between the two causes of sterility, the “one that comes from the man, and the other from the woman,” as did chapters “on the sterility of men” elsewhere in the compendium authored by some of the most prominent physicians and surgeons of the sixteenth century, including Girolamo Mercuriale, Caspar Wolff, Jacob Rueff, Martin Akakia, and Ambroise Paré.²¹⁶

These sixteenth- and seventeenth-century medical writers did not only reiterate medieval parallelisms about sterility as an affliction of “either sex.” They exhibited a more thorough-going social consciousness of the cultural problems that attended male infertility compared to relatively dry, medieval discussions that did not connect discussion of infertility to broader social issues. Often, these early

²¹⁴ On the *Gynaecorum libri*, see Helen King, *Midwifery, Obstetrics and the Rise of Gynaecology: The Uses of a Sixteenth-Century Compendium* (New York: Ashgate, 2007).

²¹⁵ Luis de Mercado too regarded such attitudes as the product of vulgar prejudice held by those who sought merely to “pacify men” who conveniently “accuse their wives of all guilt” while refusing to acknowledge their own “infecundity and sluggishness” as the reason for their lack of children. Luis de Mercado, *De affectionibus mulierum*, v. 4 (Cordoba, 1579), 364 and reprinted in *GSM*, 991.

²¹⁶ Nicholas de la Roche, *De morbis mulierum curandis* (Paris, 1542), 126 and in *GSM*, 90 ; Mercuriale declined to discuss male sterility in detail, even if the condition “*non minus solet contigere propter viros*,” only because he wished to limit his discussion to diseases that directly affected women, but then went on to discuss causes in men anyway in subsequent passages, *GSM*, 210-214; “*Sterilitas, matricis commune vitium, viris & mulieribus, & de pluribus causis venire solet*,” Caspar Wolff, *Harmoniae Gynaciorum*, in *GSM*, 2 ; Rueff, in *GSM*, 198; Martin Akakia, *Medici regii de morbis muliebribus*, in *GSM*, 776-777, 797; Luis de Mercado, in *GSM*, 971-973, 994; Ambroise Paré, *De hominis generatione*, in *GSM*, 404, 427.

modern arguments drew upon larger philosophical debates about the equality of men and women brewing at the turn of the fifteenth century. Several texts from the newly popular genre of conduct books directed at married people reprimanded husbands who too quickly blamed their wife for a lack of children, in line with a new attention to the values of “companionate marriage” pushed by humanist classics like Erasmus’s *Colloquia* and Agricola of Nettesheim’s pro-woman tracts at the turn of the sixteenth century. The Spanish moralist Juan Luis Vives (1493-1540), for instance, instructed husbands to “be not sharper nor bitter to your baren wives” stressing that children were a gift of God and barrenness or fecundity was something that He could inflict on either men or women, extending larger debates about the male and female equality to the realm of fertility and domestic relations.²¹⁷

Proto-feminist tracts embroiled in the Renaissance *querelle des femmes* also repudiated the stigma of infertility attached to women. As Gianna Pomata has shown, sixteenth-century physicians, unlike professionals in other disciplines, more willingly argued for the side of women in the *querelle*, and the question of equality in generation frequently served as a cornerstone of their arguments.²¹⁸ The French medical humanist Symphorien Champier, for instance, in his pro-woman *La Nef des femmes vertueuses* (1503) included a chapter “De la Femme Sterile” in which he argued that the causes of sterility could just as easily proceed from a man as a woman and that only vulgar prejudice assigned blame exclusively to women.²¹⁹

Later sixteenth- and seventeenth-century medical writers also insisted on the recognition of male infertility from a practical standpoint, arguing that a failure to recognize and distinguish male and female causes of infertility made it impossible to remedy the condition and only deepened marital strife in many

²¹⁷ Juan Luis Vives (Joannes Ludovicus Vives), *The office and duetie of an husband*, trans. Thomas Paynell (London, 1555), 205-207. Originally published as *De los deberes del marido*, 1528.

²¹⁸ Pomata, “*Querelle*,” 326.

²¹⁹ Champier, *La nef des dames vertueuses* (Lyon: Jacques Arnollet, 1503), cap. xv.

cases. The surgeon Louis de Serres's 1625 text on sterility perhaps took the most extreme side of this view, arguing that only misogyny and masculine pride foreclosed an honest assessment of a man's own reproductive abilities. Like Vives, De Serres exhibited a thoroughgoing consciousness of the familial tensions that attended barrenness and admonished husbands who accused their wives, "wrongly of sterility, though they know that they are themselves the cause of their own unhappiness," and vociferously argued that sterility could be imputed to either men or women.²²⁰ The French physician Laurent Joubert in 1585 also ridiculed those who denied male responsibility for fertility as one of the more common "popular errors" among those unlearned in medical matters,

as if every man was capable of engendering, and that it only had to do with the woman. This is just like accusing the earth for not growing the seed that one threw on it...In the same way, there are many impediments [to conception] both on the part of the husband and that of the wife. Many women conceive by another husband and many husbands engender with another wife, and always one wants to hold the woman responsible that she has no children.²²¹

The noted gynecological author Luis de Mercado (1525-1611) also regarded such attitudes as the product of vulgar prejudice held by those who sought merely to "pacify men" who conveniently "accuse their wives of all guilt" while refusing to acknowledge their own "infecundity and sluggishness" as the reason for their lack of children.²²²

Just as moralists and conduct book authors such as Vives argued that a husband should not take his authority over his wife too much for granted but should strive to be a just and fair ruler of his household, sixteenth-century therapeutic authors thus made an implicitly parallel, medical argument. If

²²⁰ Louis de Serres, *Discours de la Nature, Causes, Signes, et Curation des Empechemens de la conception & de la sterilité des femmes* (Lyon: Antoine Chard, 1625), 227.

²²¹ Laurent Joubert, *Erreurs populaires au fait de la médecine et régime de santé* (Paris, 1578), 211.

²²² Luis de Mercado, *De affectionibus mulierum*, v. 4 (Cordoba, 1579), 364 and reprinted in *GSM*, 991.

contemporary theories of generation maintained that men normally made a more perfect and more substantial contribution to reproduction, medical writers also argued that men should not take their fertility for granted. As several historians have argued, the assertion of masculine power in early modernity did not depend solely on the domination of weaker others, especially women. Instead, an ethic of balanced “self-mastery” dominated sixteenth-century ideologies of masculinity, coincident with the rise of capitalist modes of production that increasingly centered ideal masculinity on the values of thrift, sobriety, and moderate indulgence in pleasurable excesses. Todd Reeser especially has argued that Renaissance humanism embraced the classical ideal of the moderate mean as the essential virtue around which early modern “male subjectivity” and constructions of patriarchal power were modeled.²²³ Angus McLaren and other historians of early modern England tend to also link the values of moderation to a new “economic view of the world that lauded thrift, prudence, and self-control” over sensual enjoyment as a crucial aspect of ideal masculinity in the latter sixteenth and seventeenth centuries.²²⁴ The trend towards stricter standards of masculine bodily regulation appears to have applied both to Protestant England as well as Catholic regions on the Continent, particularly Counter-Reformation Spain and France, which simultaneously championed the values of “chastity, monogamy, and self-discipline” for men and instituted efforts to reform lay sexuality, especially to reign in the excesses of male sexuality.²²⁵

Contemporary justifications for patriarchal rule thus often rested not on a straightforward argument from an innate, *a priori* male superiority, but on men’s greater potentiality to achieve self-mastery compared to women. Political and moral theorists often argued that only men were capable of political rule because only they had enough rational capacity to master their own passions and bodies.

²²³ Reeser, 14.

²²⁴ McLaren, *Reproductive*, 28.

²²⁵ See Behrend-Martínez, *Unfit for Marriage*, 335; James R. Farr, “The Pure and Disciplined Body: Hierarchy, Morality, and Symbolism in France During the Catholic Reformation,” *Journal of Interdisciplinary History* 21 (1991): 398.

Women, as the physician Jacques Ferrand wrote, tended towards greater emotional extremes and erotic impulses than men because their natural coldness and humidity caused them to “not have the rational powers for resisting such strong passions,” a product of their manifest “leakiness,” made evident by their greater propensity for tears, the softness of their bodies, and their monthly excretions of undigested blood.²²⁶ Because men were capable of ruling over their own bodies and restraining their emotional and sexual impulses, they were in turn capable of ruling over women, who could not restrain their impulses on their own and thus required male mastery.

However, even if Renaissance political theorists argued that only men, as a category, could achieve self-mastery, they also recognized that not every individual man could attain or maintain this ideal. Self-mastery did not simply happen, by virtue of being born male or into some other position of power, as the nobility claimed in their pretensions to an “essential virtuousness.” It required that one actually work to achieve “ethical merit,” a process that required constant effort and self-reflection in order to rein in one’s natural impulses towards excess. In other words, as Todd Reeser has shown, masculine self-mastery was a delicate balancing act in which men were expected to maintain a “moderate” center between several potentially feminizing excesses.²²⁷

In a similar fashion, medical writers also stressed an ethic of active “self-mastery” in their therapeutic discussions of the male body, arguing that men should take responsibility for the regulation of their own bodies and actively work to identify and rein in any humoral excesses that might compromise their fertility. Sixteenth- and seventeenth-century treatments for male reproductive disorders explicitly mandated active moderation and self-mastery of one’s own reproductive health as an expectation for men. As the criticisms of Joubert and de Serres above suggested, medical writers demanded that men not

²²⁶ Jacques Ferrand, *De la maladie d'amour, ou Melancholie erotique* (Toulouse, 1623), 101. Originally published, 1610.

²²⁷ Reeser, 109.

assume that they were naturally fertile, simply because men normally took a more important and efficacious role in reproduction—any more than a sixteenth-century moralist would suggest that a husband had the right to treat his wife in any way he wished, simply because tradition and biblical prescription suggested that men should rule over women. Instead, medical writers stressed that male fertility—like masculine power more generally—was something that had to be actively maintained and attained and, in fact, could be much more easily lost than female fertility. In the view of therapeutic writers, part of having a more active, generative role in reproduction also meant taking an active role in the regulation of one’s own fertility, just as patriarchal rule entailed a responsibility to moderate and restrain one’s own baser impulses.

Therapeutic discussions of male fertility thus not only acknowledged that men could be at fault in a couple’s lack of issue. They stressed that had men had a responsibility to maintain their own reproductive health. This tendency no doubt fed into a general ethic of “self-help” that ruled most vernacular therapeutic texts of the sixteenth and seventeenth centuries. As most early modern medical therapies involved rather mundane, preventative measures like the regulation of diet rather than preparation of complex medicines, many texts presented medical self-help as well within the reach of even those entirely unlearned in medical matters. Innumerable vernacular texts from the late sixteenth century onwards, especially in England, urged laypeople to take active control of their own health and become one’s “own physician.”²²⁸

²²⁸ Vernacular English medical works often implied that they were intended to replace the advice of a physician in their titles, often specifying that they were published for the “common good” or for the “poore man” who could not afford professional medical help. John Archer’s 1671 *Every man his own doctor* especially called out to this sentiment. John Sadler also sub-titled his 1657 *Enchiridion medicum* a book of remedies “Very necessary to be known and understood of all that desire their own health.” Massaria’s 1657 *De morbis foemineis, the womans counsellour* followed a similarly popularizing ethic by recommending that women, and by extension all people generally, should be “taught to be their own helpers” in medical matters. A sampling of herbals and dietaries’ titles

The same expectation of self-help applied to the regulation of male fertility. Therapeutic texts enjoined men to examine themselves and make an honest assessment of the state of their own body and determine the humoral characteristics that dominated in their complexion (whether hot, cold, wet, or dry). These texts then instructed men to make any necessary adjustments to their lifestyle, to preserve an ideal balance between the seminal fluids of heat, spirit (or air), and moisture (or humidity). As Savonarola had explained, generative seed would be normatively “temperate in its qualities,” and represent a balance between these fluids, appearing “not exceedingly gross, nor fluid, but viscous, white, like hail-stones, with the odor of palm and elderberry flowers, so that flies drop down to eat it”—a description frequently repeated in therapeutic texts.²²⁹ The “temperate” appearance of the seed attested to the presence of all the necessary fluid qualities of generative semen, taken from each of the generative organs. Moist humors from the brain made it fluid, the heat of the body made it white, and the infusion of generative spirits made it frothy, clumpy, or glandular like “hail-stones.”

Medical texts presented an imbalance among these three qualities as the most common cause of fertility problems in men because it would either diminish the quantity of seed produced by the body or produce defects in the final product. Short of being unable to produce semen at all, or only producing a

also reveals a similar trend, as many suggested promised that their text would make it so that “everyone may be his own apothecary,” “people may gather their own physick under every hedge,” or provide medical care to one’s “own famelie.”

²²⁹ Giovanni Michel Savonarola, *Practica maior Ioannis Michaelis Sauonarolae* (Venice, 1547), f. 273r. This same, highly specific description appears in Champier, *Periarchon*, 53; Jacques Dubois (Jacobus Sylvius), *De mensibus mulierum et hominis generatione* (Paris, 1555), f. 20v; Mercado, 326. Mercado attributes the description to Avicenna, but I have not been able to locate it in any edition of the *Canon*. Its earliest instance that I have found is in an anonymous fourteenth-century work on sterility, *De conceptus impedimento in Natura sit Nobis Semper Magistra: Über den Umgang mit Patienten, die Diät bei akuten Erkrankungen, Sterilität von Mann und Frau, Augenleiden, Vier Mittelalter Schriften*, ed. Hermann Grensemann (Hamburg: Lit Verlag, 2001), 130.

small quantity, humoral abnormalities in the seed suggested that it had been “generated defectively” and was thus “insufficiently suited for conception.”²³⁰ As the Italian physician Giovanni Angelo Conticelli (fl. 1583-90) observed, “Sterility indeed happens to the man, when his semen is hot, as if it is burning, or cold, flowing, watery, or slowly expelled and thus,” he urged medical practitioners diagnosing infertility, that “semen must be distinguished by its conditions.²³¹ Philip Barrough (fl. 1590) too attributed infertility in men primarily to “distempore” of the seed. He reasoned that sterility probably pertained in the man, rather than the woman, “when his seede is either hote, & as it were burned, or else cold, thinne, waterie and feeble...or when it is sent foorth thicker then it ought to be.”²³²

The maintenance of male fertility, according to sixteenth- and seventeenth-century therapeutic texts, therefore required careful moderation of one’s body and abstention from excess, to prevent imbalances among these three humoral qualities. The ethic of “self-help” especially applied to the case of male fertility because its maintenance required significant effort on the part of the patient to moderate the whole temperament of the body. In the words of Barrough, this involved vigilantly keeping “the whole bodie verie temperate, and...a meane and measure in labouring, eating, drinking, and bathing, and in all other exercises.”²³³ Most practitioners in the Hippocratic therapeutic tradition recommended a similar

²³⁰ Massaria, 215-6.

²³¹ Giovanni Angelo Conticelli, *Practica rationalis de medendis morbis per causas & signa* (Rome, 1590), 265.

²³² Philip Barrough, *The methode of phisicke* (London, 1583), 157. Jacques Guillemeau too believed that those who demonstrated normal sexual functionality, like “those who bear semen straight, suddenly, and with speed,” could nevertheless be “incapable of generation, because they are too hot, too cold, too dry, too humid, liquid, and aqueous, or otherwise incapable in their matter, consistence, quality, and temperature.” Guillemeau, 481. Nicholas de la Roche echoed the same sentiment in his section on male sterility in the *Gynaecorium*: “Sterility happens in men when his semen is either boiling hot or made to dry up; or cold, thin, watery, languid, or old; or is emitted thicker than it should be.” Roche, in *GSM*, 62.

²³³ Barrough, 158.

regimen for most diseases, on the premise that moderation of the six “non-naturals,” or variables extrinsic to the body that could affect the internal balance of humoral “naturals,” like heat or moisture, within. In Renaissance terminology, the six non-naturals were often listed as “air, exercise and rest, sleep and waking, food and drink, repletion and excretion, and the ‘accidents of the soul,’ or passions and emotions.”²³⁴ As Barrough’s injunction to maintain the “meane” suggested, immoderate indulgence in any one of these categories could produce parallel excesses in the body’s temperature or fluids.

Although the regulation of the non-naturals applied to the maintenance of health generally, texts particularly stressed the importance of careful, active regulation of one’s lifestyle in the case of male fertility. Moderation of the non-naturals was often highly gendered and highly moralized. Excesses in any of the non-naturals often mapped onto behaviors commonly regarded as immoral and, moreover, unmanly, because they betokened a lack of masculine self-control and an inability to subdue the bodily impulses to the rule of reason. The emblem in Fig. 13 illustrates the excesses that most medical texts regarded as most harmful both to one’s moral standing as a man, in the cultural sense, and to one’s standing as a man in the physiological sense—“the belly, the feather bed, and lust.” Renaissance moral tracts often decried idleness, gluttony, and indulgence in sex as vices that both men and women ought to avoid—they constituted three of the seven deadly sins, and, in humoral thinking, invited imbalance into the system of non-naturals. However, moral tracts often viewed an inability to moderate one’s activities and appetites as particularly troublesome for men, who supposedly had a greater capacity, and thus a greater obligation, to restrain themselves than did women.

Morally, indulgence in these excesses could be effeminating for men because it made them more like women, who notoriously allowed their passions, rather than reason, to rule them. However, medical discourses also described moral excess as having an effeminating effect on male bodies because they

²³⁴ Siraisi, *Medieval and Early Renaissance Medicine*, 101. Coitus or venery was also often appended to this list or included either in the category of “exercise” or “evacuations.”

undermined male fertility and the production of generative seed. Medical texts thus described these excesses as literally, physiologically effeminating because they destabilized the very things that distinguished men from women: their fertility, the greater generativity of the seminal fluids and, most of all, masculine heat. Much as moral texts stressed the importance of moderation as a “key philosophical or ethical virtue” for men, medical texts also urged men to moderate their everyday activities and vices, as the key to ideal masculine embodiment.²³⁵

A particular male body type encapsulated the generative ideal—that of the moderately, hot, sanguine man. Medical authors almost universally held up the warm, humid, sanguine temperament as the ideal masculine state.²³⁶ The sanguine type possessed the ideal male body, made evident by their copious beards and dark body hair, physical strength, and deep voices—all traits that early modern texts strongly associated with ideal male physical presentation and with the possession of ideal masculine character traits like sociability and confidence. As the London physician Nicholas Fonteyn (fl. 1652) described them, sanguine men were typically “hairy men, that have Testicles of an indifferent size, and a well concocted seed, are cheerefull, affable, ever frequenting the young company of Maids, and Virgins”—an image often reflected in visual representations of male sanguinity [Fig. 16].²³⁷ Robert Fludd (1574-1637) in his text on physiognomy also described the sanguine man as one perfectly balanced both in their physical appearance, their personality, and their behaviors, having a robust body, a healthy color, a lively personality, and proportional features. Sanguine men also embodied the generative ideal for men,

²³⁵ Reeser, 12.

²³⁶ See Rafael Mandressi, “La chaleur des hommes: Virilité et pensée médicale en Europe,” in *Histoire de la virilité: l'invention de la virilité de l'Antiquité aux lumières*, ed. Georges Vigarello, (Paris: Éditions du Seuil, 2011), 231.

²³⁷ Fonteyn, 131-2. For other sixteenth-century visual examples of the sanguine temperament and its association with the moderate heat of springtime, fertility, and sexuality, see Ilja M. Veldman, “Seasons, Planets and Temperaments in the Work of M. van Heemskerck: Cosmo-Astrological Allegory in Sixteenth-Century Netherlandish Prints,” *Simiolus: Netherlands Quarterly for the History of Art* 11, no. 3-4 (1980): 149-76.

representing the active role in both sexuality and reproduction. Their superfluity of blood, which was in turn converted into superfluous amounts of semen, also supplied them with a strong appetite for “venereal action,” which made them “superior in the act of procreation among the other complexions” and, perhaps most importantly, “fecund for sons.”²³⁸

Sanguinity did not take pride of place in discussions of male fertility solely because of its association with masculine heat and blood, however. Choleric men, after all, also possessed a “hot” temperament. Medical texts prized sanguinity over choleric because it represented an ideally moderated degree of heat, restrained by the influence of “humidity” or moisture, which moderated the most extreme effects of the heated blood. Unlike hot, dry choleric personalities, who lacked the calming influence of humidity to reign in their excessive heat, sanguinity represented the perfect balance of both active, passionate masculine heat and the moderating influence of moisture. As Fludd described it, whereas sanguine men presented as more affable and cheery by nature, choleric heat caused men to be “martial,” “ferocious,” and prone to extremes of drunkenness, rage, and insatiable “lustfulness.” When it came to generation, their excessive heat and lustfulness became the downfall of choleric men. Although their heat made them prone to sexual indulgence, it also dried out the moisture necessary for semen production, so that “because of the presence of dryness they effect very little” in the way of generation.²³⁹

Men who possessed a melancholic (cold and dry) or phlegmatic (cold and wet) complexion also lacked the fluid balance necessary for generation. Medical writers regarded both temperaments as problematic for men because of their association with effeminacy, ranking in the hierarchy of temperaments below the sanguine and choleric as temperaments more typically associated with colder

²³⁸ Fludd, *Utriusque cosmi maioris*, vol. 2, 136.

²³⁹ Fludd, *Utriusque cosmi maioris*, vol. 2, 135.

women.²⁴⁰ Coldness also bore an association with effeminacy because, like choleric, it represented excess, though excess tending in the opposite direction from the choleric. Whereas choleric personalities represented the most excessive tendencies of masculine heat, to the point that they allowed their passions, and consequently, women, to rule over them, cold personalities represented the excesses of a feminine lack of heat.²⁴¹ In Fludd's opinion, melancholic men lacked a sense of humor or sociable charms and they presented as sad, timid, fickle, and weak. Their lack of heat also made them unable to digest their blood into semen, making them have "little appetite for venery" or interest in women and sex altogether. Of all the temperaments, Fludd wrote, the coldness and dryness of the melancholic man made him "the most sterile," speaking to the early modern tendency to collapse together standards of normative gender presentation and normative generative processes.²⁴²

Most therapeutic medical texts urged men to moderate the fluid balance of their bodies between these humoral extremes, neither allowing their bodies to become too hot and dry (and choleric), or too cold and wet (and melancholic). Both extremes worked to the detriment of male fertility because the ideal balance of seminal fluid required not only heat, but also adequate moisture, and air or spirits to be generative. Sanguinity thus represented the middle, moderate position between the extremes of frigid melancholy—associated strongly with impotence, infertility, and effeminacy—and the excesses of heat, which, likewise, unbalanced the choleric personality for generation.

As one might imagine, coldness overwhelmingly dominated discussions of male fertility because it represented the furthest deviation from normative standards of moderate, embodied masculinity.

²⁴⁰ As Jean Aubery wrote, sanguine men were much more given to sexual desirousness because they were "hot and humid" and had a "liberal liver" with which to digest their blood into semen. Jean Aubery, *L'antidote d'amour* (Paris, 1599), 27.

²⁴¹ Fludd claimed that choleric personalities "are accustomed to being governed and bridled by women, whom they vehemently love." Fludd, *Utriusque cosmi maioris*, vol. 2, 135.

²⁴² Fludd, *Utriusque cosmi maioris*, vol. 2, 139.

Coldness did not only harm a man's sexual or reproductive abilities, but made him quite literally, physically effeminate. In this respect, early modern discourses on male impotence and infertility tended to collapse reproduction and sex together. They also tended to collapse together reproduction and gender. In both men and women, early modern texts commonly considered a lack of normative gender presentation the surest sign of infertility. Because both sex difference—the notion that men were hotter and women were colder—and reproductive ability mapped onto the humoral spectrum of hot and cold, it followed that especially hot women and especially cold men would not only be infertile but exhibit non-normative gendered behaviors and appearance. As Jacob Rueff observed, women who presented as “over man-like” and men who presented as “more effeminate and woman-like than is requisite” would more than likely prove barren.²⁴³ Women appeared, in Rueff’s view, “over man-like” supposedly became so because they exhibited a much hotter than usual complexion, deviating from the normal cold and moist state of most women. The greater heat of their bodies caused them to take on more masculine physical features and behaviors, as suggested by their being commonly referred to as “viragos.” The term virago could refer to any masculine woman, who may have exhibited an unusual degree of strength, independence, or self-assertiveness, although medical writers often claimed that these traits usually accompanied the development of male bodily features as well, causing them to grow a beard or develop an enlarged, penis-like clitoris.²⁴⁴ The vision of the virago could in some instances be seen in a positive light.²⁴⁵ However, in

²⁴³ Rueff, 14.

²⁴⁴ The anatomist André Du Laurens claimed that excessive heat in women could cause the genitalia to extend outward, not unlike the way that heat pushed the penis and testicles outwards during male fetal development, albeit without rendering them entirely hermaphroditic. “In some women,” he claimed, the clitoris “expands so untowardly that it...hangs down like a penis,” something caused by the fact that they were “very hot from the outset and so formed by Nature.”

²⁴⁵ One need only think of the mostly positive figuration of Queen Elizabeth as a “virgin virago” as an example of the capaciousness of the term. On the meanings and etymology of the word “virago,” see Marian Rothstein, *The*

the context of medicine, female virility manifested typically as a pathological condition because their excessive heat rendered them unfeminine and infertile. In men, heat ensured fertility because it helped to concoct the seed and make it fertile, but in women too much heat caused “all the [menstrual] blood to dissipate from heat,” leaving nothing with which to nourish a fetus and so impeding conception.²⁴⁶

Humoral medicine applied the same logic to effeminate, or overly “woman-like” men, who were also considered to be simultaneously both gender-deviant and infertile. Men who became excessively cold lacked the heat necessary to concoct the seed from the blood and imbue it with the heat and vital spirits that gave it its “generative virtue.”²⁴⁷ Coldness undermined the essential physiological processes of generation in the male body because it extinguished the vital heat necessary for the digestion of seed in the first place. Because semen production depended on the processes of digestion, lack of heat betokened a problem with the digestive and blood-producing organs, most especially the liver. The heat of the liver also controlled sexual desire, and so a loss of heat accompanied a loss of libido. Lack of heat also prevented the creation of hot, airy vital spirits in the heart, which endowed the seed with motion and generative faculties. Consequently, as Liébault claimed, men who had a “cold temperament of the whole body” would, like naturally colder women, be unable to produce a great deal of seed and that what they

Androgyne in Early Modern France: Contextualizing the Power of Gender (New York: Palgrave-Macmillan, 2015), 54.

²⁴⁶ Massaria, 226. As Huarte claimed, “Aristotle saith, it is necessarie for a woman to be cold and moist, that she may be likewise fruitfull: for if she were not so, it would fall out impossible, that her monthly course should flow, or she haue milke to preserue the child nine months, in her belly, and two yeares after it is borne, but that the same would soone wast and consume.” Huarte 1594, 146. See also Dubois, in *GSM*, 163.

²⁴⁷ “Such men being temperately cold and moist, cannot send forth seed possessed with a generative vertue.” Rueff, 14.

did produce would be, like women's, sparse, non-projectile, and non-generative.²⁴⁸ Jacques Dubois similarly reasoned that those whose temperament more closely resembled that of women—cold and wet—would only produce semen that was “thin, watery, emitted late in coitus, entirely infertile,” or would produce only girls, further pointing to a strong association between normative masculine gender expression, male embodiment, and fertility.²⁴⁹

Coldness also manifested as an abnormality in men of normal reproductive years, because it meant that their temperament had degenerated into one more normally associated with that of an old man or a young boy. As Alexandra Shephard has argued, early modern medical and moral tracts usually envisioned manhood as a specific age, characterized by the predominance of heat, and treated as entirely distinct from the colder periods of boyhood and old age.²⁵⁰ Normally, men in their prime possessed a sanguine temperament and greater fertility because they possessed moderate heat and the perfectly balanced “humidity of the body.” Medical writers typically regarded the period between late adolescence and mid-life as an age “more temperate and moderate than the others,” because of the abundance of hot, wet humors that promoted fertility, which eventually dried out and diminished as they aged [Fig. 16].²⁵¹ Conversely, medical writers often suggested that very young and very old men were naturally sterile because both were too excessively cold to fully digest their blood into seed—young men because their vital heat was still accumulating and they still had to expend most of it on growth, and old men because

²⁴⁸ “The sperm is diminished in substance, movement, and mordication because the sperm comes out in small quantities, slowly, with a manifest sensation of cold in the genital parts. If it proceeds from a cold temperament of the entire body, the sperm flows out in small quantity, which will be coarse, undigested, liquid, fluid, cold to the touch like water, and will only barely flow, not together but spurt by spurt.” Liébault, 103.

²⁴⁹ Dubois, f. 21v.

²⁵⁰ Shepard, 8.

²⁵¹ Liébault, 103. Paré, 8. Pierre Pigray, *Epitome des préceptes de médecine et chirurgie* (Rouen, 1625), 63.

their vital heat diminished as they approached death.²⁵² For men in their normal reproductive years, however, coldness was abnormal. Savonarola reasoned that men with a frigid complexion would emit much “undigested, impure fluid” instead of true seed—not unlike the non-productive emissions of young boys, old men, and women.²⁵³ By implication, pathological frigidity not only made men unable to reproduce. It potentially placed them in the category of non-moderate, non-masculine, weaker “others”—a category principally occupied by women, boys, and old men.

Early modern writers expressed the most concern about melancholic men because they also diverged from the moderate, sanguine ideal and because their coldness often manifested in physical traits generally associated with women rather than men. As Jacob Rueff observed, men who were “more effeminate and woman-like than is requisite” would more than likely prove barren due to the predominance of feminine coldness in their complexion.²⁵⁴ In contrast with the image of the sanguine man described above, Fonteyn described frigidity as a pathology associated with “barren men,” who also lacked other typically masculine features. In his view, cold men could not generate “because their seed is cold, and containes not any spirit to tickle.” Their inability to produce generative seed would also cause

²⁵² Young boys, Levinus Lemnius explained, were infertile because they “lacked manly strength and their seed is too cold and thin.” Levinus Lemnius, *Touchstone of Complexions*, trans. Thomas Newton (London, 1576), 43. Originally published as *De habitu et constitutione corporis* (Antwerp, 1561). Champier claimed that sperm was not good for generation until a man reached the age of thirty, when the sperm began to get hotter and thicker, along with the body. Champier, *Periarchon*, 50. Old men were commonly regarded to be universally sterile because of their general coldness and thus their production of only “cold, thinne, waterie and feeble” seed. Barrough, 157. According to Jacques Guillemeau, “many old men, broken by years and maladies by lack of heat, destitute of spirit do not engender.” Guillemeau, 481.

²⁵³ Savonarola, f. 273v. Dubois, f. 21v.

²⁵⁴ Rueff, 14.

them to take on many of the physical traits associated with women, becoming, in Fonteyn's description, "beardless, slow in imagination, and dull in practise," not to mention lazy, "sad," and "insociable."²⁵⁵

The fact that Fonteyn in this passage attributes causal importance to cold, spiritless seed as the cause of male effeminacy and melancholy is not without significance. As we have seen elsewhere in this chapter, early modern humoralism tended to see sex, gender, and reproduction as virtually inseparable categories, all of which depended quite literally on the economy of the fluids. Fonteyn's description did not just draw on stereotypes arbitrarily applied to men who did not fit into contemporary standards of masculinity. Fonteyn and his contemporaries believed that cold or deficient seed explained every facet of this stereotype, shaping not just anatomical features of manhood, like the size of the testicles or the presence of a beard, but even aspects of one's psychological disposition, like sociability, intelligence, and libido. In other words, generative ability in the most literal sense determined the physical characteristics of sex, because it underwrote all the normative features of the male body and typical masculine behavior.

The first of the signs of male frigidity that Fonteyn listed, "beardlessness," illustrates this point. Sixteenth- and seventeenth-century medical writers almost universally agreed that the beard and body hair reliably signaled virility and normative manhood. As Will Fisher has shown, beards often worked to signify normative masculinity and virility in early modernity.²⁵⁶ Some even regarded it as the singular bodily feature that distinguished men from women. Boaistuau, in his *Discourse on the Dignity of Man*, heaped praise on the beard as a the premier "ornament of virility and strength," placed on the chin, "so that we may recognize maturity of body" and "difference of sex."²⁵⁷ John Bulwer (1606-1656) reckoned it

²⁵⁵ Nicholas Fonteyn, *The Womans Doctour* (London, 1652), 131-2.

²⁵⁶ Will Fisher, "The Renaissance Beard: Masculinity in Early Modern England," *Renaissance Quarterly* 54 (2001): 155.

²⁵⁷ Boaistuau, f. 12r.

“the signe of a man, by which he appears a man.”²⁵⁸ Bretonnayau summed up the association thus, going so far to strip beardless men of the title of man altogether:

The honorable beard is an assured sign
Of male virtue, heating the breast,
That none may well bear the name of man,
If he does not wear this first mark on the chin.²⁵⁹

Contemporary medical understandings of the male body underwrote this cultural association between beardedness and maleness, because the beard supposedly originated from men’s greater bodily heat and gave evidence of their greater generative power. Medical writers typically explained the appearance of beards as having to do with men’s hotter temperament. Women only produced hair on the hottest parts of their bodies, the top of the head and over the pudenda, but being colder, they did not have enough heat left over to produce much hair elsewhere. Women who did happen to be hot enough to grow a beard would more than likely be sterile because their excess of heat would burn up all their blood into seed, leaving nothing left over for menstruation or the nourishment of a fetus in utero. As Symphorien Champier pointed out, if a woman grew a beard it signified that she had an excessively hot complexion and therefore she would not menstruate, having burned up all of her blood as seed, meaning that she lacked sufficient nutritive matter to nourish a fetus.²⁶⁰ Beards and body hair therefore served as important markers maleness in early modernity because they clearly distinguished men from women, as markers of men’s greater internal heat.

Because the beard and body hair depended on masculine heat, they also reflected a man’s reproductive capacity. Medical theory explained beard growth as a by-product of the process of semen production, based on a model in which the beard developed as a “seminal excrement” produced from the

²⁵⁸ John Bulwer, *Anthropometamorphosis: man transform'd: or, The artificiall changling* (London, 1653), 207.

²⁵⁹ Bretonnayau,

²⁶⁰ Champier, *La nef*, 50.

heated vapor left over from the concoction of blood into semen.²⁶¹ According to the physician Helkiah Crooke, the greater heat of the male body concocted the blood into seed. Excess quantities of this heat, having nowhere to go, escaped the body as a “thicke and earthy vapour which...passeth through the Pores of the Skin.” Because the vapor was “thicke,” it left behind “some part of itself,” as hair.²⁶² This model also explained why the categorically infertile—such as prepubescent boys—did not grow beards. As the aptly-named Johannes Barbatium reasoned, boys did not have enough heat left over from growing to dedicate to other physiological processes, and so they did not have enough heat and humidity to excrete the “fumosities out of which the material of the hair is generated” as a by-product of semen production—attesting to their lack of reproductive capacity.²⁶³ Beardedness therefore marked both maleness and the attainment of male sexual and reproductive maturity, because the growth of facial hair coincided with the rising levels of heat in the body that allowed young men to begin producing generative seed.

Accordingly, the lack of a beard could signal infertility. The Spanish physician Andrés a Laguna (1499-1559) deployed a similar explanation as to why eunuchs lacked a beard and body hair, arguing that their lack of that “thin and steamy heat which is responsible for the semen,” which their lack of testicles deprived them of, left them entirely without “matter or material” out of which to form hair, or heat to

²⁶¹ Fisher, 174. Mark Albert Johnston, *Beard Fetish in Early Modern England: Sex, Gender, and Registers of Value* (Burlington, VT: Ashgate, 2011), 49.

²⁶² Crooke, 67. Quoted in Fisher, 174.

²⁶³ Johannes Barbatium, *Barbae Maiestas hoc est De Barbis* (Frankfurt, 1614), 5. More popular texts of medical “questions” like the misattributed *Problems of Aristotle*, which circulated widely in the latter sixteenth century, also often explained women’s beardlessness as having to do with their inability to metabolize their blood into semen. The 1595 English edition claimed that women had less hair than men because they expelled “all humiditie and superfluitie, which are the matter and cause of the hayre of the bodie...with their monthly tearmes, the which superfluitie remaineth in men, and through vapors doth passe into hayre.” “Why have not women beards?” in Pseudo-Aristotle, *The problemes of Aristotle with other philosophers and phisitions* (Edinburgh, 1595), n.p.

drive it to the chin, armpits, or the pubis.²⁶⁴ Barrough thus cautioned that men who were “by the parts about the stones...bald and without hair” were “not desirous to and prone to carnal lust,” indicating a lack of heat and, potentially, infertility.²⁶⁵

In sum then, coldness did not only make men infertile. It also made men less manly, affecting both the physical aspects of manhood and in turn its cultural expression, or the mental and behavioral traits associated with masculinity. Most medical advice regarding male fertility therefore centered on excessive coldness or frigidity as the condition most inimical to normative male generativity, and indeed, to normative masculinity generally. Because men of reproductive years were supposed to be normatively hot, most therapeutic texts reasoned that excessive coldness must be the product of excessive or immoderate behavior that had disrupted the body’s balance of vital heat. Most therapies thus approached male frigidity as a pathological, though curable condition, rather than a fixed state of being and advised that men take action to improve the masculine heat through moderation of the non-naturals. The Dutch physician Levinus Lemnius urged that his readers practice moderation in “three principal things” in order to ward off frigidity and sterile melancholy: to “eat moderately,” to exercise, and most of all “to live continently without wasting seed of generation,” lest sexual excess drain away too much of the vital heat.²⁶⁶ Others urged their readers to avoid activities that might excessively chill the body, including going out in cold air, eating too little or too much, sleeping too much or too little, taking too many baths, or even sitting on cold stones.²⁶⁷

²⁶⁴ Andrés a Laguna, *Anatomical Procedure, or a Survey of the Dissection of the Human Body* (1535), in *Studies in Pre-Vesalian Anatomy: Biography, Translations, Documents*, ed. and trans. L.R. Lind (Philadelphia: The American Philosophical Society, 1975), 279.

²⁶⁵ Barrough, 199.

²⁶⁶ Lemnius, *Touchstone*, 7.

²⁶⁷ Liébault, 100-1. Christof Wirsung, *The general practise of physicke* (London, 1605), 159. Originally published as *Artzney Buch* (Heidelberg, 1568).

Therapeutic texts especially stressed that men regulate their generative heat through moderate food consumption, eating neither too little or too much. Medical writers described moderate eating as especially important for male fertility because, during hematogenesis, the liver transformed ingested nutriment into seed. At one extreme, medical texts frequently cautioned against starvation or excessive leanness as detrimental to male sexual health. Without sufficient nutriment to begin with, they reasoned, men more than likely would not be able to concoct their blood into semen, because most of it would be consumed supporting other, more essential life processes. As Massaria wrote, when food is scarce, “nature converts all the material of semen into substance and nutrition for the body,” and so, presumably, men who did not consume sufficient amounts of food would be unable to produce sufficient quantities of semen.²⁶⁸ In times of sickness and starvation, Paré attributed “the causes of impotence to engender” to “lack of good and sufficient food, as one sees in the fevered, the emaciated and those with wasting sickness or from intemperance.”²⁶⁹ A common cultural association between thinness and infertility can be detected even outside of medical discourse, for instance in common sixteenth-century French proverbs that declared: “with an abundance of food, comes an abundance of semen,” “from a big belly comes the dance [*de la pance vient la dance*],” and, “without Ceres and Bacchus, Venus grows cold” [see Fig. 18].²⁷⁰

Unrestrained gluttony, on the other hand, could also cause men to develop imbalances in their temperament that prevented the production of generative seed. “It is true that to eat or drink more than nature requires renders the man incapable of generation,” remarked La Perrière.²⁷¹ Barrough thus

²⁶⁸ Massaria, 216.

²⁶⁹ Paré, 723. Liébault also attributed sterility to “too little sperm, as we see in the sick, thin, those newly sick, old men, and those who eat little, or eat foods which have little nourishment.” Liébault, 99.

²⁷⁰ Guillaume La Perrière, *Le miroir politique, contenant diverses manières de gouverner & policer les républiques qui sont & ont esté par cy devant* (Paris, 1567), f. 91r.

²⁷¹ La Perrière, f. 91r.

suggested that “men...that haue their seede corrupted through naughty and euill kind of diet,” ought to practice more “ordinate” eating habits so that “their genitours will haue fecunditie and fertilitie.”²⁷²

Excessive fatness, likewise, supposedly affected seed quality in men because it impeded the digestion of blood and caused male bodies to become more like cooler, feminine bodies. Just as excessive leanness served as an indication that the body lacked sufficient nutriment to produce semen, being excessively fat meant that the body had digested more of its blood into flesh, rather than semen, for both substances supposedly derived from digested blood. This theory conveniently explained why women—being colder—naturally had more fat in their bodies and why they also produced less generative seed, as the concoction of fat demanded greater expenditures of their heat.²⁷³ In men, however, fatness indicated that too much of the generative heat had diverted to the creation of flesh, rather than semen. According to Symphorien Champier, “The men who produce the most sperm are those who are neither very fleshy nor fat,” for in both cases, “the sperm passes over into bodily nourishment.”²⁷⁴ Fatness also bore a strong association with seminal coldness in men. Fat men, Rueff claimed, often proved infertile because “the seed is procured and derived from a more remote place, and so the vital spirit enclosed in it vanishes away sooner by that delay,” meaning that any semen emitted became excessively chilled by the time it made its exit.²⁷⁵ Medical texts therefore strongly encouraged men to moderate their food intake and their body size, and to strive for an ideally moderate, middling point.

²⁷² Barrough, 158.

²⁷³ Medical writers generally agreed that fat was formed from the digestion of blood, but disagreed as to whether it was digested by bodily heat or cold. Thomas Vicary in 1577 noted that “The flesh is...is engendred of blood congeled by heate, and is in complexion hote and moyst,” while Helkiah Crooke maintained that it originated from cold—a theory that more clearly explained why colder women had more fat in their bodies. Both quoted in Toulalan, “Too much Eating,” 66.

²⁷⁴ Champier, *Periarchon*, 54.

²⁷⁵ Rueff, bk. 6, ch. 1, 12

Similarly, medical texts regularly preached against male drunkenness as excessive—so much so that it could cause a man to become cold or infertile. Several early modern dietaries and books of psychic cautioned against drinking altogether, claiming that excessive drunkenness chilled the body and diminished male fertility.²⁷⁶ The ancient Roman Plutarch, whose *Moralia* became a popular subject of translation and commentary in the sixteenth century, had cautioned against drunkenness on the grounds that wine “killed and entirely extinguished men’s heat,” the quality most “generative of semen.” “Those who drink a lot of wine,” claimed the widely read 1575 French edition, would prove

slow to the act generation and sow nothing worthwhile, nor be of good constitution for engendering, so that their conjunctions with women [are] vain and imperfect, because of the weakness and coldness of the semen.²⁷⁷

²⁷⁶ See Ernest L. Abel, “‘Who Goes Drunk to Bed Begets but a Girl’: The History of a Renaissance Medical Proverb,” *Journal of the History of Medicine and Allied Sciences* 54, no. 1 (1999): 5-22. The status of alcohol as an intrinsically “cooling” food was controversial in the medical literature. Red and spiced wine was often regarded as “hot,” while white wine and beer often found their way onto the list of “cold” foods to be avoided. As a sampling of the varied opinions on the effects of wine on male fertility: Paré recommended that men who wished to have children, “drink of generous wine, either *hippocras* [spiced wine], or *malvoisie* [sweet Greek wine],” but only in a “mediocre quantity.” Paré, 723. By contrast, Pseudo- Arnaldus de Villa Nova’s book of secrets recommended that infertile men drink only white wine, if any, but suggested it was best to abstain altogether. Arnaldus de Villa Nova, *Trésor des povres qui parle des maladies qui peuvent venir au corps humain* (Paris, 1512), f. XLIIr. Guy Patin also discouraged the consumption of white wine, in favor of red, not because it was cold, but because “white wines, almost always hot and humid, favor the dissipation of the native heat.” Guy Patin, “Impuissance et frigidité masculines,” in *Correspondance complète et autres écrits de Guy Patin*, ed. Loïc Capron (Paris: BIU, 2018), 7. The 1648 edition of *Aristoteles Masterpiece* took the most generous position, recommending “all strong Wines,” especially those from Italy. *Aristotele's Master-Piece*, 12.

²⁷⁷ Plutarch, *Les Oeuvres Morales & meslees de Plutarque*, trans. Jacques Amyot (Paris, 1575), 383.

Many early modern authors repeated Plutarch's condemnation of excessive drunkenness as a feminizing condition associated with male infertility. The French physician Jean Mousin's 1612 treatise against drunkenness agreed with Plutarch's assessment, warning that too much wine "extinguished the natural heat" and cooled the stomach too much to properly digest and concoct the blood, sometimes resulting in "the entire abolition of the generative power."²⁷⁸ The French physician and anatomist Charles Estienne (1504-64) also echoed Plutarch on the subject of drunkenness, arguing that the semen of drunken men became sterile because wine diminished natural heat.²⁷⁹ Drunkards also supposedly had a predisposition towards having a cold and wet, or "melancholic" temperament, in the opinion of Levinus Lemnius. In the short-term, Lemnius argued, alcohol made men more "lecherous"—as the proverb "*Sine Cerere et Baccho friget Venus*," suggested—though they were unlikely to beget children from their drunken dalliances, because alcohol caused the semen to become excessively cold and watery.²⁸⁰

Most importantly, when it came to food and drink, early modern medical texts not only encouraged men to moderate their consumption habits, but also to balance the heat and coldness of the foods that they did consume. Early modern herbal medicine tended to treat health and food as intrinsically related fields, on the premise that all substances had their own innate "temperament" which, when consumed, could alter the temperament of the human body.²⁸¹ A wide range of medical and

²⁷⁸ Jean Mousin, *Discours de l'yuresse* (Toulouse, 1612), 115-7.

²⁷⁹ Charles Estienne, *L'agriculture et maison rustique* (Rouen, 1579), 310. The same warning featured in the 1600 English translation of Estienne's work by Richard Surfllet: "[Wine] cooleth in such sort, as that it bringeth to nothing and quite undoeth the provocations and acts of lust...that the seede of drunkards becometh dead and fruitlesse, and their children blockheaded groutnolles." Charles Estienne, *Maison Rustique, Or The Countrie Farme*, trans. Richard Surfllet, (London, 1600), 778-9.

²⁸⁰ Lemnius, *Touchstone*, 149.

²⁸¹ Herbal remedies and medical advice often found their way into early modern culinary works. One of the earliest printed "cookbooks," Bartolomeo Platina's frequently-reprinted *De honesta voluptate et valetudine*, for instance,

pharmaceutical texts in early modernity stressed that men should monitor their own humoral complexion and only consume foods that counter-balanced any existing imbalances in their temperament. Many works of herbal medicine especially cautioned temperamentally cold men against eating certain foods—particularly rue, agnus castus, vinegar, mint, camphor, cucumbers, glow worms, and lettuce—all of which had a long-standing reputation as “cold” foods that chilled the body and thus cooled the generative faculties [Fig. 19]. Early modern pharmacological medicine often proffered all of this latter class of substances as “anti-aphrodisiacs” because of their reputed ability to reduce the body’s heat, and, consequently, to “diminish and even consume and lose all of the sperm.”²⁸² Barrough, for one, discouraged the consumption of these foods for those seeking to improve their fertility, “for calamint & mints, although they engender much sede, yet, that which they engender, is feble & weake: but rewe doth altogether corrupt & destroy seede,” further reiterating the necessity of careful dietary regulation for the maintenance of male fertility.²⁸³

Excessive consumption of cold foods also bore a strong association with feminine coldness, as these foods also supposedly had feminizing and sterilizing effects on male bodies. Shakespeare’s Prince John, from *Henry IV, Part II* provides a literary example of the supposed effects of a cold diet on masculine reproductive prowess. In the play, the character Falstaff criticized John for eating principally fish (a cold, moist food) and small, or weak, watered-down beer. Such a diet naturally diminished the

discusses not only how to prepare culinary dishes, but is interspersed with advice on the temperament of foods, including remarks on which ones extinguished the virile heat, such as cucumbers, and which promoted the production of semen, such as cinnamon. Bartolomeo Platina, *De honesta voluptate et valetudine* (Venice, 1480).

²⁸² Liébault, 99.

²⁸³ Barrough, 158.

masculine heat, Falstaff claimed, “For thin drink doth so overcool their blood, and making many fish meals, that they fall into a kind of male green-sickness; and then when they marry, they get wenches.”²⁸⁴

The thrust of Falstaff’s mockery here is that the consumption of cold foods would effeminate men because it inflicted a feminine condition on them: greensickness. It also suppressed their generative ability. Greensickness supposedly resulted from the retention of the female seed in sexually inactive women such as virgins and widows. By implication, a “male greensickness” either entailed the retention of male seed or the inability to ejaculate, something that no doubt stemmed from the “overcooling” effects of Prince John’s diet. The effects of coldness also meant that if men of this type ever did successfully reproduce, they inevitably only produced colder, female children. By contrast, Falstaff’s companion, Prince Harry, managed to warm his naturally “cold blood” by consuming much hot, “fertile” sherry. Unlike less-alcoholic small beer, Falstaff claimed that sherry heated the liver and heart and inflamed the inner “spirits,” causing Harry to “become hot and valiant,” metaphorically transforming him from “lean, sterile, bare land,” into land, “manured, husbanded, and tilled,” and by implication, apt for generation.²⁸⁵

As Falstaff’s warning about the “getting of wenches” suggested, medical texts also recommended careful balance of one’s consumption habits not only to ensure fertility generally, but also specifically to ensure the birth of sons rather than daughters. Herbal medicine presented excessive consumption of cold substances as problematic because it increased the likelihood that a man would only produce female children—the “getting of wenches” in Falstaff’s terms. Particularly in legal contexts that favored male primogeniture, “it was failure to produce a male heir, rather than children *per se*” that especially troubled

²⁸⁴ Shakespeare, *Henry IV, Part II*, Act IV, scene iii, lines 96-100. See also Joan Fitzpatrick, *Food in Shakespeare: Early Modern Dietaries and the Plays* (New York: Routledge, 2016), 26-9; Jürgen Schäfer, “When They Marry, They Get Wenches,” *Shakespeare Quarterly* 22, no. 3 (1971): 203-11.

²⁸⁵ *Henry IV, Part II*, Act IV, scene iii, lines 124-129.

families higher up the social scale, who staked the preservation of wealth and status upon a male inheritance.²⁸⁶ Writers of texts of medical advice evinced a powerful awareness of these concerns and very often included suggestions to couples on how to conceive only male, not female, children. Liébault and Paré, for instance, counted men who had children, but only produced girls, in the same category as “infertile” men.²⁸⁷ Thus, even if most physicians of a Galenic stripe rejected the notion that women occurred as “accidents of nature” or “misbegotten men,” per Aristotle, they still apparently regarded the generation of females as no better than outright sterility and a condition to be avoided as much as possible.

Most popular medical manuals encouraged naturally cold men to increase their natural heat by consuming hot foods and avoiding cold ones to assure the birth of sons. Although Galen and Hippocrates held that the sex of a resulting fetus depended on which side of the body the seed that formed it originated from, most therapeutic texts seemed to implicitly favor Aristotle’s view that sex determination depended on heat rather than the right or left divide. Often, they argued that the relative heat or coldness of the seed—not its origin from the left or right side of the body—determined sex, or at least, they found a heat-based regimen more practical and more feasibly controllable through medical intervention.²⁸⁸ Liébault

²⁸⁶ Foyster, “Childless Men,” 161.

²⁸⁷ Liébault, 104. Paré, 95. Bertin-Simon de Dieuxivoye’s 1683 medical thesis also confirmed that “more fertile people [*foecundiores*] generate a male from the first birth,” equating fertility with the ability to produce male children specifically. Baron, 60.

²⁸⁸ Galen maintained—incorrectly—that the left testicle or side of the womb was supplied by colder, impure blood from the renal artery, and thus produced female children, whereas the aorta and vena cava supplied hotter, purified blood to the right testicle, which produced male children. *DU*, bk. XIV, ch. 6, 108. Hippocrates, *De genitura*, I.6, p. 1, 3. As Nancy Tuana has shown, Galen’s anatomical error in regards to the origin of the spermatic vessels persisted into seventeenth-century anatomy and Vesalius did not correct it. Nancy Tuana, “The Weaker Seed: The Sexist Bias of Reproductive Theory,” *Hypatia* 3, no. 1 (1988): 49. Jacques Guillemeau’s 1612 anatomy of the testicles, for

and Paré, at least, seemed to attribute the birth of female children primarily to paternal coldness. Cold men, wrote Liébault, “do not engender males,” and Paré similarly agreed that cold men “do not abound with children and...engender more often females than males.”²⁸⁹ The Spanish physician Juan Huarte de San Juan’s 1575 text, *Examen de ingenios para las sciencias* (in English, *Examination of a Man’s Wits*), also included advice to parents on how to ensure that “their children may be male and not female,” through moderate consumption of heated foods.²⁹⁰ Huarte suggested that “fathers” could best ensure the birth of sons by consuming “hot and dry meats,” and avoiding cold, wet foods like lettuce, seeing as “the sex of man consists in semen that is hot and dry when it forms.” Again, the rule of moderation pertained, as texts advised against eating even hot foods in too great a quantity because, Huarte claimed, too much food could not be easily digested into blood. Thus, Huarte claimed that many nobles produced only girls because even if they consumed vast quantities of spiced meats, their stomachs could not adequately cook the superfluity of nourishment into semen.²⁹¹

Medical manuals further recommended active regulation of one’s habits to ensure the transmission of other desirable traits to one’s children. Huarte stressed the importance of fathers’

instance, still depicted the right spermatic vein drawing from the vena cava and the left the unfiltered blood from the renal artery, as does Jacques Duval’s rendering of the testicles from the same year. Guillemeau, 86-87. Jacques Duval, *Des hermaphrodites* (Rouen: David Geuffroy, 1612), 15. Some authors of practical texts thus recommended that couples should lay on their right side during sex or tie up the left testicle to ensure the production of male children. This was apparently a common agricultural practice among farmers who wished to ensure the birth of livestock of one or the other sex, as many medical texts observed. The practice is described in, for example, Girolamo Manfredi, *Opera intitulata il Perche alla conservatione della Sanità* (Venice, 1553), f. 127v.

²⁸⁹ Liébault, 104. Paré, 95. In his 1662 thesis, Pierre Legier affirmed that “men in their prime,” that is, those superabundant in heat, would “more happily procreate male children.” Baron, 51.

²⁹⁰ Huarte, 332.

²⁹¹ Huarte, 359.

involvement in the regulation of their own fertility because the temperament of their semen determined not only the sex of the child, but certain gender-based character traits that came with the quality of heat. He therefore stressed the importance of pre-coital practices related to the moderation of heat not just to ensure conception, but to ensure that they would be intelligent and virtuous. Even if they did successfully beget sons, Huarte suggested that fathers still should take further steps to determine whether their male children grew up to be foolish or wise. For instance, Huarte suggested that men should not indulge in excessive passions during sex. In his opinion, distraction during coitus by scholarly or religious thoughts, or by disgust and shame in the act, supposedly drew away the nervous or animal spirits necessary to make semen generative.²⁹² “As many authors say,” wrote the physician Conticelli in confirmation of this view, when the imagination is deficient for coitus, the semen can become deficient, “and this because of the brain.”²⁹³ Even if, despite this deficiency, a child did result, the effects of the imagination could also “impress” on it. Huarte thus concluded that wise men would more often beget foolish children, because their minds were too absorbed by other, weightier matters during sex, thereby “weakening the seed, and making their children defective.”²⁹⁴

Huarte also cautioned that aspiring fathers should not go too far in their consumption of hot foods, because these could adversely affect the temperament of their children. Excesses of hot foods,

²⁹² Conticelli, f. 49r. As a cure for restless imaginations, Barrough suggested that men should sleep in a soft bed and “reade things that doe stirre up thinges carnal,” so as to focus the mind on these matters. Barrough, 142.

²⁹³ “Or because of the many spirits...and this happens because of the brain, which communicates the major part of the fecundity of the sperm from the brain.” Conticelli, f. 50r.

²⁹⁴ Huarte, 285-6. Nicholas Venette similarly noted that “if our spirit is very much occupied with our affairs, our natural parts are numb when we apply ourselves to love. Witness those who govern by themselves the kingdoms and republics...are almost always absent-minded children, as if the spirit of the father almost always remained more with the affairs of state that he managed than in the body of the children that he engendered.” Nicolas Venette, *De la generation de l'homme ou Tableau de l'amour conjugal*, 7th ed. (Paris, 1696), 57.

Huarte warned, might ensure the production of sons, but it might also cause them to grow up to be literally hot-headed, making them choleric and violent, “so it were better they were never formed.” Even if many fathers maintained the dictum, “better to have an evil son than a woman who does good,” the author still suggested that such an outcome could be avoided simply by eating a reasonable amount of more “tempered” hot foods.²⁹⁵

The quality of heat did not only prove important for ensuring the birth of sons, and the evenness of the resulting child’s temperament, but also for remedying male-specific impediments to conception, presumably among those who could not even generate girls. As one might imagine, heat shared a special affinity with the male body and the male generative faculties. Hot substances thus supposedly counteracted the effects of sterilizing coldness and ranked among the most popular remedies for male fertility because they corresponded to the ideal male temperament for generation and promoted the heat necessary to digest and concoct semen. Among the remedies that Barrough recommended, “which doe engender plentie of sperme, and can heate,” foods like rocket (arugula), asparagus, mustard seed, garden cress, nettle seed, pepper, sea onions, squill, orchid root, almonds, pine nuts, long pepper, anise, nutmeg, mace, and ginger featured prominently.²⁹⁶ The association between these foods and heat most likely

²⁹⁵ Huarte, 360.

²⁹⁶ Ken Albala also summarizes a longer list of heating, aphrodisiac remedies in *Eating Right in the Renaissance* (Berkeley: University of California Press, 2002), 145-148. Notably, most of the remedies listed here—such as onions, leeks, asparagus, mustard seed, pepper, and nettle seed—would have been widely available in most any herb garden. More exotic spices like cinnamon, mace, cumin, nutmeg, and ginger, all long been regarded as aphrodisiacs, were no longer entirely inaccessible luxury goods in the early modern period, owing to the increased importation of goods from the Indies and New World colonies into European urban centers. Valeria Finucci has found evidence to suggest that Venetian and Genoese merchants may have marketed these goods specifically for their venereal qualities, and in London marketplaces too, handbills advertised apothecary shops selling a variety of fertility

derived from the fact that most—especially spices—tasted “hot.” Fire ants, for instance, applied topically in a solution of elderberry oil, commonly appeared in treatments for male frigidity, on the assumption that their hot nature would stimulate the production of virile heat.²⁹⁷ These “hot and humid” foods were also distinctively associated with fertility and virility, Lemnius argued, because of the affinity they had with the humoral composition of the seed, “because the substance of the semen (testifies Galen) is made of pure, well-cooked, and windy superfluity of blood,” which required adequate heat.²⁹⁸

Medical texts also often recommended hot foods as fertility remedies for men specifically because of the association between heat and male sexual desire, inherited from three-organ conceptions of the liver and heart as “hot” organs, associated with sexual desire. In men, a hot complexion was universally associated with youth, lust, and fertility, as made evident by innumerable emblems and woodcuts of the four temperaments that depicted the ideal, sanguine man embracing a woman or surrounded by sexually suggestive symbols, such as goats, sparrows, or scorpions, all animals strongly associated with lust [Figs. 20-1].²⁹⁹ In contrast, the emblematic “melancholy man” almost always appeared alone, unaccompanied by women, and, presumably, too withdrawn and lethargic to pursue

remedies. Evans, Aphrodisiacs, 47. Finucci, “‘There’s the Rub’: Searching for Sexual Remedies in the New World,” *Journal of Medieval and Early Modern Studies* 38, no. 3 (2008): 523-57.

²⁹⁷ Ants in elderberry oil are recommended by Paré, 723, as well as in Isabella Cortese’s 1561 book of secrets, which recommends a decoction of ants, quail’s eggs, and elderberry to “make the member stand.” Isabella Cortese, *I secreti della S. Isabella Cortese* (Venice, 1561), f. 36r. Most of these remedies traced their origins to Constantine the African. He had advised that infertile men should, “Take large black ants, put them alive into a glass bottle and add good oil of elder on top. Hang it in the sun for several days and strain it afterwards. Anoint the testicles and the soles of the feet.” *De Coitu*, 522.

²⁹⁸ Lemnius, *Occulta*, f. 27v.

²⁹⁹ A complete description of the four temperaments in relation to sexual ability can be found in, Brian Lawn, *The Prose Salernitan Questions* (Oxford: Oxford University Press, 1979), B8, 6.

sex.³⁰⁰ Medical texts rarely associated melancholy with diminished sexual desire in women, but in men temperamental coldness indicated loss of libido, so much so that the cuckolding of the drowsy scholar or doddering older husband formed a common trope in sixteenth and seventeenth-century literatures.

Most of the “hot” fertility cures recommended for men thus had a dual aphrodisiac quality because they supposedly heated the body and simultaneously increased the generativity of the seed, while also stimulating the libido. Many of the most common “hot” foods included the flesh of animals supposedly prone to lecherous behavior, suggesting that they had a naturally “hot” and lustful nature. Popular examples included the genitals of especially hot and virile animals, such as bull or wild boar testicles, both recommended by Ambroise Paré as cures for male sterility, as well as cock and fox testicles, which Guillaume Rondelet recommended as hot foods, not just because of their association with lustful animals, but because they themselves contained heat and “nutrients for generating semen.”³⁰¹ Birds also had a reputation as particularly lascivious and energetic creatures, something that made their meat especially “hot,” a quality that their ingestion could transmit to an excessively cold man.³⁰² Barrough for one recommended that men who “cannot use the act of generation” should “use meates that

³⁰⁰ See for instance, the late-fifteenth century Augsburg and Strasbourg calendars, which depict sanguine men happily wooing women, while the melancholic or phlegmatic men sit alone, head in their hands, seemingly unaware of the women nearby. In Gail Kern Paster, “Unbearable Coldness of Female Being: Women’s Imperfection and the Humoral Economy,” *English Literary Renaissance* 28, no. 3 (1998): 426-7, figs. 2-3. Most early modern depictions of the temperaments adopted the same symbology from the medieval types. Henry Peacham’s 1612 emblem book, similarly, depicted the sanguine man in satyr-like attire, accompanied by “the lustfull Goate...which may import his proneness both to women and to wine.” The cold, wet, melacholic man, by contrast, sits alone [see Fig. 16]. Peacham, 127, 129.

³⁰¹ Paré, 723. Guillaume Rondelet (Rondeletius), *Methodus curandorum omnium morborum corporis humani* (Paris, 1573), f. 285r.

³⁰² Richard Jewell, *Good Huswives Jewell* (London, 1587), 20-21.

doe heate and engender good humours.” These included mainly poultry, such as “henes, capons, partrich, feasauntes, yong doves, [and] birdes of mountains.”³⁰³ Sparrows ranked among the most commonly mentioned animals whose meat supposedly increased heat and sexual vigor in men. Sixteenth-century texts of domestic cookery even recognized the heated nature of sparrow meat, such as in Richard Jewell’s 1596 recipe for a sparrow-filled “Tarte that is a courage [synonymous with sexual vigor] to a man.”³⁰⁴ Because Aphrodite’s pet sparrows supposedly pulled her chariot, sparrow meat thus encapsulated the association with the hot and lustful influences of the planet Venus in early modern astrological and medical thinking [Fig. 22].

The same kind of thinking in terms of physical resemblances applied to “hot” plant-based cures like the orchids satyron and disatyrion. Botanical and pharmacological texts often suggested that these plants had a more powerful influence over the male genital organs, with which they bore a strong resemblance. Many of these plants, by virtue of their association with the testicles and the seed, supposedly also had the ability to increase fertility in men. Satyron (whose name evoked the rampant sexuality of the satyrs), a plant of the orchis family, commonly appeared in lists of cures for male sterility, perhaps because its bulbous root had a distinctive resemblance to the testicles.³⁰⁵ The Italian polymath and botanist Giambattista Della Porta (ca. 1535-1615) argued that men should actively “consult” or “contemplate” the resemblance between the testicles and satyron in order “to have children [*proli*],” the physiognomical similarities between which he made obvious in his illustrations of the plant side-by-side with the testicles [Fig. 23]. Della Porta remarked that not only did satyron look like the male genitalia,

³⁰³ Barrough, 142.

³⁰⁴ Monica S. Cyrino, *Aphrodite* (New York: Routledge, 2010), 121-122.

³⁰⁵ The aphrodisiac properties of satyron were first described by Pliny the Elder (ca. 23-79 CE) in his encyclopedia of natural history, first printed in the late fifteenth century as Plinius Major, *Historia naturalis* (Venice, 1469), and in 68 other editions, through 1587. Pliny the Elder, *Natural History*, ed. and trans. H. Rackham, D. E. Eichholz, and W. H. S. Jones, vol. 7 (Cambridge: Harvard University Press, 1938-63), bk. 26, pg. 97-98.

but described the plant's contents in similar terms to medical descriptions of male seminal production, as he found it to be "full of liquid, sticky sap like egg whites," which he noted provided much "wind and nourishment" for its production.³⁰⁶ Théophile Bonet also recommended satyrium for its strong resemblance to male reproductive organs and processes, advising that men suffering from infertility take "Medicines that respect the slippery and frothy character of the Seed, as the root of Satyrium and other bulbous roots," such as artichokes and ambergris.³⁰⁷

The anthropomorphic shapes of these plants did not solely explain their relationship to sexuality and the male body, however. These plants also took on the humoral qualities supposed to be innate to the testicles: "hot and moist," sharing "the same complexion" as the human organs to which they corresponded. Just as the testicles were believed to provide masculine warmth to the whole body, satyrium could also heat the body of an excessively cold man. When consumed, Dodoens noted that the "ful and sappie rootes" of satyrium heated the seed in those lacking in their "nourishment" and thus "provoketh Venus, or bodily lust."³⁰⁸ Johann Wecker's book of secrets recommended satyrium as a hot and nourishing

³⁰⁶ The Flemish botanist Rembert Dodoens also proposed as much in his 1587 account of satyrium, noting that it, like most varieties of orchis, took its names from its roots' resemblance to male genitalia, such as in the varieties dog's testicles (*testiculus canis*) and fool's testicles (*testiculus morionis*). Dodoens further noted that orchis plants have testicular names in almost all European languages, see Rembert Dodoens, *A Nievve Herball, Or Historie of Plantes*, trans. Henry Lyte (London, 1578), 222. For example images and a meditation on how plants like satyrium provoked venery through their resemblance to the male genitalia, see Pietro Mattioli's commentary on the ancient Greek physician Dioscorides' pharmacology, *Commentarii denuo aucti in libros sex Pedacii Dioscoridis Anazarbei de medica materia* (Lyon, 1563), 488-9. Barrough, among others, included *testiculos caninos* in his list of male-specific fertility cures. Barrough, 143.

³⁰⁷ Théophile Bonet, *Mercurius compitalitius: or, A guide to the practical physician* (London, 1686), 694. Quoted in Evans, *Aphrodisiacs*, 125.

³⁰⁸ Dodoens, 226.

food that increased generative ability, because it “very greatly multiplies the seed,” making a man “more robust in the venereal act.”³⁰⁹ Satyrion could also ensure the production of supposedly hotter male children, because Dodoens noted, “If men do eate of the greatest and fullest rootes [of satyrion]…that they shall beget Sonnes,” presumably because it encouraged the production of hotter seed from the right side of the body.³¹⁰ Satyrion therefore implicitly gained its generative power from its ability to heat and warm the body, and in turn to stimulate the generation of male seed.

While most of the discourse on male moderation and infertility mentioned thus far stressed the importance of preserving or improving the body’s heat, medical texts also recognized that the opposite extreme—excessive heat—could also cause fertility problems in men. Liébault and Paré both suggested that if the seed became excessively heated, it would also prove to be non-generative. Both authors suggested that signs of male infertility included both if the seed felt too cold to the woman in her womb, or if it felt too hot, or if the man felt a burning sensation upon ejaculation.³¹¹ Too much heat could also have a drying effect on the brain’s moisture, a fluid required to maintain the viscosity of the seed. One of the speakers in Castiglione’s *Book of the Courtier* warned of the dangers of excessive heat to male fertility. As the speaker pointed out, even if men were distinguished from women by their superior heat and, as was universally agreed, “heat is much more noble and perfect than cold,” men were not

³⁰⁹ Johann Jacob Wecker, *Les secrets et merveilles de nature* (Lyon: S. Rigaud, 1653), 195.

³¹⁰ Dodoens, 223. The herbalist Pietro Mattioli also repeated the recommendation of Dioscorides in his examination of the plant that men who ate the larger root of satyrion would engender sons, whereas women who ate the smaller root would engender daughters. Mattioli, 488. The same advice is repeated in Leonhart Fuchs, *De historia stirpium* (Basel, 1542), 711 and Jean Ruel, *Dioscorides Materia Medica* (Paris, 1516), 270.

³¹¹ Liébault, 189. “The signes of the Barrenesse of the man are these, great heate, which may be knownen by feeling him. The woman in receiuing feeleth the great heate of the seede.” Wirsung, 295.

necessarily more moderate or temperate for it.³¹² In men, excessive heat caused the body to too quickly burn up all of the “nourishment” of digestion necessary for semen production, and for this reason the speaker noted, “they dry out for generation more often than women do.”³¹³ Excessive heatedness and dryness could even manifest as an inability to produce semen altogether, so that, Liébault wrote, “If they are intemperately dry, the sperm will come out in a small quantity and will barely flow.”³¹⁴

Part of the ethic of moderate self-mastery encouraged in fertility texts thus involved not just madly indulging in hot foods and heating activities. Even though libido and the production of seed depended on the presence of male heat, many texts stressed that the ideal male temperament for generation was not the hot-headed choleric (hot and dry) type, who so often appeared in emblem literature and artistic works violently thrashing a woman, rather than pleasantly conversing with her, behaviors typically modeled in the emblematic sanguine man.³¹⁵ As Lemnius noted, too much “choler inflamed” would only “turn into mere desperate rage and fury” rather than the moderate heat required to sustain

³¹² The pro-woman *querelle* writer Lucrezia Marinella also argued this point to a further extreme: that men’s propensity for excesses of heat actually made them overall less tempered and rational, and thus morally inferior, compared to women. Lucrezia Marinella, *La nobiltà et l'eccellenza delle donne* (Venice, 1601). On Marinella’s influences who made similar arguments about the potentially destructive effects of unmoderated male heat, see Marguerite Deslauriers, “Marinella and Her Interlocutors: Hot Blood, Hot Words, Hot Deeds,” *Philosophical Studies* 174 (2017): 2525-37.

³¹³ Castiglione’s speaker also noted that this was the same reason why men tended to live shorter lives than women. Baldassare Castiglione, *Les quatre livres du Courtisan* [with original Italian], (Lyon, 1585), 393.

³¹⁴ Liébault, 102. The later, 1648 edition of *Aristoteles Masterpiece* contained a similar caution: “For to eject immoderately, weakens a Man, and wasts his Spirits, and too often causes the Seed by long continuance to be ineffectual, and not Manly enough,” 16.

³¹⁵ For a visual example, see Paster, “Unbearable Coldness,” figs. 2-3.

generativity.³¹⁶ Instead, medical practitioners held up the more moderate sanguine man, who lay somewhere between, at one extreme, cold, wet, feminine melancholy, and the most destructive extremes of masculine heat, as the moderate ideal towards which men should strive.

Texts thus explicitly cautioned their readers against excessive indulgence even in the heated remedies that they themselves recommended. Because men were already supposed to be normatively hot, unless they had a particularly frigid complexion, medical authors frequently warned that too much consumption of hot foods or engagement in heating activities could cause one to slip into an equally problematic excess of heat. Excessive heat could especially disrupt male reproductive ability because it predisposed men to destructive degrees of lustfulness, as “lechery and debauchery” often stemmed from heated passions.³¹⁷

Medieval medicine had long identified a range of pathologies of heat that could cause problematic degrees of desirousness in men.³¹⁸ Under normal conditions, the body’s heat caused the liver to build-up digested seed, and the heart to infuse that seed with airy “spirits.” A lack of heat—and thus, a lack of spirit—resulted in impotence. Too much heat, and the consequent accumulation of too much “spiritous” seed, resulted in the opposite problem: satyriasis or priapism, both conditions characterized by continual, involuntary erection of the penis.³¹⁹

³¹⁶ Lemnius, *Touchstone*, 43.

³¹⁷ Lemnius, *Touchstone*, 45.

³¹⁸ Satyriasis and priapism were often listed as disorders of the heat in medieval encyclopedia that discussed male-specific causes of sterility. For example, Arnaldus de Villanova, *Opera omnia* (Basil, 1585), 1514; Gilbertus Anglicus, *Compendium medicinae*, 287r.

³¹⁹ Galen’s contemporary, Aeretaeus the Cappadocian, had described satyriasis as so named because, like in paintings and sculptures depicting the sexually voracious satyrs, men afflicted by the disorder experienced a

Although satyriasis and priapism may have better facilitated male generation and sexual ability than, say, impotence, early modern medicine strongly associated the namesake deities of these conditions with male excess and, paradoxically, infertility in early modernity. Priapism owed its name to the enormous phallus that typically adorned garden statues of Priapus, a lesser, often god of procreation and fertility in ancient Greece and in imperial Rome.³²⁰ Depictions of Priapus in the sixteenth and seventeenth centuries typically portrayed his excessively large member in a ridiculous light, as in [Fig. 24] and large (especially erect) penises in general were associated with stupidity and sexual immoderation. In the opinion of Riolan, an excessively “great and large member renders witness of a low wit and an absent-minded man with the nature of an ass,” because it would provoke men to greater sexual excesses and, consequently, drain energy away from the brain through multiple seminal excretions.³²¹ Moreover, many medical texts further suggested that having an excessively large penis was detrimental to reproduction and stressed the importance of moderation both in one’s sexual practices and in one’s sexual morphology. As Jane Sharp (fl. 1671) noted, “Some men, but chiefly fools, have Yards so long that they are useless for generation,” because “the spirits in the seed flee away” during a lengthy transit to the womb. Instead, she suggested that it was best if the penis fell within a moderate “mean,” such that the “Yard be of a moderate size, not too long, not too short.”³²²

continual “erection of the genital organ.” Aretaeus the Cappadocian, *Αρεταίου Καππαδόκου Τα Σοζόμενα: The Extant works of Aretaeus, the Cappadocian*, trans. Francis Adams (London, 1856), book II, ch. XII, 288.

³²⁰ “Priapism, n.,” *OED*, 1408.

³²¹ Riolan, 389.

³²² Sharp, 24-5. Alessandro Massaria similarly argued that “One cause of barrenness on the mans part, which is of all Authours condemned, is, *penis longus*, or the overmuch length of the yard; by reason whereof, the seed is refrigerated, and taketh cold in the passage of the yard, before it can be injected from the stones, into the womb.” Massaria, 105-7.

Conditions which caused outsized or immoderate erections—like satyriasis or priapism—were similarly condemned because they pointed to conditions that boded not only bodily, but humoral, fluid excesses that could compromise a man’s fertility. Both conditions resulted from the superfluous generation of semen in the body and with it the accumulation of winds, or vital spirits, which inflated the penis and caused erection, stimulating a man to lechery and sexual excess. As the German physician and apothecary Christof Wirsung (1500-1571) explained, satyriasis and priapism most often resulted from an excess of “grosse thick vapors or dampes.” He thus recommended that men moderate the excessive windiness of their seed by avoiding the consumption of too many windy or flatulent foods, believed to inflate and erect the penis, like “Pease and Beanes, and other pottages.”³²³

Early modern medicine added priapism and satyriasis to more general disorders of the “passions” that could lead to male sexual excesses. Humoralism tended to collapse together physiology and psychology and so understood inordinate desire, like any other passion, to result from the excess of a particular material substance in the body. In the case of the male promiscuity, heat was the natural suspect, representing a slippage from the lustful, but more restrained, sanguine temperament, into the excessively lustful, destructive choleric. Both Richard Burton and Jacques Ferrand, who authored early seventeenth-century treatises on pathologies of desire, theorized that excessive heat could cause the production of superfluous quantities of semen and, in turn, extreme desirousness. In the words of Ferrand, copious heat produced copious blood, which was “the material cause of semen [and] the antecedent cause of love.”³²⁴ In excess, though, the feelings of love and desire stirred up by the seed could become pathological. An excessive build-up of semen would, according to Ferrand, “irritate, by its quantity or quality, to be expelled outside the body.” If it could not gain its release, it would “become corrupted in its reservoirs and, from there, eject into the spine and other hidden conduits a thousand vapors to the brain,

³²³ Wirsung, 276.

³²⁴ Ferrand, 52.

which trouble the faculties and principal virtues,” inevitably resulting in the psychological condition of lovesickness, resulting in a total loss of sexual self-control.³²⁵ Burton agreed with Ferrand and attributed immoderate amorousness to a “certain anatomi in the seed.” If men who proved “very spermatick” because of their excessive heat could not find a way to rid themselves of the excess, Burton wrote, “they cannot stop burning, for which cause these young men...are so subject to [lust].”³²⁶

But why was excessive heat and with it excessive desire considered problematic for male reproductive functionality? One might, after all, assume that lustful, heat-based conditions like priapism, satyriasis, and lovesickness promoted male reproductive ability more than, say, cold conditions like impotence, because they at least encouraged sexual activity. However, sixteenth- and seventeenth-century medical texts treated these conditions as impediments to conception, rather than facilitators of it, precisely *because* they predisposed one to sexual excess, which they universally regarded as both morally and physically dangerous for men. Tellingly, neither Ferrand nor Burton recommended that excessively “spermatick” men should indulge in sex to relieve their affliction.³²⁷ Both found the seemingly obvious cure—sexual release—to be not only morally intolerable, but certain to entrench and perpetuate the

³²⁵ Ferrand, 194-195.

³²⁶ Robert Burton, *Anatomy of Melancholy* (Oxford, 1638), 444. Originally published 1621. Burton here quoted the 1624 edition of Ferrand’s text. Liébault drew a similar connection between excessive heat and semen production and immoderate desirousness. In his view, excessive desire for sex was caused by “the too great abundance of semen, but also the sharpness and heat of it stimulates carnal concupiscence. Sometimes the excessive heat of the loins and spermatic vessels which incessantly draw in the seminal matter. Or the weakness [of these parts], which receive a greater quantity of seed than is needed. Or some itching or desire arising from a sharp, salty, or serous humor, which excites an insatiable desire in the shameful parts.” Liébault, 69-9.

³²⁷ Instead, Ferrand recommended that a surgeon should let the excess blood and encouraged the consumption of cold foods like mint and lettuce, while Burton preached the virtues of moderate diet and avoidance of idleness in cases of excessive heat.

underlying imbalance only further. Ferrand, for one, rejected the view of “certain physicians and philosophers” who advised “lechery and fornication” as a cure for desirousness.³²⁸ For men, he warned that indulgence in venery, spurred on by excesses of heat, would only further undermine a man’s reproductive health in the long-term because it decreased the quality and generativity of the seed over time. Even if excesses of heat usually compelled men towards sexual release, Ferrand argued that the seed emitted quickly became useless after repeated sexual encounters, because it did not allow the body enough time to properly digest the blood.

Paradoxically, one of the most common male-specific causes of infertility in early modern texts is thus overindulgence in sex or, more specifically, excessive loss of seed, whether from a pathology like satyriasis or from garden-variety sexual incontinence. When it came to treating infertility, most medical writers for this reason recommended a period of abstaining from sex, particularly in those of an exceedingly hot temperament or an excessive appetite for sex. Savonarola had cautioned that men facing infertility should restrain themselves from excessive coitus because “frequentation renders the sperm non-prolific.”³²⁹ As Joubert explained, in an excoriation of over-indulgent married couples, excessive sex prevented the semen from having adequate time to be “elaborated and perfected.”³³⁰ Massaria also declared that “from assiduous coitus all of the semen is drained.” The testicles only emitted the non-generative “serous humor they contained,” which contained little concocted blood. Therefore, Massaria claimed, men who frequented prostitutes often became sterile, because they only emitted un-concocted

³²⁸ Ferrand, “Au lecteur,” in *De la maladie d’amour*, n.p. Ferrand apparently found such a cure unobjectionable in the case of women suffering from green-sickness, so long as it took place within the lawful bounds of marriage—the typical treatment for women with this condition. For men, however, he, like many of his contemporaries, saw sex as a potentially dangerous and counterproductive solution.

³²⁹ Savonarola, f. 272r.

³³⁰ Joubert, 170.

fluid.³³¹ Those of an excessively hot temperament might even develop other equally non-generative conditions like premature ejaculation. In some cases, they might even ejaculate blood, the undigested form of semen. Wecker, for instance, claimed that one man so over-indulged in the aphrodisiac satyriion that after “knowing” a woman seventy times, he found that his “semen came out drip by drip” and had changed back into unconcocted blood.”³³²

Most importantly, early modern medical writers perceived male sexual indulgence to be counter-productive to male generative ability and especially problematic in the context of marriage. Louis de Serres wrote that men who “abused their youth with beautiful women” would, once married, find themselves sterile because they had wasted “their essential balm in plowing land from which they dare not and cannot collect the crop.” As proof, he cited the examples of Henry VIII and Alexander de’ Medici, both of whom experienced fertility problems because, in his opinion, they “only ever approached their wives after having entirely exhausted all their good genital matter with whores.”³³³ Even within marital relations with one’s wife, authors of medical treatises and conduct manuals similarly urged couples to refrain from too frequent intercourse, lest “too hot pleasure alter the semen and impede generation.”³³⁴

For all the same reasons, early modern medical texts often placed gonorrhea, a condition that caused excessive effusions of seminal matter, on the spectrum of male reproductive disorders. Gonorrhea harmed male reproductive health in the exact same way that excessive heat or desirousness did: because it caused excessive expulsions and diminished the fertility of the seed in the long-term. Gonorrhea differed

³³¹ Massaria, 218.

³³² Wecker, 195.

³³³ Louis de Serres, *Discours de la Nature, Causes, Signes, et Curation des Empechemens de la conception & de la sterilité des femmes* (Lyon: Antoine Chard, 1625), 4-5.

³³⁴ Pierre Charron, *De la Sagesse* (Paris, 1604), 619.

from willful lustfulness, however, in that it had a physiological rather than moral cause, resulting from an excess of moist humors. It also differed in that it usually presented in those with a cold, rather than an excessively hot, complexion. It also typically appeared unaccompanied by any sensation of pleasure or willful desire for release.

Early modern understandings of gonorrhea primarily derived from its description in Galen, who defined gonorrhea as a continual and uncontrollable emission of semen, brought on by an excess buildup of humor in the seminal vessels, rather than an infection of the genital organs.³³⁵ Galen used the term to refer to any involuntary emission of seed—not the pus-like discharge symptomatic of modern gonorrhea—and to a condition caused by an internal humoral imbalance, rather than an external infection. The etymology of premodern gonorrhea, from the Greek *gonos* (“seed”) and *rhoe* (“flow”), reflected this understanding, as literally a “seed flow.”³³⁶

Because of its association with spermatic flux, Galen had principally described gonorrhea not so much as an unpleasant sexual ailment as a serious reproductive disorder and a male-specific one at that.

³³⁵ DU, 439. Notably, Galen did not necessarily describe gonorrhea as the equivalent of the modern venereal disease, known to be caused by infection with the bacterium *Neisseria gonorrhoeae*. Like in the case of syphilis, there have been numerous attempts to retro-diagnose gonorrhea based on ancient descriptions of symptoms akin to those produced by the disease. The Parisian urologist Georges Luys, for instance, boldly declared that “gonorrhea is as old as mankind.” Georges Luys, *A Textbook on Gonorrhœa and Its Complications*, trans. Arthur Foerster (London: Baillière, Tindall and Cox, 1913), 1. These claims are now viewed with much more suspicion, especially since the sources on gonorrhea, like those analyzed above, do not describe gonorrhea in the same way that the infection is today, as it was semen, rather than pus, that was discharged. In any case, premodern medical authors understood and described gonorrhea according to a radically different model of the body than do modern physicians. See Mirko D. Grmek, *Diseases in the Ancient Greek World*, trans. Mireille and Leonard Muellner (Baltimore: Johns Hopkins University Press, 1989), 142–44; and Daniel Orrells, *Sex: Antiquity and Its Legacy* (London: Tauris, 2015), 83–89.

³³⁶ “Gonnorea,” in *TLL* vol. 6, pt. 2, pg. 2126 lin. 83–pg. 2127, lin. 15.

According to him, women sometimes experienced gonorrhea and spontaneous expulsions of their seed as well, but Galen described female gonorrhea as pleasurable and more likely to incite them towards sexual intercourse. For men, however, gonorrhea proved much more problematic. Not only did it not feel pleasurable, it actually made sex, and by extension reproduction, more difficult. Erection rarely accompanied the spermatic fluxes that resulted from gonorrhea, making it a condition closely allied to impotence. Furthermore, because the expulsions of seed associated with gonorrhea happened involuntarily, and they could occur during sleep, they were unlikely to be deposited in the appropriate vessel during sexual intercourse.

Galen also conceived of gonorrhea as a reproductive disorder because, in his view, it manifested as a “disease of the generative organs but not of the external organs.” It signaled a failure of the spermatic ducts to properly retain, and therefore to nourish and heat, their contents—a problem that could culminate in other more serious problems in the humoral composition of the seed.³³⁷ His contemporary, Aretaeus the Cappadocian also described the disorder as one in which continual flows of semen compromised the overall fecundity and generative potential of the seed. Untreated, gonorrhea could result in total sterility in men. “The fluid which runs off” in gonorrhea already appeared “thin, cold, colorless, and unfruitful,” but would become even more so over time, as it steadily drained the man of his native heat necessary to properly prepare the seed.³³⁸ For the sake of the “propagation of the species,” Aretaeus therefore recommended a speedy treatment, consisting of applications of wool and drying astringents to the

³³⁷ Galen, *Galen on the Affected Parts: Translation from the Greek Text with Explanatory Notes*, trans. Rudolph E. Siegel (New York: Karger, 1976), 193.

³³⁸ Aretaeus the Cappadocian, *Of Chronic Diseases*, in *The Extant Works of Aretaeus, the Cappadocian*, trans. Adam Francis (London: Sydenham Society, 1856), bk. XI, ch. V, 346.

genitals, as well as the use of “dry” ingredients like rue and dill to absorb the excess humor and restore normal, generative sexual function.³³⁹

Early modern texts retained this description of gonorrhea, as a reproductively harmful “flowing of a mans seede against his will,” although by the sixteenth century most writers apparently understood that gonorrhea could also be sexually transmitted, rather than solely the product of imbalances intrinsic to the individual’s body.³⁴⁰ John Hester for instance called it a “corruption, caused of the superfluous use of women, that are infected therewith,” and attributed it to the venereal spread of the “*gallici morbi*.³⁴¹ Medical writers nevertheless understood the affliction as most problematic for men’s health, even if it could also infect, and be transmitted by, women. In men, the loss of semen, and thus the winds necessary for erection along with it, made men “unlusty” and drained them of sexual vigor.³⁴² Excessive semen loss also inhibited “the fathering of children,” noted Conticelli, because it drained away the seminal matter necessary for generation in the first place.³⁴³

Although some acknowledged the infectious quality of gonorrhea, most therapeutic texts through the seventeenth century continued to treat the condition primarily as an internal humoral imbalance, stemming from excessive moisture, rather than an externally acquired infection. Like other male reproductive disorders, most medical practitioners still fit venereal infection into the schema of hot-cold-wet-dry, as is apparent in the fact that they persistently prescribed contrary “drying” ingredients to

³³⁹ Aretaeus, bk. II, ch. V, 488-9.

³⁴⁰ Peter Levens, *A right profitable booke for all diseases. Called The path-way to health* (London, 1587), 46.

³⁴¹ “Though a Gonorrhœa may arise from another Cause, yet it is rare to meet with a Gonorrhœa that is not a Symptom of the *Leues Venerea*, or contracted by a foul Copulation.” John Hester, *The pearle of practise, or Practisers pearle, for phisicke and chirurgerie* (London, 1594), 59-60.

³⁴² Levens, 46.

³⁴³ Conticelli, 238.

evaporate the excess of moisture that supposedly caused it.³⁴⁴ As in the case of satyriasis, excessive flows of seed caused by gonorrhea, or “spermatic flux” of any kind, drained the body of vital spirits necessary for most life processes and hence, reproduction as well. Liébault claimed that gonorrhea could at the extreme cause death in men due to the “great quantity of vital spirits which come out with the semen.” Thus, he urged that men “who endure this evil must not be ashamed to immediately seek the counsel of the physician.”³⁴⁵ Most often, however, the disease damaged generative potential of the body because it drained away the heat and spirits that made seed generative to begin with. Although gonorrhea caused excessive expulsion of seed—the opposite problem that attended men considered to have a “deficiency of seed”—men afflicted with the condition only expelled infertile fluid. The lack of “pleasure and feeling” that accompanied spontaneous emissions of seed in those afflicted by gonorrhea strongly indicated a lack of spiritousness in the seed and therefore a lack of generativity. As Jean Fernel explained:

In the so-called semen that emerges involuntarily through disease as it does through gonorrhea, there is no faculty, but it is entirely refuse, in no way suited to the function of begetting. No one could correctly call this semen, unless perhaps by invoking homonymy, in the way that people usually call a hand lacking all faculty of soul a ‘hand,’ and a dead man a ‘man.’³⁴⁶

Invoking Aristotle’s comparison of the seed to the creative power of the carpenter, Fernel argued that gonorrhea caused the expulsion of seed before it had time to be properly concocted by the heat of the

³⁴⁴ John Hester, for instance, suggested a drying plaster applied to the kidneys to alleviate symptoms, while Robert Pemell’s treatise of simple medicines recommended agnus castus, which “dryeth up the seed of generation.” Hester, 60. Robert Pemell, *Tractatus de simplicum medicamentorum facultatibus. A treatise of the nature and qualities of such simples as are most frequently used in the medicine* (London, 1652), 67.

³⁴⁵ Liébault, 77. Symphorien Champier also cautioned that diseases caused by male sexual excess, like gonorrhea, priapism, and satyriasis drained away the seed and could cause full body spasms and sudden death (“unde celeriter moriunter homines”). Champier, *Practica nova*, f. CV.

³⁴⁶ Fernel, 541.

body and endowed with the faculty of “soul.” Therefore, like the hand of a dead man, the semen would be unable to shape the feminine matter, in the way that normally, “the soul uses the hand to grasp, and the craftsman an axe, to build a bed skillfully out of timber.”³⁴⁷

Practical medicine also recognized gonorrhea not so much as a “sexual disorder,” problematic because of the irritation and discomfort it brought, but as a “reproductive disorder” that could inhibit generation. The physician Johann Baptiste Montani recounted one case history from among his *consilia*, in which he had to determine the cause of infertility in a couple consisting of a man “afflicted with gonorrhea” and his “noble wife.” Although Montani ultimately concluded that the wife’s coldness and the constriction of the womb had more than likely caused the couple’s mutual lack of issue, he noted that in men “gonorrhea can impede generation, when the seed is not well concocted” because seed made in “great excess does not make for generation.”³⁴⁸ The German physician Johannes Wittich also recorded in 1604 having cured a nobleman from Meissen of sterility due to a “gonorrhea” and continual flux of semen. Montani attributed to the man’s fluxes to an excessively cold and moist humor rather than an infection with the “*lue Gallica*,” causing him to suffer from “replete,” with sterile humors that flowed continually “from the head” in his sleep but ejected only with difficulty during sex. After having purged the man with drying concoctions of *oximelle*, Wittich happily reported his treatment as a success, because the man shortly thereafter “generated sons,” suggesting that practitioners primarily recognized gonorrhea as an obstacle to reproduction for men more so than an irritating sexual disorder.³⁴⁹

Whether due to willful lustfulness and sexual immorality, or an involuntary condition like satyriasis or gonorrhea, most medical authors agreed that excessive seed loss, caused by a preponderance

³⁴⁷ Fernel, 541.

³⁴⁸ Montani, in *GSM*, 323-324.

³⁴⁹ Johannes Wittich, *Nobilis(imo)rum ac Doctis(imo)rum Germaniae Medicorum Consilia* (Leipzig, 1604), 402-403.

of moisture or wet humors, hindered male fertility by preventing the seed from being fully concocted. It could also prove harmful to men's overall livelihood, as it also put an enormous strain on the principal parts responsible for generating it. The fact that the essential organs—the liver, heart, and brain—had a hand in the production of semen meant that excessive expulsions drained the male body of vital heat and humors necessary for maintaining life itself. As the Hippocratics had argued, because the male seed originated from the “most potent part” of the body’s several humors, the emission of semen weakened the whole body, explaining the sensation of exhaustion that typically followed sexual activity.³⁵⁰ In hematogenesis, excessive sex also drew away vital nutrients that might have been otherwise used to produce fat or other fluids.³⁵¹ Sexual intercourse did not harm women as much because they emitted only a “small quantity of seed,” if any, and it did not contain spirits from the major organs from the heart. Medical writers like Liébault thus described seed loss as a problem mainly for men who more often became weak due to “immoderate usage of Venus” than women.³⁵²

The notion that seed loss could be harmful to men predominated in medical writing of the sixteenth and seventeenth centuries, which often warned men of the long-term consequences of sexual immoderation to their health. Théophile Bonet cautioned that “not only the vital Spirits, but also the animal and natural be spent sooner and in greater plenty by superfluous Venus than by any other laborious exercise of the Body,” substantially weakening the heart and brain.³⁵³ Thomas Cogan remarked that out of all the non-naturals in which one could indulge, “to exceed the meane in labour, in eating, and

³⁵⁰ “The evidence that it is the most potent part which is secreted is the fact that even though the actual amount we emit in intercourse is very small, we are weakened by its loss.” Hippocrates, *De genitura liber*, 1.1, 1-3.

³⁵¹ Aristotle, *Generation*, 1.18, 725b19-22.

³⁵² Liébault, 61-2.

³⁵³ Bonet, 545.

drinking, in sleeping, or waking doth not so greatly impaire a mans health as *Immoderate coitus...*and no mervaile, considering that the very roote and foundation of our life doth consist in *semine & sanguine.*”³⁵⁴

Too much sex, inspired by too much heat, could in the long term diminish male fertility because of its effects on the principal organs. Gregor Reisch’s textbook explained that an “excessive emission” of semen caused the

entire body to weaken and eventually die, which (alas) happens to many men who are made like a horse or a mule, in whom there is no understanding. For since the semen is made from the substance of the final, useful food, and steeped in the vital spirit, the nourishment of the limbs and life of the body is drawn away by its inordinate ejection. Therefore those who have much intercourse quickly weaken and die, as is evident in sparrows.³⁵⁵

Excessive sex thus weakened the body, accelerated aging, and could cause death in men, because it drew away the vital heat and animating spirits from other necessary life functions. As Ian Moulton has observed, it was no accident that “two of the most common euphemisms for orgasm in the early modern period were ‘to spend’ and ‘to die,’ both of which imply a loss of vital energy or material.”³⁵⁶ Because in three-organ, three-fluid manner of thinking, expenditure of semen directly drew upon the vital energy of the major organs, male orgasm was considered to be particularly “physically debilitating.”³⁵⁷

Medical writers thought that the drying effects of excessive emissions especially harmed the brain because it contributed the seminal moisture that composed the fluid portion of the semen. Most medical authors of the sixteenth and seventeenth centuries still accepted the existence of a direct pathway between

³⁵⁴ Thomas Cogan, *The Haven of Health* (London, 1636), 280-281.

³⁵⁵ Reisch, lib. IX, cap. XXXVII

³⁵⁶ Ian Frederick Moulton, *Before Pornography: Erotic Writing in Early Modern England* (Oxford: Oxford University Press, 2000), 175.

³⁵⁷ Moulton, 175.

the testicles and the brain that, when disrupted, could harm one's fertility. Citing Hippocrates' example of the Scythians, many writers reiterated the belief that either cutting or being wounded in the brain or the juvenile veins behind the ears would invariably result in male impotence and infertility. Wirsung cautioned that although contemporary surgeons sometimes bled from these veins to alleviate painful headaches, "that such as use it thereby are made barren or unfruitfull"—a condition that Liébault stressed was irreversible and "incurable."³⁵⁸ The surgeon Paré also discouraged his colleagues from performing an incision of the juvenile veins in men because, as he explained, doing so disrupted the flows of moist seminal matter from the brain to testicles:

[This] cut after healing makes this way solid in healing so that the matter of semen cannot descend and deprives the testicles of the communication of the brain, so that they cannot receive from it, neither the animal spirit nor the matter, so that the rest of the semen is weak and in too little quantity and by consequence infecund.³⁵⁹

³⁵⁸ Wirsung, 26. Liébault, 198. On the other hand, Peter Levens argued that bleeding from these veins was "good for the blaines and pimpells of the head for the meigrim and ache of the head, it helpeth mans minde, it is good for toothache, and for the goums, and for all vices in the mouth, and it purgeth the reume of the head." Levens, 54.

³⁵⁹ Paré, 723. Massaria, among others, included similar cautions on the grounds that "the seed flows from the veins behind the ears by these veins." Massaria, 22. This seems to have been common knowledge, appearing in cheap, vernacular "question-and-answer" style miscellanies, such as one French text from 1560, which claimed that the Ethiopians (rather than the Scythians) castrated their livestock by cutting these veins, because "the sperm for the most part descends from the brain by the veins which are around the temples, which being cut, it cannot let down any humor from the brain and so all means of generation is extinguished." Anon., *Les raisons naturelles et morales de toutes choses qui tombent ordinairement en devis familiers* (Paris, 1560), n.p. Several theses defended in the seventeenth-century Paris Faculty similarly argued that cutting the juvenile veins would cause infertility in men. Baron, *Agitae*, 7, 12.

The supposed connection between the brain and testicles meant that excessive flows of semen could directly affect one's mental health. Ferrand had alluded to this when he observed that the retention of semen in the testicles could send harmful "vapors" up the spine to the brain. The opposite problem, however—too frequent emissions of semen—also harmed the brain because it drained away the brain's supply of nervous moisture or animal spirits with it. As the Spanish anatomist Andrés a Laguna put it, "the testicles suck out and plunder the brain's purest substance" during repeated intercourse and emissions.³⁶⁰ The consequences could be fatal because the brain's animal spirits directed the motion and vitality of the whole body. In one well-known instance cited by the fourteenth-century physician Albertus Magnus, a "hoary old monk"

...approached a certain beautiful mistress and just like a starving man, he demanded her sixty-six times before the striking of matins; the next day he fell down and, on the very same day, was dead. And because he was a noble, his body was opened up and his brain was found to be entirely evacuated, so much so that nothing more of it remained than the size of a pomegranate, and similarly his eyes were destroyed.³⁶¹

This, Albertus claimed, proved "that intercourse particularly evacuates the brain."³⁶² Albertus's anecdote was often repeated in sixteenth- and seventeenth-century works of medicine as evidence for the dangerous effects of too much sex on the brain, including by Champier, who quoted the example as proof that men who had too much sex would suffer from debilities of the brain and eyes.³⁶³

Too much sex also supposedly caused premature aging in men, or the "cooling" off, which resulted in the loss of reproductive function and impotence that often accompanied age. Galen and

³⁶⁰ Andrés a Laguna, 279.

³⁶¹ Albertus Magnus, *Questions Concerning Aristotle's On Animals*, trans. Irven M. Resnick and Kenneth F. Kitchell, Jr. (Washington, D.C.: Catholic University of America Press, 2008), bk. 15, q. 14, 460.

³⁶² Magnus, *Questions*, bk. 15, q. 14, 460. Champier, 54. The advice was also repeated in Ketham, f. 18.

³⁶³ Champier, *Periarchon*, 54.

Aristotle both agreed that excessive sexual indulgence drained the semen from the blood vessels, making the body become progressively drier and colder—qualities strongly associated with aging and death.³⁶⁴ The humoral body contained only a finite amount of heat that, once lost, could not be easily restored. The quantity of heat naturally diminished over time, explaining old age and decline—for, Lemnius wrote, “death is only the extinction of the natural heat.”³⁶⁵ Therefore, Massaria claimed that those who use “immoderate coitus, generally they will be very weak, as if the whole body had been defrauded of blood and spirit, so much so that many who have been too given to pleasure have killed themselves in the act” or appear to ‘grow old’ prematurely.³⁶⁶ William Vaughn cautioned his readers that, “immoderate venery...hasteneth on old age and death” because semen loss “harmeth a man more, then if hee should bleed forty times as much.” For the same reason Thomas Cogan argued that hot, lecherous sparrows lived only very short lifespans, and “though incontinency consume[d] themselves.”³⁶⁷ The heated passions of youth spurred one to sexual activity, but too much indulgence diminished the body’s overall quantity of heat and rapidly accelerated the process of aging. Paradoxically, then, the consequence of too much sex was ultimately the loss of sexual ability altogether. In elderly men, the consequences could be fatal

³⁶⁴ Galen, *De semine*, 1.16, 30-31; 1.16, 139-141. Avicenna too agreed that inordinate venery would result in premature aging, due to the loss of youthful heat. Avicenna, 3.20, 1, 36.

³⁶⁵ Lemnius, *Touchstone*, 28.

³⁶⁶ Massaria, 218. “A Greek philosopher said that when one concedes to the carnal act, so one detracts from one's life[time].” La Perrière, f. 90v.

³⁶⁷ William Vaughan, *Directions for health, naturall and artificiall: derived from the best physicians, as well as moderne as antient* (London, 1626), 65. Cogan, 281. In a similar mode of thinking, “Why do animals that often have children have short lives?” asked a popular French text on “natural” phenomena. It answered: “Because with spermatic superfluities, they lose a lot of humidity, which is the true caretaker of the natural heat.” *Raisons naturelles*, n.p.

because they were already believed to be colder and drier than younger men, and so would be dried out even more by too much indulgence.³⁶⁸

Because excessive sexual indulgence caused a loss of masculine heat, paradoxically, excessive male sexuality proved not only life threatening, but also potentially effeminating. As Todd Reeser has found, Renaissance moral and marriage tracts often cautioned men against developing an excessive fondness for women, even their own wives, because through frequent intercourse, men might end up becoming more like immoderate women, unable to restrain their desires or passions.³⁶⁹ Montaigne, for one, suggested that “even the pleasures [husbands] get in making love to their wives are condemned, unless moderation is observed,” and noted that, even within matrimony, some men risked slipping into feminine “licentiousness and debauchery, just as in an illicit affair.”³⁷⁰ The fear that frequent intercourse with women could lead to male disempowerment did not only depend on social or moral prescription about appropriate relationships between men and women. It also had a physical basis, rooted in the instability of the heat and humoral fluids. As Mark Breitenberg put it, “The paradox in this cultural and anatomical code is that if the generation of semen (heated blood) is the most quintessentially masculine moment, it is also, finally, just a moment. Thus, ejaculation represents the supreme moment of masculine disempowerment *and* vulnerability—an ‘emptying out’ of the masculine principle.”³⁷¹

Emblem literature—such as in the woodcut of Glory fleeing the sexual glutton from Fig. 13—similarly implied that sexual excesses harmed men because they made them weak, idle, and irrational, just like the morally weaker, less rational women with whom they associated. As the title of the emblem in

³⁶⁸ “The venereal usage is harmful to old men and poison to the decrepit, as they are dry and the carnal act dries them more.” La Perrière, f. 91r.

³⁶⁹ Reeser, 17.

³⁷⁰ Quoted in Reeser, 17.

³⁷¹ Breitenberg, 50.

Fig. 25 warned in no uncertain terms, “Sex Effeminate [Libido Effoeminans].” According to the accompanying text, any man who washed himself in the metaphorical Fountain of Salmacis, which is “nothing other than the cunt, sweet icebox of our raging lust,” would emerge only a “half a man,” having lost “his hard virtue and his natural heat,” and been made weak and feminine by “moist lust.” As Ian Moulton has aptly observed, this ambivalence towards heterosexual sex in texts that otherwise constructed “sexual relations between men and women... as a ‘natural’ site for the demonstration of masculine mastery” suggests that early moderns saw heterosexual sex as both potentially empowering for men, but also potentially effeminating because “to take erotic possession of a woman was to weaken oneself as a man, spiritually, through a moral surrender to effeminate pleasure.”³⁷² In medical texts concerned with the maintenance and preservation of male fertility, excessive sex could become quite literally effeminating because it compromised the heat and seminal moisture necessary both for male generativity and the expression of masculine power through generation.

Medical texts thus understood the effects of excessive sex to not just be morally, but physically feminizing. The “spending of valuable seed” posed a literal threat to moderate, generative manhood because it drained away the heat, causing one to become cooler, less fertile, and worst of all, effeminate.³⁷³ Repeated expulsions of semen drew the body’s heat away from elsewhere in the body to the genitals. As the author of the pseudo-Galenic text, *De spermate*, explained, men did not menstruate because they were hotter and therefore did not need to purge undigested superfluities from their bodies. Rather, their vital heat dried up the superfluities of the blood and released them outwards, through tiny pores which turned into either body hair or vapor, causing men to have stronger breath, more sweat, and more hair on the face and body.³⁷⁴ Consequently, by draining away the masculine heat, and reducing one the digestive powers of the whole body, excessive sexual indulgence would cause these features to

³⁷² Moulton, 28.

³⁷³ Moulton, 28.

³⁷⁴ Pahta 171; *De spermate*, f. 29r.

disappear.³⁷⁵ As Lemnius explained, excessively hot men with a taste for “leacherie and whoorehunting, and thrall to all other pleasures of the body,” lost many of their masculine bodily traits as the heat drained from their body in “ouermuch profusion and wast of humour.” They lost their body hair, their skin grew pale, and all parts of the body became “thine & wearish”—all physical traits more strongly associated with women and eunuchs. Eventually, excessively hot men would lose their lust altogether and become impotent.³⁷⁶

Although most scholars have passed over histories of male infertility in pre-modernity, this more expansive reading of a spectrum of male reproductive problems reveals that early modern medical texts did discuss a range of male reproductive disorders and that men too occupied a substantial place in early modern discourses on infertility and reproductive therapies. First, these discussions reveal that early modern medical commentators strongly associated the normative functions of male bodies with generation. To contemporary medical commentators, all the disorders named in this chapter—sterile coldness, gonorrhea, satyriasis, and others—shared in common a physiological paradigm that posited normative maleness as fertile, fluid, and heated, closely associating male being in its essence with reproductive function and power. In some sense then, gender *was* generativity for men, and served to explain certain key masculine physical characteristics—like the presence of a beard or other physiognomic signs—suggesting that contemporary cultural values surrounding reproduction were far from irrelevant to discussion of male bodies.

Finally, not only did contemporaries view any departure from a fertile, generative ideal as problematic for men, but expended a great deal of effort in explaining and providing treatment for male reproductive disorders. Although the balanced, sanguine man represented the normative state of maleness in the abstract, practical medical texts also presented sanguinity as something of an ideal that had to be

³⁷⁵ Aretaeus, 489.

³⁷⁶ Lemnius, *Touchstone of Complexions*, trans. Thomas Newton (London, 1576), 45-6.

achieved, or at least actively maintained. As therapeutic texts of the sixteenth and seventeenth centuries frequently reiterated, male generativity stood at constant risk of becoming destabilized due to immoderate excess or effeminating behaviors. Although the ideally generative, perfectly balanced sanguine man theoretically constituted the “normal” male body, therapeutic medical texts presented sanguinity, and with it one’s generativity, as a state that could be easily lost or undermined. As Lemnius’s caution against above suggested, the ideal male temperament existed somewhere between two extremes of equally effeminating excess and lack. On the one hand, a lack of heat could compromise a man’s fertility, libido, and even cause him to develop more feminine physical characteristics. On the other hand, though, an excess of heat could in the long-term cause men to develop effeminating coldness.

Medical texts of the sixteenth and seventeenth centuries thus not only recognized the existence of many male-specific reproductive disorders beyond straightforward sterility alone—among them, the production of only female children, satyriasis, priapism, and gonorrhea—they also prescribed a specifically gendered regimen for their treatment that stressed the importance of continual moderation and self-mastery over one’s fluids and temperaments to normative maleness. The existence of such a regimen repudiates the assumption that early modern practical medicine had nothing to say about male fertility or the physical character of manhood, or that prevailing cultural investments the nature of masculinity had little influence on discussions of male bodies.

The next chapter further explores the therapeutic and practical dimensions of fluid-centric thinking about the character of male bodies in early modernity as it applied to contemporary discussions of male impotence. In it, I show that early modern medical writers also viewed impotence as a disorder caused by seminal imbalance that could, like the other kinds of imbalance discussed in this chapter, also undermine the ideally generative character of maleness.

FIGURES: CHAPTER III

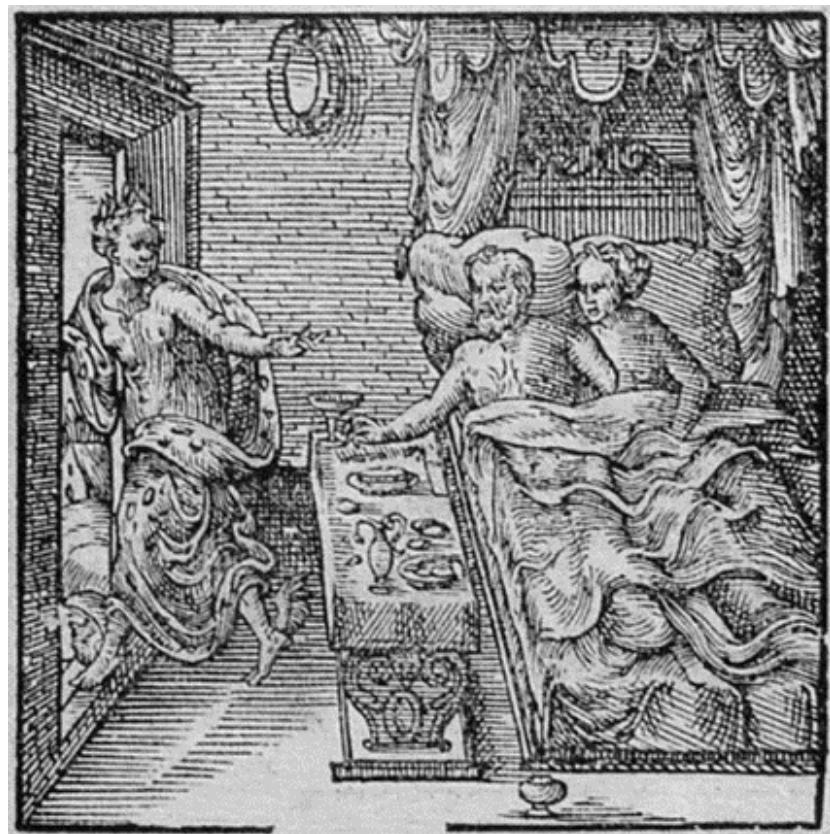
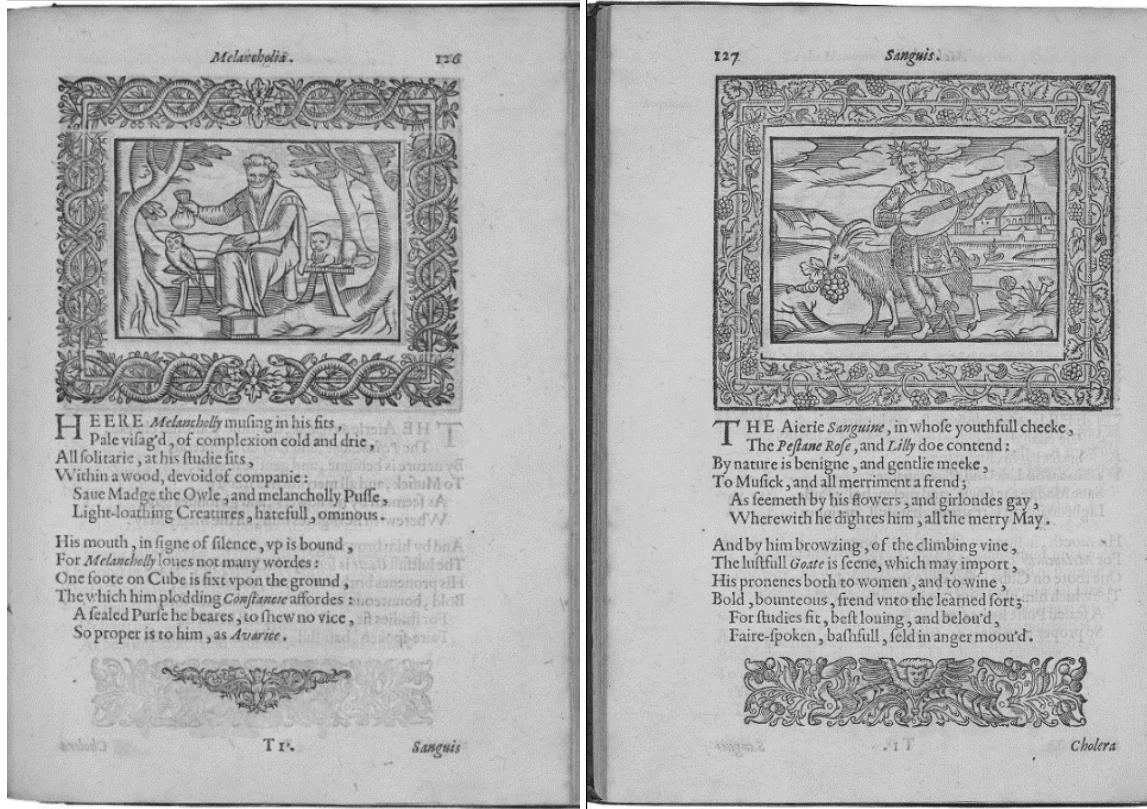


Fig. 13. “*Venter, pluma, Venus laudem fugienda sequenti* [the belly; a feather bed; lust; one who seeks praise should run from these things].” The accompanying text reads, “Famous Glory! Where are you rushing in flight, who is this man you are leaving that has driven you away? I am fleeing from the man that lounges on soft down; and the accomplice of Venus; And the slave of gluttony.” Hadrianus Junius, *Emblemata* (Antwerp, 1565).



Fig. 14. An engraving representing the moderately hot month of April as a “loving couple,” featuring a young, bearded man cheerfully entertaining a young woman—a typical representation of both the season of spring and masculine youth in sixteenth- and seventeenth-century calendar engravings and depictions of the “Ages of Man.” The image and surrounding text are highly suggestive of the association between heat and male fertility, describing the season as a time in which the “earth, closed by coldness” opens up to produce “many flowers.” Crispijn Van Passe, *April: minnend paar* (s.l., 1574). Used by permission of the Universiteitsbibliotheek Gent under a Creative Commons Attribution-ShareAlike 4.0 International License



Figs. 15-16. The melancholic and sanguine man. Peacham, 126-7. Call #: STC 19511. Used by permission of the Folger

Shakespeare Library under a Creative Commons Attribution-ShareAlike 4.0 International License.



Fig. 17. The emblem above left describes young adulthood as a period in life distinguished from colder childhood by an increase in bodily heat and with it, fertility, as “nurturing Venus claims [youth] as her own by right. During this time, the appetite [*genius*] is inflamed, the body is filled with seed, and love rages constantly in a lively body.” Guillaume de la Perrière, *Morosophie* (Lyon, 1553), f. 7v-8r. Image courtesy of the University of Glasgow.

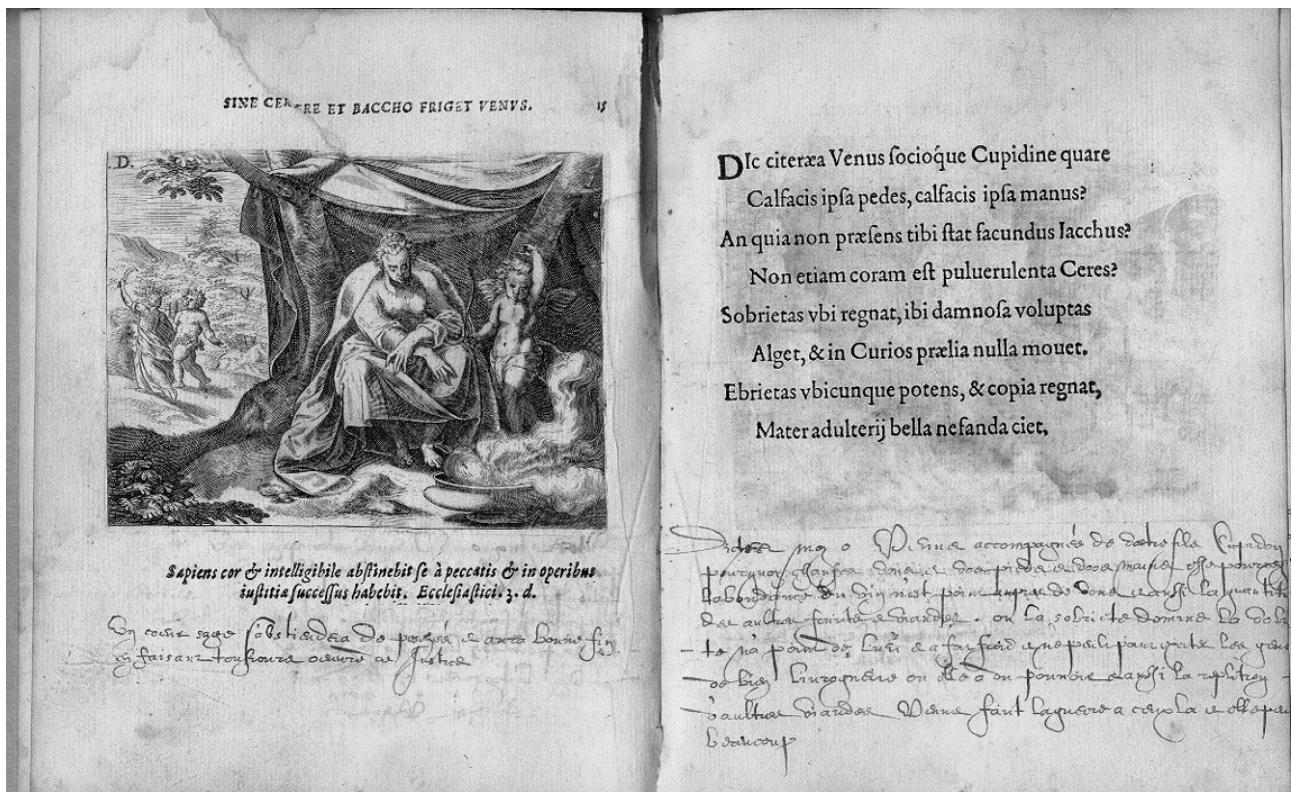


Fig. 18. This emblem illustrates the common proverb, “Sine Cerere et Baccho friget Venus,” or “without Ceres and Bacchus,” the gods of grain and wine, respectively, “Venus grows cold.” In a humoral paradigm, such pronouncements would have been understood to be physiologically true because semen was understood to be digested from ingested nutrient by the heat of the liver. Laurens van Haecht Goidtsenhoven (Laurentius Haechtanuſ) and Gérard de Jode, *Mikrokosmos = Parvus mundus* (Antwerp: Gérard de Jode, 1579), 15. Image courtesy of the University of Mannheim.



Fig. 19. The emblem above names lettuce, widely regarded as a cold, wet food, as an “amulet against love.” After her lover, Adonis, has his testicles gored by a boar, Venus leaves him behind while holding a garland of lettuce leaves. The accompanying text thus concludes that “lettuce deadens the procreative field even more than the aphrodisiac rocket [*salax*, a hot food] can stimulate it.” From Andrea Alciato, *Les emblemes latin-francois* (Paris, 1584), 209. Image courtesy of the University of Glasgow.



Figs. 20-1. The goat and the scorpion as symbols of lust. As the text accompanying the left-most image explains, goats were regarded as lascivious because of their association with the satyrs, who, “temples garlanded with the herb rocket, provide unmistakable symbols of desire without restraint. Rocket stimulates desire, the goat is a symbol of sexual appetite, and the satyrs are always lusting after the nymphs.” Alciato, f. 102r-v. The emblem of “Libidinousness” on the right thus depicts the goat, along with the symbol of Scorpio, the astrological sign that ruled over the genital parts, as the quintessential embodiments of lust.

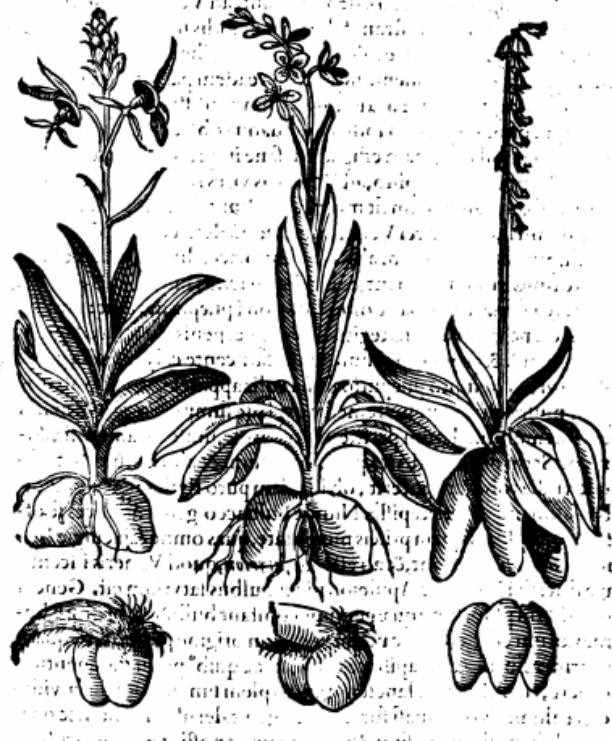
Cesare Ripa, *Nova iconologia* (Padua, 1618), 312. Images courtesy of the University of Glasgow.



Fig. 22. Venus's chariot being pulled by sparrows (or doves) and swans. From Hadrianus Junius, *Emblematum* (Antwerp, 1565),

42. Image courtesy of the University of Glasgow.

ORCHIDVM species tres finxit; duas didymi, tertiam triorchia,
simplici bulbi, cum plerq; sint, omisimus. Confer cum humanū,
& in nihilo discrepabunt.



Humanis corporibus utrā illa, quæ sanitatem, morbos mortemq;
spectant, alias quoq; herbas afferre suis virib. posse affirmant; ut puta
generandi seminis facultatē, sicut qui tū sticlus appellatus est, &
magnum ad coitum datum ē lacte captio efficacē esse. Affer & sa-
tyrium

Coquale

Fig. 23. Satyron, depicted with an implied physiognomical relationship to the male testicles. Giambattista Della Porta, *De humana physiognomia Libri IV* (Frankfurt, 1608), 216.



Fig. 24. Depiction of Priapus with his characteristically oversized penis. Antoine Le Pois, *Discovrs svr les medalles et gravevres antiques, principalement romaines* (Paris, 1579), f. 146v.



Fig. 25. "The Fountain of Salmacis. Sex Effeminate." In Barthélemy Anneau, *Imagination poétique* (Paris, 1552), 44-5. Image courtesy of the University of Glasgow.

CHAPTER IV: RECONCEPTUALIZING MALE IMPOTENCE IN EARLY MODERN MEDICINE

Impotence has already received much attention from scholars of early modern masculinities, who have identified it as the principal source of anxiety about male sexuality and male bodies in the sixteenth and seventeenth centuries. Patricia Parker, Mark Breitenberg, and others have already remarked at length on early modernity's seemingly "obsessive preoccupation" with the specter of impotence, as uniquely symbolic of the tensions inherent to early modern masculinities and the maintenance of patriarchal power.³⁷⁷ In the context of early modern Europe, impotence, perhaps more than other male-specific ailments, clearly undermined a man's ability to exert both mastery of his own self and his own body. It also undermined his ability to exert mastery over others, most especially his wife, as cuckoldry was believed to be the natural and inevitable corollary of impotence—a favorite punchline in innumerable popular ballads and plays in the sixteenth and seventeenth centuries.³⁷⁸ As Elizabeth Foyster has found in the case of England and Edward J. Behrend-Martínez of Spain, seventeenth-century cultural and political norms centered "the responsibility for household control on male sexual potency."³⁷⁹ A virile husband helped contain potentially immoderate and unrestrained female sexuality; an impotent husband, conversely, had no legitimate authority over his wife. In the context of seventeenth-century Europe, where political metaphors likened kings to fathers and households to kingdoms, the failure of a man to fully perform his role as a head of household was thus also vested with political meanings that boded disorder.³⁸⁰

³⁷⁷ Parker, "Gender Ideology, Gender Change," 345. Breitenberg, 2.

³⁷⁸ McLaren, *Impotence*, 58.

³⁷⁹ Behrend-Martínez, 5; Foyster, 9.

³⁸⁰ Forster, 725; Merrick, 187.

The bulk of this previous scholarship has, however, focused more on the gendered and psychic consequences of impotence at the expense of how these forces shaped, and were shaped by cultural understandings of the male body. However, the tendency among historians has been to treat impotence as a stand-alone condition divorced from the broader context of physiological and humoral thinking in early modernity. They have thus been led to view impotence in the past as little different than how erectile dysfunction is understood today. Despite the enormous literature existing on the subject, few have seriously questioned if “impotence” in the past has always signified the same thing as erectile dysfunction in the present—a condition today understood to be most often psychological or circulatory, temporary or age-related, and usually unrelated to one’s fertility.³⁸¹ Historians have already correctly observed that impotence may have carried a different cultural significance in the past, made evident by early moderns’ preoccupation with cuckoldry. Nevertheless, it has been incorrectly assumed that the way in which the condition, or male bodies in general, were *physically* constructed did not change significantly, especially when read into the fluid-centered, three-organ model described in the previous three chapters. This chapter looks seriously at what impotence actually *was* not just in terms of its social importance, but in

³⁸¹ The term “impotence” for sexual incapacity has generally fallen out of modern usage in favor of more specific and less value-laden terminology like erectile dysfunction or ejaculatory dysfunction. The National Institutes of Health formally rejected the term impotence in 1992. See *Impotence: NIH Consensus Statement* 10, no. 4 (Dec 7-9, 1992): 1-31. Modern urologists also generally see sexual dysfunction as having separate causes from male infertility. Research has found little connection between erectile dysfunction and fertility, measured by spermatogenesis or levels of testosterone. As of late, it is thought that erectile dysfunction more often has psychological or cardiovascular causes than hormonal ones. Matthew Coward, et al., “Fertility Related Quality of Life, Gonadal Function and Erectile Dysfunction in Male Partners of Couples with Unexplained Infertility,” *The Journal of Urology* 202, no. 2 (2019): 379-384. Male infertility patients often experience higher levels of erectile dysfunction, but this has been linked to their generally having poorer mental health and quality of life rather than testosterone deficiency. Francesco Lotti and Mario Maggi, “Sexual Dysfunction and Male Infertility,” *Nature Reviews Urology* 15 (2018): 287–307.

material terms—that is, how it was described in the context of sixteenth- and seventeenth-century understandings of maleness and the male body. This chapter therefore examines, or rather re-examines, male impotence in relationship to these broader early modern understandings of the fluid-centric male body. I treat impotence in this separate chapter, however, in order to show that, in fact, early moderns did not think of this as a separate ailment from infertility at all. Early modern practitioners considered both conditions as, socially and physiologically, closely allied disorders.

As illustrated in the previous chapters, early modern medical writers often described the physiological functions of male bodies in terms that seem entirely alien to modernity. Distinctly non-modern discussions of heat, spirits, and moisture dominated therapeutic and practical discussions of male reproductive and sexual functionality. Meanwhile, practitioners focused only secondarily on conditions of the penis and testicles, next to the humoral contributions of the heart, liver, and brain. Although these terms described essentially the same physical phenomena today explained using hormones, nerves, or circulation of the blood today, these qualities were culturally valued in different ways in early modern medical discourses, such that maleness itself was supposed to be normatively constructed around a delicate balance between the fluid qualities of heat, spirits, and moisture. Material explanations of maleness centered the inner quality of the seed and the virile heat over and above the exterior condition of the genitals, which were understood as a contingent phenomenon stemming from the heat.

The same applied to impotence, which medical practitioners often described as something more general than a loss of penile functionality. Both male impotence and infertility often featured in medical texts as closely allied, or even interchangeable, disorders, both socially and physiologically. Socially, impotence proved problematic not just because it estranged married couples, but because it obviously prevented reproductive sex, and the attainment of the “dividends of patriarchy” that came with fatherhood and the production of heirs.³⁸² However, physiology also tended to support a view of impotence and

³⁸² McCleve, “Masculinity,” 53.

infertility as two sides of the same coin. Medical texts constructed male generative and sexual ability as literally and inextricably linked because both depended on the inner fluid economy of heat, spirits, and moisture. As we have seen, humoral medicine did not so neatly distinguish between impotence and infertility because both were understood as having the same antecedent cause: an indisposition or imbalance in the semen, believed to be the motive force behind all aspects of male sexuality, including feelings of desire, erection, ejaculation, and native reproductive ability. As the previous chapter demonstrated, the early modern spectrum of male reproductive disorders included several conditions that blurred the neater, modern distinction between purely “sexual” and “reproductive disorders, as a balance among the three seminal fluids was supposed to be entirely responsible both for male infertility, as well as male sexual ability. For instance, what might be classed as modern “sexual” disorders like gonorrhea and satyriasis in would have been described by early modern practitioners principally as problems of generation in men stemming from seminal imbalances.

Medical texts also regularly treated imbalances leading to sterility almost interchangeably with sexual impotence. Coldness, for instance, could diminish the efficient principle in the male semen, causing simple infertility. However, as the heat of the liver supposedly inflamed sexual desire and the “windy” spirits from the heart caused tumescence, excessive coldness or wetness was also associated with diminished sexual desire and impotence in men. Other imbalances in the semen—too much air, too much moisture, or too much heat—could also cause sexual problems because they either prevented erection and ejaculation or promoted it in dangerous excess. In other words, humoral imbalances in the male seed could cause not only infertility in the sense that it made the male principle non-generative. It also had a direct effect on sexual, as well as reproductive functionality. Nor did humoral medicine connect psychology and physiology in the same way, as the brain was believed to have a direct, material effect on the composition of the semen. The possession or lack of typically masculine physical and mental traits was explainable in semen-centric terms because its production depended on the heat of the whole body and the influence of central organs like the heart and liver. Early modern medical texts that described

male impotence as a seed-based condition thus did not always so neatly distinguish impotence from infertility.

Unlike in modernity, pre-modern medical practitioners tended to treat impotence and infertility as materially intertwined conditions because all of the functions of normative maleness depended on the humoral composition of the seed. The humoral balance of seed determined not just one's fertility, but the ability to become erect or one's levels of desirousness, not to mention aspects of one's personality (as in the case of the melancholy man). Take for instance, the mechanism by which the "hot" and "cold" treatments for male generative ability were supposed to work, something often overlooked by historians who have labeled these as straightforward "impotence cures" or "aphrodisiacs." Practitioners in fact often prescribed these recipes to treat both flagging libido and infertility, because it was believed that increasing the heat of the body, and the generative quality of the seed in turn promoted *both* sexual activity and fertility. As a fluid-based condition, impotence could also manifest in a number of ways other than as a lack of erection, as other problems that less clearly prevented sex so much as reproduction, like an inability to ejaculate, premature ejaculation, or the inability to ejaculate sufficiently generative matter.

The way in which gender mapped onto the spectrum of hot and cold further muddied the distinction between the two conditions. To be a "cold" man in early modernity was to be identified as a particular type of man, not just one afflicted by the occasional bout of sexual troubles. Though treatable, it was usually a chronic condition that implicated all aspects of one's gendered and sexual life, so that coldness signaled at once sexual ineptitude, sterility, and effeminacy—a condition from which reproductive and sexual ability cannot be easily disentangled and treated separately from one another. Just like other male reproductive disorders, then, impotence too figured as a generative disorder stemming from a humoral imbalance of the three seminal fluids.

Humoral medicine thus did not just describe as-yet-undiscovered aspects of physiology like testosterone using different words, like "seed," "heat," or "spirits." Sixteenth- and seventeenth-century understandings of maleness, and thus of conditions like impotence and infertility, fundamentally differed

from modern, hormonal explanations and categorizations because they operated according to a different model of the body. In order to fully understand the relationship between cultural constructions of masculinity and male embodiment in early modernity, I argue for a more precise reconceptualization of impotence in the terms in which it would have been understood in the context of the sixteenth and seventeenth centuries. In doing so, I suggest that it is perhaps somewhat misleading that scholars have placed such an outsized degree of emphasis on impotence alone as the sole, isolated male reproductive problem of interest to early moderns. Rather, I propose that impotence existed as just one spoke on a broader spectrum of male *generative* disorders identified in the previous chapter.

This chapter begins by examining how the authors of medical texts described impotence in ways that often confused the condition with infertility and treated it as a fluid defect in the composition of the seminal fluids. As in the case of other reproductive disorders, therapeutic and practical medical texts treated impotence primarily as a condition of humoral imbalance, mainly as a defect of heat or frigidity or a lack of spirit or winds. Paradoxically, although cultural and literary sources often described male impotence as a condition characterized by lack—morally, suggesting a lack of control over one’s own body and physiologically, a lack of heat or seminal fluids—medical writers also construed impotence as a condition that simultaneously betokened humoral excess. Much like in the case of male infertility, excessive indulgence in sex, immoderate eating habits, and generally immoral or unmasculine behavior were most often cited as causes of male impotence. In most cases, physicians and medical practitioners suggested that male impotence could be corrected through the active practices of bodily moderation and self-mastery that would restore balance to the system of seminal fluids.

Early modern medical practitioners also tended to conflate impotence with other fluid-centric causes of infertility in their discussions of impotence caused by witchcraft or magical intervention. The second section of this chapter argues that early modern medical practitioners, demonologists, and lay people alike perceived the action of the male seminal fluids to be particularly vulnerable not only to the vagaries of the internal body, but to external influences like witchcraft as well. These conditions, I argue,

were also often explained in such a way as to confuse both impotence and infertility as both were attributed to seminal blockages caused by magical knot tying. Like other intrinsic, humoral causes of impotence, magical knot tying was understood to attack both a man's sexual ability and his fertility because these spells targeted the movement of the seminal fluids in the body.

Altogether, the early modern tendency to present male infertility and impotence together further points to the underlying importance of a principally fluid-centric construction of male bodies and male sexuality in early modernity. Furthermore, it suggests that impotence in early modernity cannot be simply conflated with the modern diagnosis of erectile dysfunction, nor was impotence the sole male disorder of interest to early modern medical practitioners. When read into the broader, fluid-centric paradigm that dominated pre-modern medical constructions of male embodiment, early modern anxieties about male impotence in fact only further point to the significance of generativity as a constitutive aspect of male embodiment.

IMPOTENCE AS A REPRODUCTIVE DISORDER IN EARLY MODERN MEDICINE

Impotence encompassed a range of overlapping meanings in the sixteenth and seventeenth centuries that cannot be simply equated to a modern concept of erectile dysfunction. In the first place, significant linguistic ambiguity muddled the precise contours of the disorder. The original Latin meaning of *impotentia* indicated a general lack of power or ability of any kind, not just that of a sexual nature, and in early modern medical discourses the term applied to a range of non-sexual conditions.³⁸³ Similarly, in Middle English, “impotency” could refer to any kind of weakness, physical or mental, and not exclusively impotence of a pathological or sexual nature.³⁸⁴ Even when used in the pathological sense, early modern medical texts often used the term in its more general sense, to refer to, for example, “impotence of engendering,” a common way of grouping together both sexual and reproductive inability.

³⁸³ “*Impotentia*,” *TLL*, vol. 7, 672.

³⁸⁴ “*impotence, n.*,” *OED*.

A sampling of definitions of sexual impotence from practical texts of medicine from the sixteenth and seventeenth centuries reveals that writers also thought of impotence in very similar terms to sterility—both of which they constructed as a lack or an inability on a part of the active, male principle in generation. For instance, male infertility is variously described as an inability “to make children,” an “ineptitude for matters of begetting,” a “disability of engendering and affecting conception,” and an “inability to conceive or bear children.”³⁸⁵ It afflicted “those who cannot use the act of generation,” those who “cannot engender at all for want of erection,” and those “without power of begetting.”³⁸⁶ Ambroise Paré too defined sterility as “the inability to engender in men because of their impotence, coldness, and bewitchment,” confusingly alternating between discussing impotence as an inability to engender and an inability to have sex altogether in his chapter on the subject.³⁸⁷

As these comments suggest, early modern medical texts often expressed little independent recognition of sexuality apart from reproduction. As Jennifer Evans has pointed out, medical writers often equated sterility and impotence out of a persistent preoccupation with reproductive sex.³⁸⁸ Sex for its own sake, outside the paradigm of marriage and reproduction, did not figure into most medical writers’ discussions. All of the medical authors featured in this project thus far restricted their comments about sex to marital, potentially generative sex only. This in part had to do with standards of modesty, which prohibited discussion of sexuality, especially in vernacular texts aimed at a general audience. The question of the propriety of discussing sexuality in the vernacular no doubt remained a source of conflict through the sixteenth and seventeenth centuries. For instance, despite his pro-marriage, pro-natalist comments, Joubert ran afoul of the medical community in France in the 1570s for publishing sexually

³⁸⁵ Riolan, 261; Vittori, f. 48v; Rueff, bk. 6, ch. 4; Lazare Rivière (Lazarus Riverius), *Praxis medicae* (Goudae, 1649), 335.

³⁸⁶ Barrough, 142. Platter, *Ordinarii*, 168. Huarte 1594, 247.

³⁸⁷ Paré 722-723.

³⁸⁸ Evans, *Aphrodisiacs*, 76.

explicit material in French that chaste women, like his dedicatee, Marguerite de Valois, might read.³⁸⁹ In England at the beginning of the seventeenth century, Helkiah Crooke's publication in English on "the Naturall Parts belonging to generation, as well in Men as in Women" also encountered scandal and condemnation.³⁹⁰ Apologetic comments that explicitly limited discussions of sex to discussion of generation only were standard in vernacular texts for this reason. Christoph Wirsung, for instance, in both the German and English editions of his text on practical medicine, framed his treatment of sexual topics as socially necessary for purposes of reproduction only, explaining his intent as "not to increase lecherie or fleshly lust, but in favour and preferment of Matrimonie."³⁹¹

Prudishness and the risk of censorship was not, however, the only reason for medical writers' desire to frame treatments for impotence in a procreative paradigm. They did so not necessarily because they thought it necessary to censor themselves, but because they saw the end-goal of all sexual activity as conception and viewed sterility, or the prevention of conception, as a problem that most people dreaded

³⁸⁹ Cabrol explained the controversy over Joubert's text in foreword of the second amended edition of the *Popular Errors*, as having to do with the fact "*qu'il l'a dédié à la Reyne de Navarre [...], veu qu'il avoit a traicter au commencement de son oeuvre, des matières grasses (come on dict) et parties honteuses [...]. Le second, que tout cela eust mieux esté en Latin, que en François, pour deux raisons: l'une, que ces propos ne sonnent tant mal en langue estrangiere, que en vulgaire, et que les femmes et filles, qui en sont plus honteuses, n'en eussent eu la cognoissance.*" See "Epistre repulsive," in Laurent Joubert, *Segonde partie des Erreurs populaires* (Paris: Lucas Breyer, 1579), vii r-v.

³⁹⁰ Lauren Kassell, "Medical Understandings of the Body, c. 1500-1750," in *The Routledge History of Sex and the Body, 1500 to the Present*, eds. Sarah Toulalan and Kate Fisher (New York: Routledge, 2013), 59. Ambroise Paré's vernacular work on generation, *De la generation de l'homme* (Paris, 1573), also engendered controversy in France when it was published. Susan Broomhall, *Women's Medical Work in Early Modern France* (Manchester: Manchester University Press, 2004), 233.

³⁹¹ Wirsung, 294.

and wanted to avoid. Those writing on the “diseases of women” often alluded to the importance of children to married couples, on the assumption that “all men and women desire to be fruitful naturally,” as Jane Sharp claimed and most writers apparently took for granted.³⁹² Many practitioners therefore framed their intentions in writing about sexual topics as serving the social function of preventing marital strife and conflict over a lack of children more so than a lack of sex. Ambroise Paré, for instance, cautioned his fellow surgeons to take care when treating wounds of the genital members and “conserve them as well as possible” because “they are necessary for generation and for keeping peace in the household,” pointing to a stronger preoccupation with reproductive, rather than sexual problems, among early modern medical writers.³⁹³

As Paré’s comment suggests, medical writers also saw their task in curing impotence as important for the preservation of marriages. More specifically, medical writers often alluded to the problem of male impotence or male infertility in the context of marital separations and annulment suits. Contemporary Catholic and Protestant marriage law both strictly distinguished between *impotentia coeundi*—or sexual inability—and *impotentia generandi*—or inability to generate—and considered only the former as grounds to officially invalidate a marriage. Medical authors, by contrast, almost exclusively discussed the latter definition of impotence as relevant to marriage, perhaps reflecting the preoccupations of their lay readers over and above theological technicalities. Rodrigo de Castro went so far as to propose his own doctrinally deviant definition of the conjugal debt, which he thought of not as sexual intercourse alone, but more specifically, as the ability of a man to produce children in his marriage. Men, he wrote, were most often sterile due to “*impotentia*,” a condition he defined as “a difficulty of the man for the debt of

³⁹² Sharp, 128.

³⁹³ Paré, 303.

generating.”³⁹⁴ Unlike their colleagues in legal and theological spheres, the authors of medical texts primarily discussed impotence only insofar as it impeded generation because they saw a lack of issue as a more pressing social problem for their readers and for married couples generally than a lack of sex, caused by impotence, alone.

The social importance of generative ability in men did not only manifest in practitioners' comments about marriage. Their physiological understanding of male infertility and men's reproductive bodies also reflected a preoccupation with generativity over sexual function in its own right. Since most medical writers saw the end-goal of sex as conception, they often treated impotence specifically as an impediment to reproduction, rather than as a general ineptitude for coitus. Practitioners classified it as such not because impotence obviously prevented sex, and thus conception. Rather, they often grouped impotence with the broader class of “reproductive problems” because they understood it as a symptom of an underlying problem of generativity that could implicate the whole body, afflicting some aspect of the balance between the seminal fluids. Medical writers often discussed sexual impotence and infertility as not only culturally, but physiologically allied conditions, because they considered both as conditions that depended on both the presence and the quality of the seed in men.

Impotence thus often seems a perpetually confused category in most medical texts of the sixteenth and seventeenth centuries because practitioners often considered not just lack of erection, but a lack of appropriately prepared semen, to be symptomatic of the condition. “Sluggishness of the genital members,” or something more akin to modern erectile dysfunction, of course most often featured in physicians’ descriptions of impotence. However, sixteenth- and seventeenth-century physicians often described impotence not just as a lack of erection, but a more general category referring to anything that

³⁹⁴ Castro, 224. The Roman physician Paolo Zacchia later explicitly attacked Castro for defining impotence in this way, which ran against the strict distinction between sterility and impotence in canon law. *QML*, bk. 9, tit. 3, quaest. 2, pg. 41.

prevented complete sexual intercourse with semination. As the physician Bartholomaeus de Montagna declared, impotence also constituted any condition in which “sperm is not permitted to enter into the vessel of generation,” including both lack of erection and inability to seminate in the womb under the same category of “impotence for generating.”³⁹⁵ The category of impotence could thus encapsulate a range of symptoms, including premature, insufficient, or total lack of ejaculation—with or without erection.

Medieval medical authorities, following Constantine the African, had long tended to treat male infertility and impotence as closely allied disorders, all reducible to the humoral imbalances in the seminal fluids. The tendency of medieval and early-sixteenth century texts to treat impotence as both a genital and a fluid disorder is perhaps best exemplified by their treatment of approximeron, a defect of the seed closely allied to impotence, but more expansively defined as a general inability to have sex.³⁹⁶ Medieval texts often construed this inability to apply not just to a defect of penetration, but rather semination. Commonly defined as a disease in which one could not “perfect the operation of venery,” approximeron appeared very typically in sections on “the flux of the seed [*de seminis fluxu*]” in twelfth-

³⁹⁵ Bartholomaeus de Montagna, *Consilia medica* (Venice, 1525), f. 222r.

³⁹⁶ Enrique Montero Cartelle claims that this odd medieval word is a verbal noun of the term *apraximeron*, from the Greek words ἀπραξία (“apraxia”) and μέρος (together, “idleness of the [genital] parts”). Enrique Montero Cartelle, ed., *Dictionarium latinum andrologiae, gynecologiae et embryologiae: Ab antiquitate usque ad XVI saeculum* (Barcelona, 2018), 59. See also “Apraximeron...est genitalium partium inoperato, *impotenz*.” Otto Prinz, ed., *Mittelalteinisches Wörterbuch, bis zum Ausgehenden 13. Jahrhundert, Band I: A-B* (Munich: C.H. Beck, 1967), 823; “approximeron,” in Juhani Norri, *Dictionary of Medical Vocabulary in English, 1375-1550* (New York: Routledge, 2016). The word also bears a strong similarity to the late Latin verbs *adproximare* and *appropinquare*, both meaning to “come near or approach,” words also used euphemistically to refer to sexual intercourse, see “Adproximo,” in *TLL* (Berlin: Deutsche Akademie der Wissenschaften zu Berlin, in aedibus B.G. Teubneri, 1934), vol. 2, 316; and “Appropinquum,” *TLL*, vol. 2, 314-15.

century manuscript collections of diseases and their remedies, many times alongside other diseases like gonorrhea that involved immoderate spillage of seed.³⁹⁷

Approximeron, however, actually caused quite the opposite—accompanied as it was by “semen ejected with difficulty.” Gariopontus of Salerno (d. 1050) implied that although approximeron was often accompanied “by feeble erection,” other symptoms—the “weakness of the whole body,” the “impeding of digestion,” and the “lack of desire for food”—pointed towards a more general inability of the body to properly digest the nutritive matter into seed.³⁹⁸ Similarly, Book Thirteen of Platearius’s twelfth-century *Practica Brevis* (ca. 1120-50) defined approximeron not as a lack of erection or failure of penetration, but as “imperfection of coitus [*imperfectione coitus*],” a condition in “which one begins to have sex and cannot complete it,” presumably, by failing to ejaculate. Like Constantine the African, medieval authorities thus tended to see male sexual problems in more fluid than exclusively penile terms, grouping together both lack of erection and failure to produce semen as fluid imbalances of heat and cold, attributing approximeron to a lack of the heat and “spirit” or “winds” necessary to produce generative seed.³⁹⁹

Sixteenth- and seventeenth-century medical texts retained this understanding of impotence or approximeron as a disorder that could cause many different symptoms of “defective coitus” other than lack of erection alone, although the term itself faded from medical discourse in the latter sixteenth century. In 1517, Symphorien Champier still used the term approximeron to encompass all disorders of “little or defective coitus,” an affliction he attributed to an imbalance in the fluid contributions of the

³⁹⁷ *Liber cirurgium cauterium*, BL Sloane Ms. 2839, f. 68r.

³⁹⁸ Gariopontus of Salerno, *Passionarius Galeni*, BL Add Ms. 21995 (ca. 12th cent.), f. 62r.

³⁹⁹ The physician Gilbertus Anglicus similarly defined approximeron as a condition that could cause either a lack of erection or semination, describing it as a “the natural operation of the generative organs...when the penis does not become erect or the seed is not emitted.” Gilbertus, f. 287r.

“principal members” of the body. In Champier’s mind, a disorder of any one of the three key organs more than likely lay at fault for “defective coitus” because, in the absence of any one of their contributions, the seed would be lacking either in substance (if there was a lack of moisture), motility (if there was a lack of spirit), or desirousness (if there was a lack of heat)—resulting, respectively, in either lack of emission, lack of erection, or general disinterest in sex.⁴⁰⁰

The capacious medieval diagnostic term “approximeron” appears to have faded from use in the latter sixteenth century.⁴⁰¹ However, sixteenth- and seventeenth-century physicians and surgeons continued to describe sexual inability much in the same way as medieval writers had discussed approximeron, as any defect of the principal parts or the three seminal fluids that prevented normal sexual intercourse. Jean Fernel, for instance, claimed that impotence involved not just an inability to sustain an erection, but could also involve a lack of emission, with or without erection. Fernel claimed that failure to have an erection resulted “when semen is not produced internally,” so that even if a man felt “drawn to venereal deeds, nevertheless this laziness of the members does not exercise them, neither in the first place rushing to venery, nor do they pulsate with desire.”⁴⁰² On the other hand, Fernel also described impotence as a condition in which semen “is not emitted” due to an “obstruction of the great vessels,” presumably even if a man possessed sufficient spirits to inflate the penis.⁴⁰³

The lack of distinction between impotence and infertility and between impediments to erection and impediments to semination had to do with the fact that early modern medical writers more often classed and treated these conditions by their underlying causes than by their outward effects. Because

⁴⁰⁰ One of the latest discussions using the term can be found in Champier, *Practica nova*, f. Cv.

⁴⁰¹ The latest reference to “apraximero” I was able to find comes from the 1549 antidotarium, Johannes Mesue, *Mesue et omnia quae cum eo imprimi consueuerunt* (Venice, 1549), 198, which recommends ginger as a useful medicine to counteract the illness, defined as an “inoperation of the [genital] parts.”

⁴⁰² Fernel, 312.

⁴⁰³ Fernel, 312.

sex—meaning penetration with semination in the appropriate vessel—required three fluid elements inherent to the semen, a defect in any one of these could cause any number of issues which all shared closely related causes. A lack of vital spirits would prevent the preparation of semen from being generative enough to inspire new life, causing infertility. A lack of vital spirits could also, though, prevent erection because the heart did not fill the penis with sufficient “winds.” Alternatively, too little “spirit” in the seed would reduce its propulsive power and make ejaculation difficult. Similarly, too much moisture from the brain would make the seed too “watery” for generation—causing the seed itself to be infertile. Too little moisture, especially if accompanied by too many dry, windy, spirits, however, and the seed would not be sufficiently viscous to allow ejaculation even if the man in question could become erect. Finally, heat—the quality that set hematogenesis into motion in the first place—controlled both the sensation of sexual desire and a man’s fertility, meaning that coldness could cause either infertility or impotence, or both together.

The three crucial fluid ingredients therefore not only constituted the physical substance of the seed, but the physical substance associated with desire, pleasure, and sexual ability. Most of the same illnesses, imbalances, or accidents of the principal parts believed to cause male infertility were thus also strongly linked to sexual impotence. Luis de Mercado for instance attributed both impotence and infertility to “thin or little seed,” or to a specific defect in the spirit, moisture, or heat necessary to properly concoct generative seed.⁴⁰⁴ Jean Liébault also described male impotence and infertility as practically interchangeable disorders of the seed in men. Like Mercado, he argued that impotence in men most often proceeded from a defect in any one of the three things simultaneously necessary for both sexual intercourse and for generation: the “appetite” from the liver, the moist excrement of the brain that gave the seed its viscosity, and the vital spirits of the heart.⁴⁰⁵

⁴⁰⁴ Mercado, 364.

⁴⁰⁵ Liébault, 96.

Just as in the case of male fertility generally, heat bore the strongest association with impotence because of its connection to pleasure, fertility, and male sexuality and maleness generally. So much so, that its opposite, coldness or frigidity (*frigiditas*), had long been synonymous with male impotence. Although some acknowledged that the womb could also be afflicted by an intemperate coldness, the chronic disease of frigidity, as an impediment to fertility, was a male-specific condition in early modernity.⁴⁰⁶ Only later did the term switch genders, becoming a female-specific condition associated with sexual passionlessness or anorgasmia in the nineteenth century. In early modernity, female impotence did exist as one possible, though exceedingly rare, cause of female infertility, but was described as a vaginal obstruction or *arctitudo* rather than intemperate coldness, in keeping with practitioners' womb-centric view of women's reproductive role.⁴⁰⁷

⁴⁰⁶ "Frigid," in B.E., *A new dictionary of the terms ancient and modern of the canting crew*, 1st ed. (London, 1699), is defined as "a weak disabled Husband, cold, impotent." In French, *frigidité* prior to the eighteenth century pertained to "l'état de l'homme impuissant." The fourth edition of the *Dictionnaire de l'Academie française* from 1762 defined frigidity as male-specific, whereas only by the ninth edition was it defined as female-specific, owing to an "absence of insufficiency of desire or sexual pleasure on the part of the woman."

⁴⁰⁷ As Peter Cryle and Alison Moore note in their history of frigidity, so long as *impotentia coeundi* was conceived of as a genital obstruction in women, "it was quite literally an incapacity: a failure to serve as a proper vessel. But when frigidity was identified as a likely source of the problem, it became possible to entertain a notion of female *potentia*, a power to desire and to act that was identified in principle by its very absence." This conception of female impotence only developed in the nineteenth century, they argue as "female impotence could only appear where there was an expectation of female potency." Cryle and Moore, 5. In the eighteenth century, for instance, the *Encyclopédie* of Diderot and d'Alembert still defined frigidity as a male-specific condition: "We are speaking here only of men, for frigidity in women is not a cause of impotence nor an impediment to marriage." Antoine Gaspard-Boucher D'Argis, "Frigidité," In *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, etc.*, vol. 7, eds. Denis Diderot and Jean Le Rond (Paris, 1757), 308.

The importance of heat led medical writers to think of frigidity as an affliction that originated in the seed but could have effects that radiated through the whole body. Coldness both caused and was symptomatic of impotence or frigidity and, therefore, a lack of generative seed. Louis de Serres reasoned that temperamentally “cold” men would not have sufficient semen for engendering because they would lack sufficient heat in their bodies to refine and concoct the blood into the substance of seed. Coldness of the testicles especially indicated that the seed had not been sufficiently heated and concocted.⁴⁰⁸ A number of medical authorities echoed the same sentiment. Juan Huarte de San Juan, for instance, argued that coldness of the overall body, or the genital parts in particular, would cause both impotence and infertility, for, he wrote “if the cods haue not more heat than cold, a man will prooue impotent, and without power of begetting.”⁴⁰⁹ Paré too similarly attributed both male infertility and impotence to bodily coldness, suggesting that cold men were at once “not very apt to the venereal act and do not abound with children and...engender more often females than males,” suggesting that humoral coldness caused not only sexual symptoms, but reflected an underlying defect of one’s generative abilities.⁴¹⁰

Heat served as the unifying element that tied together infertility and impotence because medical writers considered it all-important for maleness itself, and thus critical both for male reproductive and sexual functionality. The heat of the heart caused the production of winds, or spirit, which many believed to be responsible for erecting the penis and spirit in turn also composed a significant portion of the reproductive matter of the male semen. Sixteenth- and seventeenth-century practitioners often described the heat as not only that which made the male seed the principle “mover in generation,” and initiated growth and the conception of the fetus. They also regarded heat as the physiological origin of sexual desire and the cause of stimulation and erection in the first place. Many physicians wrote about seed as having its own independent movement in the body that stirred one to lust, by virtue of its active, restless

⁴⁰⁸ De Serres, 6.

⁴⁰⁹ Huarte, 247.

⁴¹⁰ Paré, 95.

heat and the force of the hot, airy breath it contained. For example, Andrés a Laguna, citing Plato's *Timaeus*, attributed the "itching" sensation of desire in the genital parts to a "flatulent exhalation of the semen, for after the testicles become swollen with very warm semen and are much distended with it they wish to be rid of so great a burden," thus describing the physiological function of erection in terms inseparable from semen production.⁴¹¹

The accumulation of heat and spirit in the testicles, communicated through the vehicle of the seed, also supposedly provoked erection, further connecting male sexual function to the underlying reproductive function of the male semen. As Jennifer Evans has found of aphrodisiac treatments in seventeenth-century England, "seed was understood to be crucial not just for male fertility, but for sexual desire and the ability to achieve and maintain an erection."⁴¹² Several texts described impotence as stemming from a defect of seed, such as that of the physician Lionello de Vittori, who attributed diminution of coitus to "a lack of sperm, the spermatic vessels being emptied." More often, writers attributed lack of erection not to a lack of seed itself, but to deficient quantities of the spirit and heat that composed it, especially the "flatulent" or windy humor, which supposedly inflated the penis. Later in the seventeenth century, Nicholas Venette too agreed that sexual ability principally depended on "the humors and the subtle vapors" that filled the testicles, so as to "encourage [men] with women." A potent man, therefore, had to be quite literally "full of blood and spirits" not just to generate, but to be sexually capable.⁴¹³

Erection and sexual ability thus depended on the spirituous, heated nature of the seed as it accumulated in the testicles, which in turn directed sexual desire and the sensation of pleasure and filled the penis with winds in preparation for intercourse. Presumably, if one did not have sufficient heat or

⁴¹¹ Andres a Laguna, 280.

⁴¹² Evans, *Aphrodisiacs*, 76.

⁴¹³ Venette, 574, 562.

winds contained in their seed, not only would it be infertile, but also sexual functionality itself would be affected, because the man would lack sufficient winds to sustain an erection. Any defect that prevented the seed from filling and inflating the penis would also cause impotence. As Jean Riolan claimed, even if a man was able to produce otherwise “good semen,” that “impotence to make children” would still result if “due a bad disposition of the body” if it was unable to travel to and thus fill and erect the genital parts.⁴¹⁴

Medical practitioners also implicated heat in the sensation of sexual desire and pleasure, often lacking in impotent men, because most writers discussed desire, or heat, as a physical, fluid component of the seed. Lust is “derived from the warmth of the semen,” insisted Fernel.⁴¹⁵ As surgeon Jacques Duval wrote, the more copious the seed, which was “moved, rattled, mixed, and made turgid by the imagination,” the more it stimulated an “inexpressible titillation,” stirring a man to sexual desire.⁴¹⁶ By contrast, he claimed that young boys, old men, and others suffering from conditions of “intemperate coldness” lacked the heat necessary to provoke their desire, much less experience erection. In all three cases, the seed was, “less spiritous and diminutive compared to what is required to support life,” so not only would the “hope of procreation” be reduced, but one’s overall sexual desire. Less spiritous seed, wrote Duval, “does not give such an orgasm and consequently does not induce such a great and perfect pleasure in its excretion” because the seed “provides no less libidinous itching, than the saliva of the mouth and the tonsils for the taste of meat.”⁴¹⁷ Therefore, he concluded, “one finds the common saying to be true: that in this action one can do no good, if one does not have pleasure,” again pointing to the

⁴¹⁴ Riolan, 261.

⁴¹⁵ Fernel, 565.

⁴¹⁶ Duval, 35.

⁴¹⁷ Duval, 36.

inseparability of male sexual desire, sexual function, and reproductive function in early modern medical thought.⁴¹⁸

The conceptualization of desirousness or sexual pleasure in terms of a physical quality of heat and spirit meant that medical writers explained even impotence due to a lack of desire in fluid-centric, rather than strictly psychological, terms. Early modern medical writers very frequently discussed sexual pleasure, in both men and women, as necessary for procreation and considered an inability to experience pleasure to be one of the most common causes of infertility. In the case of male impotence, medical writers also thought of pleasure and procreation, and therefore impotence and infertility, as inextricably intertwined because they believed a lack of desire affected generativity and vice versa. They frequently described the psychology of desire and pleasure as inseparable from the physiology of reproduction and especially from the physiology of seed production, discussing loss of desire as a more physical than emotional state or at least a physical state that could be strongly influenced by the emotions.

Feelings of love and pleasure were also strongly associated with the humoral quality of heat and so also directly affected the fluid quality of the seed. Ambroise Paré, for one, gave significant space to the “fire of love” as critical to seed formation and erection in men because it supposedly increased the heat of the blood and accelerated the digestion of seed from the blood.⁴¹⁹ As the humorous fold-out illustration in Fig. 26 suggested, the “fire of love” literally served to inflame the heart and, in turn, fill the penis with hot, spirituous seed. Negative feelings and emotions, on the other hand, betokened a melancholy, or excessively cold and languid, temperament in which the predominance of humoral coldness suppressed the heat of pleasure and generativity. For this reason, the physician Nicholas Culpepper claimed that “Want of Love” or hatred for one’s spouse would cause impotence because these emotions would

⁴¹⁸ Duval, 36.

⁴¹⁹ Paré, 723.

somehow spread to and corrupt the seed, dampening both sexual and reproductive ability.⁴²⁰ Similarly, Venette attributed both sterility and impotence to,

A biting malady [which] destroys our passion. Love is languishing when we suffer and we do not wish to bond amorously with a woman if our natural heat and our spirits do not multiply in us and are not communicated to our natural parts. Anything which destroys our natural heat and extinguishes our fire and our spirits opposes directly the actions of marriage. Our testicles wither, our spermatic vesicles dry up and our member diminishes.⁴²¹

According to Venette and his contemporaries, then, feelings of love and intimacy were not simply a socially preferable antecedent to sexual union, but had a real, physical, fluid quality necessary for both sexual and reproductive ability in men.

As these discussions of humoral temperaments and their associated emotions suggest, early modern medical texts did also recognize that impotence had a psychological, as well as a physiological component. However, as in the case of infertility, the psychological causes of impotence stood little apart from the physiological, as the “cold” of melancholy and the heat of sexual desire both had identifiable, fluid and physical components of the body associated with them. In the three-organ paradigm, male seed after all had a direct connection to the humoral influences of the brain and therefore the imagination and “passions,” which might encourage or impede sexual desire. Juan Huarte de San Juan described the powerful influence that the brain could have over one’s sexual ability through the force of the vital spirits from the heart, which were highly susceptible to the force of the imagination. They gave the different parts of the body “force and vigor” and caused them to move, but always according to the mind’s object of “contemplation.” For instance, if one remembered something that made him angry, the vital spirits

⁴²⁰ Nicholas Culpeper, *A Directory for Midwives: or, A guide for women*, vol. 1 (London: George Sawbridge, 1675), 70.

⁴²¹ Venette, 563.

rushed to the heart and stirred him to seek revenge. If he thought of a “beautiful woman” or “acts of venery” the vital spirits would rush to the genital members, filling them and “raising them to performance.”⁴²² If, however, the imagination was distracted by other things because of a lack of desire, attraction, or love, the vital spirits would be diverted to other parts of the body, resulting in a lack of seed, a lack of fertility, and in turn, a lack of sexual desire and a lack of erection.⁴²³

Therapeutic treatments for impotence also often overlapped with the same treatments prescribed to treat male infertility and deficiencies of the seed generally, further blurring the distinction between impotence and other male reproductive disorders in early modern medical thought. Early modern pharmaceutical treatments for “impotence” more often tended to target male generativity rather than sexual ability in isolation, as they supposedly worked on the fluid qualities of the seed in order to increase both desire and generative ability. Such recipes for aphrodisiacs, or substances intended to “provoke Venus” or “venery” circulated widely in vernacular texts of the sixteenth and seventeenth centuries.⁴²⁴ As Jennifer Evans has also aptly observed, however, early modern medical practitioners and their readers did not understand the purposes or the effect of aphrodisiacs on the body in the same way that we do today.⁴²⁵ Stimulating as they were, the recommended use of aphrodisiacs was not to promote venery for its own sake. Medical and pharmaceutical writers commonly labeled so-called “aphrodisiacs” as cures for barrenness that targeted the interrelated problems of both impotence and infertility.

Aphrodisiacs often targeted the humoral quality of the seed, as the most commonly suspected cause of impotence and loss of desire. Remedies intended to “provoke Venus” very often appeared in discussions of male infertility because it was thought that aphrodisiacs could remedy humoral imbalances

⁴²² Huarte, 25.

⁴²³ Huarte, 25.

⁴²⁴ Evans, *Aphrodisiacs*, 3-4.

⁴²⁵ Evans, *Aphrodisiacs*, 5.

of the seed that dampened sexual desire or prevented erection, an obvious obstacle to generation.

Although Evans claims that early modern aphrodisiacs often did not have sex-specific uses, rarely specifying whether they should be used only by men or women or both, many remedies do appear to have been implicitly intended for male use only. These remedies targeted humoral traits specific to men's seed only, especially the heat of the body and the vital spirits as well as organs believed to be specifically connected to men's generative ability, like the liver, heart, brain, and brain.⁴²⁶ According to the logic that male sterility most often manifested as a "defect of coitus" altogether, early modern herbals and popular books of physick from England often recommended aphrodisiacs to cure impotence or infertility because they supposedly promoted the "increase" of seed. By "increase," however, English authors did not mean that aphrodisiac medicines increased the overall quantity of seed. Rather, they acted qualitatively on its humoral components, mainly by increasing the quantity of stimulating vital spirit present in the seed.

The term aphrodisiac itself had a strong connection to the heat and seminal fluids, which were understood and commonly discussed as the underlying source of sexual desire and sexual function in men. Suggestively, several early modern commenters even pointed out the etymological connection between aphrodisiacs and the legend of the birth of Aphrodite, who had supposedly taken her name from the foam or froth (*aphros*) from which she arose when Cronus severed the testicles of Uranus and they fell into the sea. One English dictionary entry from 1694 pointed out as much, noting that the Ancients (Aristotle most notable among them) understood the story to symbolize the importance of froth, or heated moisture, as one of the vital components of the seed and hence one of the "Principles of Generation."⁴²⁷

⁴²⁶ Vernacular translations of some of the foremost medieval medical authorities circulated widely at the beginning of the sixteenth century, such as a popular French translation of Arnaldus of Villanova's fourteenth-century text, the *Trésor des povres*, which distributed the physician's remedies for impotence widely. Most of these—beef, mutton, pigeons, satyrion, long pepper, onions, and other spices—were standard aphrodisiacs in the sixteenth and seventeenth centuries. Arnaldus de Villa Nova, *Trésor*, XLI v. – XLII r.

⁴²⁷ "Aphrodite," in Louis Morieri, *The great historical, geographical, and poetical dictionary* (London, 1694), n.p.

The connection between Aphrodite, who herself represented sexual desire, and foam or froth conformed with the descriptions of many sixteenth and seventeenth century authors, who characterized seed as normatively frothy, foamy, and spiritous, drawing its generative and stimulating power from the hot moisture that suffused it.

Jean Fernel, among others, explicitly recognized and expounded upon this connection between etymology and physiology and between the physiology of male generativity and sexual ability. Fernel claimed that the seed had a direct role in provoking erection and emission because it served as the vehicle for vital spirits. Foamy seed indicated the presence of vital spirits because it was their introduction that caused it to “bloat into a great swelling of dense white foam from air pent within it,” taking on the appearance of a “white of egg beaten for some time.” The foaminess of the seed and the presence of vital spirits, Fernel concluded, stimulated sexual desire and determined sexual ability in men, whom he distinguished by the force with which they ejaculated their seed. It was thus no accident, he wrote, that “in Greek Aphrodite is named from foam, as if to say, ‘Venus the foaming goddess,’ and ‘aphrodisiazein’ is to ‘skim off the foam’ [*despumare*] into lust.”⁴²⁸ As one later author summed it up, noting the origin of Aphrodite’s name, “*Aphros* is froth; such is Lust, such is Sperme.”⁴²⁹ Effectively, the seed controlled everything that the goddess, seed-born Aphrodite, represented: sex, desire, and fertility all in one.

⁴²⁸ Fernel, 547. “Despumatio,” *TLL*, 5,1: 751. The verb *aphrodisiazein* cited by Fernel referred in ancient Greek to the active, penetrative role in sex and is thus was usually understood to be male-specific. Women and boys who allowed themselves to be penetrated by an active partner had a separate term: *aphrodisiasthenai*, which referred to sexual intercourse in the sense of being acted upon by someone else. Despite his staunch Galenism and acceptance of the doctrine of two seeds, Fernel’s implication is that only men had an active role in sexuality and only they emitted truly generative seed, something represented by its intrinsic foaminess and the greater force with which they expelled it. See Michel Foucault, *The History of Sexuality, Vol. 2: The Use of Pleasure* (New York: Vintage Books, 1985), 46.

⁴²⁹ Samuel Purchas, *Microcosmus, or the historie of Man* (London, 1627), 157.

Accordingly, medical writers did not only think of aphrodisiacs as purely sexual stimulants, intended to cure impotence alone, but as cures for any number of seed-based deficiencies, including both impotence and barrenness.

Early modern aphrodisiacs thus served to improve sexual ability because of the effect they had on the seminal fluids specifically. The presence of generative and spiritous and frothy seed, filled with sufficient winds to inflate the penis, was necessary to provoke sexual desire—and all of the actions of Venus—in the first place. Many medical writers therefore recommended aphrodisiacs as a remedy for impotence specifically because of their effect on the spirituousness of the seed. For instance, the Parisian physician Guy Patin wrote in a consultation for “men seized by frigidity and feeble erection” that the disorder most commonly originated from a “defect either of the seminal matter or the winds and spirits, so that the vessels which inflate to cause an erection are obstructed and paralyzed.”⁴³⁰ He therefore recommended a whole laundry list of foods that were “flatulent” in more than one sense, including chestnuts, peas, beans, radishes, artichokes, turnips, and onions. In theory, he wrote, these foods would encourage the production of winds throughout the body, which would infuse the seed with vital spirits, and thus “inflate the penis,” effectively curing both impotence and the underlying seminal issue at once.⁴³¹

The same logic informed the remedies for impotence found much later in the seventeenth century, for instance in the Genevan physician Théophile Bonet’s 1682 practical guide for physicians.⁴³² Jennifer Evans credits the English translation of Bonet’s work for first introducing the term “aphrodisiack” into

⁴³⁰ BIU Ms. Latin 2007, f. 241r.

⁴³¹ *Ibid.*

⁴³² Théophile Bonet, *Mercurius compitalitius: or, A guide to the practical physician shewing, from the most approved authors, both ancient and modern, the truest and safest way of curing all diseases, internal and external* (London, 1686), 694.

the English language, a class of medicines he defined not so much by their effects—presumably, provoking erection—as by the cause of their effects, functioning as “strengthners or increasers of Seed *substantially*.⁴³³ Bonet’s explanation for how aphrodisiacs achieved their effect was far from novel, however, as he subscribed to the long-standing notion that properly concocted seed acted like Plato’s “little animal,” pushing the erection outwards as it strove for its own release. According to Bonet, salty foods had a stimulating effect because they improved the quantity and hence the spirituousness of the seed because it made it “more turgid, spirituous and acrimonious.” The increase in spirits in turn provoked “greater titillation and *impetus*” as the seed strived to achieve its own “exit,” thus filling the penis and stimulating erection.⁴³⁴ Conversely, anti-aphrodisiacs worked to reduce sexual desire because they prevented erection, by “hindring the gathering of Seed, or by constriction” of the expulsive pressure of the vital spirits.⁴³⁵ Both theoretically and therapeutically, then, early modern medical writers considered sexual and reproductive ability as indistinguishable conditions in men and treated them together in similar ways, by primarily focusing on increasing the heat or spirit present in the body and in the seminal fluids.

The lack of distinction between remedies for impotence and remedies for barrenness further points to the inextricable link between generativity and normative maleness in early modernity. It also does something to explain the lack of distinction between impotence and infertility consistent through early modern therapeutic discussion of reproductive disorders in men. In early modernity, the two conditions existed in an almost circular relationship to one another. Infertility caused impotence, in that a defect of the seminal fluids would inhibit erection, but impotence also caused infertility, at least in terms of its social effects, because it prevented the production of children. For both infertility and impotence, most medical writers thus recommended the same treatment regime, replete with remedies intended to increase the quantity or quality of the virile seed. The tendency to collapse together sex and reproduction,

⁴³³ Bonet, 694.

⁴³⁴ Bonet, 694.

⁴³⁵ Bonet, 256.

impotence and infertility, and pleasure and procreation is a continual through thread in early modern discourse on male fertility, suggesting that medical writers saw normative maleness as not just socially predicated on sexual performance and the production of children, but literally, physically linked to one's fertility through the seminal fluids.

Sixteenth- and seventeenth-century therapeutic texts not only treated male impotence and male infertility as having virtually indistinguishable causes, both being attributed to deficiencies or excesses in the heat or spirits present in the male seed. Therapeutic and practical texts also tended to read both conditions into the framework of humoral excess and stressed the importance of masculine bodily self-mastery and careful humoral regulation of one's own body. Morally and socially, early modern literary sources often depicted impotence as the loss of masculine mastery par excellence. As Angus McLaren has found, male impotence often figured as the natural corollary of cuckoldry in ribald verse and innumerable humorous tracts of the sixteenth century. Despite also containing a healthy heaping of misogynistic content aimed at women, these sources suggest that early modern culture generally regarded male sexual potency as essential to the assertion of masculine control over women in marriage and served to also "police men" by setting standards of deficient male marital sexuality.⁴³⁶ For example, the Dutch engraver Crispijn van de Passe's quad-lingual *The Abuses of Marriage* (1641), which portrays a catalogue of the various kinds of "cuckolds" from different European nations, is a representative example in that it presents masculine humiliation through cuckoldry as the natural and expected outcome of a husband's impotence. Its verses often imply that male coldness and impotence will inevitably cause married women to satisfy their lusts elsewhere, through adultery. Van de Passe's example is hardly unique, though, as the

⁴³⁶ McLaren, *Impotence*, 74. Elizabeth Foyster has also found that literature on cuckoldry and "weary wives" in early modern England also frequently blamed female adultery on male impotence. Foyster, *Manhood*, 68-72.

connection between cuckoldry, adultery, and impotence appears as an exceedingly common trope in early modern literary and visual treatments of the subject of impotence [Fig. 27].⁴³⁷

Male impotence did not only betoken an inability to control one's own household, as the cultural connection between cuckoldry and impotence suggested. From the medical perspective, it also indicated an inability to control one's own body. Much as in the case of other male reproductive disorders, medical texts often linked social standards of male mastery to physiological standards of humoral balance and practices of humoral self-mastery. Again, much as in the case of male infertility, the standard of humoral balance centered on the well-tempered, sanguine complexion associated with youth and moderate lust. As van de Passe's engraving above suggests, excessive coldness, in this case, brought about by old age, unsurprisingly made the man in question sexually incompatible with his much younger wife, who instead sought out a younger, more heated, and hence more sexually capable, man. Medical texts often echoed the same cautions about marriage between older men and younger women because they regarded old age as a condition associated with incurable frigidity, due to the decline in heat that occurred in a man's latter years.⁴³⁸ Robert Burton, for instance, argued that old men "who are cold and dry by nature" ought not to marry younger women without first making an assessment of his "wants," for if his wife proved to be more heated and thus more "craving, clamorous, unsatiable, and prone to lust than is fit," she would

⁴³⁷ The theme of "couples of poorly-matched ages [*couples d'âges mal-assortis*]," and, by implication, poorly matched complexions, was a common trope in French emblem literature. For examples, see Raimond van Marle, *Iconographie de l'Art Profane au Moyen-Age et à la Renaissance, et la Décoration des Demeures* (La Haye: M. Nijhoff, 1931-32), figs. 489-92.

⁴³⁸ Daniel Schäfer has found that jurists also commonly considered "that the elderly's cold constitution made them impotent (with only a few exceptions)." Legal scholars produced several studies in the seventeenth century that debated at length whether or not elderly men were eligible for marriage, considering that men's sexual and procreative abilities declined sharply later in life. Schäfer, 127.

inevitably “be pleased by some other meanes.”⁴³⁹ By implication, then, both medical and literary texts stressed the importance of humoral management in terms of men’s choice of spouse, urging older men away from humorally unequal relationships in which they, inevitably, would be unable to exercise control over their own bodies or that of their spouse.

Aside from choosing a spouse appropriate for one’s temperament, medical texts also stressed the importance of other forms of humoral regulation and self-management for the treatment of male impotence. As in the case of male reproductive disorders generally, these often involved the avoidance of bodily excesses thought to disrupt the balance of heat, spirits, and moisture necessary for the production of seed. Gluttony and excesses of food again was commonly linked to impotence. Philip Barrough’s text, for instance, urged men suffering from impotence away from a “naughty and evill kind of diet” and stressed that men ought to instead adhere to a “more ordinate diet and healthfull” if they hoped to maintain or increase their virility.⁴⁴⁰ As the literature on aphrodisiac treatments for impotence suggests, men were also urged to take account of any complexional balances intrinsic to the body, such as a defect of coldness or winds, and to adjust their diet or behaviors accordingly, suggesting that early modern medical writers saw both male impotence and other male reproductive disorders as conditions that both required conscious, active regulation of the humoral composition of the seed.

If the previous discussion of impotence in early modern medicine sounds little different from the preoccupations with humoral and seminal balance described in Chapter Three, that is entirely the point. Upon closer examination of the social, physiological, and therapeutic dimensions of male impotence in early modernity, it is clear that pre-modern medical practitioners did not neatly separate “sexual” disorders like impotence from other “reproductive” disorders, nor did the physiological paradigm in which they operated allow for such a modern distinction. Medical practitioners often treated male

⁴³⁹ Burton, 598.

⁴⁴⁰ Barrough, 158.

impotence and male infertility interchangeably in terms of their social effects on marriage and progeny. Physiologically, they also tended to conflate impotence with other varied male reproductive disorders, on the assumption that male sexual ability necessarily depended on male fertility, or the balance of the three seminal fluids and the contributions of the three organs. Reconceptualized as a disorder of the seminal fluids, rather than the direct pre-modern analogue of erectile dysfunction, male impotence appears less as a source of quasi-Freudian penile anxiety or a preoccupation with male sexual domination of women. Rather, the early modern conceptualization of impotence as a disorder essentially interchangeable with other male generative disorders. Therefore, medical writers regarded male sexual desire and sexual function as dependencies of male fertility, further confirm the centrality of a principally, fluid-centric, “generative” model of male embodiment in the sixteenth and seventeenth centuries.

Thus far, this chapter has explored this fluid-based link between male infertility and male impotence, as disorders of the seminal fluids, in regard to early modern disease etymologies, aphrodisiacs, and regimes of humoral balance. This link is also apparent, though, in discussions of non-intrinsic, non-humoral causes of impotence, particularly that caused by witchcraft. The next section re-evaluates medical discussion of impotence caused by witchcraft in relation to fluid-centric descriptions of the male body. It argues that a fluid-centric conception of the male body made normative male sexual and reproductive function particularly vulnerable to not only humoral disruption, but also interruption by malicious parties. As in the case of impotence more generally, medical writers also frequently described so-called magically caused “impotence” as a condition of both male sexual and reproductive ability, centered on the quality of the seed. Because witches were understood to target the fluid qualities of male bodies, they were capable of inducing not only impotence, as has often been assumed, but more general issues that compromised both male fertility and male sexual ability.

THE TIES THAT BIND: MAGICALLY-CAUSED IMPOTENCE AND INFERTILITY IN EARLY MODERN EUROPE

Most of the medical writers who addressed male impotence in the sixteenth and seventeenth centuries acknowledged that the condition could also have something other than strictly intrinsic, humoral causes. In the sixteenth and seventeenth centuries in Europe, medical writers, demonologists, and lay people alike commonly believed male generativity to be particularly vulnerable to the influence of witchcraft. In fact, the connection between impotence and witchcraft was so strong in sixteenth and seventeenth-century Europe that *maleficia*—or bewitchment—very often appeared as a synonym for male impotence.

Historians have already acknowledged the long-standing connection between witchcraft and male impotence in medieval Europe and in early modernity.⁴⁴¹ However, most historians have interpreted early modern anxieties primarily in symbolic, psychoanalytic terms, describing magically-induced impotence as symptomatic of a general sense of “masculinity in crisis,” in which anxieties about patriarchal power became transposed onto female witches. Often, historians have discussed impotence magic as a straightforward form of “magical impotence” or “magical castration” that spoke to widespread fears about diminished male sexual power and masculine humiliation, using terms and an explanatory framework that contemporaries themselves would not have recognized. This is especially the case for spells involving the tying knots in a cord or a knot, commonly known by its French name, the *nouement de l'aiguillette*, which witches supposedly used to induce male impotence in the sixteenth and seventeenth centuries.

⁴⁴¹ For instance: Maurice Foucault, *Les procès de sorcellerie dans l'ancienne France devant les juridictions séculières* (Paris: Bonvalot-Jouve, 1907); Catherine Rider, *Magic and Impotence in the Middle Ages* (Oxford: Oxford University Press, 2006); Lyndal Roper, *Oedipus and the Devil: Witchcraft, Sexuality and Religion in Early Modern Europe* (New York: Routledge, 1994).

Emmanuel Le Roy Ladurie, for instance, interpreted fears of magical knot-tying magic and its association with male impotence as a kind of “castration anxiety-complex” and cast anxieties about the spell in Freudian terms, as a perceived assault on phallic manhood and male sexual domination in early modern society.⁴⁴² As in the case of male impotence more generally, these scholars have not extensively examined the underlying cultural logic behind the witchcraft-impotence connection in terms of contemporary understandings of male sexuality and embodiment.

Rather than embracing phallo-centric Freudian frameworks to understand early modern impotence magic, this section revisits the symbology of tying the *aiguillette* in early modern Europe, in relation to contemporary, fluid-centric definitions of male impotence and infertility. I argue that like other more “natural” causes of impotence and other male reproductive disorders that often figured into medical texts, the operations of so-called impotence magic also closely corresponded to contemporary, fluid-centric understandings of the male body. It was in this paradigm, rather than in terms of penis loss, that early moderns expressed certain profound anxieties about the stability of male fluid balance, generativity, and the maintenance of patriarchal power. Early modern people saw men’s sexuality as particularly susceptible to the negative influence of witchcraft, not because the Devil held particular power over the male genital organs, or because fears of impotence magic touched on transhistorical psychic anxieties about castration, but because in the humoral paradigm, male fluid balance was unstable and precarious and could be easily disrupted by natural means or by the intervention of preternatural forces. This section thus examines the underlying cultural logic, which explained why the Devil held particular power over the fluid and spirituous faculties necessary for generation and re-examines the notorious spell of the *aiguillette* as a manifestation of anxieties about male fluid balance and fertility, more so than fears about castration or phallic integrity.

⁴⁴² Emmanuel Le Roy Ladurie, “The Aiguillette: Castration by Magic,” in *The Mind and Method of the Historian*, trans. Siân and Ben Reynolds (Brighton: Harvester Press, 1981), 84.

Interpreting the *aiguillette* in modern psychoanalytic terms like “castration anxiety” raises several problems when carefully examined against the backdrop of fluid-centric constructions of male bodies, which prevailed in the sixteenth and seventeenth centuries. First, it tends to import assumptions about sexuality from the twentieth century back into early modern understandings about the function and symbolic import of male bodies. This interpretation takes for granted that the importance of the phallus signified in the same way culturally for early moderns as it does in modern psychoanalytic frameworks. Doing so risks misinterpreting both Freud and the early modern sources. For one thing, Freud himself did not use the term “castration anxiety” to mean a fear of literal castration—which was, of course, extremely rare at the time that he wrote—but to describe the psychic processes underlying the development of normative gender identity and sexuality. Freud also understood psychic castration to involve the penis specifically. According to his essay on “Infantile Sexuality” (1920), both male and female children assume that everyone has a penis until they discover otherwise. Following this discovery, “castration anxiety” manifests in boys as an obsessive fear of losing their penis, while girls feel they have already been mutilated and develop penis envy as a compensatory mechanism.⁴⁴³

Freud’s definition of castration-as-penis-loss also does not align well with early modern views of magical knot-tying magic. For one thing, castration as it was practiced in early modern Europe almost always entailed removal of the testicles, not the penis.⁴⁴⁴ Although impotence certainly affected the penis, magically-caused impotence did not typically cause its complete removal. Nor did magically-caused impotence necessarily induce feminization and other physical changes associated with castration besides just loss of sexual functionality. Furthermore, the tying of the cord did not symbolize full removal of the genitals in early modern contexts, or even a straightforward removal of genital function, as Ladurie’s invocation of “castration anxiety” might suggest. Rather, so-called “impotence” magic more often

⁴⁴³ Sigmund Freud, *Three Contributions to the Theory of Sex*, 2nd ed., trans. A.A. Brill (New York, 1920), 36-67.

⁴⁴⁴ Katherine Crawford, *Eunuchs and Castrati: Disability and Normativity in Early Modern Europe* (New York: Routledge, 2019), 2.

signified a loss of fluid, rather than penile, ability. Like in the case of “impotence” more generally, the category of magically-induced impotence was much more capacious than historians have recognized and could include any number of male-specific reproductive disorders beyond just modern erectile dysfunction alone. Impotence magic and the tying of the *aiguillette* was therefore not associated solely with impotence, as it has often been discussed in the historiography, but with a wide range of male fluid deficiencies and imbalances and thus ought to be re-interpreted as part of more general anxieties about male generativity in the broadest sense.

Freud’s penis-centered definition of castration is also inadequate to describe magically-caused impotence because this brand of magic was commonly understood to work not on the penis directly, but on a man’s humoral generative faculties. Contemporaries in fact often described the knot or the *nouement de l'aiguillette* as acting not on the penis or the testicles, but on the underlying flows of heat and seminal fluids that determined the functionality of the genitals. The knot was a form of sympathetic magic, understood to mimic in the body of the victim the action performed by the witch. By knotting the *aiguillette*, the witch effectively “tied” the spermatic vessels of her victim, preventing the flow of heated, spirituous vapors into the penis, preventing not only erection, but also ejaculation, and thus both sexual union and reproduction. In this section I thus argue for a rethinking of the symbology of the knotted *aiguillette* in the context of early modern medical thinking, which treated the generative male body as preeminently fluid-centric rather than genito-centric and understood impotence as a condition inseparable from the inner fluid economy of the body and flows of seed.

As Catherine Rider has shown, the belief that knot-tying spells could cause male impotence or otherwise impede male sexual ability existed long before concerns about diabolical witchcraft reached a fever pitch in the late fifteenth century. The specific association between knot-tying magic and impotence

dates at least to Virgil.⁴⁴⁵ Numerous medieval accounts also suggest that male impotence had been attributed to magical causes for centuries prior. For instance, the canon *Si per sortiaras* (ca. 860) specifically acknowledged a connection between witchcraft and *impotentia* and had long established that sorcery resulting in a permanent inability to consummate a marriage could justify the separation of the partners.⁴⁴⁶

Medieval sources also recognized impotence magic, often describing it as a kind of love magic, usually inflicted by female ex-lovers or jealous suitors who wished to prevent their beloved from having sex with someone else.⁴⁴⁷ As Guido Ruggiero has found for fifteenth-century Venice, rituals of binding

⁴⁴⁵ *Eclogue* VIII describes the use of knot-tying as a kind of love magic intended to bind the beloved, “Weave, Amaryllis, three hues in three knots; weave them, Amaryllis, I beg, and say, ‘Chains of love I weave!’” Virgil, *Eclogues*, in *Eclogues. Georgics. Aeneid: Books 1-6*, trans. H. Rushton Fairclough, ed. G. P. Goold, LCL 63 (Cambridge, MA: Harvard University Press, 1916), 81. Sixteenth and seventeenth-century demonologists and medical writers often referenced this passage as evidence of the ancient origins of impotence-inducing knot-tying.

⁴⁴⁶ *Si per sortiaras* was fully adopted as a part of the canon law of marriage after its inclusion in Gratian’s canon law textbook (ca. 1139-58), in Gratian, *Decretum Magistri Gratiani*, in *Corpus Iuris Canonici*, ed. Emil Freiberg, vol. 1 (Leipzig: Berhard Tauchnitz, 1879, rp. Akademische Druck- u. Verlagsanstalt, 1959), causa 33. Gregory IX’s canon, “*De frigidis et maleficiatis, et impotentia coeundi*,” as its title suggests, also further maintained that sorcery could not only cause impotence, but could be cited to justify the annulment of an unconsummated marriage. In *Liber extravagantium decretalium*, liber IV, titulus XV, ed. Emil Friedberg, in *Corpus Iuris Canonici*, vol. 2 (Leipzig: Bernhard Tauchnitz, 1881, Reprint Graz: Akademische Druck- u. Verlagsanstalt, 1959).

⁴⁴⁷ The physician Peter of Abano’s 1310 *Lucidator*, for instance, claimed that male impotence could be caused by any number of implements more typically associated with love magic more generally, such as “images, round mirrors, beans, chickpeas, or nails (and especially those from wagons).” Quoted in Rider, *Magic*, 178. Like love magic generally, the caster of the spell was usually described as a jilted ex-lover or another vengeful woman. Guibert of Nogent (ca. 1115) describes how his father was bewitched and made impotent by a woman who wanted him to marry one of her daughters instead. Thomas of Chobham’s confession manual (ca. 1217) also recounts the

and unbinding were a common motif in various kinds of love magic, including impotence magic, because they played on metaphors associated with marriage and sex.⁴⁴⁸ Impotence spells likewise often gained their efficacy by symbolically tying the male genitals or an enchanted object thought to have a sympathetic correspondence with the genitals. Medieval impotence spells often featured knots and cords because they supposedly simulated the “tying up” of a man’s sexual ability. Albertus Magnus, for instance, suggested that tying a wolf’s penis with a “white thread” after stating the name of one’s target would immediately render him impotent.⁴⁴⁹ By 1453, the physician Jacques Despars described the iteration of the spell most common in the sixteenth and seventeenth centuries. Despars claimed that the spell could be performed simply by tying a knot in a cord or a strap, which would “bind” a man and prevent sexual intercourse.⁴⁵⁰

Although this association between knot-tying and impotence magic had long existed in medieval Europe, anxieties about magical knot-tiers became especially pronounced in the sixteenth century. Whereas accounts of vengeful knot tiers only exist in scattered medieval sources, Emmanuel Le Roy

tale of a woman who “impeded a man who had left her so that he could not have intercourse with another woman whom he had married.” Quoted in Rider, 97.

⁴⁴⁸ See Guido Ruggiero, *Binding Passions: Tales of Magic, Marriage, and Power at the End of the Renaissance* (Oxford: Oxford University Press, 1993).

⁴⁴⁹ See Book 22 of Albertus Magnus, *De animalibus*. Quoted in Ladurie, 93.

⁴⁵⁰ “I know a certain count who said to a newly-married knight, ‘You see this strap?’ He replied that he did. The count said to him, ‘I will tie it and until I untie it, you will not be able to have intercourse with your wife completely.’ This happened, as the knight swore to me and to others, although he was sexually very potent and his wife was beautiful and full of energy and twenty years old,” Jacobus de Partibus, *Commentary on Avicenna’s Liber Canonis* (Lyon, 1498), bk. 3, fen. 20, tr. 1, c. 36. Quoted in Rider, 198; Danielle Jacquot, “Le Regard d’un Médecin sur son Temps: Jacques Despars (1380?-1458),” *Bibliothèque de l’école des Chartes* 138 (1980), 63. As Rider points out, this story is unusual in that the spell is cast by a man rather than a woman.

Ladurie and Pierre Darmon both described a “climate of psychosis” in sixteenth-century France generally surrounding fears of knot tying, or the *nouement de l'aiguillette*.⁴⁵¹ Especially in France, the epicenter of anxieties about impotence magic, sixteenth- and seventeenth-century commentators often referenced a dramatic recent increase in cases of magically-induced impotence. The French writer Pierre de Brantôme around 1600 remarked that, “We have seen an infinity of such cases in the last twenty years in France and elsewhere.”⁴⁵² Male litigants appearing before the seventeenth-century Officialité of Paris also very often attributed their impotence to a “*nouement de l'esguillette*,” referring to the tying of the knot as practically synonymous with male impotence. For instance, Pierre Follion claimed that he did not consummate his marriage on his wedding night because “he had the *esguillette* knotted for the space of a year, but was untied at the end of a year”—a very common claim among male litigants in the court.⁴⁵³ Fears of the *nouement* were particularly pronounced in regions of the French mid-Atlantic coast, including Normandy, Poitou, Aunis, Saintonge, and Angoumois, as well as the coastal districts of Languedoc. As Kevin Robbins has found, both the Catholic and Reformed Churches in Western France thus undertook organized campaigns against supposedly epidemic tiers of knots during the sixteenth- and seventeenth centuries.⁴⁵⁴

Fears of knot tiers also arose elsewhere in Europe of the sixteenth and seventeenth centuries, based on the same concerns about the vulnerability of the male body to demonic influence. In 1617, the English reverend Thomas Cooper linked an increase in ligature magic intended to “hinder copulation, and so procreation” to a coincident increase in “Atheisme and Irreligion that overflows the land.” Numerous British medical and demonological texts, including those of Reginald Scot and James I, also attributed to

⁴⁵¹ Darmon, 45.

⁴⁵² Pierre de Brantôme, “Discours sur Mesdames, filles de la noble maison de France,” in *Oeuvres complètes*, ed. Ludovic Lalanne, vol. 8 (Paris: Renouard, 1875), 92.

⁴⁵³ AN Z1O 115, Follion-Renauldin, November 25, 1623, Interrogation, f. 2.

⁴⁵⁴ Robbins, 65.

witches the power to take away a man's generative ability.⁴⁵⁵ On the Continent, Italian courts also often tried witches who claimed to have the ability to tie men's generative powers, and evidence for concerns about tiers of knots, or *Nestel knüpfen*, also exists for Germany.⁴⁵⁶

Concerns about impotence magic increased in the sixteenth century for a number of reasons. First, theological and demonological thought about the nature of magic and witchcraft generally had changed by the late fifteenth century. Many theologians of the late fifteenth and early sixteenth century argued that magic was not simply a neutral instrument that people could use to enact their own will, but something that had inherently diabolical origins and that necessitated a demonic, anti-Christian pact with Satan. Increasingly, fifteenth- and sixteenth-century demonological writers argued that witches had no independent power to induce impotence or infertility in men and that these spells of necessity involved the intervention of Satan, who granted witches power to command demons in exchange for making a heretical pact with him. Sixteenth-century proponents of what historians refer to as the “diabolical” interpretation of witchcraft described witchcraft as a heretical conspiracy designed to advance Satan’s agenda against Christendom and therefore interpreted impotence magic as a core part of that agenda. The theologian Pierre de la Palud had argued as much in as early as the fourteenth century, claiming that, “when women do sorceries with beans or cocks’ testicles, it should not be believed that the man is rendered impotent by the power of those things, but by the hidden power of demons,” with whom the witch had formed a pact.⁴⁵⁷ Enchanted objects like the knot or other implements of love magic thus had no intrinsic power to work on bodies at a distance, but involved the hidden operations of demons that actually carried out the spell. Nor did witches have complete control over these demons but were merely

⁴⁵⁵ Thomas Cooper, *The mystery of witch-craft* (London, 1617), 260-1.

⁴⁵⁶ Ruth Martin, *Witchcraft and the Inquisition, Venice, 1550-1650* (Oxford: Oxford University Press, 1989), 127; Ruggiero, 167-9. On the *Nestel knüpfen*, see *Encyclopaedia of Religion and Ethics*, vol. 7, 749; Fritz Byloff, “Nestelknüpfen und -lösen,” *Archiv für Geschichte der Medizin* 19 (1927): 203-8.

⁴⁵⁷ Pierre de la Palud, *Scriptum in librum quartum sententiarum* (Venice, 1493), f. 171r-v.

deluded into believing that they acted at their own behest. In reality, these demons only used witches in order to enact the will of Satan in the world.

According to the diabolical interpretation of magic, the Devil then had a grander purpose in interfering with human sexuality than merely satisfying the petty jealousies of ex-lovers who tied the knot. He did so to fulfill a dual purpose: to undermine the sacrament of marriage and to prevent the birth of legitimate Christian children. Heinrich Kramer, author of the most notorious early text on diabolical witchcraft, the *Malleus Maleficarum*, reasoned that the Devil must delight in sowing discord between spouses and seeing holy matrimony dissolved due to impotence. In Kramer's view, the Devil interfered with men's sexual abilities in order to cause sin and push the spouses toward adultery and fornication, causing the unsatisfied wife to "seek other lovers."⁴⁵⁸

Kramer's thought on the Devil's desire to undermine marriage set the pattern for sixteenth-century responses to the knot as well. Both Protestant and Catholic sources cast the Devil as an enemy of marriage who actively sought to undermine the sacrament. Numerous authors wrote of how the knot caused marital discord that often led to fighting, bitterness, and ultimately adultery. In many cases, the spouses would be violently repelled from one another, so that they could not come near one another without fighting, either due to the Devil's physically blocking their union or natural bitterness stemming from their situation.⁴⁵⁹ Pierre Crespet, a prior of the Celestine Order from Sens, believed that Satan hated the sacrament of marriage and wished by use of the knot to sow dissension between spouses so that they

⁴⁵⁸ Kramer, 95. Long attributed to both Heinrich Kramer and Jakob Sprenger, recent scholarship tends to attribute authorship solely to Kramer. See Wolfgang Behringer, "Malleus Maleficarum," in *Encyclopedia of Witchcraft: The Western Tradition*, vol. 3, ed. Richard M. Golden (Santa Barbara, CA: ABC-CLIO, 2006), 717-23. I refer to Kramer throughout as the sole author of the *Malleus*.

⁴⁵⁹ Bodin described a couple from Toulouse who suffered from this violent physical repulsion from one another, so that "when they tried to become intimate, they would claw at each other and struggle wildly." Bodin, 59.

would fall into “fornication, lewdness, and sodomy.”⁴⁶⁰ Fears of the *aiguillette* also threatened to push marriage outside of the disciplinary gaze of the church, as many couples in France apparently held secret marriages outside the eyes of the church in order to prevent jealous lovers from bewitching their union before they had consummated it.⁴⁶¹

Like contemporary Catholic demonologists, many Protestant writers also interpreted the knot as a real threat to the sacrament of marriage something that threatened to undermine church discipline over marriage. The Calvinist pastor Louis Hesnard in 1591 railed against the *nouveurs* in La Rochelle as a part of the Devil’s plan to delude people into believing in the papist model of “perpetual virginity” and trick them into foregoing marriage altogether.⁴⁶² Worse yet, many of those afflicted turned to relief from magicians themselves rather than prayer, something that both Protestant and Catholic authorities interpreted as equally sinful to casting the spell in the first place.

While commentators often cited a demonic plot against Christian marriage as the purpose behind knot-tying magic, many also believed this plot to entail an assault on the ends of marriage as well, by not only causing sexual sin, but preventing procreation. Curiously, then, much of the anxiety about so-called “impotence” magic in fact centered on concerns about male fertility rather than male sexual power

⁴⁶⁰ Crespet, f. 271v, 275r.

⁴⁶¹ Marriage customs intended to avoid the spell are recorded in Thomas Platter the Younger, *Journal of a Younger Brother: The Life of Thomas Platter, as a Medical Student in Montpellier at the Close of the Sixteenth Century*, trans. Seán Jennett (London: Frederick Muller, 1963), 171-2. Michel le Riche also recorded similar practices in the region around La Rochelle in *Journal de Guillaume et de Michel le Riche, avocats du roi à Saint-Maixent, (de 1534 à 1586)*, ed. A. D. de la Fontenelle de Mandoré (Saint-Maixent, 1846), 210. The Catholic canonist and scholar Maximilian van Eynatten in 1619 also cautioned priests to avoid solemnizing marriages at unusual times for people seeking to avoid the curse, *Manualis Exorcismorum* (Antwerp, 1648), 251-2.

⁴⁶² The text is anonymous, but Kevin Robbins suspects that Louis Hesnard is the author. Robbins, 70. Louis Hesnard (attributed), *Traite de l’enchantement qu’on appelle vulgairement le nouement de l’esguillette, en la celeb ration des mariages en l’Eglise reformee & des remedes a L’encontre pour le soulagement des fideles* (La Rochelle, 1591), 12.

exclusively. By preventing the spouses from joining together in marriage, the Devil also worked to prevent procreation by attacking the generative powers of both men and women. Numerous authors spoke of impotence and infertility, induced by knot-tying spells, as allied conditions that formed a part of witches' desire to harm human reproduction in general. The physician Antonio Guaineri for instance claimed that in the Piedmont, where some of the earliest witch hunts took place during the 1420s, that both "men and women are often bewitched." In his experience, many of them were "often never able to produce offspring" as a result of the efforts of sorceresses "and from then on they could never conceive again."⁴⁶³ In the estimation of the increasing number of theorists of diabolism of the fifteenth century, the Devil targeted fertility because he wished to end the propagation of mankind and de-peopled the world in the years leading up to the end times. The apocalyptic 1484 papal bull *Summis desiderantes*, which granted Heinrich Kramer authorization to prosecute witches in the Rhine Valley, took this position and throughout frets about the power of witches to destroy human and agricultural fertility, and particularly to "hinder men from begetting and women from conceiving, and prevent all consummation of marriage."⁴⁶⁴ The sixteenth-century demonologist and political theorist Jean Bodin too found it no wonder that the Devil would induce witches to attack men with knots because such action would naturally "prevent the procreation of the human race, which [Satan] tries as much as he can to exterminate."⁴⁶⁵

⁴⁶³ Quoted in Rider, 198. Antonio Guaineri, *Practica* (Lyon, 1525), f. 70r.

⁴⁶⁴ Innocent VIII, *Summis desiderantes affectibus* (1484) in *Witchcraft in Europe, 400-1700: A Documentary History*, eds. Alan Charles Kors and Edward Peters, 2nd ed. (Philadelphia: University of Pennsylvania Press, 2001), 178.

⁴⁶⁵ Bodin, 59. Pierre de Lancre similarly claimed that Satan taught witches how to tie ligatures "by which he cuts the root of generation, thinking by this means to depeople the world and by imposture ape the works of God, tying men and women under the fine and specious pretext of virginity, which he does seeming to love and seek to prime men and children and lead them to him from their tender youth." Pierre de Lancre, *Incrédulité et mécréance du sortilège* (Paris, 1622), 310-1.

The concept of diabolical witchcraft thus attracted greater attention to knot-tying as a part of a sinister, organized plot against human fertility. The new “science of demons” therefore offered a more thoroughgoing etiology of magically-caused impotence, its causes, and its cures than had medieval sources. Demonologists of the fifteenth and sixteenth centuries differed from previous writers on magic and witchcraft in that they ascribed the power of enchantments exclusively to the action of demons in the world, who sought to thereby further Satan’s agenda. The involvement of demons as the primary agents in witchcraft significantly raised the stakes involved in combating sorcery, as it veered close to some of the central questions in Christian doctrine, such as the extent of demonic power over the sacrament of marriage. The involvement of demons in magical knot-tying therefore necessitated a greater degree of philosophical attention and European intellectuals sought to develop a science of demonology that made witch belief logically consistent with existing philosophical structures, especially Aristotelian natural philosophy.⁴⁶⁶ This was particularly true in the case of fertility and impotence magic, which often appeared indistinguishable from natural causes, and which required a more precise explanation for how demons operated on the body to cause impotence and infertility in male bodies.

The integration of impotence magic into the diabolical witch stereotype thus raised larger natural theological questions about the extent of demonic involvement in human sexuality, not to mention medical questions about the interaction of human bodies and demonic forces. Most importantly, magically-caused impotence raised the question of whether or not demons, being immaterial, could act on the material human body and, if so, how they could possibly accomplish this? A number of witchcraft skeptics in the fifteenth and sixteenth centuries saw this question as a problem for diabolical witchcraft, arguing that because demons were incorporeal beings, they could never have physical contact with humans and so could not interfere directly with human sexuality. This was an argument often used to

⁴⁶⁶ See Stuart Clark, *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford: Clarendon Press, 1997).

refute the notion—most famously expressed in Heinrich Kramer’s *Malleus maleficarum*—that demons could have sexual intercourse with and impregnate human women with demonic offspring. Witchcraft skeptics like the Lombard jurist Ambrogio Vignati (ca.1410-1480), for instance, argued that demons could not possibly have sexual contact with witches at the Sabbat because they did not have physical bodies and therefore did not have any of the organs necessary to produce semen. “As physicians say (*dicunt Physica*),” he wrote, “semen is the product of the final digestion, [and] demons, who lack all bodily functions including digestion, cannot have semen and therefore cannot have sexual intercourse with witches.”⁴⁶⁷ Even if demons could assume the physical body of a succubus or an incubus to steal the semen of human men, as Kramer had claimed, Vignati reasoned that any child that resulted would still be that of the man whose semen was taken, rather than that of the demon.⁴⁶⁸

Even skeptics like Vignati, however, maintained that demons could still interfere with human (and specifically male) sexuality in other ways and that claims about physical contact with demons were not entirely delusional. Demonologists like him rather reached for contemporary, fluid-centric explanations about male physiology in order to explain how incorporeal demons could interfere not just with male sexual ability, but effectively undermine his fertility altogether by “blocking” up the underlying fluid mechanism behind semen production and erection. Vignati maintained that, although demons could not reproduce with humans due to their incorporeal nature, they could still harm normal human reproduction by acting indirectly on the fluid capacities of male bodies. Vignati claimed that demons took especial pleasure in causing male impotence and infertility, “something that we see daily,” and that the delicate balance of spirit, heat, and moisture necessary for male generativity made male bodies especially

⁴⁶⁷ Ambrogio Vignati, *Elegans ac vtilis tractatus de haeresi* (Rome, 1581), 43. See Matteo Duni, “Impotence, Witchcraft and Politics: A Renaissance Case,” in *Cuckoldry, Impotence and Adultery in Europe (15th-17th century)*, ed. Sara F. Matthews-Grieco (New York: Ashgate, 2014), 217.

⁴⁶⁸ Vignati, 43.

susceptible to demonic interference.⁴⁶⁹ Demons apparently disrupted male generativity not by acting directly on men's bodies themselves (i.e. by inducing "magical castration") but on the underlying fluid motions of the body, by clouding the mind with frightening illusions or impeding the movement of the humoral fluids, such that they "cooled the parts of the man or made his spirits dissipate, which erect the instrument," causing both male infertility and a loss of sexual ability.⁴⁷⁰

Other demonologists of the fifteenth century offered several different explanations as to why demons could interfere with male sexuality and fertility, even if they lacked corporeal bodies. Vignati's contemporary and fellow witchcraft skeptic Ulrich Molitor (1442-1507), similarly refuted copulation between devils and humans as physically impossible but maintained that demons did frequently inflict impotence on men by attacking the incorporeal, fluid movements that supplied male sexual and generative function.⁴⁷¹ Others constructed elaborate natural philosophical explanations for demonic action on human bodies that emphasized the power of demons to act locally on the fluid humors of the body. Most authors derived their explanations for demonically-caused impotence from Pierre de la Palud's fourteenth-century commentary on the *Sentences* of Peter Lombard, book IV, distinction 34. In his gloss on the passage, Palud rejected the notion that witches' charms had any inherent power to cause changes in the body on their own. The action of demons alone could operate within the body to cause impotence—enchanted objects or knots did nothing to accomplish this, but only led the witch to believe that they truly had the power to inflict impotence. Palud claimed that, though they were immaterial beings, demons

⁴⁶⁹ Vignati, 40-1.

⁴⁷⁰ Vignati, 41.

⁴⁷¹ Like Vignati, Molitor also cited medical authority on this point. Demons lacked testicles, as well as the "potency of the heart (*virtus cordialis*)," critical to the production of semen. Incubi could only inject the stolen semen of human men into women and so could not produce their own children with humans. Ulrich Molitor, *De lamiis et pythonicis mulieribus* (Strasbourg, 1489), f. 43-4. See Matteo Duni, "Doubting Witchcraft: Theologians, Jurists, Inquisitors during the Fifteenth and Sixteenth Centuries," *Studies in Church History* 52 (2016): 222.

could “impede men” from the act of generation in five different ways, primarily through the action of “blocking” or “stopping up” fluid motion. Operating externally, the demon could adopt an assumed body and physically stand between the spouses to prevent them joining together. Internally, he could manipulate the “occult virtues” of the body to cause a man to grow excessively cold or hot, he could “impress” vile images on the imagination to make him loathe his wife, or he could “restrain the member from rigidity.” Finally, he could inhibit “the emission of discharge [*sputum*] from the member” by blocking the “channels of semen so that they do not descend to the vessels of generation, so that they either recede or disappear from it.”⁴⁷²

Notably, each of the methods Palud outlined involved the physical interposition or supposition of the demon to stop the movement of people, organs, or substances. Like his contemporaries, Palud agreed that demons, as immaterial beings, could not act directly on material objects and so could not enact substantial changes to the quality or essential nature of a thing. However, Palud reasoned that demons could control corporeal bodies through the manipulation of internal fluids and organs through “local motion [*motus localis*],” primarily by blocking or preventing the motion of internal humors, rather than physically (re)moving parts of the body, as “castration” might imply.⁴⁷³ In Palud’s mind, the demonic

⁴⁷² Palud, f. 171r.

⁴⁷³ Palud, f. 171r. Local motion referred to movement in place. In Aristotelian mechanics, local motion was the first and most basic kind of motion that caused all movement of material bodies. Aristotle believed local motion must precede any other kind of motion, including any change or alteration in a body, because an alteration would be impossible without the thing that altered it changing its position in place relative to the object. As Aristotle took it as axiomatic that everything that moves must be moved by something else. Thus, terrestrial bodies moved passively through local motion, when something else applied force to cause it to move. Celestial bodies obeyed a different set of rules because they appeared to move without a mover and so produced their own continuous local motion. Because local motion was inherent to the more perfect realm of the stars, it was nature’s most perfect quality and, thus in a Neoplatonic schema, immediately subordinate, and thus proximate, to the lowest level of spiritual nature,

power to block movement through local motion explained why men were particularly susceptible to witchcraft targeting their fertility and sexual ability. Because the demon could more easily “through local motion interpose or obstruct the vessel,” of generation in men, Palud reckoned that men were “more often bewitched than women.”⁴⁷⁴

Many demonological writers of the fifteenth century drew upon Palud to emphasize the power of the devil to act on the fluid humors of the body in men specifically to induce not just impotence in the sense of a loss of erectile function, but a total loss of generative power. Johannes Nider, a Swabian Dominican theologian and author of the 1438 work *Formicarius*, repeated Palud’s five methods through which demons caused impotence.⁴⁷⁵ In the first place, Nider maintained that a demon could form an external impediment by assuming a material body and physically standing between the spouses. He could also form an internal impediment by acting directly on the generative faculties of a man. In most cases, he did so by interfering with the production of semen or its emission. Demons could also prevent the infusion of heat into the seed by causing the man to grow “cool,” interfere with the imagination and the spirituous elements that composed it, prevent erection altogether by “blocking the channels of semen,” or by blocking the emissions and “motive force [*utus motiva*]” of the male member.⁴⁷⁶

which demons supposedly inhabited. Local motion naturally obeyed the influence of superior, spiritual nature in the same way that bodies moved according to the spiritual influence of the soul or the stars. Demons, as spiritual beings, could thus command lower natural substances by moving them in place. See Aristotle, *Physics*, 8.1-8.7. For a brief explanation of Aristotle’s concept of local motion, see “Mechanics, Aristotelian,” in *The Routledge Encyclopedia of Philosophy*, vol. 10 (New York: Routledge, 1998), 249-50.

⁴⁷⁴ Pierre (Petrus) de la Palud, *Scriptum in librum quartum sententiarum* (Venice, 1493), bk. IV, sent. 4.34.2.4, f. 171r-v.

⁴⁷⁵ Johannes Nider, *Formicarius* (Strasbourg, 1516), bk. V, ch. 5, f. 262r.

⁴⁷⁶ Nider, bk. V, ch. 5, f. 262r-263r.

In the 1450s, Nicolas Jacquier, another Dominican demonologist convinced of the reality of the witchcraft heresy, listed impotence as one of the many illnesses that demons could inflict on the body. Similarly to Nider, Jacquier claimed that the Devil could physically interpose himself between spouses, so that “the bewitched person cannot tolerate the presence or society of the other person,” and would run away screaming in pain at their sight. More often, though, he attacked the plural “members [*membra*] for the venereal act,” implying that he could control not only the erection, but also the entire sexual apparatus of a man. He did so by controlling the humoral components of the seed and preventing them from forming generative semen. Not only could he incite the “appetite” at will, but he could also take it away by “retracting and retaining the [vital] spirit [*spiritus*] and other things pertaining to the carnal act, so that they do not arrive or flow, so as to be of use to (sexual) passion [*passioni*].”⁴⁷⁷

The theologian and demonologist Pierre Mamoris, from Poitiers, also wrote at the same time as Jacquier on the nature of *maleficium* and its special control over the fluid balance of male bodies.⁴⁷⁸ In his view, demons could not easily control whole bodily organs and so could not act directly on the genitals to induce impotence, by removing penile function. However, they did have special power over the “natural virtues,” of the body, especially that of the seminal flows underlying both male sexuality and generation. To cause impotence, demons acted on the heat, moisture, and the winds [*ventositas*] necessary for sexual action. Thus, a man might have an erection but emit no semen because the demon blocked his humor or moistness, or, if the demon blocked his winds, he would be unable to have an erection at all.⁴⁷⁹

⁴⁷⁷ Nicolas Jacquier, *Flagellum haereticorum fascinariorum* (Frankfurt, 1581), 89-90.

⁴⁷⁸ Along with Jacquier, Mamoris was one of the first to discuss the witches’ Sabbat as a heretical anti-Christian cult, which sought to undermine lawful human sexual relations and increase sexual sin. On Mamoris, see Hans Peter Broedel, *The Malleus Maleficarum and the Construction of Witchcraft: Theology and Popular Belief* (New York: Manchester University Press, 2003), 138. Martine Ostorero, *Le diable au sabbat : littérature démonologique et sorcellerie (1440-1460)*, 546-8.

⁴⁷⁹ Pierre (Petrus) Mamoris, *Flagellum maleficorum* (Toulouse, 1486), ch. 10, f. 11r.

Heinrich Kramer notoriously, and perhaps more than any other of the witchcraft theorists that followed him, stressed the power of witches to control male sexuality and generativity through manipulation of the seminal fluids. In Kramer's mind, women more often became witches because of their natural lustfulness and often conjured demons to satisfy their petty sexual jealousies and desires.⁴⁸⁰ Satan then used witches' crimes to further his plans to overthrow Christianity and enflame God's wrath. According to Kramer, demons procreated with humans and in this way perpetuated the number of witches and their evil deeds, while at the same time they worked to inhibit human reproduction by causing impotence or diverting desire from one's rightful spouse.⁴⁸¹ Kramer also believed that the Devil took a particular interest in sexuality because this was how he preferred to lead people into sin, by prompting them to commit adultery or fornication. Following Aquinas, Kramer reasoned that God granted Satan greater power to control sexuality because of its connection to the Fall and the temptations of the "serpent of lust."⁴⁸² As he wrote, "God gives permission more in connection with this act, which is the one through which the first sin is spread, than with other human acts." Thus, throughout his work, Kramer expressed a thoroughgoing preoccupation with the demonic manipulation of human sexuality and especially the effects that demons could have on male generativity.⁴⁸³

Because of the sexual nature of many witches' crimes, and the propensity of women to become witches, Kramer considered men to be more often the victims of witchcraft. In the section on how witches "impede procreation," he argued that although women's fertility could also be harmed by witchcraft, he

⁴⁸⁰ Kramer, 187.

⁴⁸¹ Kramer, 259.

⁴⁸² This was a common justification for Satan's interest in human sexuality in the fifteenth and sixteenth centuries. The Italian physician Giovanni Battista Condronchi, for instance, reasoned that the Devil targeted married couples because of the association between sex and "original sin." Giovanni Battista Condronchi, *De morbis beneficis ac beneficiis, libri quattuor* (Venice, 1595), f. 111v.

⁴⁸³ Kramer, 321.

agreed with the suggestion of the bull *Summus desiderantes* that, “men are more often affected by sorcery in connection with this act than are women.”⁴⁸⁴ In part, this had to do with the fact that so many more sorcerers were women, a point that Kramer repeatedly stressed. On the other hand, the reason for men’s vulnerability to witchcraft stemmed from the nature of the male body, as Kramer claimed that sorcery that impeded procreation could “be done better and more easily in the case of men.”⁴⁸⁵ Kramer only mentions in an off-handed manner that demons could inspire hatred in a woman for her husband, but otherwise, he does not discuss female frigidity. By contrast, Kramer takes up the question of how demons attacked men’s sexual abilities at great length. A much greater portion of the *Malleus* is dedicated to describing precisely how demons exploited the physiological processes of the body to impede procreation in men, drawing on the evidence of canon law, medicine, and natural theology.

Kramer’s explanation for why demons could more easily attack the bodies of men becomes apparent from what he believed demons could *not* do. For instance, although Kramer fully believed that demons could impede men’s generative powers, he seriously doubted that they could literally castrate the genital organs altogether, as he claimed, “many have seen” and he knew by “general report.”⁴⁸⁶ The *Malleus Maleficarum* includes three such bizarre tales of witches who physically removed “male members [*membra*],” including one who stashed a whole colony of them away in a bird’s nest.⁴⁸⁷ In each case, Kramer emphasized that the witches appeared to have literally removed the organs in question, so that the bodies of the afflicted men appeared completely “smooth.”⁴⁸⁸ In the first story, a man who wished to leave his lover had a “glamour” cast over his genitals so he could “see or touch nothing.” When he threatened to kill her, she restored his member to him by touching his thigh. In the second, a confessor

⁴⁸⁴ Kramer, 189.

⁴⁸⁵ Kramer, 189.

⁴⁸⁶ Kramer, 323.

⁴⁸⁷ Kramer, 189.

⁴⁸⁸ Kramer, 323.

met a young man who complained to have also lost his members and regained it by confronting the woman who bewitched him. In the third, a witch advised a similarly enchanted man to climb a tree and there, finding a nest full of members, to take one. When he reached for the largest one, she reprimanded him and said that it belonged to the parish priest.⁴⁸⁹

Fantastic as these stories were, however, Kramer only included them in order to refute their veracity and to cast doubts on the ability of demons to physically move or remove the genital organs. Although the inclusion of these stories would seem to be fully in line with his views on witches and their special power over the generative organs of men, Kramer hesitated to accept their reality at face value. Instead, he argued that Satan only created the illusion of magical castration in the mind of his victims.⁴⁹⁰ In his view, sorceresses did not physically remove the organs from the body, but the demons who acted at their behest could distort a man's perceptive faculties of sight and touch so that the members only appeared to be missing.⁴⁹¹ He wrote: "It must in no way be believed that such members are really torn right away from the body...they are hidden by the Devil through some prestidigitatory art so that they can be neither seen nor felt."⁴⁹² In Kramer's view, those who too quickly believed that demons could steal away penises granted Satan far too great a power and revealed their own credulity in the Devil's wiles. Kramer apparently regarded those afflicted by this magic to have in a way brought it upon themselves anyway, as he noted that those not in a state of Grace would be more susceptible to the trickery of the Devil, who only appeared to give witches such a threatening power over the body.⁴⁹³

⁴⁸⁹ Kramer, 323-8.

⁴⁹⁰ Moira Smith, "The Flying Phallus and the Laughing Inquisitor: Penis Theft in the *Malleus Maleficarum*," *Journal of Folklore Research* 39, no. 1 (2002): 91.

⁴⁹¹ Kramer, 195.

⁴⁹² Kramer, 328.

⁴⁹³ Kramer, 328.

Despite his apparent skepticism, however, Kramer did not regard episodes of demonic penis stealing as entirely untruthful or any less “real,” even if they were illusions. Rather, by explaining how demons acted on the imagination in naturalistic terms, he sought to further confirm the extent of demonic power over male bodies and male generativity. As Walter Stephens has pointed out, Kramer’s discourse on penis-stealing witches points to his desperate desire to prove that contact between demons and witches really existed, as evidence of the truth of Christian doctrine and the power of the sacraments.⁴⁹⁴ The canon *Si per sortiaras*, after all, had clearly established that sorcery could impede the consummation of marriage and, if incurable, justified annulment.⁴⁹⁵ Presumably, demons might choose to do so by removing the male member altogether, a condition that would certainly and permanently exclude one from marriage. To Kramer, denial of the reality of this kind of sorcery—even to consider “whether such an effect can be considered imaginary and not real”—amounted to a heretical denial of the canons.⁴⁹⁶ Otherwise, there could be no explanation for why impotence sometimes occurred in marriage, because if witchcraft did not exist and did not really block the completion of the sacrament of marriage, then the sacrament itself must have no efficacy.

Like his predecessors, Kramer argued that such illusions were produced by demons acting on the humoral elements of the male body through local motion. The bodily fluids, whose motions apparently had no mover, after all appeared to be more subject to spiritual influences than the human will. By manipulating the humors, demons could also alter the physical character of the imagination, producing

⁴⁹⁴ See Walter Stephens, “Witches Who Steal Penises: Impotence and Illusion in the *Malleus Maleficarum*,” *Journal of Medieval and Early Modern Studies* 28, no. 3 (1998): 495-529.

⁴⁹⁵ Kramer, 328. Out of all of canon law, only the *Canon episcopi* receives more citations in the *Malleus* than *Si per sortiaras*. Stephens, *Demon Lovers*, 313.

⁴⁹⁶ Kramer, 95.

illusions.⁴⁹⁷ Following Aquinas, Kramer believed the sense perceptions to physically reside in the corporeal spirits and humors in the body.⁴⁹⁸ Demons could not create new images and senses of their own accord—which would involve a qualitative change—but altered existing memories and fancies contained in the spirits to cause hallucinations. When it came to stealing male members, demons also could not enact such a substantive change to the body as literal castration. Instead, they operated further up the causative chain by moving or blocking the humors of the body. They did so by obscuring a person’s perception of reality and transposing a combination of images that already existed in the memory over the visual faculty. When they wanted to manipulate the imagination, they acted locally on the blood that infused the “inmost seat of the senses” in the brain and created memories, rearranging the corporeal spirits to display what they wished. In a sense then, demons who stole members did enact a real, physical change in the body, although this change in fact took place in the spirituous humors of the brain rather than the genitals directly. Hence, Kramer’s confusing concluding statement on the matter: “It can be said that there is a true removal of the member[s] from the point of view of the imagination of the person affected, though not from that of the thing itself.”⁴⁹⁹

The same logic about demonic blockages of humoral fluids, in Kramer’s mind, explained why witches could more easily target male sexuality and male generativity. In Kramer’s view, demons’ power over the humoral aspects of the body meant that they could also act locally on parts other than the imagination. In the same way that they could interfere with the blood in the brain to create new images in the imagination, they could also manipulate or redirect the movements of other fluid humors in the body to cause real physical effects. Aside from making the members disappear in the imagination, Kramer

⁴⁹⁷ Kramer cites Aristotle’s *De Somnio et Uigilia*, in which he explains apparitions in dreams as a product of local motion, in which memories and senses are rearranged to produce an illusion.

⁴⁹⁸ See Thomas Aquinas, *Summa Theologiae: Supplementum*, q.1-68, trans. Fr. Laurence Shapcote, in *Opera Omnia of St. Thomas Aquinas* (Green Bay, WI: Aquinas Institute, 2018), q. 1, a. 111.3.

⁴⁹⁹ Kramer, 195.

listed several other ways in which demons could impede procreation in men by suppressing the production or movement of generative seed. In his estimation, demons could more “easily” attack men’s fertility because they simply had to block and suppress the seminal vessels. It is unclear if Kramer believed that women also emitted generative seed, but in any case he does not describe female impotence or infertility as a result of demonic interference with the seed.⁵⁰⁰ In men, however, demons could use local motion to “suppress the hardness of the member suitable for propagation” by blocking off “the seed’s paths to prevent it from going down to the vessels of procreation.” Because “the virtue of motion” necessary for erection resided in the seed, blocking it from “departing or coming out or being sent forth” would effectively make sexual intercourse impossible.⁵⁰¹ Furthermore, because demons supposedly had knowledge of the natural virtues of all objects, they could also interfere with the generativity of the seed by applying cooling plants that would diminish its heat and force.⁵⁰²

Later demonologists, writing at the height of concerns about magically-caused impotence at the end of the sixteenth century, also drew upon Kramer’s and Nider’s naturalistic explanations for how demons interfered with male sexuality by acting on the underlying fluid action of seminal production. Out of the ten ways in which the Devil could “block marriage” that Pierre Crespet (1543-1594) listed, five of them involved blocking the necessary elements for the formation of semen, including the use of herbs which blocked “the power to engender” and deprived the genitals of their heat, preventing the infusion of “the spirits in which the virtue of mixing [the seed] consists,” and “stopping up the conduits of semen so that it will not distill or flow to the vessel appropriate for engendering.”⁵⁰³

⁵⁰⁰ Kramer’s remarks elsewhere on how incubi and succubi created demonic children paint women more as passive recipients of seed, as Aristotle does, rather than having an active role in generation.

⁵⁰¹ Kramer, 188.

⁵⁰² Kramer, 188.

⁵⁰³ Pierre Crespet, *Deux livres de la hayne de Sathan* (Paris, 1590), f. 274v.

Physicians and medical practitioners of the sixteenth and seventeenth centuries also expressed a great deal of anxiety about the vulnerability of male seminal flows to demonic interference. Early modern medical practitioners tended to explain magically-induced impotence in naturalistic terms, most often explaining the affliction as a demonic blockage of the three seminal fluids. The notion that the Devil could most easily inhibit the sexual act by attacking the fluid elements of the semen corresponded to early modern medical theory, which situated both men's sexual and generative abilities within a humoral economy of fluids. As the town physician of Ulm, Wolfgang Reichart (1486 - ca. 1547), explained, because the physiology of sexual ability depended on three humoral qualities—humor, *spiritus ventosus*, and heat—any interference in the operations of these fluids could cause impotence or infertility in men, including the “hidden operations of demons.” In cases of impotence, Reichart claimed that demons could physically interpose themselves between the heart and the genitals, preventing spirit from filling the penis.⁵⁰⁴ Giovanni Savonarola also reasoned that, because demons had to act through natural means, they must necessarily attack the three humors necessary for male sexual ability in their incantations, either the “humidity, the greatest part of which comes from the brain; the windy spirits impelled from the heart to the penis; or the natural desire, which comes from the liver.”⁵⁰⁵

Just as in discussions of naturally-caused impotence, the situation of demonic causes within the framework of the three fluids far expanded the definition of impotence beyond just lack of erection, to encompass a range of male humoral imbalances. The physician Benedetto di Salvatico, for instance, recounted the case of a nobleman from Germany who was afflicted by a “magic bond” that did not make him impotent for penetration per se. Rather, the man in question found himself unable to “emit any

⁵⁰⁴ Wolfgang Reichart, *Conclusiones super quodam eunicho infringidato* (ca. 1512-1547), State and University Library Hamburg, Supellex epistolica Uffenbachii et Wolfiorum 4°, vol. 49. See Frank Ursin, Giovanni Rubeis, and Florian Steger, “The Pathophysiology and Therapy of Erectile Dysfunction in a Newly Discovered Treatise by Wolfgang Reichart (1486-circa 1547),” *Urology* 139 (2020): 22-26.

⁵⁰⁵ Savonarola, f. 257v.

semen” when he approached his wife, such that “semen with pleasure, otherwise copiously ejaculated, did not proceed from the erection, at any time that the penis was rigid.”⁵⁰⁶

Considering the emphasis of contemporary demonologists and physicians on demonic manipulation of the seminal fluids, it is thus somewhat misleading (or at least incomplete) to claim that demons acted exclusively to cause impotence in men or to label this brand of witchcraft as a kind of Freudian “magical castration” in which the penis was all-important. To do so is to overlook the numerous demonological and medical sources that described the spell as having several different possible effects beyond a loss of erection or penile function alone, including infertility and various other kinds of male fluid imbalances. In many cases, physicians implied that because demons could act to block the motion of the three seminal fluids—crucial for male reproductive physiology—that witchcraft could easily impede both male sexual and reproductive ability.

In fact, often the two went hand-in-hand. As in descriptions of male impotence more generally, medical practitioners rarely drew a clear distinction between “impotence” as a loss of penetrative power and impotence as a more general loss of reproductive function. The physician Daniel Sennert, for instance, reckoned that the Devil primarily attacked the male body because he sought to “inhibit the propagation of mankind.” The method through which demons acted also attacked generation, as well as sexual ability, because they primarily worked “to extinguish the seed” and thereby prevent “the Penis to Erect and Ejaculate Semen.” Without the force of virile seed to animate the penis, the man in question would not only be unable to sustain an erection, because the lack of spirit hindered “the erection of the yard,” but he would also be “dried up” so that, even if the man could still have sex with his wife, he “would not be able to emit semen.”⁵⁰⁷ Condronchi also described the causes of demonically-induced impotence in fluid terms, describing how demons could act through local motion to prevent “the emission

⁵⁰⁶ Benedetto di Salvatico (Benedictus Silvaticus), *Consiliorum et responsorum medicinalium centuriae quatuor* (Geneva, 1662), 298.

⁵⁰⁷ Daniel Sennert, *Practica medicina* (Wittenberg, 1635), 950.

of spirit, in which strength is moved to the members, or restricting the seminal pathways, so that it does not descend to the vessels of generations, nor is emitted,” causing both impotence and, more significantly in Condronchi’s eyes, “impeding generation” in men.⁵⁰⁸

Other medical practitioners also acknowledged the power of magical knots and the demons they commanded to target both sexual and generative function in men. The surgeon Ambroise Paré claimed that use of the knot could make men not only impotent, but also “infecund” because “the natural virtue to engender is restrained.” He wrote of magically-caused impotence and infertility as indistinct or at least concomitant conditions.⁵⁰⁹ Indeed, numerous medical writers seemed more inclined to treat bewitchment as a cause of barrenness than impotence. The English writer William Drage noted that witches “tie this knot many wayes, and sometimes hinder copulation; sometimes give leave to copulation, but hinder generation” and caused “Barrenness.”⁵¹⁰

These statements did not only serve to point out the obvious truth that preventing sexual intercourse naturally prevented reproduction. Other writers claimed that in some cases the knot did not impede sexual intercourse at all, but instead caused only sterility. John Pechey mentioned that male barrenness could be caused by “Inchantments.” Normally, Pechey clarified that this meant that “then the man cannot lye with his wife,” but in some cases he claimed that men still retained their sexual powers but became sterile, for, “though he should, yet [he] cannot emit seed.”⁵¹¹ Pierre De Lancre, similarly, claimed that those tied by the knot could still have sex, although they would not bear issue, writing that “although the effects of copulation be free, the generation and procreation of children can be made impossible” depending on “the design of the leather and the color of the *esguillette*, and how many knots

⁵⁰⁸ Condronchi, f. 112r.

⁵⁰⁹ A discussion of the spell is included in the section “On sterility, which is lack of engendering in men,” Paré, 723.

⁵¹⁰ William Drage, *Daimonomageia a small treatise of sicknesses and diseases from witchcraft, and supernatural causes* (London, 1665), 14.

⁵¹¹ John Pechey, *The compleat midwife's practice enlarged* (London, 1698), 243.

are knotted [in it]," suggesting that the spell itself was understood to not just exclusively inhibit male sexual ability, but could also specifically target male fertility as well.⁵¹²

Descriptions of popular beliefs related to knot-tying magic also tended to link the spell both to male infertility and male impotence. Jean Bodin, the most frequently quoted source on the spell in the sixteenth century and after, claimed to have met a noblewoman in Poitiers in the 1580s familiar with the operation of this kind of magic and how its physical effects interfered with the physiology of generation.⁵¹³ While tying any kind of knot could supposedly induce impotence, in the sixteenth century the spell was most often imagined as a tying of the codpiece strings, or a *nouement de l'aiguillette*. Out of the "more than fifty ways to tie the codpiece-string" that Bodin's informant described, a variety of different methods could be used to block not just copulation, but procreation in men.⁵¹⁴ Consistent with early modern medical theory, which described both impotence and infertility as defects of seed with the same underlying cause, the anonymous noblewoman claimed that the knot "impeded" both sexual intercourse and the reproductive faculties by blocking or tying the flow of generative seed. Not only would his sexual powers languish, but his legitimate children would obviously remain unborn. This was reflected in the magical objects involved, as the build-up of unspent fluid in the body manifested on the knot over time and "one could see swellings" come out of the cord, representing "the signs of the children who would have been procreated if the people had not been bound."⁵¹⁵

⁵¹² De Lancré, 316. René Bretonnayau too noted that the knot could cause both impotence and infertility in men because "They have no more power, though they have desire enough, / He who the magician ties by the black band / By unworldly execrable spirits he commands, / The bewitched he cannot have any children, / And tying and untying that which God has conjoined." Bretonnayau, f. 31v.

⁵¹³ Bodin, 57-58.

⁵¹⁴ "One is sometimes tied for generation and not for intercourse." Bodin, 59.

⁵¹⁵ Bodin, 59.

The mechanism of the spell itself as described by Bodin's informant—the tying of a man's codpiece strings—supposedly imitated the act of “tying” up or blocking the fluid motion of semen, thus inhibiting both sexual and reproductive ability in men. The association of knot-tying magic and magically-induced impotence or infertility with codpieces is also telling and deserves further examination. Scholars have often read the fashion for codpieces in the fifteenth and sixteenth centuries as symbolic of a fixation on “phallic” masculinity, and have construed the codpiece as an object intended principally to simulate an erection. Leo Steinberg, for instance, claimed that the Renaissance codpieces symbolized “a permanent state of erection” and that it was thus served as an emblem of “prowess and virile fecundity.”⁵¹⁶ Ladurie and others have similarly been inclined to view the ritual of “tying the codpiece string” as a spell that explicitly attacked the penis and a man’s sexual functionality only. However, historians of witchcraft have perhaps taken too much for granted what the codpiece in the context of the sixteenth and seventeenth centuries was meant to symbolize and, in turn, what action witchcraft involving codpiece strings was meant to induce. A closer examination of contemporary discussions of, and material uses for, the codpiece reveals that this accessory functioned less as an exclusively phallic object, but rather an accessory that stood in for “broader genital references” in which masculinity is figured as principally generative and centered on the both the penis and the testicles.⁵¹⁷ In the context of witchcraft as well, spells involving the codpiece or the “tying of the codpiece string” did not exclusively work to enact the removal of penile function or penile castration, but symbolized a more general blockage of fluid, seminal ability. In the first place, the “tying the codpiece string” most likely did not refer to tying the codpiece, or the metonymic penis, round with a string as Ladurie has suggested, but the rather mundane action of tying a codpiece onto the breeches. Prior to the invention of buttons or

⁵¹⁶ Leo Steinberg, *The Sexuality of Christ in Renaissance Art and Modern Oblivion*, 2nd ed. (Chicago: University of Chicago Press, 1996), 85.

⁵¹⁷ Patricia Simons especially has argued that Renaissance codpieces should not be read as a “penile” accessory only. Simons, 103.

zippers, codpieces had to be tied on with strings. The *aiguillette* referenced in the spell to “knot the *aiguillette*” specifically refers to a silk or leather cord with metal pointed tips, which was used to attach clothing items together—not, as Ladurie has suggested, a method for castrating animals using a string tied around the testicles.⁵¹⁸ This fact rather changes how witches would have performed the spell and what action they might have thought the action would have sympathetically simulated in a man’s body. The demonologist Johann Weyer, for one, specifically referenced the fashionable function of the codpiece when he explained how in Italy, “the most notorious and disgusting prostitutes” believed that they could render a man impotent if they “remove the front band of his underclothes and tie knots in it.”⁵¹⁹

Further examination of codpiece fashion in the sixteenth and seventeenth century complicates the straightforward association between codpiece magic and an exclusively phallic interpretation of so-called impotence magic. Despite the modern compulsion to see codpieces as blatantly phallic objects intended to advertise a “permanent state of erection,” and codpiece magic as an attack on phallic manhood, a closer reading of the history and symbology of codpieces suggests that codpieces had a range of functions and could evoke a range of symbolic meanings beyond the purely phallic. Despite the notable prominence of

⁵¹⁸ Antoine Furetière’s dictionary defined an *aiguillette*, also known as a “point,” as a “cord or tissue shod at both ends, which serves to attach something to another,” most often to close the “upper of the breeches,” from which the French term for codpiece—*braguette*, or breeches (Latin *bracae*)—derives. Antoine Furetière, *Dictionnaire universel*, vol. 1 (La Haye, 1690), 62. Most period French-English dictionaries thus translated “nouer l’*aiguillette*” as “to tie the point of a man’s codpiece.” Randle Cotgrace’s 1611 bilingual dictionary, for instance, recorded that the power of the *nouement* “is supposed to come by the force of certaine words uttered by the Charmer, while he ties a knot in the parties codpeece-point.” “*Esguillette nouée*,” in Randle Cotgrave, *A Dictionarie of the French and English Tongues* (London, 1611).

⁵¹⁹ Johann Weyer, *Witches, Devils, and Doctors in the Renaissance: Johan Weyer, De praestigiis daemonum*, trans. John Shea, eds. George Mora and Benjamin Khol (Binghampton, NY: Medieval and Renaissance Texts and Studies, 1991), 333.

bulging, brightly colored codpieces in several mid-sixteenth century portraits of kings and the high nobility, such as those of Charles V (1532), Henry VIII (1537), and François I (1540), several scholars have remarked on the scrotal, rather than penile shape of this accessory. As Thomas Laqueur has noted, they look “often decidedly unphallic...broader at the end than at the base, blunt not sharp, [and] decorated with ribbonlike braids.”⁵²⁰ Patricia Simons has also commented that padded styles of the codpiece in portraits often appear “tumescent” and “bulging,” suggesting generative abundance, but not necessarily phallic. Charles V’s is particularly subdued and is more ovoid, with a seam down the middle, more closely approximating the shape of the scrotum than an erect penis.

Codpieces as they developed in the fifteenth century were also not intended originally to put the penis on display or advertise one’s virility at all. Contrary to what Holbein’s famous portrait of Henry VIII (1537) and his protruding sheath might suggest to modern viewers, men most likely first wore codpieces to conceal, rather than call attention to, the genital area. Codpieces first became common in the fifteenth century among non-noble, principally military men, when young men began to wear shorter skirts over hose for horseback riding. Men’s hose did not consist of a single piece but were each put on separately and tied to the doublet with lace or points at the waistline. However, over time, the hemline of men’s skirts grew increasingly shorter, so that the lack of undergarments or a fly for the breeches meant that if the hose were untied to allow one to bend down or urinate, one risked inadvertently exposing oneself—a not unlikely scenario, given the inconvenience of having to constantly tie and untie the hose strings.⁵²¹ As evidence of the problem of genital exposure, in 1425, the preacher Bernardino of Siena lambasted Florentine parents who allowed their young sons to go about in short doublets and “stockings

⁵²⁰ Quoted in Simons, 105.

⁵²¹ Grace Q. Vicary, “Visual Art as Social Data: The Renaissance Codpiece,” *Cultural Anthropology* 4, no. 1 (1989): 4-8; Anne Hollander, *Seeing Through Clothes* (Berkeley: University of California Press, 1993), 234. Montaigne also remarked on the codpiece as a “ridiculous part of the hose that our fathers wore,” pointing to its use as a functional accessory used to close the front of the hose.

with a little piece of cloth in front and behind, so that they show a lot of flesh for the sodomites.”⁵²² The English Commons under Edward IV also specified that a man should wear a coat long enough to “cover his privy members and buttockes,” perhaps in response to the problem of rising hemlines.⁵²³ Grace Vicary proposes that the codpiece entered into male fashion as a solution to rising concerns about revealing men’s dress, originally as a simple, removable triangular flap, laced to cover the front opening of the hose and conceal the genital area [Fig. 28]. In its original manifestation, then, the flap-style codpiece emerged as a solution to male nudity rather than a bold imitation of it.

The codpiece had an additional functional purpose beyond phallic advertisement. It served not only to conceal the genitals—as opposed to advertising the penis—but also to protect them from harm. Before it became popular with nobles and monarchs, the codpiece appears to have been most popular with military men like Dürer’s *Standard Bearer*. Depictions of codpieces prior to the 1530s usually feature them on pikemen, soldiers, and other nameless men of arms, such as Vittore Carpaccio’s armored *Young Knight in a Landscape* (1510), suggesting that it may have had some protective function in military dress. The codpiece of the early sixteenth century, as portrayed in visual art, grew much larger due to the addition of extra cloth padding than the original triangular flap of the late fifteenth century. Furthermore, the codpiece did not actually house the genitals, but simply closed the opening of the hose, providing an

⁵²² Quoted in Michael Rocke, “Sodomites in Fifteenth-Century Tuscany: The Views of Bernardino of Siena,” in Kent Gerard and Gert Hekma, eds., *The Pursuit of Sodomy: Male Homosexuality in Renaissance and Enlightenment Europe* (New York: Harrington Press, 1989).

⁵²³ Quoted in Vicary, 8. Sumptuary laws and university regulations of the fifteenth century in Germany also responded to this new concern with male nudity and mandated that men wear clothing that could conceal the private parts. See Thomas Lüttenberg, “The Cod-Piece—A Renaissance Fashion between Sign and Artefact,” *The Medieval History Journal* 8, no. 1 (April 2005): 61.

extra layer of defense from swords and other implements.⁵²⁴ Paired with the armored skirt that Carpaccio's *Young Knight* is wearing, a cloth-padded codpiece then would have provided a degree of protection, while the cloth material would still allow the wearer to ride a horse and otherwise move freely.⁵²⁵ In sum, then, codpieces in fact more than likely functioned more to protect the whole of the male genital apparatus, rather than intentionally serving to put one's virility or phallic prowess on display. Even the term codpiece itself, from the Middle English word cod, meaning scrotum, suggested that codpieces served to protect or store the testicles (the "cods") and thus bore a stronger association with the testicles, and hence with the preservation of male fertility, than with the phallus exclusively.⁵²⁶

Rabelais's satirical discourse on the "dignity of codpieces," also references this protective function and further supports the notion that the codpiece originally functioned to protect the cads in battle and was thus more strongly linked to the testicles, or the male genital apparatus as a whole, rather than the penis exclusively. In Chapter VIII of the *Tiers livre*, Panurge tells Pantagruel that the codpiece is the "principal piece of armor to arm a warrior." Because Panurge wishes to marry and thus "retire from the military art," he claims that he does not "wear any more a codpiece, nor by consequence my

⁵²⁴ Written sources confirming the military usage of the codpiece are scarce. Sir John Smythe mentioned that men did indeed wear cloth codpieces into battle and that this was one gap in the armor of the lower body particularly susceptible to arrows, which, "in their lower descents...light either upon the breasts, bellies, cod peeces, thighs, knees, or legges," *A Certain Discourse of Weapons* (London, 1590), 28. Vulnerability to arrows was perhaps the trade-off for the wider range of movement a cloth, rather than a metal, codpiece allowed.

⁵²⁵ This stands in contrast to metal codpieces, which compose most of the few codpieces from the Renaissance that survive today—most famously, that of Henry VIII, on display in the Tower of London. These codpieces formed part of suits of armor that were purely ceremonial or decorative. Most historians believe that they were never worn into battle because, among other reasons, they would have obviously made it impossible to ride a horse comfortably.

⁵²⁶ See "Cod, n. 1," *OED*.

breeches,” further suggesting an association between the codpiece and the military profession.⁵²⁷ The codpiece is a useful piece of armor, Panurge says, because, unlike other husked nuts and peas—common contemporary euphemisms for the testicles—Nature “created man naked, tender, and fragile, without either offensive or defensive arms.” Against its detractors, Panurge argues that the codpiece did not exaggerate Nature, but merely corrected its deficiencies by providing the defensive shell it had already thought fit to grant other vulnerable “fruits.” Moses himself wore one “to cover and arm the cuds” because, as Rabelais pointed out, Galen ranked the testicles among the principal members of the body and to lose them would be devastating. Panurge goes on to lampoon book 1 of *De Spermate* and claims that the codpiece is necessary to war, because if the “head is lost, only that person dies. But, if the cuds be lost, all of human nature dies.” Thus, he says, “it were better, that is to say, a lesser evil, to have no heart than to have no genitories. For they are the sacred repository of the germ that conserves the human lineage.”⁵²⁸ Panurge’s discourse suggests that the codpiece could have a useful purpose: as an implement of war and a protective encasement, used primarily to shield the whole of the genitals from harm and, particularly, to preserve their generative function.

The history and function of the codpiece as a protective and testicular object, rather than a phallic one, complicates the view that codpiece magic necessarily and exclusively targeted male sexual power. Considered against the broader range of associations that the codpiece held in the sixteenth century, it is possible to interpret the ritual of “tying the codpiece strings” not just as an assault on phallic manhood, drawing a straight line between erection and masculine power or, conversely, loss of erection and masculine disempowerment. If the codpiece could serve other functions other than the blatant display of

⁵²⁷ François Rabelais, *Tiers livre des faictz et dictz heroiques du noble Pantagruel* (Paris, 1546), 65-66. It is unclear if Panurge is speaking figuratively of the sexual freedom of bachelorhood that he must give up, a fitting interpretation given his notoriously negative views on marriage. Elsewhere, however, he hints at the codpiece as having a protective function that would make it obviously desirable in military action.

⁵²⁸ Rabelais, 70-71.

phallic manhood, by protecting the “cods” and hence preserving male fertility, tying the codpiece strings could also symbolize a more general loss of male reproductive ability. The codpiece thus functioned metonymically in the spell of the *nouement* in the place of a man’s whole sexual apparatus, not just the penis and its penetrative functions. Tying the knot did not simply rob a man of an erection so much as it worked to impede all sexual function, by acting on the *whole* contents of the codpiece, including the testicles and seminal vesicles.

As discussed above, early modern medicine made little distinction between sexual and reproductive ability but saw male sexual function as almost wholly dependent on the humoral quality of the seed as the active force behind both sexual and generative ability. The ways in which early moderns believed knot-tying magic to work mirrored medical understandings of male sexuality as fluid-centric, because the spell caused impotence by literally impeding the flow of semen, not by enacting a symbolic “castration” of the penis, as Ladurie saw it. As Bodin’s informant above suggested to him, tying the codpiece string thus did not act to castrate a man so much as to bind up the generative faculties or the seminal fluids supplying the penis. So long as the codpiece string remained tied, a man would be unable to have sexual intercourse because the knots would obstruct the entire genitals contained in the codpiece—penis and testicles both—preventing the production and flow of semen or *pneuma* necessary for erection, and backing up the seminal flows as additional knots representing a man’s unborn children. Hence, as Reginald Scot suggested in his description of the spell, magical knots impeded “the vertue of generation” because they stopped “the passage of the mans seed, so as it may not descend to the vessels of generation,” effectively acting both on the penetrative and generative functions symbolized by the codpiece.⁵²⁹

The association between tying the codpiece point and other kinds of ligature magic, intended to bind or block fluid movement, further points to how knot-tying spells targeted the semen or *pneuma* required for both erection and ejaculation. Johann Weyer categorized impotence magic among other kinds

⁵²⁹ Reginald Scot, *The Discoverie of Witchcraft*, ed. Montague Summers (New York: Dover, 1972), 44.

of “tying” spells that supposedly stopped mills from turning, fires from burning, rain from falling, and fountains from flowing so that “no water can be drawn.”⁵³⁰ In France, the *aiguillette* was commonly associated with a class of magic used to block fluid movement (*chevilement*), such as that used to “tie up” the force of a stream or the winds or to block a channel.⁵³¹ Fevret ranked “magic arts used to render a man impotent in the marriage act” among other spells that stopped movement, including those used to “bind the tongue and remove the power of speech, and to stop in an instant the course of swift horses, to fix and jam the geared wheels of a turning mill, to charm the bolt of a hunter’s cross-bow, to loosen or to arrest the wind, and other similar feats that sorcerers perform with the aid of the Devil.”⁵³² Jean Bodin further suggested that knot had a special affinity with the fluid matter of the body in general because it could also be used to stop “people from urinating, from which many people die.” In one case, he claimed that a “master witch” bound a man so that he could not urinate, and then waited until he was in public to suddenly remove the “impediment” and thereby humiliate him.⁵³³ In at least one 1613 case heard by the English astrologer Richard Napier, claimed that witchcraft had tied the movement of urine so that “by ye partyes yt brought his water yt he is bewitched.”⁵³⁴ Presumably, in the same way, the knot could physically block the movement of semen and, once removed, would allow it to flow again. Henri Boguet, a judge and witch-hunter of Saint-Claude in the Jura Mountains in Burgundy, similarly argued that

⁵³⁰ Johann Weyer, *De praestigiis daemonum*, in *Witches, Devils, and Doctors in the Renaissance: Johann Weyer, De praestigiis daemonum*, eds. George Mora and Benjamin Khol, trans. John Shea (Binghampton, NY: Medieval and Renaissance Texts and Studies, 1991), 335.

⁵³¹ Collin de Plancy, *Dictionnaire Infernal ou répertoire universel* (Paris: Plancy, 1853), 304.

⁵³² Fr. Fevret, *Traité de l’abus*, book 5, ch. 4, no. 6

⁵³³ Bodin, 60.

⁵³⁴ Lauren Kassell, Michael Hawkins, Robert Ralley, John Young, Joanne Edge, Janet Yvonne Martin-Portugues, and Natalie Kaoukji (eds.), “CASE41247,” *The casebooks of Simon Forman and Richard Napier, 1596–1634: a digital edition*, <https://casebooks.lib.cam.ac.uk/cases/CASE41247>, accessed 21 November 2020.

witches had a special power over the fluid humors of the body because they could block a nurse's milk or cause the retention of the urine, leading to bladder stones.⁵³⁵ In much the same way, they could cause the retention of the semen and "remove the hardness from the member...and divert procreation" by "blocking the conduits descending to the vessels of generation."⁵³⁶

The association between the knot's interruption of seminal flows and other kinds of bodily fluids is also reflected in popular methods for reversing the spell, which most commonly involved urinating through a ring or the keyhole of the church where the marriage was celebrated.⁵³⁷ In 1585, Étienne Tabourot noted that people believed the only way to reverse the spell was to "urinate through the ring with which one was married," almost as a matter of course.⁵³⁸ Demonological writers recorded the use of similar remedies for the *nouement*, particularly in certain regions of France. Pierre de Lancre, for one, wrote that witches in Western France who specialized in untying the knot did so by commanding the bound husband to urinate through the wedding ring.⁵³⁹ Men apparently also sought out this cure themselves. For instance, in a 1623 annulment case in Paris, Jean Andoyes accused his own wife, Charlotte Boyin, of bewitching him and causing his impotence. After trying numerous other "spells and

⁵³⁵ Henri Boguet, *Discours exécitable des sorciers: ensemble leur procez* (Rouen, 1606), 174.

⁵³⁶ Boguet, 174. Thomas Broomhall in the seventeenth century also described a case of ligation of the bladder as analogous to the binding of male sexual powers: "The Urines of men might be stopt by this trick, whereof they were not few that dyed. I found a poor boy almost dead with this thing; and the man that did the feat, loos'd again the knot, and so gave his urine vent. And not many moneths after, this very Sorcerer dyed of a like ligature." Thomas Broomhall, *An history of apparitions, oracles, prophecies, and predictions with dreams, visions, and revelations and the cunning delusions of the devil* (London, 1658), 127-8.

⁵³⁷ Jean-Baptiste Thiers, among others, recorded "pissing through the keyhole of a church where one was married" as a popular superstition used to reverse impotence magic in previous centuries, *Superstitions anciennes et modernes*, vol. 2 (Amsterdam: Jean Frederic Bernard, 1736), 268.

⁵³⁸ Étienne Tabourot, *Les Bigarrures du seigneur Des Accords, quatrième livre* (Paris, 1585), f. 68v.

⁵³⁹ De Lancre, 312.

drugs,” he demanded that she give him her wedding ring so that he could use it to reverse the spell, presumably by urinating through it.⁵⁴⁰

Knowledge of the remedy was not confined to France, however, as the English writer Reginald Scot also listed it among the “popish and magicall cures, for them that are bewitched in their privities.”⁵⁴¹ Jane Sharpe’s *Midwives Book* mentioned that the French, in cases of impotence, “would advise a man to thread the needle *Noutr C’equilliette*, as much to say, to piss through his wife’s wedding ring and not to spill a drop and then he shall be perfectly cured.”⁵⁴² In Venice, an accused witch claimed that she had the power to untie knots by having the afflicted urinate through the wedding ring, while the papal nuncio complained to the Holy See about men who sought to free themselves from the knot by urinating on church doors.⁵⁴³ The wedding ring cure was also frequently mentioned in works of medical advice, even if only to mock it as Felix Platter did.⁵⁴⁴ It also commonly featured in books of secrets like that of Johann Wecker, which recommended that if the “spouses piss through the wedding ring,” the man would be “untied and delivered from impotence from Venus and from the charm.”⁵⁴⁵

⁵⁴⁰ AN Z1O 116, Andoyes-Boyin, Interrogation, April 29, 1623, f. 6.

⁵⁴¹ Scot, 47.

⁵⁴² Jane Sharp, *The Midwives Book, Or the Whole Art of Midwifry Discovered*, ed. Elaine Hobby (New York: Oxford University Press, 1999), 81. Note that Sharpe here appears to have confused the name of the spell with its cure. Nicholas Culpeper also recommended urinating through a wedding ring to those afflicted by the spell: “In this I will tell you no more than I have known tried. The Cure is easie, and was done by the man only making water through his wives Wedding Ring.” Culpeper, 90.

⁵⁴³ Ruggiero, 168. Alberto Bolognetti wrote to the Holy See: “These incantations produced truly diabolical effects, as with those who, being at first unable to consummate their marriages, freed themselves from impotence by urinating in the immediate surroundings of a tomb or on the door of a church.” Quoted in Joanne M. Ferraro, *Marriage Wars in Late Renaissance Venice* (Oxford: Oxford University Press, 2001), 76.

⁵⁴⁴ Felix Platter, *Ordinarii praxeos medicae tomi tres* (Basel: Johannes Schroeteri, 1625), 538.

⁵⁴⁵ Johann Jacob Wecker, *De secretis libri XVII* (Basel, 1662), 85.

The ritual of urinating through the wedding ring represented a reversal of the action that binding magic had on the fluid capacities of the male body.⁵⁴⁶ The use of the ring or the keyhole could represent the desired effect by symbolically re-enacting sexual intercourse, the ring or keyhole standing in for the vagina and urination simulating the fluid action of ejaculation [Fig. 29]. In French, *lascher l'aiguillette* (to release the codpiece-point, or to remove one's codpiece) was a colloquial term for urination, suggesting that doing so would symbolically “untie” the knot and allow a man release in more than one sense.⁵⁴⁷ Variations on this cure also involved the use of fluids meant to stand in for ejaculate, for instance, by tapping an unopened barrel of wine and directing its stream through the ring.⁵⁴⁸

Altogether, then, so-called early modern impotence magic drew on a range of cultural significations beyond what the term “castration” alone might suggest. Much as in the case of more “naturally-caused” kinds of male reproductive disorders, physicians and demonologists alike tended to frame magical knot-tying as an affliction of a man’s fluid faculties that could affect both his generative and sexual abilities. In fact, it was these fluid faculties that made men especially prone to demonic attack because, as numerous demonologists argued, demons could very easily block the movement of natural fluids in the body or, by “tying” up the movement of winds, humor, or heat, very easily deprive men of the ability to generate. Because medical theory tended to treat erection and sexual function as essentially

⁵⁴⁶ As Louis Henard wrote, “An enchantment is nothing but a reversal of the legitimate usage of the Word of God.” Hesnard, 17.

⁵⁴⁷ Furetière, 62. In Latin, male semen bore an etymological connection to urination: “Verbs meaning ‘urinate’ are often used for ejaculation in Latin...It is not plausible to suggest that they reflect a ‘primitive’ failure to distinguish sharply between urine and sexual secretions. In Latin at least it is more likely that they would have been interpreted as crudely figurative, or as infantilisms deliberately maintained in vulgar speech. Semen is sometimes likened to other bodily secretions (e.g. mucus, CIL IV.1391, tears, Lucil. 307).” Adams, 142. On the connection between urination and ejaculation in early modern art, see Simons, “Manliness and the Visual Semiotics of Bodily Fluids in Early Modern Culture,” *Journal of Medieval and Early Modern Studies* 39, no. 2 (2009): 331-73.

⁵⁴⁸ Thiers, 267-8.

reducible to one's generative function, or the presence of these seminal fluids, discussions of witchcraft's effects of the male body similarly treated magically-caused impotence as essentially indistinguishable from infertility more generally. Magical knots on the one hand resulted in infertility because they prevented erection and sexual intercourse in men, but they were also caused in some sense by infertility because this form of magic worked by attacking and diminishing the quality of the seminal fluids. In a grander sense, magically-caused impotence was indistinct from male infertility because Satan primarily wished to undermine and disorder marriage and lawful human generation. In its aims, causes, and effects, then, the knot tended to affect both male reproductive and sexual ability.

In this section, I have argued in favor of what might seem like a relatively minor revision of terms, by dispensing with psychoanalytic or symbolic "castration" as an explanation for early modern anxieties about magically-caused impotence. However, re-interpreting the ritual of the knot in relationship to contemporary models of the male body reveals that even the term "magically-caused impotence" may not fully capture the kinds of anxieties that the spell awakened in men of the sixteenth- and seventeenth centuries. The centrality of seminal flows and humoral balance to male embodiment meant that male bodies were seen to be particularly susceptible to the influence of witchcraft. Furthermore, the ability of demons to block seminal flows, and the power of the knot to simulate this action, suggests early modern physicians and demonologists saw witchcraft as an assault not just on male phallic or penetrative power, but a general assault on male fertility, the underlying source of masculine power which female witches supposedly sought to undermine. Like in the case of impotence caused by natural means, then, contemporaries in fact regarded magically-caused "impotence" to include a range of possible effects beyond just sexual dysfunction. This finding does not only entail a revision of terms to include a more expansive definition of "impotence" for early modernity, but further points to the significance of generativity as a constitutive aspect of male sexual difference, male embodiment, and one of the core ways in which early moderns visualized the expression of masculine power.

FIGURES: CHAPTER IV

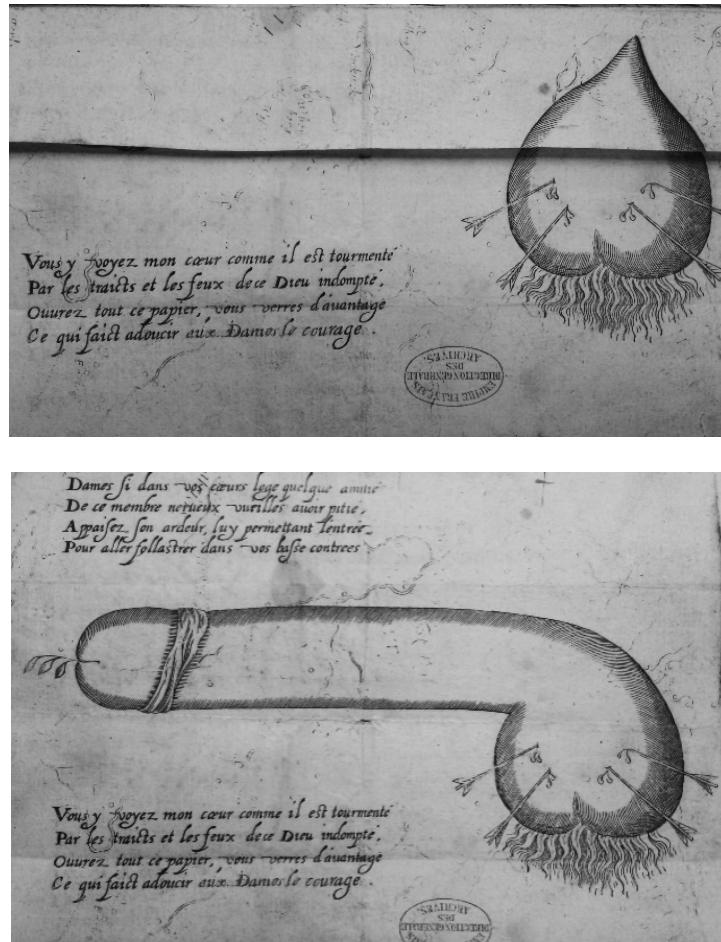


Fig. 26. A fold-out illustration depicting the heart, on the left, pierced by Cupid's arrows and inflamed with "the fires of this untamed God." When unfolded, the heart transforms into inflamed testicles attached to an erect, ejaculating penis. Implicitly, this illustration calls out to the fluid importance of heat to sexual desire, the formation of male seed, and sexual ability, as well as the physiological connection between the male genital organs and the heart. Anonymous, "Aux Dames d'Amour," AN Z1O 115, n.d. (ca. 1623). Courtesy of Archives Nationales de France.

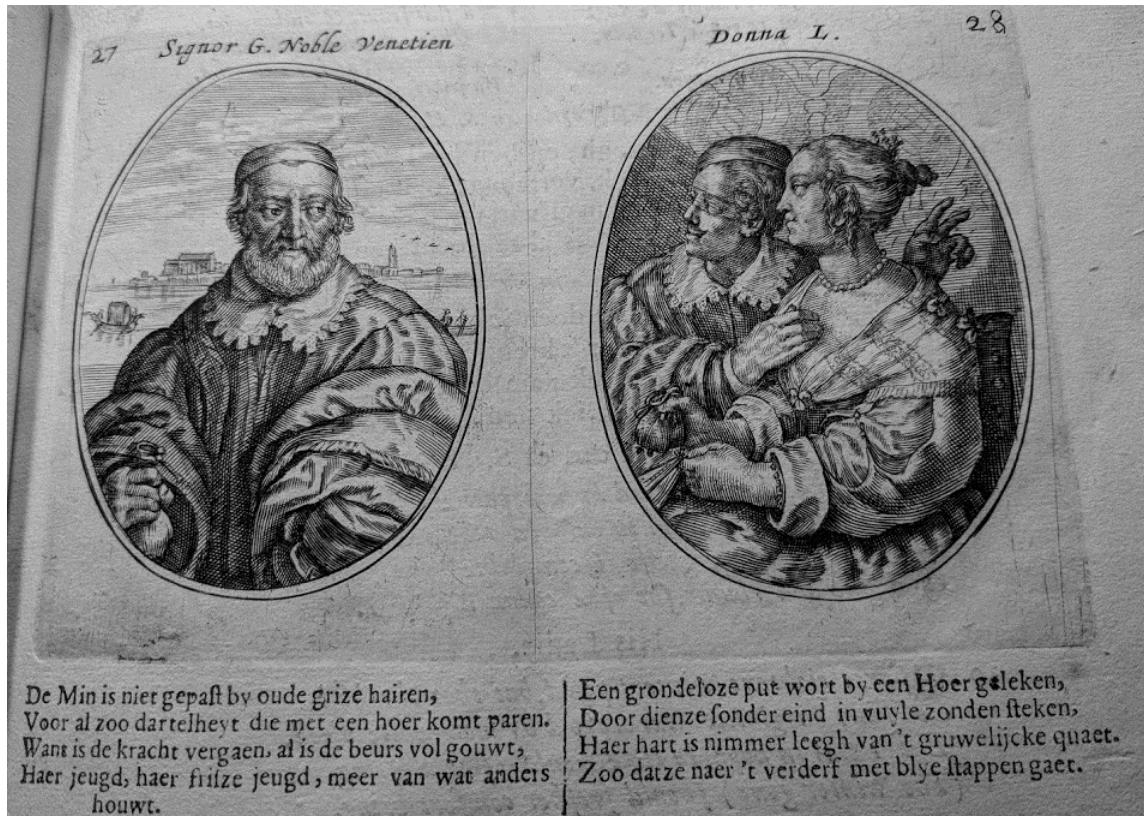


Fig. 27. The verses above portray a noble Venetian lady who has resorted to the embraces of her servant because her much older (and implicitly, much colder) husband has failed to satisfy her sexually. Crispijn van de Passe, *Les abus du mariage* (Amsterdam, 1641), verses 27-8. Courtesy of the Folger Shakespeare Library.



Fig. 28. Albrecht Dürer, *The Standard Bearer* (1500), featuring an infantryman wearing a simple flap-style codpiece.



Fig. 29. A Venetian “marriage picture” of Cupid and Venus featuring Cupid urinating through a laurel wreath, an action Patricia Simons has interpreted as a symbolic representation of sexual-intercourse-as-fluid-projection. Lorenzo Lotto, *Venus and Cupid* (Venice, ca. 1520s). Used with permission of the Metropolitan Museum of Art under a Creative Commons 1.0 Universal (CC0

1.0) Public Domain Dedication license.

CHAPTER V: MANHOOD ON TRIAL: MEDICO-LEGAL VIEWS OF THE MALE BODY IN EARLY MODERN EUROPE

INTRODUCTION

Although, as the previous chapter showed, early modern medical texts tended to describe impotence and infertility as closely allied conditions, impotence did differ from other male reproductive disorders in terms of its legal significance, particularly its importance for the adjudication of marriage. Unlike other male-specific reproductive conditions, which rarely provoked legal action, cases involving impotence frequently appeared before early modern legal tribunals. In the sixteenth and seventeenth centuries, courts increasingly called in outside medical experts to examine the bodies of men and make determinations of impotence in cases alleging non-consummation of marriage. As Edward Behrend-Martínez has found in the case of seventeenth-century Spain, “during the early modern period judicial institutions took an increasingly prominent role in determining who was and was not a man on the basis of the physical body,” pointing to an increased legal interest in defining masculine identity on the basis of pre-existing medical models of the body. Cases citing impotence involved much greater scrutiny of the male body in the seventeenth century, as legal and medical experts increasingly “looked for definitive proof of manhood...in physical medical examinations rather than simply masculine behavior,” such that “sharper image of ‘true’ manhood emerged through the social excision of adult males who did not fit the idealized image.”⁵⁴⁹ Impotence cases therefore serve as an excellent source of information on how normative standards of male embodiment were applied to real men.

While the last two chapters have discussed the therapeutic consequences of a seminal model of male sexuality, including its intersections with magic and witch belief, this chapter turns to examine its legal consequences in light of this increased emphasis in Continental courts on medico-legal proofs as the basis of social classification. It begins first by surveying how canon law definitions of male impotence

⁵⁴⁹ Behrend-Martínez, “Manhood and the Neutered Body,” 1073.

determined the evidentiary standard necessary to prove male potency in court in ways that often drew upon fluid-centered, humoral models. This section shows that, although the canonists in principle strictly differentiated between male impotence and male infertility, their insistence on semination and generative potential as proof of potency tended to include both men incapable of erection and those who suffered from a wide range of reproductive disorders together in the category of “impotent.” In the sixteenth and seventeenth centuries canon law specialists such as Tomas Sánchez and the papal physician Paolo Zacchia further stressed the importance of semination and the production of “true semen” and demonstrations of “virile heat” as the basis of male potency, over and above the ability to become erect alone, reinforcing the centrality of humoral heat and demonstrations of seminal generativity as key markers of manhood.

The greater involvement of medical experts in the adjudication of male bodies in the later sixteenth and early seventeenth centuries further centered the question of fluid, rather than penetrative, ability in legal evaluations of male bodies. As shown in previous chapters, most medical writers and practitioners of the sixteenth and early seventeenth centuries tended to privilege the humoral qualities of heat, spirits, and moisture as the foundation of male sex difference and the explanatory force behind male sexual and reproductive ability, and accordingly, they often tended to treat male impotence and infertility as virtually indistinguishable conditions. Medical experts called to cases involving impotence applied these same understandings of male bodies in their legal testimony. As the records of the diocesan court of the Officialité of Paris suggest, practicing physicians and surgeons often described and assessed men’s bodies in much the same way as they did in concurrent medical discourses about impotence, infertility, and normative, fluid-centric manhood.

Although infertility and impotence had quite different legal effects, medical experts in such cases often applied the same fluid physiological paradigm present in their published texts to their legal testimony, describing both conditions in terms of humoral, fluid imbalance. In these cases, medical experts often considered generative aspects of normative manhood, especially the presence of sufficient

heat and the ability to ejaculate, to be equally important to legal determinations of impotence as the ability to demonstrate erection. Although one might imagine non-consummation suits to be concerned exclusively with the “penetrative” aspects of manhood, in practice experts applied a much broader definition of sexual ability in their assessments of impotence that extended beyond penile function alone. A close examination of the records of the Officialité reveals that often times experts clashed with laypeople and lawyers who insisted that manhood ought not to be defined by vague humoral qualities like “heat” or “spirits” or “true semen” but rather could be made evident simply by the possession of a penis and testicles or the ability to sustain an erection alone. These sources therefore demonstrate that, although medical, fluid-centric categories predominated, the nature of the “normal” body for men was intensely disputed in the sixteenth and seventeenth centuries and was expressed variably over time, in response to changing socio-cultural pressures.

IMPOTENTIA COEUNDI AND GENERANDI: THE CANON LAW DISTINCTION

Despite the frequent confusion between male impotence and other male reproductive disorders apparent in early modern medical texts, the Catholic legal tradition actually had relatively little to say about male-specific disorders other than impotence. Impotence attracted much more attention than any other male reproductive disorder in legal spheres because canon law considered only impotence to have any bearing on the validity of a marriage. Although discussions of impotence in practical medical and therapeutic texts of the sixteenth and seventeenth centuries often muddied the distinction between impotence and infertility, legal and juridical sources (in theory, at least) maintained a rigid distinction between the two conditions. Prior to the legalization of divorce in some Protestant polities, and later at the nation-state level, sexual impotence was one among very few limited circumstances in which a marital union could be formally dissolved. Consistently since at least the thirteenth century, canon lawyers decreed that permanent and incurable impotence that predated the union and prevented consummation could be cited as grounds for an annulment. By impotence, however, they specified that they only meant

impotence for sexual relations—or *impotentia coeundi*—and specifically excluded impotence for engendering—or *impotentia generandi*—as sufficient grounds for dissolution. Thus, by contrast with medical sources that frequently discussed male impotence and “barrenness” as practically interchangeable conditions, canon law did clearly distinguish between the two, implicitly upholding male sexual potency and penetrative power (rather than generation or procreation) as the foundation of male identity in marriage.

The specific exclusion of sterility from the adjudication of marriage demands some explanation, especially as other sources examined so far expressed something close to a preoccupation with male reproductive ability in the context of marriage. The exclusion of sterility may also seem surprising considering that Catholic theologians often cited reproduction as one of the principal reasons why God allowed marriage in the first place, and sterility obviously undermined the procreative purposes of marriage. Saint Augustine had himself established the production of offspring as one of the principal “goods” of marriage and that, so long as couples engaged together solely for the purposes of procreation, sexual intercourse within marriage was acceptable.⁵⁵⁰ However, Augustine also ascribed a secondary, principally sexual purpose to marriage because he believed that it provided a licit sexual outlet to the vast majority of people who found the spiritual ideal—complete abstinence—impossible to maintain. Because marriage removed the guilt of sexual gratification, it also made it permissible for the partners to “require one from the other the due of the flesh,” meaning that marriage created an obligation to satisfy one

⁵⁵⁰ “The union, then, of male and female for the purpose of procreation is the natural good of marriage. But he makes a bad use of this good who uses it bestially, so that his intention is on the gratification of lust, instead of the desire of offspring.” Saint Augustine, *De Nuptiis et Concupiscentia ad Valerium Comitem*, in Philip Schaff, ed., *A Select Library of the Nicene and Post-Nicene Fathers of the Christian Church, Volume 5: St. Augustin: Anti-Pelagian Writings*, trans. Peter Holmes and Robert Ernest Wallis (Grand Rapids, MI: William B. Eerdmans, 1887), 762.

another's sexual impulses, and so help the other avoid sin, by rendering the conjugal debt.⁵⁵¹ Other theologians argued that even if procreation was the primary good of marriage, that its secondary good, the suppression of lust and the avoidance of sexual sin, made procreation possible in the first place. In the view of most of the early Christian theologians, the fact that marriage allowed sex was the only thing that made it an acceptable alternative to celibacy, for those who did not have the gift of continence.⁵⁵²

The Augustinian interpretation of marriage as a principally sexual, rather than a procreative, institution became further entrenched in the canon law of marriage as it developed in medieval Europe. As the Roman Church began to assert greater administrative control over marriage in Western Europe in the eleventh and twelfth centuries, canon lawyers developed a series of legal guides that established not only what marriage was, but what actions constituted a binding union, who was eligible for it, and under what circumstances a marriage could be dissolved. Most interpreted the precepts of earlier theologians, who emphasized the conjugal over the procreative purposes of marriage, to mean that impotence, or non-consummation, could invalidate a union, but sterility could not. Theologians and canon lawyers of the twelfth century thus generally favored the "coital" model of marriage formation, which held that the satisfaction of lust through consummation, and not the production of children, made the sacrament valid and therefore permanent and indissoluble.

Inability to consummate a marriage due to impotence posed problems for the canonists not only because it undermined one of the principal purposes of marriage. It also ran contrary to the interest of twelfth-century reformers, who wished to more strictly limit sexual activity among the laity to the

⁵⁵¹ *Ibid.*, 777-8.

⁵⁵² Among the Church fathers, John Chrysostome for instance maintained that marriage existed primarily for the avoidance of sin, for those unable to renounce sexual relations, and only secondarily for the production of children. John Chrysostome, *On Virginity*, trans. Sally Rieger Shore (Lewiston, NY: E. Mellen Press, 1983), 19.

marriage relationship exclusively.⁵⁵³ If marriage did not satisfy lust as it was intended to, it potentially still left both partners exposed to sexual temptation and the sin of extra-marital fornication. In the view of canon lawyers, an incapacity for sexual intercourse thus overruled the verbal consent of the parties, typically all that was required to establish a valid and binding union. In other words, vows made with an impotent person constituted defective consent because consent to marriage entailed an expectation of conjugal satisfaction and the fulfillment of the debt.⁵⁵⁴ Natural impotence thus made one an “illegitimate person (*illegitimatam esse personam ad contrahendum cum aliqua*)” in the sense that they could not contract a marriage legitimately.⁵⁵⁵

Gratian’s influential twelfth-century canon law textbook, the *Decretum*, amalgamated these arguments together to establish the essence of the coital model: that verbal consent alone did indeed initiate a marriage, but that the conjugal union completed and perfected it. In effect, Gratian established that if a husband could not consummate his marriage due to impotence, after a waiting period of three years his wife could legally separate from him and remarry. In truth, they would be considered to have

⁵⁵³ Brundage, *Law*, 183.

⁵⁵⁴ The divide between “consensual” and a “coital” interpretations of marriage was controversial among eleventh- and twelfth-century theologians and canon lawyers prior to Gratian. Around 1000, Ivo of Chartres for instance claimed that a letter of Pope Leo I written in 458 proved “marriage exists between a couple whether they have consummated their union or not, for even an unconsummated marriage fully symbolized the tie between Christ and the Church.” Brundage, *Law*, 188. As a contract, Peter Lombard also emphasized the consent of the parties over consummation: “What makes a marriage is not the consent to cohabitation nor the carnal *copula*, it is the consent to conjugal society that does.” Peter Lombard, *Sentences in IV libris distinctae*, ed. Ignatius Brady, 3rd ed., vol. 2 (Grottaferrata: Editiones Collegii S. Bonaventurae ad Claras Aquas, 1981), 422-24.

⁵⁵⁵ This is the language used in the *Summa Parisiensis* from ca. 1160, an influential commentary on Gratian’s *Decretum*. T.P. McLaughlin, “The Formation of the Marriage Bond according to the *Summa Parisiensis*,” *Medieval Studies* 15 (1953): 208-12, at 210-12.

never been married, as an unconsummated marriage was effectively not a marriage at all.⁵⁵⁶ The impotent party could not legitimately contract another marriage because they could not legally give or obtain consent with the knowledge of their defect.

Canon law did not accept the notion that sterility alone, absent permanent impotence, could void a marriage contract and therefore placed male infertility alone beyond the consideration of Catholic courts. Thomas Aquinas maintained that if sterile marriages could not attain the primary end of marriage (children), as long as the secondary end—avoidance of sexual sin—remained fulfilled and did not interfere with the possibility of procreation, the marriage was still valid. Sterile partners after all usually did not and could not know that they were barren for many years and so their marital promises did not constitute defective consent. No one could with certainty promise to fulfill a “procreative” debt in the same way that they could be reasonably expected to fulfill a sexual one in the short-term. Even those who somehow knew themselves to be sterile beforehand still did not dishonestly obtain the consent of their partner, Aquinas argued. The nature of the contract depended on the fact that the partners owed one another a *conjugal* debt, not a debt of engendering, because when one made a marital vow, he wrote, one “transfers a right to the generative act itself but not to actual fertility.”⁵⁵⁷ Thus, although both impotence

⁵⁵⁶ Gratian, *Decretum Magistri Gratiani*, ed. Emil Freiberg, *Corpus Iuris Canonici*, vol. 1 (Leipzig: Akademische Druck-u. Verlagsanstalt, 1959), causa 33, q. 1. Illuminated images in some copies of the *Decretum* appended to the sections on impotence further attest to the perception among ecclesiastical authorities that impotence would lead married couples into sin. For instance, one fourteenth-century copy depicts a woman whose husband has become impotent taking an adulterous lover. Robert Gibbs, “Illuminated Impotence: Ruskin’s Pictorial ‘Gratian’ Manuscript,” *The British Art Journal* 2, no. 3 (2001): 46-47.

⁵⁵⁷ Thomas Aquinas, *Commentary on the Sentences: Book IV, Distinctions 26-42*, trans. Beth Mortensen, eds. Peter Kwasniewksi and Jeremy Holmes, in *Opera Omnia of St. Thomas Aquinas*, vol. 9 (Lander: Aquinas Institute, 2018), dist. 34, q. 1, art. 2.

and infertility made generation impossible, only impotence made both sex and generation impossible and so invalidated a marriage.

Although canon law and theology more strictly differentiated impotence from infertility than did medicine, in practice the distinction between the two conditions remained much murkier than these prescriptions suggest. The canonists of course had no trouble agreeing about the surface-level definitions of these conditions: impotence prevented sex (hence, “impotence for coitus”) and infertility prevented reproduction (hence, “impotence for engendering”). However, they did disagree fundamentally about what sex was and thus, what bodily defects specifically made men permanently incapable of contracting marriage. The canons therefore express significant ambiguity surrounding the question of what sex acts counted as “consummation” or the “*copula*” and therefore what counted as an impediment to coitus for men.

Some authors maintained that consummation only required vaginal penetration and so they principally read “impotence” into a strictly penetrative paradigm, defining the impediment as anything that prevented vaginal penetration, often due to a lack of erection in men. However, male impotence in canon law was also described as a fluid or humoral defect that did not only manifest as a lack of penetration. As in medieval medical texts, canon lawyers often attributed the condition in men to excessive coldness or “frigidity,” a term used synonymously with *impotentia* in numerous medieval canon law titles. As we have seen, frigidity did not always or exclusively indicate a total inability to become erect. Although the canonists prescribed that impotence had to be “absolute,” or incurable, to invalidate a marriage, they did not necessarily mean that the man in question had to be entirely incapable of erection in all instances. The condition, however defined, only had to be incurable and perpetual to be considered “absolute.” Many legal authors themselves recognized that frigidity could manifest as any number of sexual problems short of total impotence, such as having an erection too weak to penetrate the womb, premature ejaculation, or total inability to ejaculate.

Discussions of frigidity also blurred the canonical distinction between impotence and infertility because both were understood as conditions of humoral imbalance presence in the three seminal fluids. As parallel medical discourses established, frigidity did not only apply to strictly “sexual” problems. It encompassed any and all reproductive defects in men because excessive coldness prevented the concoction of generative seed and so caused sterility. Sterility in turn inhibited sexual ability because erection and, obviously, ejaculation required the presence of spirituous heat from the seed. Canonical considerations of frigidity thus inevitably involved a consideration of generative as well as sexual ability because the virile heat and the underlying generative quality of the seed determined both.

Fluid-centric definitions of frigidity also led the canonists to consider whether impotence always constituted a defect of penetration or if ejaculation was also required to establish consummation. In other words, should a “frigid” man who was capable of penetration, but incapable of insemination, be counted as impotent? Aquinas, for one, did not define impotence exclusively in penetrative terms, as the inability of the man to become erect, or the inability of a woman to receive the virile member. He implied that insemination, as well as penetration, was necessary to establish a marriage. Impotence in his view commonly prevented consummation because it removed the “rigidity of the member by which the union of bodies occurs.” In the same breath, however, he claimed that frigidity might also impede marriage by preventing “the commingling of seeds [*commixtionem seminum*],” or ejaculation. Excessive heat, less commonly, he noted might also “dry a man out,” and thereby cause impotence for insemination, even if penetration was achieved.⁵⁵⁸

⁵⁵⁸ “Since marriage caused affinity insofar as it was a carnal mingling, it follows that also an unlawful intercourse causes affinity insofar as it has something of natural copulation,” here meaning “commingling of seeds.” Aquinas, *Summa Theologiae: Supplementum*, q.1-68, trans. Fr. Laurence Shapcote, in *Opera Omnia of St. Thomas Aquinas* (Green Bay, WI: Aquinas Institute, 2018), q. 55, a. 3.

The canonists therefore often included not just lack of erection, but semination, as a necessary proof of male potency and thus maintained that men had to demonstrate not only penile, but fluid, seminal function in order to qualify for marriage. Aquinas, for instance, apparently regarded the “commingling of seeds” to be an important and binding element both for the formation of the marital *copula* and for other legal relationships. Elsewhere, he had defined it as a necessary pre-condition for the establishment of affinity, including marital affinity. In his view, any carnal coupling, licit or illicit, so long as it involved a “commingling of seeds” established a relationship of affinity between the couple and their blood relations because it involved “natural copulation,” or sex with the potential for generation. This was a category he distinguished from “unnatural copulation,” or sodomitical sex acts which only satisfied lust and had no generative potential (i.e. that did not make possible the meeting of the male and female seeds).⁵⁵⁹ At least to some degree then, Aquinas considered the question of generativity to be relevant to marriage formation and implicitly regarded lack of semination, just as much as lack of penetration, as a potential impediment to consummation in men.

In the later sixteenth century, the issue of semination as opposed to penetration again preoccupied canon lawyers and commentators, especially when it came to the marriage of castrated men. In the case of eunuchs, defining consummation as penetration alone was problematic because many castrated men could still engage in sexual activity, though they could not reproduce. In 1587, Pope Sixtus V issued a brief, *Cum frequenter*, forbidding the marriage of eunuchs and retroactively annulling several such unions in Spain for precisely this reason. Sixtus accused castrated men and their wives of knowingly contracting these marriages in the interest of “lecherousness,” presumably so they could have sex without the risk of pregnancy. He argued that eunuchs counted as “impotent” and thus could not consent to marriage because, though most retained some sexual ability, they could not “emit true semen [*verum semen emittere*].” If they emitted anything, they only ejected non-productive “fluid hardly suitable for the

⁵⁵⁹ Aquinas, *Sentences*, dist. 34, q. 1, art. 2.

purpose of marriage,” which Sixtus regarded as having only the barest similitude to “semen lawful for generation.” In an apparent reversal of the canonical separation between impotence and infertility, Sixtus’s brief suggested that consummation by definition required not only intromission in the womb, but that the fluid emitted had to also be fertile and generative. Implicitly, then, *Cum frequenter* further established that penetration alone could not sufficiently consummate a marriage and expanded the canonical definition of male impotence to include both sexual inability as well as generative inability.⁵⁶⁰

Although *Cum frequenter* specifically applied to castrated men, subsequent commentators broadened this definition of impotence to potentially apply to all men who (even if they were sexually capable) had testicular defects or who, for whatever reason, could not produce “true semen.” Sixtus’s brief did after all leave quite a lot of room for interpretation. It was vague as to what constituted “true semen,” though this language bore a strong resemblance to contemporary medical texts that expounded on the distinction between “perfect” and “imperfect” semen in their discussions of male impotence and infertility. It also did not specify whether the requirement of “true semen” applied only to those who lacked testicles, and thus the primary organ in which semen was supposedly “perfected,” or if intact men who produced only humorally deficient semen—due to intemperate coldness or heat—might also be counted as impotent.

The Spanish casuist Tomas Sánchez, most notably, interpreted the requirement of “true semen,” and thus the definition of impotence, to potentially apply to any man who produced non-productive or non-normative emissions, whether they had been castrated or not. In his influential 1607 compilation of the canon law on marriage, he cited *Cum frequenter* as specifically excluding eunuchs from marriage on the grounds of impotence. In his comments on the brief, Sánchez noted that, “although in eunuchs the

⁵⁶⁰ Sixtus V, Ep., *Cum frequenter*, June 27, 1587, in *Codicis iuris canonici fontes*, ed. Pietro Gasparri, vol. 1, no. 169, (Rome: Typis Polyglottis Vaticanis, 1926), 298-299. A. Esmein, *Le mariage en droit canonique*, vol. 2 (Paris, 1891), 273.

member is erected, and sometimes they emit a watery material, it is nevertheless not true semen, nor of the same nature as true semen.”⁵⁶¹ Citing Galen and contemporary medical authorities, Sánchez claimed that the testicles were necessary for the elaboration of seminal matter taken from the blood and the contributions of the “heart, liver, and brain.” Without the testicles, the “spirits” from the principal parts would “evanesce” and the whole body would become too chilled to heat and concoct semen. Thus, men might still ejaculate unperfected material that had not been sufficiently heated or infused with generative “spirits” to count as “true semen.”⁵⁶² Sánchez however interpreted this to apply not just to eunuchs, but all men with atrophied or damaged testicles. Furthermore, the requirement of “true semen,” at least potentially, extended the impediment of impotence to include any man incapable of “semimation inside the womb” and specifically, incapable of semimation “apt for generation.”⁵⁶³

Sánchez’s insistence upon true, generative semen as a necessity for consummation seemed to obviously confuse the canonical distinction between sexual and reproductive impotence. However, the importance of “true semen” to sexual ability drew its support from contemporary medical understandings of impotence, which tended to see reproductive and sexual ability as two sides of the same coin, both having their origin in the humoral composition of the seed. In the seventeenth century, physicians began to produce the first works of legal medicine in order to help reconcile canonical standards of evidence in body-related matters with contemporary medical theory and practice. These included, for instance, the Palermo physician Fortunato Fidele’s 1602 compilation on medico-legal matters, which reiterated Sánchez’s definition of coitus-as-semimation. Fidele insisted that physicians called to testify in cases of “frigidity” should understand that impotent men by definition “do not only have ineptitude of the

⁵⁶¹ Tomas Sánchez, *Disputationum de sancto matrimonii sacramento*, vol. 2 (Antwerp: M. Nutii, 1620), 364.

⁵⁶² Joseph Bajada has shown that Sánchez misinterpreted the import of *Cum frequenter*, even though his gloss became the preferred one among canonists. *Sexual Impotence: The Contribution of Paolo Zacchia (1584-1659)* (Rome: Editrice Pontificia Università Gregoriana, 1988), 68-69.

⁵⁶³ Sánchez, 361.

members, but do not generate fecund semen” and that physicians therefore had an obligation to assess not only the condition or function of the genitals, but the general presence of virile heat or spirits in a man’s body necessary to produce semen.⁵⁶⁴ Specialized medico-legal dissertations on the subject from the early seventeenth century, such as Johannes Kruschius’ 1607 *De impotentia virili*, also sought to dispute the notion that impotence “does not only consist in a deficiency of erection,” but defined the condition as legally, an inability to produce or eject “perfected” semen into the appropriate vessel.⁵⁶⁵ By the beginning of the seventeenth century, then, a vast body of canon law literature existed which significantly blurred the distinction between the categories of *impotentia coeundi* and *impotentia generandi*, mandating that male eligibility for marriage depended not just on the presence of intact and functional genital organs, but on the presence of fluid heat and “true semen” as the most significant markers of manhood.

The seventeenth-century papal physician, Paolo Zacchia, further re-iterated the importance of seminal, fluid ability in legal assessments of male bodies. His work consolidated and reinforced the canonical view of coitus-as-semimation and a humoral framework for male impotence in canon law up to the twentieth century. Zacchia provided significant medical justification to canon law definitions of impotence that centered the importance of semimation, especially Sánchez’s notion of the “true semen,” as a crucial legal signifier of normative manhood. Often credited as the first comprehensive work of “legal medicine,” and a standard in European legal courts, Zacchia’s 1661 *Quaestiorum medico-legalium* systematically united canon law concepts of the *copula* to contemporary, fluid-centric medical understandings of impotence and frigidity and provided a practical guide to physicians summoned to make determinations of potency on the basis of heat and fluid function in legal cases.

The text of the *Quaestiorum medico-legalium* maintained the importance of coitus-as-semimation and demonstrations of heat and fluid ability over genital integrity as the basis of normative male

⁵⁶⁴ Fortunato Fidele, *De relationibus medicorum libri quatuor* (Palermo, 1602), 209.

⁵⁶⁵ Johannes Kruschius, *De impotentia virili* (Erfurt, 1607), cap. i-iii.

embodiment. At the outset of his sections on male impotence, Zacchia repeated the canonically correct view at the outset of his chapters on impotence, that only an impediment of coitus, not an impediment of generating, could legally invalidate a marriage. In fact, he explicitly rejected the views of other physicians like Rodrigo de Castro, who had lumped the two conditions together arbitrarily, without regard to the legal distinction between male sterility and male impotence.⁵⁶⁶ However, in his view the inability to complete the sexual act also constituted a kind of sterility, particularly when a man demonstrated “*impotentia seminandi*,” or impotence for inseminating.⁵⁶⁷ He maintained that true coitus had to have at least reproductive potential, meaning semination with appropriately concocted semen, “from which generation may follow.” According to Zacchia’s interpretation of the canons, any sex act that fell short of semination in the womb therefore did not count as sex for purposes of marriage. In his opinion, a physician summoned in a case of impotence could not declare that a marriage had been consummated, nor safely determine a man’s potency, unless he fulfilled three requirements that confirmed both his sexual and (potentially) generative ability: “complete erection of the genital members for the works of consummation, certainly lasting until the emission of semen; his member ought to intromit into the vessel of the woman, and ejaculate semen in the womb.”⁵⁶⁸ Citing Sánchez, Zacchia claimed that “the emission of semen from the virile part into the vessel is necessary for the validity of the marriage.” Nothing short of this could be “called the completion of marriage, even if the man had penetrated the feminine enclosure, unless he discharged semen inside the vessel.”⁵⁶⁹

Zacchia set semination as the standard of potency and eligibility for marriage not only because the canons maintained that marital sex had to be “potentially generative.” His arguments lent significant

⁵⁶⁶ “*Impotentes dicuntur qui coire non possunt, non qui non possunt generare.*” *QML*, bk. 9, tit. 3, quaest. 2, pg. 40-1. On Castro’s unconventional definition of the “impediment of impotence,” see Chapter III, above. Castro, 224.

⁵⁶⁷ Bajada, 77. *QML*, bk. 3, tit. 1, quaest. 1, pg. 200.

⁵⁶⁸ *QML*, bk. 9, tit. 3, quaest. 2, pg. 41.

⁵⁶⁹ *QML*, bk. 9, tit. 3, quaest. 2, pg. 43.

medical support to Sánchez's notion of the "true semen." Zacchia believed, like most contemporary physicians, that underlying defects of the semen caused most of the sexual problems associated with frigidity. In his view, "frigid men," most often demonstrated "idleness of the generative parts" because their excessive coldness inhibited the production of spirituous semen, for "indeed," he wrote, "it is often the native heat that harms the semen more than anything else."⁵⁷⁰ Coldness either inhibited hematogenesis, preventing the generation of semen altogether, or it produced imbalances in the moisture or winds that it contained. Men who, for instance, ejaculated prematurely more than likely had sufficient "winds" to temporarily erect the penis, but they suffered from a defect in the formation of the semen that prevented its retention, "because it is fluid and watery and is felt to be cold or not entirely hot, nor of conspicuous odor."⁵⁷¹ In the same way, men who suffered from excesses of heat, as in those who suffered from fevers, would also find their sexual ability reduced because they "are vexed by the extinction of the native heat of the genital parts, extinguishing the desire of coitus and the procreation of semen," both of which Zacchia considered to be necessary pre-conditions for male potency.⁵⁷²

Rather than examining the exterior situation of the penis and testicles, and whether or not a man could sustain an erection, Zacchia instead recommended that physicians look to the underlying cause of the defect. He recommended that physicians instead consider a man's humoral temperament or, if he was able, the heat, quantity, and quality of the semen that a man emitted. Those who demonstrated a total deficiency of "native heat" more than likely would not generate "true semen," and so more than likely would be unable to maintain an erection, much less completely seminate in the womb. Furthermore, by examining the quality of the heat, the physician could thus make a more accurate assessment as to

⁵⁷⁰ *QML*, bk. 9, tit. 3, quaest. 2, pg. 41.

⁵⁷¹ *QML*, bk. 9, tit. 3, quaest. 2, pg. 42-3.

⁵⁷² *QML*, bk. 9, tit. 3, quaest. 2, pg. 41.

whether the impediment could be cured—for instance, if it stemmed from a temporary defect in the fluid contributions of the heart, liver, or brain—or if it was permanent, owing to innate frigidity or old age.

According to this expanded definition of frigidity, Zacchia acknowledged that many different classes of men might be labeled “impotent,” beyond those simply incapable of sexual intercourse, due to their inability to fulfill any one of the tripartite requirements of erection, intromission, and ejaculation—some of whom could just as easily be classified as “sterile.” This included not just men who were incapable of erection or penetration, but also those who demonstrated a defect of semination, which Zacchia, like Sánchez, regarded as essential for the completion of a marriage. The most easily-identifiable form of frigidity of course manifested as a total inability for all three coital requirements, erection, intromission, and ejaculation, “for either the semen is emitted from the flaccid member on the external opening of the womb, or they do not seminate at all.”⁵⁷³ Others ejaculated too swiftly, prior to intromission, or were capable of erection and intromission, but could not ejaculate into the appropriate vessel, or they could not ejaculate at all (as in the case of eunuchs).⁵⁷⁴

Most notably, Zacchia also included men incapable of semination in the category of “frigidity”—a possibility he acknowledged not just in eunuchs, as Sánchez did, but in intact men as well for, he wrote, “Some are frigid who not only grow erect, but indeed in some way exercise venery, but cannot send forth semen.”⁵⁷⁵ He criticized the Swiss physician Felix Platter for denying this possibility, claiming that a man could not become erect at all without being able to produce semen. Apparently, Platter had used this argument before the matrimonial consistory in Basel to have a case of non-consummation due to non-

⁵⁷³ “We thus say this first species of frigidity to be among all the most notable.” *QML*, bk. 9, tit. 3, quaest. 2, pg. 42.

⁵⁷⁴ *QML*, bk. 9, tit. 3, quaest. 2, pg. 42-44.

⁵⁷⁵ *QML*, bk. 3, tit. 1, quaest. 1, pg. 208.

semination thrown out.⁵⁷⁶ As Zacchia pointed out, the case of eunuchs of course proved that one did not have to be capable of producing semen to be sexually capable, because it was the winds or “spiritous breathe” from the heart, not the seminal matter per se that provoked erection. Presumably then, even a man who had both testicles might be sufficiently windy to have normal intercourse, but still be too cold to be able to concoct his blood into semen. Indeed, Zacchia claimed that some men “have sufficient stimulus for the exercise of venery, but they strive fruitlessly with an erect member to emit semen,” because even if the heart “committed spirit for the erection of the member,” the seminal matter could sometimes still be too cold or improperly formed for emission.⁵⁷⁷ Furthermore, Zacchia claimed, eunuchs were not the only class of men who sometimes emitted something other than “true semen” that might also impede the completion of the act. He also noted that some men might also be counted impotent if they emitted only “a certain undigested, small, watery material, of no odor and entirely inept for generation” because they lacked enough native heat to completely concoct or perfect the seminal matter, suggesting that Zacchia was willing to expand the category of “impotence” to include a number of different male seminal defects.⁵⁷⁸

Despite his insistence on semination as a crucial element of coitus and his acknowledgement of non-semination as a kind of impotence, as Joseph Bajada has noted, Zacchia was inconsistent as to whether non-eunuchs who could not ejaculate true semen should be excluded from marriage. Although he seemingly thought that the case cited by Platter should have been annulled, or at least taken more

⁵⁷⁶ *QML*, bk. 9, tit. 3, quaest. 2, pg. 43. Platter saw the case as only a “pretext for divorce” on the part of the wife and rejected her claim that her husband could become erect, but could not emit semen, because, he claimed, “Naturally, it rarely happens that the virile member is able to be raised without first having the stimulus of Venus, which is excited by the itching of the semen in the genital vessels, inciting it to excretion.” Felix Platter, *Observationes in hominis affectibus plerisque, libri tres* (Basel, 1614), 240.

⁵⁷⁷ *QML*, bk. 9, tit. 3, quaest. 2, pg. 43.

⁵⁷⁸ *QML*, bk. 9, tit. 3, quaest. 2, pg. 44.

seriously, he elsewhere maintained that short of an obvious physical defect, like lack of testicles, the claim of non-semimation could not safely justify dissolution of marriage after the fact.

The reason for this had less to do with Zacchia's theoretical views on the nature of marriage and the male body, though he firmly maintained that semination with "true semen" was necessary for the formation of the carnal *copula* and that seminal causes most often prevented consummation in men. His concerns stemmed more from the practical problem of proof and the limits of medico-legal observation in real legal cases. It was, after all, one thing for a physician to observe that a man was capable or incapable of erection, or that he lacked testicles, both things Zacchia supposed to be easily visible and verifiable during a physical examination. Medical inspection of the vagina for evidence of penetration could also be, and often was, used in court to secure indirect proof of a man's potency.⁵⁷⁹ It was, however, much more problematic to uncover physical evidence of semination, or more precisely, to prove that one was entirely incapable of ever producing semen—the legal standard necessary to prove that the impediment was permanent and incurable. Eunuchs safely met this standard because they most certainly did not and never could produce sufficiently heated, generative seed due to their lack of testicles. In any other man, however, the defect was an exclusively internal one and, in Zacchia's estimation, "truly not apparent to the senses."⁵⁸⁰ The operations of heat and spirit inside the body after all mostly involved internal organs other than the external genitalia, something mostly imperceptible to medical observation, not to mention variable according to one's age and habits. Furthermore, although physicians generally agreed as to what

⁵⁷⁹ As an example of this, Zacchia cited a criminal case in which a man made the unusual claim that he was not guilty of violating a virgin because, even though he did penetrate her, he was incapable of ejaculating semen. The judges nevertheless found him guilty of the crime because they found that "intromission of the penis into the womb and the laceration of the vessel" even without semination constituted defloration and in any case, the woman in question had incurred social "damages" because she was thereafter unable to find a marriage partner. *QML*, bk. 9, tit. 3, quaest. 2, pg. 44.

⁵⁸⁰ *QML*, bk. 9, tit. 3, quaest. 2, pg. 44.

“true semen” was supposed to look like—hot, thick, spiritous, etc.—one could not state with certainty that even clearly defective semen was entirely void of all generative ability. Zacchia thus concluded that, unless the physician observed an obvious genital defect, the court had to presume the man to be “potent for generation (hence to generate true semen),” and so could not annul marriages due to non-insemination.⁵⁸¹

Influential as they proved to be in the seventeenth century, the pronouncements of Zacchia did not definitively settle the question as to whether semination was required for the consummation of marriage or, for that matter, how to conclusively prove impotence in a court of law. Zacchia hesitated to annul marriages based on non-insemination alone, and presumably acted on this view in his capacity as a physician for the court of the Roman Rota. However, other ecclesiastical jurisdictions took the three-part requirement of erection, penetration, and ejaculation literally, and required legal proofs of full reproductive and sexual functionality in matrimonial cases citing impotence. In practice, then, the canonical distinction between male sterility and male impotence in fact proved quite blurry, as the canonists and medico-legal writers such as Zacchia maintained that male sexual potency did not depend solely on the ability to sustain an erection, but on the ability to produce “true” or generative semen—a proof that verged quite close to a proof of fertility as much as sexual ability. In practice, sixteenth- and seventeenth-century tribunals following the guidelines of the canons and Zacchia thus frequently considered proofs of normative male potency beyond phallic integrity alone (despite what the category of *impotentia coeundi* suggested), including the presence of heat and active demonstrations of fluid ability, further reiterating the significance of seminal ability as a constitutive aspect of male embodiment both in legal, as well as medical, spheres of the sixteenth and seventeenth centuries.

⁵⁸¹ *QML*, bk. 9, tit. 3, quaest. 2, pg. 44.

“A FORCE AND A HEAT THAT CAN ONLY BE KNOWN THROUGH ACTION”: PROVING IMPOTENCE IN THE SEVENTEENTH-CENTURY OFFICIALITÉ OF PARIS

Theological and medico-legal definitions of male potency as seminal ability did not only exist in the realm of theory, but influenced practical determinations of impotence in Continental legal courts. Perhaps the most extreme outcome of canonical and medico-legal definitions of coitus-as-semimation, resulted in the adoption of legal procedures that required men to demonstrate complete sexual ability, including the ability to inseminate, in front of medical experts. Towards the end of the sixteenth century, many of the French ecclesiastical tribunals known as *Officialités* began to routinely demand not only a physical examination to determine the physical “fitness” of the man for intercourse, but required that the couple attempt a sexual demonstration (known as the “congress” [*congrès*]) before a jury of midwives, surgeons, and physicians. Though highly controversial in its own time, the *Officialités* of France relied almost entirely upon the congress in determinations of impotence and implemented it routinely in suits for dissolution. For one notorious tribunal, the diocesan court of the *Officialité* of Paris, more than one hundred annulment cases citing impotence survive from the early seventeenth century, almost all of them requiring the congress.

Most studies have written off the congress as something of a historical anomaly or have condemned it as an embarrassing historical aberration, representative of the ignorance of early modern medicine and the arbitrariness of *ancien régime* justice. Pierre Darmon, for instance, argued that the congress defined the seventeenth century as a “golden age of repression” for impotent men.⁵⁸² Philippe H. Brenot too considered the congress to be nothing less than “the persecution of an impotent man” and for this reason labeled the seventeenth century an era of “sexual terror.”⁵⁸³ However, such a dismissive view does not explain why many sixteenth- and seventeenth-century jurists, lawyers, and laypeople saw the

⁵⁸² Pierre Darmon, *Le tribunal de l'impuissance : Virilité et défaillances conjugales dans l'ancienne France* (Paris: Éditions Seuil, 1979), 207.

⁵⁸³ Philippe H. Brenot, *Impuissance Masculine: perspectives historiques* (Paris: L'Esprit du Temps, 1994), 60, 66.

congress as a reasonable course of action in impotence cases, overriding concerns about its moral unsavoriness. In this section, I re-evaluate the contemporary rationale behind the congress in the context of medical models that centered on demonstrations of fluid ability, legal definitions of coitus-as-semimation, and contemporary discourses about the nature of male embodiment. In doing so, I argue that the congress was not a historical aberration at all, but perfectly comprehensible when viewed in the context of contemporary medical views on impotence and normative male embodiment.

In the first place, the congress can be understood as a means of compensating for the limits of contemporary medical observation. It provided a practical, though extreme, solution to what was otherwise an almost impossible legal problem: the problem of decisively proving in court that a man could not, and never could, have sex, much less that he could not have complete coitus with semimation, as it was defined by canon law. The congress solved most of the problems of proof that Zacchia cited in impotence cases because it provided near-certain evidence of all three requirements for the *copula*, including one's ability to become erect, to penetrate, and to seminate.

Furthermore, the practice of the congress corresponded to contemporary views of the male body, which privileged the presence of seed and heat as central to male sexual functionality, over and above the genital or phallic aspects of manhood. Pierre Darmon has argued that the congress was invented purely to satisfy the voyeuristic tendencies of the ecclesiastical judges of the Officialités. However, it in fact appears that it was the medical experts, rather than canon lawyers, who presided in such cases first instigated the congress and thus brought a particular view of male embodiment to bear in their testimony. Physicians and surgeons who testified in such cases repeatedly called for the congress because they claimed that they could not judge a man to be permanently impotent based on an exterior examination of the genitals alone. Like Zacchia, they insisted that a man could appear to have entirely normal genitalia, and even have erections, but still have an internal deficiency of “heat” that prevented the complete consummation of the marriage. Most cases of frigidity, after all, had no external physical explanation—that, for instance, castration would conveniently explain—but impotence stemmed from an unknown and

unobservable internal defect of the principal parts or their humoral contributions. As was well-known to physicians of the time, impotence could also manifest as any number of conditions besides an inability to become erect, including premature ejaculation, partial but insufficient erection to penetrate a woman's vagina, inability to ejaculate, or to ejaculate "true" generative semen. Thus in the view of medico-legal experts, the only way to determine the nature of the defect was through an active demonstration, which would show that a man had sufficient heat not only to become aroused, but also to concoct semen, maintain an erection for the duration of sexual intercourse, and intromit into the appropriate vessel.

The origins of the congress, long disputed among historians, can be pinpointed at the intersection of rising concerns about proof and the increasing reliance of courts upon medical expertise.⁵⁸⁴ Its adoption

⁵⁸⁴ Although the records of the Paris Officialité are too fragmentary to trace the development of the congress over the course of the sixteenth century, Anne Lefebvre-Teillard has shown that it appeared in other French Officialités "towards the last decade of the fifteenth century and the first years of the sixteenth." Lefebvre-Teillard, 108-9. Joseph Petit also discovered a single case using a similar medical examination from the fourteenth-century Officialité of Troyes. Joseph Petit, *Registre des causes civiles de l'Officialité de Paris, 1384-1387* (Paris: Imprimerie Nationale, 1919), xxiv. However, critics of the congress in the late sixteenth century unanimously agreed that it was a recent innovation that had come about in recent years, despite the existence of late-medieval precedents. Most dated it to the middle of the sixteenth century, though they do not base this claim on any specific case. Antoine Hotman, the first legal author to comment at length on the congress, believed that it had only been introduced into France "thirty or thirty-five years" prior to his writing in 1581. Antoine Hotman, *Traité de la dissolution du mariage par l'impuissance et froideur de l'homme ou de la femme* (Paris: Edme Pepingue, 1656), 49. Commentators in the later seventeenth and eighteenth centuries for the most part adopted this periodization. Writing in 1680, Chrétien-François de Lamoignon, advocate general of the Parlement of Paris, dated the beginning of the practice to "around two centuries ago," when "the use of the proof of impotence by the Congress was introduced in the Officialités." Chrétien-François de Lamoignon, *Plaidoyé sur le congrès* (Paris, 1680), 77. Jean-Baptiste Fromageot, *Consultation pour M. l'Abbé de ***, vice-gérent dans l'officialité de ***, sur le "Traité de la dissolution du mariage pour cause d'impuissance," imprimé à Luxembourg en 1735* (Dijon, 1739), 15.

no doubt reflected a general trend in many sixteenth-century Continental tribunals towards stricter standards of evidence that privileged physical and ocular proof, verified by outside medical experts, over the testimony of lay witnesses. In cases of impotence, the adoption of more “objective” procedures that required the physical examination and observation of bodies marked a decline in trust in older methods of proof, which primarily depended only on the testimony of the parties. Previously, the *Decretum* had prescribed compurgation and interrogation of the parties and the practice of *septima manu*, or the appearance of seven witnesses who vouched for the wife that the marriage has not been consummated. Judges also prescribed the *triennium [cohabitation trienniale]*, or cohabitation for a period of time normally set at around three years. If, after a period of three years, the wife claimed that the husband still had not consummated the marriage, his impotence was assumed to be permanent and thus justified an annulment.⁵⁸⁵

Witness testimony, however, came to be seen as unreliable in cases of impotence because ecclesiastical authorities recognized that laypeople had strong motivations to claim non-consummation in order to procure an illicit divorce. The canonists’ insistence upon “coital” permanence and indissolubility in marriage was after all almost certainly in tension with most people’s overriding procreative priorities when it came to marriage. On this point, the reigning ecclesiastical opinion directly conflicted with the practical needs of laypeople, particularly among the European upper classes, who deemed marriage essential for the production of heirs and the preservation of their family’s lands, titles, and wealth, and probably only secondarily saw the institution as a refuge from sexual sin. The principle of indissolubility

⁵⁸⁵ H. Moulin, *Le carnaval et les causes grasses au parlement: Dernier procès pour impuissance et abolition du congrès (1659-1677)* (Paris, 1885). Chrétien-François de Lamoignon, *Plaidoyé sur le congrès, par M. de La Moignon* (Paris, 1680), 73.

on the basis of consummation, rather than procreation, thus posed an enormous risk to families whose financial and political status depended on productive marriages.⁵⁸⁶

Canon lawyers, from the inception of impotence as a marital impediment, strongly suspected that many impotence cases were fraudulent and motivated by family concerns and so often approached witness testimony alone with suspicion. Because men too might conspire with their wives and lie about their impotence, confession, typically lauded in canon law as the most desirable form of proof, was not admitted in matrimonial cases. The *Decretum* cautioned that men who admitted to their own impotence, but wished to take another wife were not to be trusted because such an admission made it “obvious that, at the Devil’s suggestion, he was burning with hatred towards his first wife and was attempting to dismiss her by a duplicitous lie.”⁵⁸⁷ Finding seven believable witnesses also obviously posed a problem in a matter widely acknowledged to be “occult and hidden,” because it also opened the way for conspiracies on the part of families who wished to contract a more desirable union.⁵⁸⁸ Nor did the imposition of a further three-year waiting period in the form of the *triennium* remove the possibility for fraud, as it still depended entirely on the word of the woman in the case, always suspected of having ulterior motives. Preoccupied with the possibility of couples and families colluding together to end undesirable matches, ecclesiastical courts of the latter Middle Ages demanded a higher standard of evidence in the form of ocular proof by a neutral third party, necessitating recourse to medical expertise and observation.

By the latter thirteenth century, it appears that a number of ecclesiastical jurisdictions began to prefer physical examination, or *inspectio corporis*, by medical professionals as a more reliable method for determining impotence than witness testimony. Although some twelfth-century clerics, like the

⁵⁸⁶ Elisabeth Van Houts, *Married Life in the Middle Ages, 900-1300* (Oxford: Oxford University Press, 2019), 97-98.

⁵⁸⁷ Gratian, *Decretum*, causa 33, q. 1, pt. 1, canon 2.

⁵⁸⁸ Hotman, 2.

Archbishop Pierre de Tartiense, had called upon “*beneficium medicinae*” in cases of impotence, such methods were not sanctioned in contemporary glosses on the *Decretum* like Bernard de Pavie’s *Summa de matrimonio* or his *Summa decretalium*.⁵⁸⁹ In the thirteenth century, a series of papal decisions and glosses urged the adoption of physical examination over and above more traditional methods like compurgation and the triennium. Pope Gregory IX’s decretal on impotence of 1220, *De frigidis et maleficiatis*, proposed that the court should order the physical examination of the spouses to determine external signs of impotence, like the wife’s virginity and the state of the man’s penis and testicles.⁵⁹⁰ Similarly, Hostiensis’s *Summa aurea* (1250) recommended that in annulment cases citing impotence, that only “honest and expert men” should verify the claims of the wife, by inspecting the man for “defects of the virile members.”⁵⁹¹ By the early fourteenth century, Duns Scotus was content to leave the determination of impotence to “the judgment of doctors (*per iudicium medicorum*),” as did Thomas of Strasbourg, who suggested that physical evidence of impotence, “based on the observation of doctors (*per experientiam medicorum*),” could shorten the usual three-year waiting period to annul the marriage on the grounds of a man’s impotence.⁵⁹²

By the time of his writing in 1363, the French physician Guy de Chauliac claimed that ecclesiastical courts increasingly entrusted determinations of impotence to physicians. His surgical works provided instructions to medical professionals tasked with examining the “complexion and structure of the reproductive organs” for physical signs of impotence. However, Chauliac expressed significant concern about the ability of even a trained physician to identify impotence through physical examination alone, and suggested that perhaps jurists had taken the validity of medical witnessing too much for

⁵⁸⁹ Peter Biller, *The Measure of Multitude: Population in Medieval Thought* (Oxford: Oxford University Press, 2000), 38-39. Esmein, 253.

⁵⁹⁰ Brundage, *Law*, 415.

⁵⁹¹ Quoted in Lefebvre, *Autour*, 15, n. 18.

⁵⁹² Quoted in Biller, 39.

granted. Wary that “people are in the habit of committing many frauds in such cases,” and that the eyes of the physician might be deceived by external appearances, he recommended a further proof. Certain evidence of absolute impotence, in his opinion, required not just examination of the male genitalia for abnormalities or traces of frigidity, but a live demonstration of their functionality. He thus suggested that the couple attempt to have sex in front of a “matron,” who would then report her observations to the court.⁵⁹³

Although by Chauliac’s time, it was clearly expected that a physician might be called upon to perform a physical examination in impotence cases, the method of “congress” he described did not seem to be in common usage in fourteenth-century France, or anywhere else, and was implemented in only two known cases in late-medieval England.⁵⁹⁴ By the end of the sixteenth century, however, the Officialité of

⁵⁹³ Chauliac wrote that the judge “must tell [the husband and the wife] to lie together on several successive days in the presence of the said matron. She must administer spices and aromatics to them, she must warm them and anoint them with warm oils, she must massage them near the fire, she must order them to talk to each other and to embrace. Then she must report what she has seen to the physician.” Guy de Chauliac, *Inventarium sive chirurgia magna*, ed. M.R. McVaugh, vol. 1 (New York: E.J. Brill, 1997), tract. VI, doct. II, cap. vii. Quoted in Vern L. Bullough, “On Being a Male in the Middle Ages,” in Clare Lees, ed., *Medieval Masculinities* (Minneapolis: University of Minnesota Press, 1994), 69.

⁵⁹⁴ In a case from 1292 in Canterbury, the court enlisted several women from the community to caress and sexually incite a man supposed to be impotent, a procedure repeated in another case from York in 1433. Jacqueline Murray, “On the Origins and Role of ‘Wise Women’ in Causes for Annulment on the Grounds of Male Impotence,” *Journal of Medieval History* 16 (1990): 240-1. See also, R.H. Helmholz, *Marriage Litigation in Medieval England* (Cambridge: Cambridge University Press, 1974), 89; Bronagh Kane, *Impotence and Virginity in the Late Medieval Ecclesiastical Court of York* (York: Borthwick Publications, 2008). Frederik Pedersen, “Privates on Parade: Impotence Cases as Evidence for Medieval Gender,” in Per Anderson, Mia Münster-Swendsen, Helle Vogt, eds., *Law and Private Life in the Middle Ages: Proceedings of the Sixth Carlsberg Academy Conference on Medieval Legal History* 2009 (Djøf, 2011), 81-104.

Paris was regularly prescribing the congress as a routine procedure, hearing dozens of such cases by the middle of the seventeenth century, and had apparently abandoned older oath-based forms of proof like the triennium and swearing by *septima manu*. No records document precisely when and how the judges of the Officialités came to adopt such an unusual procedure, but the surviving testimony suggests that it was recommended at the insistence of medical experts who found the physical inspection to offer only insufficient evidence of a man's true sexual status.

The historical origin of the congress out of the insistence of medical experts, and as an institution reflective of prevailing medical views of male embodiment, may be inferred from the standard procedures adopted by the court and the existing testimony of physicians and surgeons. In a typical case of alleged impotence, the Officialité of Paris still ordered a medical examination, known as the visitation, before resorting to the congress. After interrogating each of the parties, the judges appointed a panel of three or more experts, consisting of a surgeon and a physician to examine the man, and a midwife to examine the woman, typically at the home of the wife's *procureur*. Ambroise Paré in 1571 described how this procedure should be undertaken, advising surgeons called to pronounce in such cases to, "visit diligently the parts dedicated to generation," and to identify any possible "defect in their dimensions, in size, length, girth, depth, and situation," that might impede the man's ability to consummate the marriage.⁵⁹⁵ Simultaneously, the midwife had the task of determining if the woman in question was "whole or corrupted, virgin or wife," which was taken as evidence of the husband's potency.⁵⁹⁶ The three experts then recorded their observations together in a signed report on the "external conformation" of the parties for the judge of the Officialité.

Medical experts and male litigants often complained, though, that the visitation, far from providing the objective certainty that the court clearly expected of the examination, seemed often to only

⁵⁹⁵ Paré, 891.

⁵⁹⁶ BNF Z Thoisy 188, Corbie-De Bray, 1576, f°4.

further obscure the truth. In the first place, the virginity of the wife was notoriously difficult to determine and men frequently objected to its use as proof of their own impotence. Many medical texts from the sixteenth century were ambivalent about the existence of the hymen and often questioned whether virginity had a physical and measurable quality at all, attributing belief in the physical quality of virginity to the superstitions of midwives. Male litigants also often objected to the evidence of their wife's virginity being used as evidence of a lack of intromission and denied the midwife's ability to detect it at all.

Paranoia about fraud and collusion also undermined the proof of virginity and the visitation. Male litigants frequently objected to the use of virginity as proof of their own incapacity because they feared women could easily falsify it and thereby deceive the experts. The conception of virginity by some as only a superficial tightness rather than a distinct anatomical feature or metaphysical quality meant that women could potentially simulate it. Anxieties that women could use astringents from a quick trip to the “boutique of a druggist” and thereby win their case formed a common objection to the visitation of the woman.⁵⁹⁷ Such fears undoubtedly drew upon the trope of the meddling matron who specialized in reconstructing virginity and who appeared frequently in satirical literature of the time.⁵⁹⁸ Tales of women who went to the extreme of falsifying both their testimony and their own bodies reinforced concerns about false accusations of impotence.

The testimony given before the Officialité of Paris shows that fears of women's secret potions, and thus the inadmissibility of proof-of-impotence-by-virginity, had some basis in reality. Elisabeth Guyot, suspected of using “philters to cause some blockage” of the consummation admitted that she had artificially restricted herself, although she claimed this was only so “the defendant would have more

⁵⁹⁷ Fromageot, 24-25.

⁵⁹⁸ For instance, Anon., *Le réveil du chat qui dort, par la cognissance de la perte du pucelage de la plupart des chambrieres de Paris* (Paris, 1616) ; Anon., *Quinze marques approuvées pour cognoistre les faux cons d'avec les légitimes* (1620).

contentment in the marital action with her.”⁵⁹⁹ Accusations of bodily fraud frequently prolonged the visitation. Several men, including Jacques Rippeau, requested and paid the fees for a second visitation because they insisted that their wives had used “astringent waters and other artifices” in order to falsely appear as virgins before the midwife.⁶⁰⁰ As a preventative measure against fraud, the midwives therefore routinely bathed the wife in tepid water to remove any “restrictive waters” and searched her body and the bedding for any “drugs proper in such cases to hide corruption” before making determinations of virginity.⁶⁰¹ This expedient aside, however, the possibility of fraud established in the minds of surgeons and male litigants alike that the evidence of virginity could not be known with certainty and therefore could not be used to condemn a man for his impotence.

The possibility for fraud and wariness of the impenetrable unknowability that shrouded the female body destabilized the visitation a means of proof and necessitated recourse to the congress. However, experts found the male body almost as equally problematic in their reports. Considerable ambiguity surrounded the question of whether the external appearance of the body could provide sufficient proof of impotence. Much like in the case of virginity, the experts frequently doubted the ability of the body to provide certain evidence of a man’s real, internal state. Although the use of the visitation seemed to presume that the “good conformation” or the “integrity of the parts” could provide evidence of virility, the experts almost always reached an inconclusive decision on this basis alone.

For example, in their examination of Gilles Darrault from 1613, the experts wrote in their report that they found his “natural and shameful parts...well-conformed, well-nourished, and proportionate.” Nevertheless, they declined to make any decisive judgment, writing “we cannot certify at present his virility or impotence because this depends not only on the integrity of the said parts, but also on a force

⁵⁹⁹ AN Z1O 100, Guyot-Feuillet, July 24, 1616, *procès-verbal*, 1-2.

⁶⁰⁰ AN Z1O 101, De Boue-Rippeau, February 17, 1618, *procès-verbal*, 1.

⁶⁰¹ BNF Z Thoisy 188, Goussier-L’Orsonvilliers, November 22, 1578, report of the visitation, 1.

and interior virtue that cannot be recognized except by action.”⁶⁰² This inconclusive refrain appeared so often in reports from the visitation that it appears to have been almost a standard formula, written with the expectation that the Official of the court would order the congress and thus resolve any ambiguities that might appear in the bodies of the spouses during the visitation [Fig. 30]. Often the experts explicitly called upon the judge to order it as the sole means by which a certain determination could be made. In the case of Guillaume Le Viel, the physician Jean Riolan and his companions wrote that they found his “natural parts...well-proportioned and marked for operation,” but concluded that they could not make a certain judgment of his ability “except by the action of the congress.”⁶⁰³ Without a literal demonstration of its operation, the experts insisted frequently existed that they could derive no certain evidence from the body alone.

Out of all the reasons given to justify the congress—as a safeguard against feminine artifice and fraud, as a more objective form of proof than oath-based evidence, as a way of speedily dispensing of invalid unions—none provoked as much discussion as its usefulness in resolving the otherwise ambiguous evidence offered by the male body. Pragmatic reasons aside, the Officialité’s adoption of the congress came about at the behest of the medical experts, who felt that they could not determine impotence based on a physical examination alone and often returned inconclusive reports.

The unwillingness of medical experts to base their decision on clinical observation rather than the spectacle of the congress did not necessarily indicate the ignorance of medical knowledge in the seventeenth century, as Darmon and Brenot have suggested. Rather, I contend that the experts’ discussions are revealing about the unique context of medical knowledge in the seventeenth century and prevailing standards of male embodiment. Their conversations about the problem of proving impotence

⁶⁰² AN Z1O 92, Alexandre-Darrault, April 1, 1613, report of the visitation, 1.

⁶⁰³ AN Z1O 93, Gouin-Le Viel, September 3, 1613, report of the visitation, 1.

reflected widespread cultural anxieties about the relationship between the male body, evidence, and the attribution of masculine identity at the end of the sixteenth century.

The experts may have preferred the congress in the first place due not to medical ignorance, but due to different contemporary standards regarding the body and what proofs observation of the body could reasonably offer. Due to the lesser status of medicine among the professions and the as-yet haphazard application of forensic evidence in early modern tribunals, the court may have already been predisposed to think of all bodily evidence as inherently uncertain. The status of semiology was particularly weak within the framework of Aristotelian logic, as it was widely accepted that “ambiguous bodily signs...could never lead to necessary and causal knowledge,” only conjectural.⁶⁰⁴ Early modern suspiciousness of the body and the deceptiveness of outward appearances also may have led the experts to worry about what bodily signs could meet the court’s standard of absolute and certain evidence. As several infamous cases of hermaphroditism in the late sixteenth and early seventeenth centuries had demonstrated, after all, the outward appearance of the body did not always neatly correspond to one’s real sexual status. At the risk of improperly dissolving a marriage and condemning a potent man, the experts therefore repudiated the visitation in favor of a less ambiguous physical performance.

Most importantly, the experts appeared to have favored the congress because of how they viewed the male body in particular. Because they believed that the physical exterior of the male body could provide only capricious and uncertain evidence of virility, they tended to place greater emphasis on the functional and performative qualities of manhood over the simple possession of a penis and testicles. As their remarks above suggest, the experts thought of virility much as they did virginity: as a real, ontological state that nevertheless manifested only ambiguously on the surface of the body. Although the visitation could yield some indications of impotence, opinion varied widely on what signs indicated true and certain manhood. Possession of a penis or the ability to have an erection alone did not suffice to prove

⁶⁰⁴ Silvia De Renzi, “Medical Expertise, Bodies, and the Law in Early Modern Courts,” *Isis* 98, no. 2 (2007): 319.

one's virility. Most agreed that the real sign of manhood eluded the perceptions of experts altogether, because it depended on an internal quality—the presence of virile heat, which could only be demonstrated by the production and expulsion of seed. Contemporary guides for surgeons called to testify in court cases cautioned practitioners against making determinations of impotence on the “outward conformation” alone because, as the surgeon René Gendry argued, one had to “consider the temperament of the entire body of the animal” in order to determine the presence of internal qualities like “heat,” which provoked the production of semen.⁶⁰⁵ In 1609, the surgeon Pierre Pigray similarly advised that medical practitioners called to report on male impotence ought to consider not just the appearance of the external parts, but the signs of heat that directed their functionality, looking for signs that the man was “cold, bewitched, and debilitated, or there is a defect in the erection of the penis, or lack and poverty of semen, or it is too liquid, or it is gonorrhea.”⁶⁰⁶ Medical expertise therefore could not rely on passive observation of the body and argued for an active demonstration as the only means of decisively proving one’s manhood. Gender performance therefore necessitated a literal performance, as only proof of physical potency could establish one’s virility with certainty.

The problem of proving potency in a court of law brought two models of male embodiment into tension. The first focused on the exterior, anatomical form and especially the presence of male genital organs. It insisted that the normal appearance of the male genitalia, referred to in the documents as a “good conformation,” could sufficiently prove one’s manhood. The other claimed that a good conformation—or an obvious defect like a missing testicle—could easily mask an underlying deficiency and therefore required a man demonstrate his functional ability through the action of the congress, through the three proofs of erection, intromission, and ejaculation.

⁶⁰⁵ René Gendry, *Les moyens de bien rapporter à Justice les indispositions et changemens qui arrivent à la santé des hommes* (Paris, 1650), 138.

⁶⁰⁶ Pierre Pigray, *Epitome des préceptes de médecine et chirurgie* (Rouen, 1625), 498-9.

The question of whether possession of a good conformation could, on its own, clear a man of charges of impotence inspired no end of controversy. Men who appeared accused before the Officialité of Paris frequently insisted that if the visitation found no obvious defects in their genitals, they could not be considered impotent. For instance, Blaise Vignard denied his wife's accusation that he was impotent on this basis. In his interrogation, when asked if he was "impotent as she claimed," he retorted that the visitation would show that he was "a true and natural man, with all the faculties required to know a woman carnally." In his view, the fact that he was not physically deprived of any of the "requisite parts" that made a "natural man," and thus at least had the potential to prove his potency, rendered the question of the actual consummation irrelevant.⁶⁰⁷ Vignard's defense by reference to a "good conformation" made good legal sense because it dispelled the possibility that a man was in fact a eunuch or otherwise entirely incapable of consummating the marriage. The frequency with which men invoked their physical attributes suggests that laymen commonly understood the canonical standard of evidence required to establish "absolute" impotence and knew that only castrated men were categorically excluded from marriage.

A woman who sued for an annulment, apparently, had a much higher standard of proof to reach, because she had to prove not only that the marriage was unconsummated, but that it never could be due to permanent and incurable impotence. Presumably, someone who completely lacked the "requisite parts" that Vignard referred to would indeed be permanently and incurably impotent, but otherwise proving that an invisible, internal defect like "frigidity" constituted absolute impotence was much more difficult.

Even men who admitted to the lack of consummation were still able to argue that, in the absence of obvious physical defects, their impotence could not be considered an absolute impediment to marriage. This could also be true of the many cases of magically-caused impotence because it left no obvious mark on the body and did not always cause permanent impotence, because the spell might be reversed in the future. Louis Douet made exactly this argument. He confessed that he had not consummated the marriage

⁶⁰⁷ AN Z1O 98, Barbier-Vignard, July 9, 1616, interrogation, 5.

with his wife, Françoise Thoris. However, he argued that the lack of consummation could not justify an annulment because he only suffered from a temporary affliction brought on by “some charm, spell, or tying of the knot [*nouement d'esguillette*].” Therefore, he might in the future still be capable of the carnal act should he ever come “untied.” After all, he could not be truly impotent because he was a “natural man, having all the parts required in a man to have the company of his wife, as was seen in the visitation of his person.”⁶⁰⁸

Opinion often diverged between experts and lawyers, who debated what even constituted the appropriate conformation of the genitalia. The case of Jacques Dalest is instructive in this regard, because it shows the doubts that could also arise from an exclusive focus on the state of the genitalia. Dalest’s advocate, Bottreau, disputed the findings of the experts in the visitation because he felt that they had declared him impotent based on the equivocal evidence of the testicles, without consideration of other evidence of his manhood. He especially took offense to the decision of the experts because, in his view, they had no right to judge a man impotent who was for the most part “well proportioned” on the exterior of his body and possessed of all the parts necessary to accomplish the marriage. In fact, he insisted that they had failed to take into account other humoral signs of his manhood. Bottreau argued that Dalest otherwise appeared an entirely virile man, who had already proven that he possessed sufficient “courageous heat” simply by taking up the profession of arms. As further evidence of his hot disposition, he also possessed “a sanguine temperament, and a colored complexion,” a thick beard, “a free and firm gait, a masculine voice, and a strong and robust constitution,” all qualities associated with sanguine, generative manhood.⁶⁰⁹ To reduce Dalest’s condition to the state of his genitals risked overlooking the obvious evidence that he possessed sufficient virile heat, which, Bottreau argued, could be clearly seen just by looking at his face.

⁶⁰⁸ AN Z1O 95, Thoris-Douet, March 1615, *procès-verbal*, 4.

⁶⁰⁹ BNF Z Thoisy 416, f. 154, 1.

Bottreau also took issue with the fact that the experts had failed to specify what they meant by several of their remarks and the criteria they used to determine impotence. For instance, they had noted that Dalest's genitals "were not very sensitive," but they did not expand on what bearing this might have on sexual ability. The defects of the testicles that did appear, Bottreau argued, could just as easily be construed as conferring a reproductive advantage. For instance, they had mentioned that the "scrotum is hard" in their report, but in Bottreau's opinion the hardness of the scrotum could just as easily mean Dalest was "more capable to conserve heat in these parts" and thereby produce more prolific semen. Similarly, he argued that a defect they found on the "left side" of his genitals was irrelevant because this side more often begat female, rather than male, children anyway. Nor did the coldness of the "noble parts" they found prove anything because only the real, invisible operation of the heat inside the body mattered, not the ephemeral and capricious external temperature. Regardless of the shape or heat of the testicles, their mere presence necessitated the presumption of virility. "Truly," he wrote,

if [Dalest] had no testicles, if he was without a beard or hair, if he had a dry and arid penis, too short and too small, wounded or twisted; and with all these considerable defects one did not recognize in him spermatic vessels, one could suspect and accuse him of frigidity; and still, if at least he had an erection, ejaculation, and intromission, he could not succumb to this accusation.⁶¹⁰

In his view, as long as Dalest otherwise bore all the external signs of manhood, the lack of heat could only be proven with certainty through the demonstration of the congress. Even if Dalest lacked both testicles, so long as he could intromit and produce semen, this sign was irrelevant to the impotence or virility of his client.

In practice, making legal determinations on the basis of impotence proved incredibly controversial, as ambiguities and exceptions to the rule proliferated. In France, several high-profile impotence suits threw into question the significance of testicular deformities and injuries in

⁶¹⁰ BNF Z Thoisy 416, f. 154, 17.

determinations of virility. Even in cases of men who were entirely deprived of one or both testicles, ambiguities persisted that passive observation of the external body could not resolve. Castrates were rare in France, but cases in which men who suffered injuries to their genitals were not at all uncommon in the sixteenth and seventeenth centuries, and the records of the Officialité attest to the constant threat of injury in daily life.⁶¹¹ Military men and the nobility of the sword proved especially susceptible to accidents involving horses, guns, and swords. Among the more notable cases, Nicolas d'Amerval de Liancourt found his marriage with Henri IV's lover Gabrielle d'Estrées annulled after a fall from his horse supposedly made him impotent.⁶¹² Numerous men also reported suffering at the hands of surgical tools, especially following surgical operations like cutting for the stone, a common procedure that often resulted in impotence. The experts remarked that numerous men appeared to have been inadvertently castrated by medical intervention, such as in the case of Dominique Guyot, who had lost a testicle to an operation for a hernia [*descents de boyaux*].⁶¹³ Given that one of the most common therapies for hernia in the seventeenth century was castration, and the frequency with which other accidents emerged in cases of impotence, the experts often had the difficult task of deciding if men who lacked testicles or suffered some other deformity could still produce generative seed and perform sexually.

More rarely, some men lacked testicles from birth, raising the question of whether this automatically constituted incurable and absolute impotence in the same way that being surgically castrated did. Most notable among these, the case of Estienne De Bray, tried in 1576, raised the question of whether the lack of one testicle automatically indicated impotence. The report of the experts found that

⁶¹¹ As Valeria Finucci has also observed, "Castration was hardly uncommon in the Renaissance, and not so much because there were *castrati* singers, I would argue, but because at any given day a number of men circulated in the streets with somewhat suffering or damaged genitalia." Finucci, *Manly Masquerade*, 256.

⁶¹² "Testament de Nicolas d'Amerval, décembre 1594," *Bulletin de la Société Académique de Laon* 19 (Paris, 1872), 25-27.

⁶¹³ AN Z1O 129, Guyot-Vichet, April 24, 1657, report of the visitation, 1.

De Bray had “only the left testicle and that the testicle on the right side” suffered a “defect of nature.”⁶¹⁴ Estienne Pasquier in a factum written on behalf of De Bray’s wife, Marie de Corbie, pointed to this as evidence that De Bray had intentionally “seduced and wasted the youth” of his wife in a fruitless and invalid marriage, knowing that his condition since birth excluded him from the sacrament.⁶¹⁵ Citing the canons’ rulings on eunuchs, Pasquier asserted that, “true and undoubtable impotence for the works of marriage is when nature is lacking and defective in the genital parts” and argued that De Bray should be declared impotent on this basis.⁶¹⁶

Antoine Hotman disagreed. Writing in defense of De Bray, he argued that, on the contrary, a man who lacked one or even both testicles should not be automatically regarded as impotent. Much like Bottreau argued in the case of Jacques Dalest, Hotman insisted that the attribution of virility could not be entirely reduced to the state of the testicles. His argument rested on the example of eunuchs, whom he argued in certain cases could still “have the company of women” and even engender, despite exterior appearances.⁶¹⁷ Hermaphrodites also threw the question into doubt for Hotman, as the most striking example in which the external appearance of the sexual organs could deceive. He noted that sometimes those “for a long time reputed to be women” turned out to be men after all and even married.⁶¹⁸ Therefore, he concluded that, “one must not easily presume evil of a man, nor judge him impotent, for not seeing on the exterior the witnesses of his potency.”⁶¹⁹ In his view, a man who appeared to be fully a man and was commonly reputed to be so could not be anything other, and the weight of legal presumption

⁶¹⁴ BNF Z Thoisy 455, f. 116, 135.

⁶¹⁵ BNF Z Thoisy 455, f. 116, 134.

⁶¹⁶ BNF Z Thoisy 455, f. 116, 136. Pasquier appears to have misinterpreted *Cum frequenter* in his argument, perhaps intentionally overlooking the fact that the brief and its sequelae allowed for men with one testicle to marry.

⁶¹⁷ Hotman, 12.

⁶¹⁸ Hotman, 22.

⁶¹⁹ Hotman, 23.

therefore rested with him. So long as the man in question exhibited all the exterior signs of a “complete man”—specifically, a “a voice that is not effeminate, a wit that is not dull, and hair that comes to him naturally”—he could only be presumed to be capable of marriage, regardless of the state of the privy parts.⁶²⁰

In 1599, the case of Charles de Chastilon, the Baron d’Argenton, further enflamed the controversy over the relationship between the testicles, masculine presentation, and sexual ability. The Baron’s wife, Marguerite de la Châtre, sued for annulment, claiming he had no testicles and was therefore impotent. The physicians and surgeons who examined him in the visitation verified the allegations. Although they made special note of the fact that he had a “firm voice” and copious hair, they found his “purse” to be “destitute and deprived of apparent testicles.”⁶²¹ They declared that, “such a man is impotent, and without testicles cannot make any semen.” Furthermore, because he had far surpassed the age of puberty at age twenty-nine, they reasoned that if his testicles had been retained internally, they would have long since descended and thus there was no hope of a future alteration in his condition.⁶²² Following the report, De la Châtre’s lawyer, Julien Peleus, argued that the defect of his genital parts decisively proved that Argenton was “neither man nor husband” and recommended that the court declare the marriage null.⁶²³

The Baron’s defender, Sébastien Rouillard, on the other hand, utterly rejected the conclusions of the experts. In a printed factum, he insisted that they could not be certain that the Baron did not, in fact, have testicles hidden inside his abdomen. Far from an irremediable defect, Rouillard claimed that the

⁶²⁰ Hotman, 23.

⁶²¹ BNF Ms. Dupuy 630, La Châtre-d’Argenton, January 24, 1599, “Visitation du Sr. D’Argenton,” f. 65r.

⁶²² BNF Ms. Dupuy 630, La Châtre-d’Argenton, January 24, 1599, “Visitation du Sr. D’Argenton,” f. 65v.

⁶²³ Julien Pélèus, *Quaestio singularis de solutione matrimonii ob defectum testium apparentium in Senatu tractata et iudicata* (Paris, 1602), 29.

internal retention of the testicles occurred frequently in nature and in no way proved the Baron's impotence.⁶²⁴ Although the eyes of the doctors "could not penetrate the knowledge of internal and hidden illnesses of the body," Rouillard argued that they should instead attend to the external "indices" that proclaimed to all his client's virility. As the experts admitted, the Baron undoubtedly possessed all the signs of manhood, including a beard, body hair, and a deep voice, which Rouillard reasoned could only emerge from the presence of the virile heat.⁶²⁵ Furthermore, he claimed that the presence or absence of the testicles was in any case incidental to sexual ability. Rouillard claimed that the work of the "Anatomists" had shown that the testicles only served to elaborate seed and played no role in the work of copulation. The seed moved from the "spermatic vessels" by the force of the heated passions and therefore their position in the body did not matter. If they were held internally, he reasoned that generation would be even more "perfect" because of the reduced distance between the "preparatory" and "ejaculatory" vessels and added protection from "exterior disturbances."⁶²⁶

Rouillard therefore urged the court to order the congress, as the only means by which the Baron might defend himself against the charges and make a visible demonstration of his ability. Although Rouillard himself considered the congress to be shameful and too often favorable to women, his request reveals why barristers may have found it a useful last resort in cases where the visitation produced only ambiguous evidence of a man's virility. Given that opinion differed greatly on the normative markers of potency, the case of Argenton demonstrates that the congress did not always work to condemn men, but also sometimes provided an additional opportunity to clear their name. Nevertheless, the court ignored Rouillard's plea and declared the marriage invalid based on the recommendation of the experts. A few

⁶²⁴ Rouillard, 18.

⁶²⁵ Rouillard, 22.

⁶²⁶ Rouillard, 43-44.

years later, however, an autopsy of the Baron's body vindicated Rouillard, revealing "two perfectly functioning, undescended testicles" hidden inside the abdomen.⁶²⁷

For many commentators on the case, the court's error in the case of the Baron d'Argenton revealed the limits of medical expertise and observation in cases of impotence. Much like in extraordinary cases of hermaphrodites and castrates, who could sometimes still have sex, legal and medical experts before the Officialité repeatedly stressed that the external body could mask the real internal state of a man. The stress of the experts on this point drew upon broader medical understandings of manhood as a quality understood to principally reside in internal, humoral qualities like heat. Based on his observations of several such cases before the Officialité, Jean Riolan frequently disputed the importance of the testicles in his reports to the court and in his anatomical writings in favor of evaluations of the functional value of "heat." To support his arguments, Riolan recounted several cases of men who either lost a testicle, or lacked them from birth, and yet still produced seed and therefore could potentially still engender. During the dissection of a soldier hung for adultery, for instance, he discovered that the man had "no appearance of testicles." However, he marveled to find "the spermatic vessels perfectly composed and full of white seed."⁶²⁸ Similarly, in another man who had one testicle removed by castration and the other "very extended and corrupted," Riolan still found "seed inside the seminal vesicles," suggesting to him that the testicles were not essential to the production of semen, and by extension, erection, so long as the man in question still possessed sufficient heat, moisture, and vital spirits elsewhere in the body to generate seed.⁶²⁹

For Riolan, the examples of castrates and other ambiguous men threw into question the ability of the unaided eye of the expert to discern the internal movement of these fluids, based solely on its external

⁶²⁷ Breen, 788. Sébastien Rouillard, *Les reliefs forenses*, 2nd ed., vol. 2 (Paris, 1610), f. 278r–79r.

⁶²⁸ Riolan, 397.

⁶²⁹ Riolan, 397.

appearance. These examples suggested that evaluations of potency based on the mere presence or absence of the testicles were flawed because they did not always unequivocally signal one's sexual or reproductive ability, something that depended on interior processes of digestion and concoction. Riolan further maintained that in some circumstances a man without testicles could still produce semen and have children. As evidence of this, he claimed to have known a "certain gentleman whose two testicles were carried off by an arquebus," who still managed to have "a son by his wife, a very honest lady."⁶³⁰ This example therefore showed that the external conformation could only provide an imperfect sign of sexual capacity. Even if the genitalia manifested some obvious defect in the visitation, it was still theoretically possible for a man to produce semen, and therefore he could not be declared impotent on this basis. Only direct observation of sexual performance would suffice. This view no doubt translated into Riolan's work as a court-appointed physician in the Officialité of Paris, where he and his colleagues often recommended the congress as the best means possible to resolve cases where the external state of the genitals offered only ambiguous evidence of impotence.

The preoccupation of medical writers with extraordinary cases of eunuchs clearly informed their discussions about the importance of the testicles and the normative features of the "external conformation" for sexual and generative ability. However, very few of the men called before the Officialité could be labeled castrates because of a physical defect or deformity. More often, cases of impotence raised the possibility that the body could mislead in the opposite case: a man might have perfectly normal genitalia and yet still be unable to have sex. Despite the furor that exceptional cases of missing testicles like that of the Baron d'Argenton inspired, frigidity was a much more common condition and one that proved much more difficult to adjudicate. Because frigidity afflicted the temperament rather than the physical body, due to a lack of virile heat, its operations eluded the ocular inspection of the visitation. For this reason, after the abolition of the congress, several eighteenth-century commentators

⁶³⁰ Riolan, 397.

called for its reintroduction as the best legal mechanism available to prove impotence with certainty. The physician Philippe Hecquet, for instance, defended it on the grounds that the “organs which distinguish the sexes” could deceive the eyes of the experts, as had often happened in known cases of hermaphroditism. In the same way, the body could conceal the true interior condition of *froids*. He therefore condemned the reliance on the visitation and the external evidence of the body, lest it overlook an internal defect:

it would be a crude error, tending to impertinence, to conclude from the sole presence of these organs that a man is a husband, fit or unfit, potent or impotent, cold or passionate, capable or incapable to have a wife... A pompous equipment of organs, notable for their presence, sufficient by their number, distinguished by their volume... proves that nothing lacks in the sex of a man, but this does not remove the doubt that he lacks a lot of the condition of a husband, which is not decided by the presence of fine organs, but by the effective marks of their action.⁶³¹

The eighteenth-century jurist Antoine-Gaspard Boucher d'Argis, looking back on the history of the Officialité, also cited the problem of frigidity as one of the reasons for the adoption of the congress in the first place. As he pointed out, a man could “appear on the outside to be well conforming,” but the body could conceal an internal defect proceeding from “the constitution of the blood” or the “weakness of the organs.”⁶³² Acknowledgment of the fact that a man could be well formed and still unable to accomplish the works of marriage thus most often undermined the proof of the “conformation” taken from the visitation and justified recourse to the congress.

Women's descriptions of frigidity further demonstrate the utility of the congress to cases in which there existed no outward sign of impotence. Female litigants in these cases often could cite no apparent

⁶³¹ Philippe Hecquet, *Question de Médecine: S'il est des signes qui assurent de la puissance des hommes, autant que le sont ceux qui répondent de la sagesse des filles?* (Paris, 1713), 1-3.

⁶³² Antoine-Gaspard Boucher d'Argis, *Principes sur la nullité du mariage, pour cause d'impuissance. Par M avocat en Parlement, avec le traité de M. le président Bouhier, sur les procédures...* (London, 1756), 60.

physical cause for their husband's alleged impotence and usually described the condition to the court in only vague, euphemistic terms. Women who accused their husbands typically described frigidity as an unspecified inability or mysterious affliction for which they had no explanation. They often insisted simply that they knew of no reason for a man's impotence, except that he "could not."⁶³³ The case of Marie Lasne from 1614 illustrates the vagueness of most women's testimony on the nature of her husband's frigidity. In her interrogation, the *procureur* asked her how she knew that her husband, Claude Maudert, was impotent. No matter how he rephrased the question, she replied only in euphemisms. She merely insisted that he had not had her "carnal company," although they had always lived in peace together and she had "obeyed him in all he desired."⁶³⁴ However, she "knew nothing" about what this entailed, other than that he "worked extremely when he wanted to accomplish his desire to have her carnal company, which she knows to come from no other cause than impotence."⁶³⁵ This she only learned by talking with the other women in the household where she worked as a servant, who informed her that he "was not capable of the works of the flesh."⁶³⁶ In the absence of specific information from the interrogation about the nature of this inability, the experts therefore could only determine certain evidence of impotence by reproducing the conditions of the union in the congress.

⁶³³ So often did the charge "il ne peult" resonate in the chambers of the Officialité that the shameful designation of an impotent man as a "Jean qui ne peult" entered the literary lexicon. Pierre de l'Estoile claimed that Rémy Belleau's poem of the same title introduced this term in reference to the case of Estienne de Bray, although its connection to the case has been disputed. Robert Kuin and Anne Lake Prescott, "The Wrath of Priapus: Rémy Belleau's 'Jean qui ne peult' and its Traditions," *Comparative Literature Studies* 37, no. 1 (2000): 16. Tom Hamilton, *Pierre de L'Estoile and his World in the Wars of Religion* (Oxford: Oxford University Press, 2017),

⁶³⁴ AN Z1O 95, Lasne-Maudert, December 31, 1614, interrogation.

⁶³⁵ AN Z1O 95, Lasne-Maudert, December 31, 1614, interrogation.

⁶³⁶ AN Z1O 95, Lasne-Maudert, December 31, 1614, interrogation.

Other women spoke more frankly about the nature of their husband's frigidity. However, what they described was not necessarily just an inability to become erect or a defect of the exterior organs, but any number of sexual abnormalities, including the inability to ejaculate. Some women claimed that their husbands seemingly could not produce semen at all, despite having all the requisite external organs, and cited this as proof positive of in-born and absolute impotence. Marie Bouche did not specify whether her husband had penetrated her or not, but still claimed that he was impotent because he never expelled seed and that it "made no appearance in him in any fashion whatever in all the time they remained together."⁶³⁷ Surprised, the judge followed up on this by asking if she knew if he was "castrated." She replied that he was not, but maintained that he was not "a virile man nor potent for generation because he does not produce semen."⁶³⁷ Apparently, the seed had such high evidentiary value in the minds of the litigants that some men went to great lengths to hide their impotence by tricking their wives into thinking that they had ejaculated during sex. To achieve this end, Claude Manzangerbe claimed that her husband, Charles Bonamy, "took his saliva and put it at the end of her nature to make her think that this was semen"—something Bonamy furiously denied, claiming that he did in fact "produce seed appropriate for generation."⁶³⁸ Similarly, when asked if her husband, Jean Andoyes, could produce semen, Charlotte de Boyin responded that she thought he had, but she found a "small bottle full of some liquid" near the bed, which he used to simulate ejaculation. She threw it out the window in anger, though Andoyes insisted that the liquid in the bottle was only almond oil, a common aphrodisiac.⁶³⁹

Several others accused their husbands of being unable to achieve intromission and ejaculate into the appropriate vessel, despite appearing "well conforming" in their privy parts. Frequently, they attributed impotence to a general lack of control over the body and its secretions. The tales they told of frustrated attempts frequently eluded any simple explanation based on the evidence of the body alone

⁶³⁷ AN Z1O 124, Syon-Bouche, December 10, 1626, interrogation, 6.

⁶³⁸ AN Z1O 98, Manzangerbe-Bonamy, July 6, 1616, interrogation, 6.

⁶³⁹ AN Z1O 116, De Boyin-Andoyes, April 29, 1623, interrogation, 6, 14.

because these defects supposedly proceeded from the invisible operations of the virile heat. Although the production of seed indicated the presence of internal heat, deficiencies of the seed and premature expulsions suggested that it might be insufficient to support intromission. Anne de Fesselles, for instance, claimed that Michel Larcher could achieve an erection when he “manipulated his penis with his hand” but when he approached her, the “erection ceased and left some wetness on her.”⁶⁴⁰ When asked if she saw her husband could “produce some semen” Claude Arnouel similarly claimed that he had, but it was “on the bed and on the flesh and not in her nature.”⁶⁴¹ Several women pointed to the spilling of seed *inter cruses* as indisputable evidence of their husband’s impotence. Elisabeth Guyot for instance claimed that when she lay with Pierre Feuillet, she sometimes felt some “wetness” on her “outside the vessel of nature” and thus reasoned that he was not “capable of any virile action, even though he soiled and ruined her with his semen, because he made no intromission.”⁶⁴²

In most cases, these fruitless secretions had no apparent cause, although sometimes they appeared as a symptom of a more serious illness linked to other uncontrollable emissions. For example, Robert Cossart’s wife described him as having an unknown malady that caused him to prematurely emit semen the color of “red and black” onto the bed-linens, at the same time that he suffered from effusions of “urine like blood and some days after like mud and other days black and white and red urines.”⁶⁴³ Cossart had previously sought out a remedy from a physician, but even he could not guess the reason for these bizarre emissions and ultimately the experts concluded on the basis of the congress that he simply “did not sufficiently illustrate natural heat” to consummate the marriage.⁶⁴⁴ The lack of intromission in these cases necessitated recourse to proof by congress because the experts felt that they could not otherwise verify

⁶⁴⁰ AN Z1O 116, Fesselles-Larcher, April 27, 1623, interrogation, 11.

⁶⁴¹ AN Z1O 120, Arnouel-Roger, May 25, 1625, interrogation, 6.

⁶⁴² AN Z1O 99, Guyot-Feuillet, June 21, 1617, interrogation, 2-3.

⁶⁴³ AN Z1O 92, Faschon-Cossart, February 14, 1613, interrogation, 4.

⁶⁴⁴ AN Z1O 92, Faschon-Cossart, February 18, 1613, report of the congress, 2.

testimony about premature ejaculations. After all, in cases as unusual as Cossart's, at least the presence of semen indicated some degree of virile heat. However, to pronounce on whether or not men had sufficient heat and force to achieve intromission required a direct demonstration in the view of the experts.

In the absence of indisputable ocular evidence, the court ruled that the vague fumbling, spilled seed, and extraordinary effusions that all these women described could only be verified through the action of the congress. The inability to produce semen or to control its emission indicated an internal defect of the virile heat that could not be perceived based on the exterior of the body alone. After all, it occurred despite the otherwise well-conforming appearance of the genitalia. The equivocal evidence that the body offered in cases that pointed to frigidity all led the experts to prefer the congress as the most certain means of proving impotence and, consequently, the Officialité to cast the weight of legal presumption onto it. The court therefore placed higher significance on demonstration of fluid ability than the external state of the body. Because frigidity was an invisible condition, the only way to fulfill the Officialité's standard of certain proof was by recreating the circumstances of the marriage bed under artificial and, in theory, reproducible conditions. Isolated from the confusing mess of conflicting testimonies and personal interest that the interrogations yielded, the congress made the invisible secrets of the body visible on a micro scale. As the experts' refrain "virility can only be known by action" suggested, an exteriorized performance provided a much more reliable indicator of the invisible, interior virtue of the body, compared to its capricious surface.

That the congress frequently contradicted the findings of the visitation in the minds of the experts, also attested to the uncertainty of exterior examinations. This was particularly true in cases where the experts suspected "in-born," as opposed to temporary or acquired, frigidity. The failure to demonstrate an erection and emit virile seed was taken as a much stronger indicator of a defect of the virile heat than the appearance of the genitalia alone. For instance, at first, Louis Douet appeared "well and naturally formed" and the physician and surgeon found "no defect, from which one could draw any consequence of

impotence to frequent a woman.”⁶⁴⁵ During the congress, however, the experts discovered that after leaving the couple together for three hours in the rooms belonging to the concierge of the Officialité, Douet had “made no action at all in the congress because of a lack of erection, intromission, and ejaculation.” The experts speculated that he suffered from a kind of interior blockage of “the noble and interior parts,” which could not communicate the necessary heat and spirits to the genitals, although they did not find on his body “any mark or imperfection which attests to impotence.”⁶⁴⁶ Similarly, in the case of Nicolas Baudin, they discovered no “defect in his conformation” but concluded that he did not “sufficiently demonstrate his heat and natural vigor” to consummate the marriage.⁶⁴⁷

Although the experts regarded the erection as one of the most significant signs of virility in the congress—Hotman called it “the principal, the most necessary and most efficacious” sign of manhood—erection alone did not suffice to pass the congress.⁶⁴⁸ Because women reported so many cases of men who suffered from premature ejaculation and unnatural spilling of seed, as in the case of Robert Cossart, the congress required men to fulfill a very high standard of proof by demonstrating not only that they could become erect, but could also produce generative seed and successfully do so in their wife’s vagina. The experts often took the erection as a promising sign of virility, and during the congress typically asked the husband to only call them back into the room when they felt the stirrings of desire. However, if the erection failed to demonstrate enough “force” to achieve penetration, this could still not sufficiently dispel an accusation of impotence. Men such as Jacques Camus who managed to fulfill at least two of the three requirements, by producing “a strong erection and ejaculation of semen” could still fail. In his case, he only managed to deposit his seed on “the exterior orifice of [his wife’s] nature, so that intromission was

⁶⁴⁵ AN Z1O 107, Thoris-Douet, August 29, 1620, report of the visitation, 1.

⁶⁴⁶ AN Z1O 107, Thoris-Douet, September 4, 1620, report of the congress, 1.

⁶⁴⁷ AN Z1O 92, Martin-Baudin, March 29, 1613, report of the congress, 1-2.

⁶⁴⁸ Hotman, 24.

not made.”⁶⁴⁹ In fact, the experts considered the erection an indecisive sign of one’s fitness for marriage and hesitated to pronounce on its absence in some cases. During the congress, Charles Bonamy produced “no witness of the erection, which,” they declared, “is the first but not only mark of virility.” Nevertheless, they concluded that they could not by a “sole act of lack of erection declare Bonamy impotent at present,” and repeated the congress a second time before finally declaring him incapable and annulling the marriage.⁶⁵⁰

Seminal secretions served as a more important factor in determining virility than the erection because an inability to control the body and its secretions automatically indicated an internal disturbance of the virile “heat,” an otherwise a mostly invisible quality. The experts measured success in the congress by a man’s ability to leave visible proofs in the body of his wife, in accordance with the male role in generation, which was supposed to be active, generative, and productive. The failure to leave “any mark” on her that the experts could discern indicated a lack of this active principle, even in the presence of an erection. On the other hand, the mere presence of seed suggested that a man had at least sufficient virile heat to produce semen, and thus he probably could not be permanently impotent, even if for whatever reason he could not actually have sex with his wife. The experts recommended that Simon Bidot might be best suited to marry a widow instead of a virgin, because although he could not have the company of his wife, they noticed that he “expelled some portion of seminal matter without true erection.”⁶⁵¹ The case of Camus, mentioned above, was found to be inconclusive because he had at least left some mark of his ability on his wife’s body, even if he had not penetrated her.⁶⁵²

⁶⁴⁹ AN Z1O 115, Lanay-Camus, September 11, 1623, report of the congress, 1.

⁶⁵⁰ AN Z1O 98, Manzagerbe-Bonamy, July 6, 1616, report of the congress, 1.

⁶⁵¹ AN Z1O 131, Le Bas-Bidot, March 18, 1662, report of the congress, 1.

⁶⁵² AN Z1O 115, Lanay-Camus, September 11, 1623, report of the congress, 2.

Despite the semiotic importance of seed and semination in the experts' determinations, it still produced ambiguities that made it a far from perfect sign of virility. Observations from the congress provoked a great deal of discussion about what constituted true and generative seed and whether the expulsion of non-generative seminal matter could suffice to prove one's impotence. Even with ocular proof of intromission and ejaculation, some jurists and medical practitioners disputed whether the ability to produce semen was enough to decisively prove a man's potency. Much as Sánchez had done in the case of the canonical conception of "*verum semen*," Riolan and other medical practitioners distinguished between perfect and imperfect seed, one having "full power in generation" and the other having "no other virtue than that of saliva."⁶⁵³ In their view, the fluid that castrates produced would be only imperfect. Because they lacked testicles, the blood could not be completely heated or cooked to its final perfection in the testicles. Instead, Paré theorized that castrates only projected "the viscous humor contained in the prostate glands."⁶⁵⁴ Contemporary physicians commonly recognized that if a man expelled imperfect seed, like the non-generative matter expelled by castrates, he could not fulfill the final requirement of ejaculation, even if he was capable of intromission. In non-eunuchs, the imperfection of the seed usually resulted from an internal imbalance in the virile heat or temperament. Paré claimed that insufficient seed would be, "too hot or too cold, too dry, or humid or fluid," because it would not be "well cooked, elaborated, and perfected."⁶⁵⁵ Seed with an unusual appearance could thus provide evidence of a temperamental imbalance or an underlying impotence, suggesting that medical experts regarded seminal quality to be just as important for normative male embodiment and normative male sexuality as they did the "external conformation" or penetrative ability.

Discussions of the quality of the seed also show the tendency of the experts to confuse and conflate sterility with impotence because they considered sexual ability to derive from the same principle

⁶⁵³ Riolan, 397.

⁶⁵⁴ Paré, 723.

⁶⁵⁵ Paré, 722.

as generative ability, through the force of the virile heat. The surgeon Jacques Guillemeau, like several of his contemporaries in the medical professions, viewed the distinction between sterility and impotence maintained in canon law as an artificial one, because he reasoned that infertile seed indicated an internal lack of heat and a diminished propensity for sexual desirousness as well as an inability to engender. He therefore claimed that the congress failed when the experts did not consider the quality of the semen and whether it had been adequately “cooked” by the virile heat. He argued that men who could not ejaculate quickly “like the bolt of an arrow” and with “spirit” should not be judged potent because their semen would not only be useless to engender, but occasion premature or excessively prolonged ejaculations. Even those who ejected “semen straight, suddenly, and with speed” would in his opinion be “nevertheless incapable if they are too hot, too cold, too dry, too humid, liquid, and aqueous, or otherwise incapable in their matter, consistence, quality, and temperature.” In his view, the mere ability to “make wet” that concerned the experts in their post-congress examinations could not account for the quality and temperature of the seed, the crucial factors that distinguished imperfect semen from the perfect.⁶⁵⁶

As in the case of the conformation of the testicles, distinguishing perfect from imperfect seed in practice proved to be a difficult task. Discussions of the true seed rarely appeared in trial records but caused considerable confusion when they did. For instance, at the visitation of De Bray, the experts found the question of “true seed” pertinent enough to describe “a quantity of a sappy and aqueous substance” at the end of his penis. Even when they observed the same “clear and watery substance” at the conclusion of the congress, they remained agnostic on whether this was “true and perfect semen” and declared him impotent anyway.⁶⁵⁷

Ultimately, most jurists judged the question of true seed too uncertain to admit in court. Although the experts had some idea in mind of how virile seed should appear—ideally, “well cooked and digested,

⁶⁵⁶ Guillemeau, 481.

⁶⁵⁷ BNF Z Thoisy 188, Corbie-De Bray, 1576, f. 1, 8.

starched and clumpy, and full of vigorous spirits”—they could not visually perceive whether it had undergone the processes of concoction and infusion with animal spirits, the internal operations of generation being beyond their perceptive ability.⁶⁵⁸ Furthermore, natural variation could also undermine the evidence of the experts' eyes. Hotman and Tagereau both wished to place the perfection of the seed beyond the scope of the court altogether, because they reckoned it “impossible for doctors to judge the goodness of the semen” for it varied so greatly according to the “diverse dispositions of man,” depending on whether a man was “in good humor” or “poorly disposed and in anger”—which, presumably, under the pressures of the congress, he would be.⁶⁵⁹

If one takes account of the profound doubts experts expressed about the evidentiary value of the body and the inability of their own expertise to meet the standard of certain evidence, the institution of the procedure that Voltaire called “shameful for wives, ridiculous for husbands, and undignified for judges” begins to make a great deal more sense.⁶⁶⁰ Given the high social stakes attached to the accurate attribution of manhood, it is hardly any wonder that so many called on the congress as a means to resolve the complications that arose in often ambiguous and equivocal cases. In the eighteenth century, well after the abolition of the congress, Jean Bouhier, a jurist at the Parlement of Dijon, in 1735 wrote an anonymous and scandalous apology for the congress, which he defended as the only certain means of ascertaining the true marks of virility in a man.⁶⁶¹ This is hardly surprising in a cultural context that directly linked “access to the prerogatives of the patriarchal role” to the normative dispositions of the male body. In such cases,

⁶⁵⁸ Paré, 722.

⁶⁵⁹ Hotman 18-19. Tagereau, 25.

⁶⁶⁰ Voltaire, *Oeuvres complètes de Voltaire: Dictionnaire philosophique*, vol. 7 (Paris, 1855), 725.

⁶⁶¹ Bouhier, 44-45.

the courts could set the standard of evidence, and thus the standard of proof of manhood, at nothing less than the literal coupling of husband and wife.⁶⁶²

In the eyes of its numerous critics, however, the practice of the congress produced more problems than it solved. In the rare instances when a man manifested some indication of virility, especially if he could demonstrate an erection, the experts only introduced greater confusion by insisting on the evidence of intromission and the ejaculation of true seed. Hotman and Tagereau both insisted that the Officialité ought to forego the congress altogether. In their view, the erection alone ought to be the principal sign of virility and that, so long as no other defect appeared, a man must be “undoubtedly potent.”⁶⁶³ In their view, the additional hurdles of intromission and ejaculation in the presence of witnesses practically guaranteed that no man would ever succeed in the congress and the trial records of the Officialité of Paris corroborate their concerns. As far as I know, in no single case did a man ever emerge victorious from the congress. Although the experts had originally recommended it because they doubted the evidence of the external body in determinations of ability, and tended to favor functional demonstrations of “heat,” the congress still perpetuated doubts about what bodily signs definitively proved manhood.

The inability of the congress to resolve these difficulties eventually led to its abolition in the latter half of the seventeenth century. A growing number of critics decried the practice as both shameful and useless for proving virility. In 1626, the physician Hugo Chasles defended a thesis in medicine that declared the congress a “filthy fabrication” with no basis in canon law.⁶⁶⁴ Not only did he consider it shameful, but also regarded it as an inadequate and often misleading means of proof because it often led

⁶⁶² Forster, 724.

⁶⁶³ Tagereau, 24.

⁶⁶⁴ Hugo Chasles, *An congressus publicus virilitatis virginitatisque examen ? Quaestio medica, quodlibetariis disputationibus mane discutienda in scholis medicorum, die Jovis, XVII. decembris, M. Pet. de Beaureains doctore medico, moderatore*, 2nd. ed. (Paris, 1647), 1.

the experts to incorrectly label a man impotent. Many others like Chasles opposed the congress because they felt that the capricious and deceptive body could not be made subject to the evidentiary logic of the courtroom or the hubris of the experts, who wished to reduce the male body to discrete, compartmentalized proofs. For them, the congress represented the futile extremes to which human curiosity might go in an obsessive search for the secret truths of the body. Indeed, this effort would always fail because the congress laid bare what nature had intended to remain hidden, by exposing the nude body to the prying eyes of the experts. In the view of critics like the jurist Anne Robert, forcing nature to give up the secrets of generation in this way did nothing more than make a mockery of the authority of husbands and reduced the sacrament of marriage to mere physical qualities.⁶⁶⁵

Critics of the congress also claimed that the intrusive nature of the procedure made it psychologically impossible for even an entirely potent man to ever succeed. These critiques were echoed in a growing number of seventeenth-century voices who argued that male sexual ability did not only depend on the presence of humoral qualities like heat or the ability to concoct semen, but was directly influenced by psychological qualities like the passions and emotions. In the view of this new generation of critics, the congress proved insufficient because it focused solely on the observable actions of the body. However, they argued, the body and especially the ever-capricious penis, did not always correspond to the internal state of the mind. This was in part a moral argument that an honest man could not perform sexually in front of witnesses, unaccompanied by the spontaneous feelings of love and friendship that marriage required. Hotman, for instance, claimed that this would be an impossible act for any man who was not “as brutal and impudent as a dog” to perform “in the view of the doctors, surgeons, and matrons that one fears and with a woman that one takes for his enemy.”⁶⁶⁶ The artificial conditions and pressures of the congress removed all of “the secrets of the bed, the flatteries, the amorous colloquies” judged

⁶⁶⁵ Robert, 557.

⁶⁶⁶ Hotman, 51.

necessary to incite desire in the first place, often surprising men with a temporary “disobedience.”⁶⁶⁷ In theory then, a man might possess sufficient virile heat to engage in coitus normally, but the draconian procedure of the congress could temporarily extinguish it. The congress could therefore condemn a man as permanently impotent on the example of only a few (stressful) hours.

These claims increasingly found a basis in medical arguments as well. Practitioners also increasingly took the view that the congress was not merely anxiety-inducing, but physiologically impossible for men, because the movements of the penis—increasingly described as a self-willed, independent organ—often disobeyed the will. Therefore, the court could not command sexual performance with any hope of success. Hugo Chasles doubted the evidence of the congress for this reason because, he claimed, the movements of the penis did not depend on the will or reason, but on the physiological force of the passions upon them and their incitement of the virile heat. “Love only,” he wrote, “which is the greatest of the passions, incites coitus and disposes one to the venereal act.” Faced with a woman who had caused him shame and embarrassment, Chasles reasoned that hatred would immediately cool the imagination and consequently the operation of the “parts intended for generation.”⁶⁶⁸ Increasingly, then, medical practitioners discussed impotence as an affliction of the imagination that could have psychological, not just physical causes.

By mid-century critics could also point to several cases in which the congress had demonstrably misled the experts in their conclusions. Several cases in which men were declared impotent based on the congress, but later married and produced children especially pointed to the inherent weaknesses of the procedure. One particularly famous case, that of René de Cordouan, the Marquis de Langey, brought about the end of the congress altogether. In 1657, after four years of marriage, his wife, the Marie de Saint-Simon de Courtaumer, accused him of impotence and claimed that he had not consummated the

⁶⁶⁷ Fevret, 534.

⁶⁶⁸ Chasles, 2.

marriage.⁶⁶⁹ In the ensuing congress, the experts recorded that Langey “gave no sign of virile potency, be it in erection, intromission, or ejaculation” and declared him impotent, making the marriage invalid.⁶⁷⁰ Although the court explicitly banned Langey from re-marriage, he did so anyway with a Protestant noblewoman, with whom he had seven children in less than ten years—a fairly strong indication that Langey was not, in fact, impotent.⁶⁷¹

Langey’s case reveals the high social stakes involved in correctly making medico-legal determinations of manhood and fitness for marriage. His second marriage created an awkward legal scenario that the prohibition on remarriage for impotent men was intended to forestall. Legally, Langey’s children were illegitimate because he had proven his potency in his second marriage, meaning that, because no impediment existed, his first marriage had been valid all along. Typically, in such cases, the court would order the couple to return to one another and dissolve any subsequent unions as bigamous and thus invalid. However, the Dame de Saint-Simon had also remarried and had three children, so returning the two to one another would have naturally caused an irremediable problem of legitimacy for all their combined ten children. When the Dame de Saint-Simon died in 1670, her death meant that, if any

⁶⁶⁹ Because both parties were Protestant, the case bypassed the ecclesiastical jurisdiction of the Officialité of Paris and went before the civil lieutenant of the Châtelet of Paris. Protestant marriages would have been judged in consistorial courts, but the decisions of the national synods tended to stress conformity with royal statutes concerning marriage. The Edict of Beaulieu from 1579 and later the provisions of the Edict of Nantes held that royal judges would oversee cases in which both parties were Huguenots—in the Châtelet, the Parlement of Paris or in the Paris Chambre de l'Edit, a special court created for this purpose—but if one litigant was Catholic, it would be tried in an Officialité. See Diane C. Margolf, *Religion and Royal Justice in Early Modern France: The Paris Chambre de l'Edit, 1598–1665* (Kirksville, Mo.: Truman State University Press, 2004).

⁶⁷⁰ “Congrès de médecins : consultation collective (impuissance du marquis de Langey),” Collection Philippe Zoummeroff, Bibliothèque Criminocorpus (s.l., 1658), 1.

⁶⁷¹ *Journal du Palais*, 780.

valid marriage bond had existed between them, it was then void and Langey, as a widower, had the option to form a second marriage. Shortly after her death in 1675, Langey therefore appealed his case to the foremost royal court, the Parlement of Paris, claiming that he had been improperly tried by the Châtelet and arguing for the restitution of his right to marry, so that he could gain recognition for his union with his second wife and ensure the legitimacy and guardianship of his children.⁶⁷²

The proceedings that followed put the validity of the congress on trial. Langey attacked the procedure itself as an improper and insufficient means of proof. Chrétien-François de Lamoignon, advocate general in the Parlement of Paris, argued on his behalf that the congress offered only an imperfect proof of impotence, which deduced permanent inability from the actions of a single day, because “as much as this proof is undignified, it is uncertain, and one may draw from it entirely contradictory inductions.”⁶⁷³ It failed because the experts expected men to perform sexually and automatically on command and interpreted any temporary failure at the congress as permanent impotence, rather than accounting for all of the possible factors that could cause a temporary disturbance of a man’s faculties. Langey, after all, had shown himself to have a “good conformation,” in the visitation. A congress of a few hours thus hardly formed an accurate portrait of a man’s ability over time, which could change with age, state of mind, illness, and with different women. Langey claimed that his “imprudent youth” and “temerity” caused his body to fail him, both things that he naturally overcame later in life and for which the experts failed to make an exception.

Lamoignon also deployed a psychological argument against the congress, claiming that the very act inspired such shame that the conditions of the procedure almost assured failure. Just by observing, the

⁶⁷² Darmon, 81-7, 197-203. Claire Carlin, “The Staging of Impotence: France’s Last Congrès,” in *Theatrum Mundi: Studies in Honor of Ronald W. Tobin*, eds. Claire Carlin and Kathleen Wine (Charlottesville, VA: Rookwood Press, 2003), 103-4.

⁶⁷³ Lamoignon, 23.

experts destroyed any hope of finding the very proof they sought. What man, Lamoignon asked, could perform in the presence of judges, experts, and witnesses that “ice over the imagination” with fear?⁶⁷⁴ Langey suspected that he may have suffered from the afflictions of charms, which the congress had failed to account for, but either way he was “assured that his imagination was troubled, and that the imagination [was] the mistress of the event,” not any incurable defect.⁶⁷⁵ The evidence of his children, after all, unquestionably proved his potency and the grave error of the experts. In any case, Lamoignon argued that the honor of men and the security of families could not depend on a proof as clearly prone to error as the congress. As the outcome of Langey’s case suggested, probably more than one marriage had been improperly voided because of the procedure.

On February 18, 1677, the Parlement of Paris issued an *arrêt* not only siding with Langey and reversing the previous decision, but also abolishing the practice of the congress altogether from all French tribunals. The court’s decision condemned the congress as shameful and undignified for Christian institutions, regardless of the perceived necessity of ending invalid unions. In the court’s view, it could not meet the standard of absolute proof necessary in cases that might endanger the honor and inheritance of families. They saw the introduction of the congress as the absurd extreme to which human curiosity could carry itself by attempting to make the secrets of nature conform to the needs of a human institution and seeking knowledge of matters beyond the bounds of human reason. In the words of the judges, those who had introduced it into the Officialités a century prior did so only out of a “vain and indiscrete curiosity” for things that God had purposefully chosen to leave hidden from their eyes, namely the “miracle of the generation of men.” With the introduction of the congress, the experts boasted of having “the conquest of all secrets, despite the shadows that covered them.”

⁶⁷⁴ Lamoignon, 24.

⁶⁷⁵ Lamoignon, 26.

However, as the case of Langey demonstrated, the congress did not bring the certain knowledge that it had originally promised, and the experts still incorrectly judged a man's potency. The congress could not possibly account for all the circumstances that might influence a man's ability and, even with this licentious performance, the experts still failed to accurately perceive the true state of the body and the secrets it contained. Citing several medical authorities on the question, the court concluded that the very act of congress would make success psychologically impossible for men. In their estimation, any honest man would lose his "force and his reason" to act under the conditions of the congress and it therefore could not be used to prove impotence.

The decision of the Parlement represented a reversal in thinking on the matter of proof in questions of impotence. Whereas previously the medical experts had privileged active, fluid demonstrations of heat, this new decision upheld the primacy of the external conformation over functional performativity as the standard for determinations of virility. It also reversed the precedents of the last century and reinstated the visitation as the sole method used in determinations of impotence. The Parlement's decision greatly reduced the burden of proof imposed on the husband and, by insisting on the visitation alone, presumed his innocence until proven otherwise. If the visitation found a man to be well-formed, the presumption rested with him and favored the preservation of the marriage and the Officialité of Paris could not pursue the case any further. While previously the judges and medical experts of the Officialité had judged the external conformation too uncertain and variable to form a decision on a man's potency, the case of Langey and others revealed that the congress did not necessarily truthfully represent a man's ability. The Parlement therefore decided that the presumption of the existence of a marriage overruled any doubts about a man's ability.

The decision of the Parlement also represented a reversal in thinking on active performance as the preeminent sign of virility. Medical experts like Jean Riolan at the beginning of the seventeenth century had treated impotence as a temperamental condition whose real nature lay within the body, beyond the perception of medical observers. The experts had recommended the congress because the surface of the

body provided only uncertain evidence, which only a perfect fluid performance, complete with emission of seed could verify. As the exceptional cases of eunuchs and hermaphrodites had demonstrated, the body did not always perfectly correspond to one's true nature and the experts felt that they could not take for granted that the underlying status of the body necessarily corresponded to its external composition. A frigid man, for instance, might appear entirely normal on the outside. The decision of 1677 effectively excluded frigidity from consideration because it was impossible to determine whether it formed a permanent impediment or if the congress itself brought it on by inflicting a temporary disturbance on the imagination of a man.

However, even proof by action could produce only ambiguous evidence of impotence. As contemporary medical practitioners claimed, the penis moved according to the whims of the imagination, and any intervening circumstance might yield a negative result. Too many things could interfere: a hateful wife who resisted her husband's advances, magical charms and astringent potions, and the gaze of the experts could disturb the man's emotional state and make him unable to act. All conspired to create an impossible standard for men to overcome. Worst of all, the congress could not establish permanent impotence, because a man might appear incapable for a single day, but, like Langey, later go on to produce children. For all these reasons, the Parlement re-affirmed that, despite the confusion that previous cases had caused, only a defect in the external conformation of the genitalia, revealed in the visitation, could excuse the annulment of a marriage.

The Officialité of Paris followed the orders of the Parlement and ceased to order the congress. After its abolition, the court continued to regularly hear cases of impotence, although experts typically limited their decision to the examination of the external body alone in their reports. Nevertheless, confusion persisted about what the court should do in cases of frigidity, which left no obvious mark on the body. The same problems of ambiguous genitalia and confusion over the appropriate signs of manhood that had necessitated the introduction of the congress in the first place persisted. The visitation, for instance, could not resolve cases like that of Claude Hubigneau, who appeared entirely well

conforming on the exterior, but still allegedly had not consummated his marriage.⁶⁷⁶ Much as before the prohibition of the congress, basing the entirety of decisions about virility on the external body was only useful in some cases, but still left the possibility of an undetected, underlying impotence. In place of the congress, therefore, the experts of the Officialité instead began to ask men to demonstrate an erection during the examination. The decision of Parlement did not specify exactly how the experts should undertake the visitation and thus left this open as a possibility. Whereas previously, the Officialité of Paris had forbidden masturbation during the visitation, it more readily allowed experts to comment on the erection after the abolition of the congress. During the trial of the Marquis de Gesvres in 1714, the surgeons, led by the physician Philippe Hecquet imposed a test not unlike the congress in this way, leaving the Marquis in a room to “incite himself” and returning at half hour intervals to examine the state of the virile member “in erection.” In the end, they concluded that neither “the tension, the hardness, nor the duration in this state appears sufficient to us to accomplish the act of generation.”⁶⁷⁷

The proof of the erection naturally drew negative attention back to the Officialité. Following the first examination of the body of Florent Cahu in 1701, the experts suspected some “interior defect” despite the normal appearance of the genital parts and thus asked him to prove his ability to have an erection in a second visitation. They first watched him, but then thinking he failed out of “fear” left him alone in a room until he succeeded. However, he failed to do so on two separate occasions and consequently the Official annulled his marriage. He appealed his case from the Officialité to the Parlement of Paris. He argued that the experts in his case had violated the decree of 1677 because they had demanded that he produce an erection in their presence, something he argued ran contrary to the law forbidding the congress. In his view, not only had the experts subjected him to a kind of illicit congress,

⁶⁷⁶ *Factum pour Claude Hubigneau, procureur au siège présidial de Laon, appelant comme d'abus de la sentence rendue en l'officialité de Paris, le 1er avril 1700, ... contre Anne-Gabrielle de La Motte, femme dudit Hubigneau*, (Paris : Caillé, 1700), BNF Z Thoisy 192, f. 510, 2.

⁶⁷⁷ AN Z1O 156B, Mascranni-De Gesvres, July 26, 1714, report of the visitation, 1.

but they did so against the evidence of the visitation, which by virtue of his “good conformation” should have sufficed to establish his potency.⁶⁷⁸

The court confirmed the validity of the proof of the erection and upheld it as the most certain deciding marker of manhood in cases of impotence. In their opinion, although in the seventeenth century, the Officialité had forbidden masturbation during the visitation, the abolition of the congress had necessitated it.⁶⁷⁹ In fact, the Parlement had already ruled on a similar case originating in the Officialité of Rheims in 1687, in which they determined that the experts could pronounce on the nullity of marriage based on the lack of erection in the visitation.⁶⁸⁰ The *arrêt* of the Parlement argued that the erection was the “most certain and essential” sign of virility and thus medical experts had to be able to observe it, as otherwise the internal state of the body would remain invisible to them. In the case of Cahu, they deemed the request of the experts entirely permissible, so long as they did not also ask him to ejaculate in their presence—a measure that perhaps too closely imitated the forbidden congress.⁶⁸¹

Another man also objected to the admission of the sin of Onan into the visitation. In 1740, Jacques-François Michel underwent a visitation that showed that he “was not deprived of the necessary organs necessary for marriage” but he could not muster “any sensation of virility” in his genital parts. He appealed a case from the Officialité of Beauvais to the Officialité of Paris, claiming that the decision of 1677 had abolished the visitation altogether and that so long as a man demonstrated the “sufficiency of the conformation,” the court could not pursue any allegations of impotence further, especially not by forcing him to physically demonstrate their falsity.⁶⁸² Any further inquiry violated the presumption that

⁶⁷⁸ Pierre Decombes, *Recueil tiré des procédures criminelles faites par plusieurs officiaux, et autres juges du royaume* (Paris: Nicolas Le Gras, 1700), 704.

⁶⁷⁹ Decombes, 704.

⁶⁸⁰ Decombes, 705.

⁶⁸¹ Decombes, 706.

⁶⁸² D'Argis, 137.

the decree had placed on the possession of fully-formed genitalia. In his view, this applied to those who possessed “doubtful and equivocal conformations,” and demonstrated “lethargy of the organs,” neither of which could undermine the presumption of the law.⁶⁸³ In the end, the court overturned his appeal on April 11, 1740 and clarified that “frigidity was always a valid means to dissolve the marriage” and under the 1677 law, one could demand a physical demonstration of erection as proof of potency.⁶⁸⁴

In a dramatic reversal of previous thinking, which thought of the stiffened member as only a secondary sign of a virile temperament, the erection finally became the sole and sufficient proof for determining virility and that most prized among the experts. Hotman and Tagereau had of course long before claimed that the *Officialité* ought to only consider the erection in determinations of impotence, but it was not until the eighteenth century and the abolition of the congress that the experts finally settled on it as adequate proof that surpassed the simple ocular evidence of the conformation, but also provided some indicator of underlying problems. Throughout the eighteenth century, the *Officialité* annulled numerous marriages based on the erection, particularly in cases where the external conformation appeared otherwise normal. In 1776, they determined that although Jean Sturm displayed no exterior sign of impotence, he still could not summon up an erection, suggesting that he suffered from some “vice of the internal organs, or the liquors, impenetrable to the eyes of experts.”⁶⁸⁵

The proof of erection was also both morally permissible and sufficient in the opposite case, Antoine Louis argued in a *factum*, because the experts could not always be sure that an injury or deformity did not in fact indicate permanent impotence. In reference to a report by surgeons who had investigated a man and found that he had a urethra that did not extend the length of the gland, Louis argued that the experts could not assuredly deem him impotent because they had not observed his member

⁶⁸³ D'Argis, 137.

⁶⁸⁴ D'Argis, 62.

⁶⁸⁵ AN Z1O 216, Renard-Sturm, April 16, 1776, report of the visitation, 1-2.

“in the required action...the exterior conformation does not establish virile potency; one must see the principle in action.”⁶⁸⁶ Citing the decision in the case of Florent Cahu, Louis therefore upheld the erection as the deciding factor in otherwise ambiguous cases.

Only after nearly two centuries of legal wrangling over the question of proving manhood did the experts of the Officialité of Paris finally settle on the erection as the principle and most perfect sign of virility. As obvious as this conclusion may seem, a phallocentric definition of impotence only developed out of a legal morass of arguments about the normative limits of the male body and the moral limits of expert knowledge. As these records of the Officialité show, the question of proving manhood was a far from straightforward matter in the view of medical practitioners in the sixteenth and seventeenth century. Discussions of the semiotic significance of different signs of manhood uncovered a growing tension between multiple definitions of what constituted normative male embodiment. On the one hand, fluid-centric thinking about the nature of male sexuality present in the medical literature of the sixteenth and seventeenth centuries insisted on the necessity of virile heat and seminal presence to both male potency and male generativity. This led the medical experts in these cases to rely on the congress as the only way to prove the internal presence of virile heat, which they regarded as an important marker of virility, and they felt they could not attest to without a functional demonstration of the tripartite criteria of erection, intromission, and ejaculation. This reflected a preference for the functional and performative aspects of manhood, in particular the emission of virile seed, over and above the external appearance of the genitalia.

On the other hand, critics of the practice insisted that manhood was not something that needed to be proven by “action,” as the experts insisted. It was an anatomical given—anyone who possessed a “good conformation,” that is, a normal-looking penis and testicles, they argued, ought to be presumed to

⁶⁸⁶ Antoine Louis, *Mémoire à consulter [Sur l'impuissance du mari de la plaignante]* (Paris, 1772), BNF 4-T18-121, f. 414, 707-8.

be a fully potent man. Eventually, this competing view of the male body appears to have won out, at least in this particular court. The abolition of the congress reinstated the exterior conformation as the most perfect sign of virile male embodiment and by the eighteenth century experts had finally settled on the evidence of the erection alone as sufficient proof of a man's abilities, dispensing entirely with concerns about internal "heat" or the presentation of "true semen."

This shift from a view of normative maleness as fluid, active, performative, and variable—depending on variations in "heat" or "frigidity"—to one that was principally fixed, innate, and located in the exterior physical body marked broader cultural changes tending towards increased privacy around conjugal sexuality and more restricted views of marital relations. An overwhelming number of seventeenth-century critics of the congress, after all, found the practice especially repugnant not so much because it was a weak form of proof, but because it made intimate sexual details a matter of public controversy. Worst of all, most cases were initiated by women, giving wives the opportunity to publicly impugn not only the authority of their husbands over them, but the status of their manhood altogether. As Charles Ancillon noted in an English-language account of the history of the congress, "the whole body of the Civil Law ought to be condemn'd, which allows Women to exhibit Processes against their Husbands, if Eunuchs or Impotent, when...it ought to repress the Incontinence of those Unhappy Women, and look on them as wanting modesty because they dare complain."⁶⁸⁷ The satirist Nicolas Boileau in 1668 further implied that such inversions of the gendered order were nothing short of unnatural, for, he noted,

In woods, ne'er did the lustful Hind impart
Complaints of impuissance 'gainst the Hart:
No Judge, in Congress there, so much a fool,

⁶⁸⁷ Charles Ancillon, *Eunuchism Display'd* (London: Edmund Curll, 1718), 180-1.

To stain his sentence, thus, with ridicule.⁶⁸⁸

At the same time that arguments about the impudence of women in impotence cases proliferated in the 1670s and 1680s, medico-legal views underwent a similar “closing off” of male bodies from scrutiny. In effect, the transition from an evidentiary framework built on active demonstrations of heat and fluid ability to one centered on physical morphology functioned to partition off male bodies from the scrutiny of medical experts and the complaints of women. Whereas in the sixteenth and early seventeenth centuries and previous, jurists had feared that impotent men might trap women in unfruitful marriages, the latter half of the period saw concerns about women openly questioning the sexual ability of their husbands ultimately win out. Views of male bodies seemingly changed in concert with these broader shifts. Where previously medical experts had seen the exterior male body as suspect, implicitly favoring the testimony of women who reported that their apparently “well-conforming” husbands were still unable to perform, the seventeenth century saw a flip to seeing the interior fluids as more uncertain and suspect and the mere presence of “well-conforming” organs a sign of virility beyond further question. After all, the failures of the congress had shown that flights of the passions or the imagination could very easily interfere with a man’s ability, no matter if he possessed sufficient virile “heat” or not. The legal authorities and medical experts of the Officialité therefore rejected the question of heat or fluid ability as beyond the ability of the court to determine.

Examining medico-legal definitions of impotence and their application to actual cases of impotence and the congress elucidates the importance of fluid-centric standards of normative male embodiment throughout the sixteenth and seventeenth centuries, as both canon law and legal procedures like the congress tended to privilege semination as an important signifier of male sexuality. Thus, far from

⁶⁸⁸ Nicolas Boileau, *Oeuvres de Boileau-Despréaux*, vol. 1 (Paris: J.J. Blaise, 1821), 193-194. Originally published, 1668. Translation taken from the English edition of M. de Lignac, *A Physical View of Man and Woman in a State of Marriage*, vol. 1 (London: Vernor and Hood, 1798), 247.

a historical aberration or a straightforward case of male sexual oppression, as Darmon has maintained, the practice of the congress can be understood as a procedure borne of contemporary definitions of normative maleness, which can only be understood against the backdrop of fluid-centric, humoral explanations for male impotence and anxieties about male fluid balance.

FIGURES: CHAPTER V

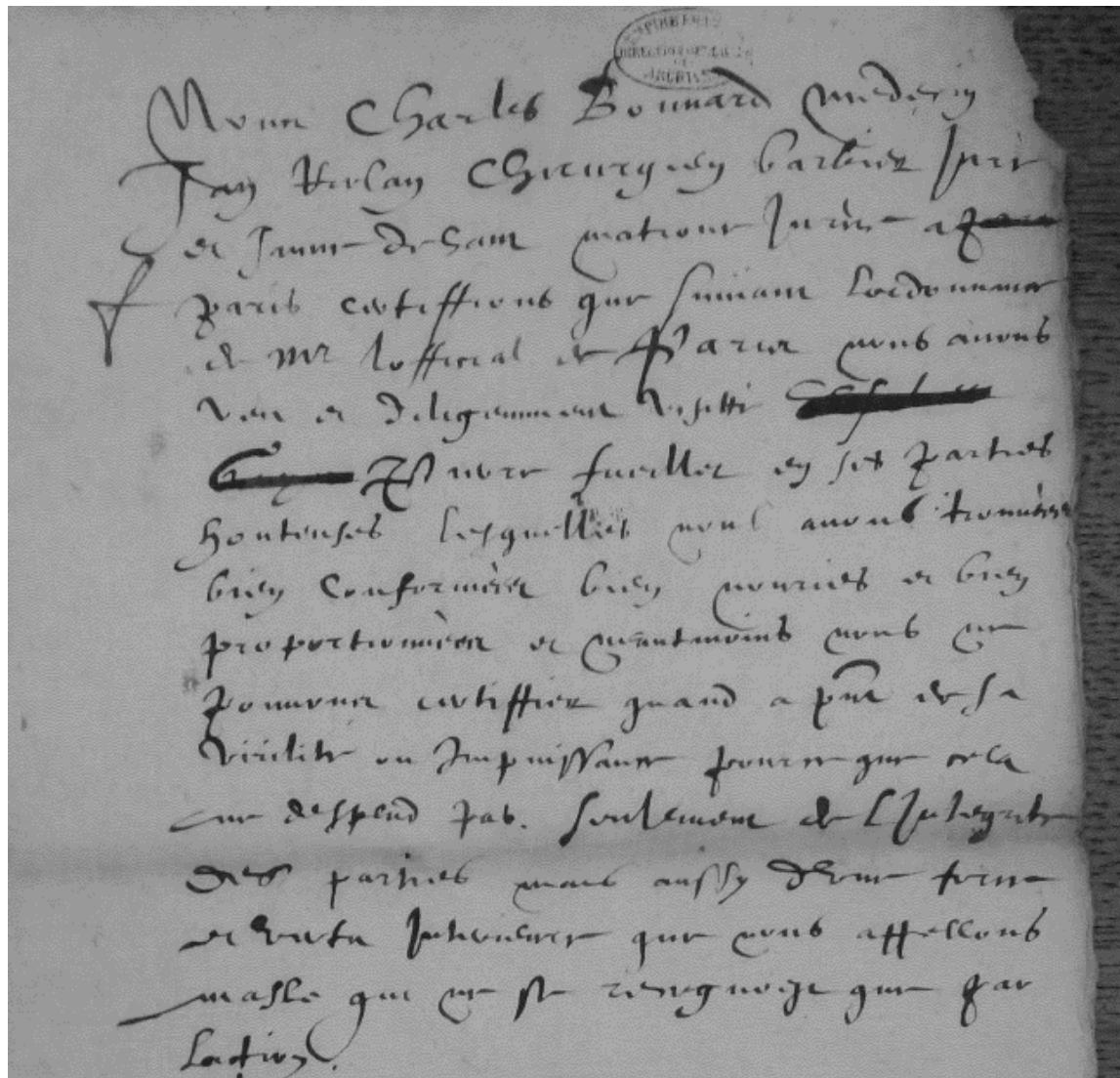


Fig. 30. An example of a typically inconclusive report of a visitation. The experts write that “We have seen and diligently visited Pierre Feuillet in his shameful parts which we found well-conforming, well-nourished, and well-proportioned and yet we cannot presently certify his virility or impotence because this depends not only on the integrity of the parts but also on a force and an interior heat that we call male which cannot be recognized except through action.” AN Z10 99, Guyot-Feuillet, June 22, 1617, experts’ report. Courtesy of Archives Nationales de France.

CHAPTER VI: FROM LITTLE ANIMAL TO ANIMAL SPIRITS: CHANGES TO THE FLUID MALE BODY IN THE SEVENTEENTH CENTURY

INTRODUCTION

The previous three chapters have been temporally static because they provide a comprehensive “snapshot” of all the various ways in which fluid-centric definitions of manhood manifested in sixteenth and early seventeenth-century discussions of male impotence and infertility. This is not to suggest that constructions of normative maleness themselves did not change in early modernity, however. As I suggested at the outset of this study, it would be a mistake to assume that male bodies are uniquely immune to historical change or have always been constructed in the same way. I have already argued that modern, phallocentric or genito-centric views of manhood do not hold transhistorical validity and demonstrated why they do not suffice to describe premodern notions of sex difference and male embodiment, which more often privileged the internal, fluid qualities of manhood, such as the masculine heat and the seminal matter, over and above the penis and testicles as the prime bodily signifiers of maleness.

In the later seventeenth century, however, several crucial aspects of this fluid-centric, humoral framework for understanding male bodies began to erode. In place of multiple fluids like heat, spirit, and moisture and the contributions of multiple internal organs as the foundations of male sexual and reproductive function, seventeenth-century physicians increasingly emphasized the mechanical and nervous aspects of male reproductive functionality. In place of fluids and flows, medical discussions of male sexuality and reproductive disorders increasingly focused on conditions of the nerves, the passions, and the imagination, as well as physical disorders of the muscles. The focus of anatomical and therapeutic attention for male bodies also shifted away from the internal system of fluids distributed throughout the body to the discrete organs of the genitals themselves, a shift precipitated by a more detailed anatomical understanding of the function of the testicles and related glands and the discovery of the spermatozoa.

Although the seventeenth century yielded many such important medical discoveries and saw a proliferation of new theories of the human body beyond the strictly humoral, few historians have examined the impact of these shifts on contemporary views of male embodiment. Historians of gender and sexuality often treat the latter seventeenth and eighteenth centuries as a major temporal hinge in thinking about male and female bodies and sex difference, conveniently mapped onto the era of the “scientific revolution” and the innovations in the physical and life sciences that came with it. However, most following Laqueur have only focused on the question of when “one-sex” modes of thinking, which emphasized the doctrine of the two seeds and the similitude of male and female reproductive anatomies, declined in favor of a more sharply demarcated, modern “two-sex model” of sexual difference. Michael Stolberg and Karen Harvey, for instance, have investigated the timeline of this supposed shift between one-sex and two-sex models of sex difference and made important revisions to Laqueur’s timeline.⁶⁸⁹ Both, however, examined sex difference more generally, as it applied to both men and women, rather than to male-specific qualities exclusively.

While these discussions often encompass changes to medical models of male bodies such as the discovery of the spermatozoa, none are centered on how views of normative maleness changed across the bridge between “one sex” and “two sex” models. I propose that, alongside broader shifts in thinking about the differentiation between male and female bodies, several important revisions happened specifically to thinking about the character of male bodies. In the sections that follow, I suggest that a partial shift from a more “fluid-centric,” humoral framework to one more focused on anatomical “solids” like the genital organs may better encapsulate these changes as they applied to male bodies than a unitary “one sex” to “two sex” shift.

Examining the shifts that occurred in the later seventeenth and eighteenth centuries is important because they serve as an important prelude to modern conceptions of maleness and help to explain why

⁶⁸⁹ Stolberg, “A Woman,” 274; Harvey, “Substance of Sexual Difference,” 205.

certain categories previously central to maleness, such as heat, gradually declined in importance. The distinction between modern and pre-modern models of maleness is obvious in retrospect. Although modern definitions of maleness cannot be reduced to any single thing—for instance, modern medical discourses might variously point to morphological difference (i.e. genito-centric difference), chromosomal difference, or hormonal difference as the basis of male sex assignment—nevertheless, what is certain is that most of the qualities associated with male bodies in the sixteenth and seventeenth centuries are no longer in use today. The liver, heart, and brain are no longer considered to be the primary male generative organs or to have any direct role in semen production, which takes place primarily in the testicles and adjacent organs. “Heat” is no longer a meaningful way to distinguish male and female bodies. The idea that three separate souls animate the body is no longer a mainstay of professional medical contexts. Nor do physicians typically invoke “spirits” to explain male fertility, it being understood that the reproductive portion of semen is composed of microscopic, motile cells called spermatozoa, not heated blood infused with “vital spirits” from the heart. Finally, male sexual function is no longer explained as a phenomenon subordinate to the fluid composition of the semen, but something usually treated entirely independently from male fertility.

The question remains unanswered in the historiography, however: how did we get from there to here? How did genito-centric definitions of maleness and male sexual functionality come to subsume the fluid-centric model that suffused premodern discussions of male bodies? Or, at least, what happened to discussions of “heat” and “spirits” and what were the consequences for their decline for views of normative maleness? The answer probably cannot be pinpointed to a single, historical moment or explanation. Nor should “genito-centric” or “fluid-centric” models be understood as monolithic dividing points neatly marking the separation between the premodern and the modern, but rather a shorthand for discussing the obvious contrasts that separate sixteenth- and twenty-first-century notions of what it means to be “male.” As in the case of “one-sex” and “two-sex” thinking, elements of both no doubt co-existed at

various points in time. Both also underwent any number of changes and cultural iterations in the eighteenth and nineteenth centuries, which are beyond the scope of this study.

That said, some shifts towards a more genito-focused or more profoundly “genito-centric” model of normative maleness can be detected in early modernity. The sixteenth and seventeenth centuries represent a unique moment in the history of manhood in that they span a kind of middle ground between medieval, schematic representations of male fertility—reduced to three organs and three fluids—and more modern theories of generation which defined the male role primarily by the local products and movements of the genitalia alone. As discussed in Chapter II, fluid-centric, humoral explanations of male generativity had already come under scrutiny in the sixteenth century. Although therapeutic texts continued to cling to the three-organ model of male fertility, the revival of descriptive anatomy in the early sixteenth century undermined the notion that any direct pathways existed linking the liver, heart, and brain to the male testicles.

Other changes suggest that early modern medical writers may have increasingly favored other markers of sex difference besides qualities like heat or generative seed. For instance, there is also a good deal of evidence suggesting that embryologists and specialists in the field of medical science did differentiate more clearly between male and female reproductive bodies and their functions by focusing on “incommensurably” different qualities entirely unique to both.⁶⁹⁰ The emergence of new “gamete-centered” theories of generation—which proposed the existence of either a female egg or a male sperm,

⁶⁹⁰ There is also a good deal of evidence to suggest that older Galenic homologies also persisted in other fields, especially in popular medical texts on generation like *Aristoteles Masterpiece*, which repeated basically the same “one sex” advice about reproduction to lay readers well into the nineteenth century. McLaren argues that “two-sex” views of generation did not so much completely subsume one-sex views as they opened a wider gulf in the eighteenth century between an educated “high” cultural view on sex and reproduction and a popular “low” culture, that had formerly been the common culture for everyone and changed little in response to new scientific innovations. McLaren, *Reproductive*, 21-22.

or both—invalidated the older view that both sexes produced a similar substance known as seed. Instead of a homogenous “seed” derived from the blood, differing only in that one was hotter and white and one was colder and red, the majority of seventeenth-century embryologists maintained that there were in fact two entirely distinct “seeds.” Self-proclaimed “ovists” claimed that the female reproductive contribution was not a seed at all, but an egg, described as an inert sphere, whereas the “spermist” camp claimed that there were “animalcules” observed swimming in the male semen, which were motile, worm-like, and seemingly alive.

Much has been said about how this shift may have affected views of women’s bodies and women’s sexuality. It has been argued that the decline of two-seed theory had major practical consequences for women, or at least for how women’s sexuality and reproduction were explained in medical models. Whereas previously, most Galenic medical texts had insisted on the necessity of female orgasm for conception so that the two seeds could unite, the realization that women did not emit seed effectively rendered female pleasure superfluous to reproduction. Laqueur, most especially, linked declining medical support for the necessity of female orgasm to wider cultural changes, including the rise of female sexual “passionlessness” in the nineteenth century.⁶⁹¹ The consequent recognition that the so-called “female testicles” were in fact entirely different organs also further marked female bodies out as having their own unique structure and function apart from male bodies, supposedly deepening the perception of physical differences between the sexes.

These scholars, however, did not center male bodies as the explanatory force behind these transitions, nor examine how more general changes to contemporary understandings of sex difference and

⁶⁹¹ Laqueur, *Making Sex*, viii, 189. Londa Schiebinger, Carolyn Merchant, and Angus McLaren also associated the discovery of the sperm and ovist theory with female “passionlessness” and an emphasis on female sexual passivity in the nineteenth century. McLaren, *Reproductive Rituals*, 21; Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: Harper Collins, 1980), 156; Schiebinger, *The Mind*, 189.

reproduction specifically shaped views of maleness or male embodiment. Rather, most focused on how changing understandings of female bodies explained the new gender system of the seventeenth and eighteenth centuries, or the effects that these changes had on the social experience or cultural valuation of women, with scant reference to how these changes applied to men. If, however , one assumes that seventeenth-century medical science and natural philosophy did more clearly differentiate between two sexes, it would follow that male bodies were also described in more particular, sex-specific ways than they had been previously. As we have seen, even under the one-sex, two-seed rubric, male bodies were still discussed in sex-specific ways in the sixteenth century, as medical texts frequently discussed semen as a quintessentially male fluid, even if they also acknowledged that women produced an inferior kind of seed. Similarly, even if men and women both supposedly had testicles, their other sex organs were not always described in perfect parallel. For instance, the heart, liver, and brain were believed to be instrumental to the production of male semen but not the female. The question remains: Did the re-location of male difference from the realm of heat suffusing the entire body, or from the operations of three separate organs to the testicles specifically, have any meaningful effect on perceptions of normative maleness in the seventeenth and eighteenth centuries?

This chapter examines how seventeenth-century innovations in anatomy, embryology, and microscopy may have challenged or unsettled some of the foundational elements of this humoral, fluid-centric model of manhood described in the previous chapters. It identifies several substantial changes to medical description and treatment of male bodies in early modernity. First is the decline of three-organ, three-fluid explanations for semen production and the diminishment of heat as a meaningful category for explaining physiological phenomena or differences between male and female bodies. In its place, anatomists and medical theorists increasingly focused on the solid structures of the genitals more as straightforward signifiers of maleness. The testicles especially underwent a significant reevaluation among anatomists, who increasingly identified them as uniquely male structures, dispensing with the notion of complementary “female testicles,” and who increasingly identified them as the exclusive site in

which semen was produced. By the end of the seventeenth century, the notion that men and women both produced similar seeds, differentiated based on heat, also declined in favor of gamete-centered theories of reproductive difference, which theorized that men and women contributed entirely different reproductive matter, eggs and “spermatic” animalcules. Finally, the rise of mechanism and nerve physiology in the seventeenth century, coupled with a heightened concern with regulating the “sensible” passions in the eighteenth, gave rise to a greater emphasis on the penis as a uniquely nervous, unruly organ, which often moved independently of the rest of the body according to nervous stimulation, rather than in response to seminal, fluid pressure.

WHAT HAPPENED TO HEAT? SEVENTEENTH-CENTURY INNOVATIONS

The seventeenth century saw a great deal of energetic research activity surrounding the construction and physiology of male bodies. As a result, medical writers proposed several substantial modifications to the fluid-centric paradigm of male sex difference and male generativity that had nearly universally prevailed in the sixteenth. I do not use the term “paradigm” in the Kuhnian sense, however, to suggest that humoral explanations were wholly washed away in a flood of anomalies, giving way to a singular new consensus. Though it might be tempting to yoke substantial changes in this area to the broader intellectual changes brought about by the so-called “scientific revolution,” innovations in the study of generation and embryology did not necessarily revolutionize wholesale medical models of the male body, as scholars focused on the timeline of the “one-sex” to “two-sex” shift have suggested.

Humoral explanations for masculine sex difference, based on a polarity of heat, a hierarchy of seeds, and semen-centric explanations for male sexual function continued to appear throughout the seventeenth century. This was especially true of therapeutic and practical texts, especially those aimed at general audiences, which usually engaged little with innovative works in the life sciences. Many of these texts have already been mentioned in previous chapters, suggesting that some very strong continuities united sixteenth- and seventeenth-century medical thinking about the nature of male embodiment.

What the seventeenth century did witness was less a singular shift from one “model” to another as much as a multiplication of many more, divergent constructions of male bodies, other than the system of heat and fluids previously described. As Martin Schurig testified in his 1720 summary of the state of “spermatology,” many divergent theories, both ancient and modern, related to the origin of the semen, the nature of conception, and the operations of the male genital parts were in circulation by the early eighteenth century.⁶⁹² At the same time that traditional humoralism flourished virtually unchanged in popular and practical medical texts, self-styled practitioners of the “New Philosophy” proved more willing to challenge the all-encompassing explanatory power that humoralism tended to afford to the masculine heat as the underlying cause of male embodiment, male sexual function, and a superior male generativity based on a greater ability to metabolize the blood into semen. These practitioners instead approached the nature and physiology of generation and the construction of male and female bodies as questions that still had not been entirely resolved, rather than as pre-ordained categories fixed in qualities of “heat” or “coldness.” As a result of these broader research programs into generation, embryology, and anatomy, a number of natural philosophers and scholars put forth different constructions of the male genital anatomy, the physiology of semen production, and, by extension, the nature of male reproductive and sexual function than those contained in Aristolo-Galenic teachings.

Seventeenth-century medical theorists proved especially dissatisfied with prevailing explanations about the nature, formation, and role of the male seed and, consequently, its place in medical explanations of sex difference and the male reproductive role. The idea that male semen was a heterogenous product of heat, spirit, and moisture taken separately from the liver, heart, and brain became a matter of especial contention, as anatomists uncovered evidence to suggest that the semen was a local product of the genitalia and accessory organs, not the traditional triad of the “principal parts.” Already in the sixteenth century, descriptive anatomy had challenged the notion that the productions of the liver, heart, and

⁶⁹² Martin Schurig, *Spermatologia historico-medica* (Frankfurt, 1720), 1-3.

brain—or at least, all three together—had anything to do with the production of male semen. Anatomical research on the nature of the testicles increasingly suggested that semen was produced primarily, if not solely, in the testicles and accessory glands. In the 1510s, Leonardo da Vinci had explicitly rejected any direct fluid channel between the brain and the testicles, though his notes were not published until the nineteenth century. Vesalius, independently, discovered no anatomical basis for the three-organ model or, at least, made no mention of the heart, liver, and brain in his 1543 discussion of the male genital organs. He instead favored Galen’s suggestion that the tightly wound tubules within the testicles were solely responsible for the production of semen, rather than far-flung organs like the heart or brain.⁶⁹³

The opinion of sixteenth-century medical authorities after Vesalius on the question of where semen was produced remained mixed, however. As Chapters IV and V showed, therapeutic and practical discussions of male impotence and infertility continued to frame these as conditions marked by an imbalance in the fluid qualities like heat, moisture, and spirits. Even later sixteenth-century anatomists seemed eager to locate the origins of male generativity elsewhere than in the genitals alone. Realdo Colombo in 1559, for instance, theorized that “three rivers” from the heart, liver, and brain respectively supplied the testicles with blood and the penis with spirits. He insisted that this blood was only perfected in the seminal vesicles in the testicles, but not produced there and that it was in fact the secretions of these distant organs that controlled male sexual and reproductive function.⁶⁹⁴ The Italian anatomist Gabriele Fallopio, similarly, argued in 1562 that semen acquired its “perfected,” generative character in the testicles, but it was not produced by them,” as did Constanzo Varolio, who in 1591 maintained that the testicles only heated and refined “venous and arterial blood, with the vital spirit” brought there from veins

⁶⁹³ Vesalius, 523.

⁶⁹⁴ Colombo, 220-1.

and arteries elsewhere in the “lumbar region,” implying the age-old affinity between the testicles and the spinal fluid and, effectively, subordinating their function to that of the other principal organs.⁶⁹⁵

In the seventeenth century, physicians and anatomists proposed several more substantial revisions to the old, medieval three-organ, three-fluid model. The initial challenge to the theory of hematogenesis in the seventeenth century followed on the heels of a growing skepticism about the explanatory weight that Aristotelians and Galenists had placed on the vital heat, as an objectively existing force, in theories of generation and sexual differentiation. As Deborah J. Brown explains, in the seventeenth century the core of Galenic medicine, most notably “the idea of three different systems or ‘souls,’ and the three types of bodily fluids or spirits, each possessing its own distinctive properties or ‘powers’—clashed with the emerging mechanistic conception of matter,” adopted by a new generation of physicians like William Harvey.⁶⁹⁶ Beginning in the 1620s, innovative natural philosophers attacked the vagueness of humoral qualities like the innate heat as a “symbol of the vacuity of scholastic learning,” and physicians also took up the charge against vague Galenic and Aristotelian categories such as heat. Francis Bacon wrote in 1623, expressing the rejection of classical medicine among seventeenth-century intellectuals, “these things which the vulgar physicians talk of [namely] radical moisture and natural heat, are but mere fictions.”⁶⁹⁷

The discoveries of the English physician William Harvey on the circulation of the blood especially undermined certain key elements of the theory of hematogenesis, or that semen was principally

⁶⁹⁵ Gabriel Falloppio, *Observationes anatomicae* (Cologne, 1562), 286; Constanzo Varolio, *Anatomiae sive de resolutione corporis humani libri III* (Frankfurt, 1591), 86.

⁶⁹⁶ Deborah J. Brown, *Descartes and the Passionate Mind* (Cambridge, UK: Cambridge University Press, 2006), 40.

⁶⁹⁷ Francis Bacon, *History Naturall and Experimental, of Life and Death, or, Of the Prolongation of Life*, in *The Works of Francis Bacon, Lord Chancellor of England*, ed. Basil Montagu, vol. 3 (Philadelphia, PA, 1842), 468.

Quoted in Pomata, “Innate Heat, Radical Moisture, and Generation,” in *Reproduction: Antiquity to the Present Day*, eds. Nick Hopwood, Rebecca Flemming, and Lauren Kassell (Cambridge, UK: Cambridge University Press, 2018).

composed of blood digested by the heat of the liver. His discoveries particularly served to unseat the liver as a significant life-giving organ in favor of the heart and, in turn, re-focused contemporary theories of spermatogenesis more narrowly on the heart and the blood. In 1628, Harvey demonstrated that the venous and arterial systems of the blood are, in fact, connected, though Galen had treated them as separate systems. The implication of this was that venous blood (regarded as the impure, colder blood that supplied the lower extremities) did not originate in the liver, as was thought, but rather continuously circulated back to the heart, where it was sent out again through the arteries.⁶⁹⁸ His discovery had implications for the three-organ theory of seminal origins because it showed that the liver did not make a separate contribution of heated blood to the testicles, via the veins, nor did the heart separately contribute spirit to the penis and testicles via a “bloodless artery” filled with air—undermining the notion of separate venous (or heated) and arterial (or spirituous) contributions from these organs to the formation of the male seed. In effect, by showing that there was no separate venous supply of blood to the testicles from the liver, Harvey relocated many of the functions previously attributed to the separate hot, cold, wet, and dry humors, or the triad of vital, animal, and natural spirits to the operations of the heart, and the contents of the blood alone.

Rather than entirely denying entirely the influence of all the three principal organs on the male genital organs, however, Harvey instead focused the origin of semen onto the one he viewed to be most important: the heart. As a neo-Aristotelian, Harvey heaped praise on the heart as the seat of life in animals. In the preface of his text, he wrote that, “the heart of animals is the foundation of their life, the sovereign of everything within them, the sun of their microcosm, that upon which all growth depends, from which all power proceeds.” As the primary source of growth and life, Harvey thus identified the heart as the principal generative organ because it imbued the “seminal fluid of all animals” with a

⁶⁹⁸ William Harvey, *An Anatomical Disquisition on the Motion of the Heart and Blood in Animals (De motu cordis)*, in *The Works of William Harvey*, trans. Robert Willis (Philadelphia, PA: University of Pennsylvania Press, 1989), 33.

“prolific spirit” capable of inspiring not only motion in the limbs, but the motions that brought about new life.⁶⁹⁹

Harvey’s work, although it effectively ruled out a role for the liver in the production of semen, was still mostly compatible with hematogenetic theories that described semen as a product of the heated blood, albeit arterial blood only. He also still afforded a rather minimal role to the testicles as important generative organs in their own right and, like Aristotle, maintained that the function of the testicles in generation was subordinate to that of the heart, which he saw as the origin of all animal motion, including that of generation. While Harvey mostly left alone the hematogenetic notion that semen was a product of the blood, later seventeenth-century theorists proved more willing to challenge the ancient idea that male seed was wholly or principally produced from heated blood.

A number of seventeenth-century anatomists decoupled semen production from the rest of the body altogether, and increasingly suggested that the testicles and related glands solely directed the production of male semen. The first half of the seventeenth century saw several successive anatomical studies that described in greater detail the tubular interior construction of the male testicles, which physicians increasingly regarded as playing a functional, local role in the production of the male semen. Jean Riolan the Younger, for instance, provided the first detailed anatomical study of the seminiferous tubules. Against the earlier anatomists Fallopio and Colombo, Riolan asserted that the existence of these tubules suggested that the spermatic matter was not merely “prepared during its voyage” by passing “from the vas deferens across the epididymis during ejaculation, without entering into the testicle.” His autopsies revealed that semen in fact filled the seminiferous tubules, suggesting that the testicles had a role beyond merely “preparing” or “cooking” the blood into its final perfection, as hematogenetic theory had suggested, and instead, it served as the principal site in which semen was formed.⁷⁰⁰

⁶⁹⁹ Harvey, *On the Motion of the Heart*, 29.

⁷⁰⁰ Riolan, 392.

A flurry of subsequent studies in the 1650s similarly ascribed a greater role to the testicles and seminiferous tubules in male generativity, unseating the primacy of internal organs like the heart, liver, and brain for explaining normative male physiology. The English physician Nathaniel Highmore in 1651 also described the seminal ducts in his *Corporis humani disquisitio anatomica*, as did Claude Aubery who independently claimed to have made the same discovery in his 1658 *Testis Examinatus*. Departing from a strictly hematogenic interpretation, Aubery averred that these tubules functioned to produce rather than merely prepare or cook blood brought to the testicles from elsewhere.⁷⁰¹ Consequently, a growing body of evidence suggested that the male genitalia had a much more important role in the production of the male semen than humoral theories of the three organs had previously afforded them. By 1689, the anatomist Isbrand van Diemerbroeck noted that it was only a misguided error that had reduced these so-called “spermatick vessels” to a preparative function and that only “formerly it was thought the Blood was there prepared for the Generation of Seed.”⁷⁰² Where the seminal matter came from, if not the blood, was still a matter of speculation that nerve theorists attempted to fill in. In any case, thosse investigations suggested that the testicles indeed possessed a functionality beyond supplying “heat” because they possessed specialized structures instrumental in the formation of male semen.

Added to increased anatomical interest in the structure and possible functionality of the male testicles also came greater attention among anatomists to the many, smaller male genito-urinary structures than had been previously recognized, which further suggested that the “solid” organs contained in the abdomen had a more instrumental role in semen formation than the system of hematogenic, fluid-centric theories had suggested. Anatomists in the seventeenth century paid greater attention to the construction and function of male-specific reproductive organs like the prostate, and the epididymis, in addition to the seminiferous tubules. Numerous new structures also appeared for the first time in anatomies of the male

⁷⁰¹ Nathaniel Highmore, *Corporis Humani Disquisitio Anatomica* (The Hague, 1651); Claude Aubery (Vauclius Dathirius Bonglarus), *Testis Examinatus* (Florence, 1658).

⁷⁰² Isbrand van Diemerbroeck, *The Anatomy of Human Bodies* (London, 1689), 131.

genital organs, many of which still bear the names of their discoverers. For instance, in 1651, Nathaniel Highmore described an additional duct running through the middle of the seminiferous tubules of the testicles (Highmore's bodies). In 1699, William Cowper described two small glands beneath the prostate glands, eponymously known as Cowper's glands or as the bulbourethral glands. These glands, Cowper reported, opened into the urethra and excreted their own pre-ejaculate "liquor" which, Cowper theorized, aided the excretion of semen during coitus.⁷⁰³ Although these are relatively minor structures, the discoveries of Highmore and Cowper suggested that the local, immediate area of the testicles and related glands had a greater role to play in seminal formation and male reproductive functionality than the three-organ, three-fluid model had previously suggested.

As a result of these discoveries, the notion that several secretions, produced locally in the testicles and in related glands, by the end of the seventeenth century had become a commonplace explanation among anatomists for the origin of semen. As Timothy Clark wrote in 1669, the existence of a great many interrelated structures in the male genito-urinary system, including Cowper's glands, the prostate, the vas deferens, the seminal vesicles, and the epididymis, many of which seemed to produce their own "Juices [which] in these Parts differ from one another both in Colour and Substance," suggested that the semen was not a "simple" or homogenous fluid, amalgamated together out of vaguely described spirit, heat, and moisture, but composed out of immediately definable, discrete secretions taken from the glands immediate to the testicles.⁷⁰⁴ By 1694 Daniel Tuvry similarly claimed that the "testicles supply the more

⁷⁰³ William Cowper, "An Account of Two Glands and their Excretory Ducts Lately Discovered in Human Bodies," in *The Philosophical Transactions of the Royal Society of London, From Their Commencement, in 1665 to the Year 1800*, eds. Charles Hutton, George Shaw, and Richard Pearson, vol. 4 (London, 1809), 445-7. A contemporary summary of the many glands and structures added to the male reproductive apparatus by the 1720s may be found in Jean Palfin, *Anatomie du corps humain* (Paris, 1726), 177-81.

⁷⁰⁴ Timothy Clark, "The Vasa Deferentia," *The Philosophical Transactions of the Royal Society of London, to the End of the Year 1700*, ed. John Lowthorp, vol. 3, 2nd ed. (London, 1716), 194.

spiritual matter [of the semen], the seminal vesicles the more watery, [and] the prostate the oily part,” effectively supplanting the older three-fluid, three-organ model entirely, in favor of a model more structurally bound to functions specific to the genital organs than the processes of digestion and locomotion governing the body as a whole.⁷⁰⁵

While anatomists increasingly focused their attention on the testicles and related structures as the quintessential male generative organs, innovations in anatomy revealed many more differences between male and female reproductive anatomies than had been previously acknowledged, further reinforcing the notion that the male genitalia were structures not only independent from other organs in the body, but unique to the male body specifically. Most especially, increased attention to the specific structures of the male testicles revealed that these were sex-specific structures with no analogue in the so-called “female testicles,” leading medical writers to increasingly view the testicles as quintessentially male organs with their own action, independent of the force of fluids from elsewhere in the body.

Although previous medical writers had theorized the existence of both male and female testicles, anatomists of the latter sixteenth and seventeenth centuries increasingly recognized that the so-called “female testicles” were in fact distinct, sex-specific structures and, by extension, so were the male testicles. As Michael Stolberg has shown, by around 1600, a number of medical writers had spoken out against theories of “one-sex” genital homologies, which implied an essential sameness between the male and female genital organs, particularly the scrotum and the uterus, the latter of which had often born the label of “female testicles.” The physician Du Laurens, for instance, vociferously denied that any “similarity comes in between the vagina and the male penis; none between the uterus and the scrotum;

⁷⁰⁵ Daniel Tauvry, *Anatomia rationalis* (Ulm 1694), 187-8.

neither in the structure, form and size of the testicles the same, nor in the distribution and insertion of the spermatic vessels.”⁷⁰⁶

The relocation of male generativity from the three principal organs to the testicles alone, as distinct, male-specific organs further undermined the notion of male-female genital commensurability, as physicians developed more detailed, sex-specific anatomies of male bodies. The Dutch physician Regnier de Graaf perhaps provided the most thoroughgoing refutation of a three-organ basis of male difference in his 1668 study *On the organs of men serving generation*, the “longest medical treatise on male genitalia of the period.”⁷⁰⁷ In it, de Graaf established in the first place that the genital organs of men differed substantially in their structure and function from those of women and that the use of terminology like the “female testicles” implied a false similarity between male and female bodies. In his view, it was primarily the possession of testicles, rather than superiority in heat or other fluids that set men apart from women and these structures deserved to be viewed as uniquely male.

To this end, de Graaf denied the “one-sex” view of those of his contemporaries who “think that the so-called male ‘members’ do not differ from those of the female except in position” and rather, insisted that the function of the male and female genital parts substantially differed from one another.⁷⁰⁸

⁷⁰⁶ Quoted in Stolberg, “A Woman Down to Her Bones,” 286; Du Laurens, f. 567r. Although popular medical tracts continued to reiterate the older theory of the two seeds and male-female commensurability, even the more traditional *Aristotle’s Masterpiece* in 1769 acknowledged that this was a matter of “Controversy” among contemporary anatomists and presented two-seed theories along with the newer, “ovist” explanation of conception. Anon., *Aristotle’s Last Legacy* (London, 1769), 33.

⁷⁰⁷ Stephanson, 31.

⁷⁰⁸ Regnier de Graaf, *De virorum organis generationi inservientibus, de clysteribus et de usu siphonis in anatomia* (Rotterdam: Hackiana, 1668) in *Regnier de Graaf on the Human Reproductive Organs: An Annotated Translation of Tractatus de virorum organis generationi inservientibus (1668) and De mulierum organis generationi inservientibus tractatus novus (1672)*, trans. H.D. Jocelyn and B.P. Setchell (Oxford: Blackwell Scientific Publications, 1972), 9.

He maintained in the first place that the male testicles alone produced semen and no other organ had any role in the process, thus centering his discussion of the male body solely on the genital organs. Like Riolan, Highmore, and Aubery before him, de Graaf claimed that his animal dissections confirmed the appearance of tightly wound tubules inside the testicles, which, he reasoned, were probably not simply a useless or “preparative” organ as Aristotelian theory, and contemporaries like Harvey, held.⁷⁰⁹ The existence of these tubules, he claimed, “prove that male testicles produce semen and female ‘testicles’ do not because in men, Nature formed quite remarkably long tubes for the generation of semen and such an arrangement would, of course, be superfluous if semen did acquire a high degree of perfection in the very simple organs.”⁷¹⁰ A number of other observations also led him to reason that “only one kind of semen is generated and this in the [male] testicles alone.”⁷¹¹ For instance, when he tied a dog’s testicles to restrict the flow of blood prior to coitus, they still appeared to swell with semen, leading him to suggest that “the theory of those who think that semen is concocted in the testicles themselves is certainly more supportable” than the claim that the testicles merely attracted serous humors from elsewhere in the body.⁷¹²

These findings did not only prove significant for anatomical science, but for broader thinking on the nature of male-female sex difference as something located in the solid, physical organs rather than in internal fluid differences of heat and processes of seminal metabolism. At the same time that anatomists paid greater attention to the particularities of the male reproductive structures, as distinct from women’s,

⁷⁰⁹ De Graaf, *De virorum*, 56.

⁷¹⁰ Regnier de Graaf, *De mulierum organis generationi inservientibus* (Lyon, 1672), in *Regnier de Graaf on the Human Reproductive Organs: An Annotated Translation of Tractatus de virorum organis generationi inservientibus* (1668) and *De mulierum organis generationi inservientibus tractatus novus* (1672), trans. H.D. Jocelyn and B.P. Setchell (Oxford: Blackwell Scientific Publications, 1972), 149.

⁷¹¹ De Graaf, *De virorum*, 41.

⁷¹² De Graaf, *De virorum*, 29.

embryological theorists also identified many more differences between the male and female reproductive contributions than the older “unequal two-seed theory” of difference had captured. First among these included the rise of ovist theories among experimental anatomists and embryological theorists of the mid-seventeenth century. Ovist physicians and anatomists claimed that men and women did not produce a mostly identical “seed,” differing only in its heat or fluid composition, as sixteenth-century Galenists had claimed. Nor did they take the Aristotelian position that women made no substantial contribution to reproduction at all. Rather, ovists claimed that only men produced and emitted a fluid substance called seed or semen, whereas women produced and contributed something substantially different: an egg.

William Harvey, again, had a powerful influence on the development of seventeenth-century ovism. In his 1651 *Anatomical Exercises on the Generation of Animals*, Harvey recorded dissections that he had performed on a female deer post-coitus. Because he found no evidence of remainders of male semen in the deer, or any trace of a female seed or menstrual blood, Harvey concluded that the mixture of male and female seeds could not be the cause of conception. Instead, he theorized that animal life developed from an egg contained in the womb of the female, which was inspired to take on an ordered, human form following some kind of “*aura seminalis*” or “contagious” stimulation at a distance by the male semen (he believed it was anatomically impossible for the semen to reach the site of the egg in the womb).⁷¹³

Harvey’s claim was at once novel and intensely traditional as far as it concerned the construction and male and female bodies. Despite his notorious declamation, “*ex ovo omnia*,” or that, “everything comes from an egg,” which seemingly attributed much greater importance to the female role in generation, Harvey based his conclusions about the egg on a rather traditional argument from female

⁷¹³ William Harvey, *Anatomical Exercises on the Generation of Animals (Exercitationes de generatione animalium)*, in *The Works of William Harvey*, trans. Robert Willis, 145-573 (Philadelphia, PA: University of Pennsylvania Press, 1989), 297, 466.

bodily inferiority. He noted that even though many of his contemporaries argued that “all women pour out a seminal fluid, and that this is necessary to generation” that he found scarce evidence that women’s emissions had any effect on generation, as they were manifestly thinner, less heated, and generally inferior to “the male spermatic matter.”⁷¹⁴ Furthermore, he found it impossible to believe that “parts so imperfect and obscure” as the female testicles could ever produce “a fluid like the semen, so elaborate, concocted and vivifying,” which he clearly saw as being both materially and spiritually superior to the female matter.⁷¹⁵ Furthermore, even if Harvey described the egg as the origin of all life, he also maintained that it was a passive structure that had no innate fertility in and of itself. Much of his language used to describe the action of the male semen during conception in fact sounded little different from that of unequal, two-seed Galenists who lauded the greater heat, spiritousness, and formative power of the male seed over that of the female. In his words, even if the egg contained the potentiality for human life, it was the male semen alone that could set the process of generation in motion, because it possessed a “prolific quality,” “analogous to the essence of the stars,” and “imbued with the spirit and the virtue of a divine agent” that acted “spiritously” on the egg to inspire conception.⁷¹⁶

⁷¹⁴ Harvey, *Anatomical Exercises*, 299.

⁷¹⁵ Harvey, *Anatomical Exercises*, 299.

⁷¹⁶ Harvey, *Anatomical Exercises*, 315. For more on the gendered character of Harvey’s discussion of the egg, see Eve Keller, “Making Up for Losses: The Workings of Gender in William Harvey’s *De Generatione animalium*,” in *Inventing Maternity: Politics, Science, and Literature, 1650-1865*, eds. Susan C. Greenfield and Carol Barash, 34-56 (Lexington, KY: University Press of Kentucky, 1999). In this respect, Harvey followed on the theories of his Aristotelian mentor, Hieronymous Fabricius d’Aquaductus, who upheld in *De formatio foetu* (1604) that the male semen acted as the generative agent on passive feminine matter, working through an “irradiant and spirituous quality” to make the entire uterus and egg fertile. Quoted in Clara Pinto-Correia, *The Ovary of Eve: Egg and Sperm and Preformation* (Chicago: University of Chicago Press, 1997), 108-9.

In another sense, though, Harvey's notion that men and women made entirely different material contributions to reproduction was a novel departure from older “one-seed” or “two-seed” theories. In Harvey’s view, the male and female reproductive contributions were composed of entirely different substances altogether, the one characterized by a mostly, passive, inert egg and the other characterized by hot, active, expulsive, and “spirituous” semen. While Harvey’s assumption that female passivity or male superiority could be read into the reproductive bodies of men and women was hardly anything new—after all, the notion that men only had the power to inspire “fecundity” in passive feminine matter was a distinctly Aristotelian idea—the distinction between eggs and seed marked a notable departure from “unequal two-seed theory,” in which men and women made materially similar, if slightly different, contributions to generation.⁷¹⁷

The notion of vastly different male and female reproductive materials, rather than only slightly different “seeds,” intersected neatly with anatomical innovations that stressed the distinctiveness of male and female reproductive structures. De Graaf, for instance, accepted the existence of a female egg and, like Harvey, denied the existence of the two seeds, arguing that, “women contribute quite different material from men as their share in the process of generation.”⁷¹⁸ He also maintained that not only did men’s and women’s contributions to generation differ, but that they also possessed different reproductive

⁷¹⁷ Harvey was not alone in maintaining a traditionally Aristotelo-Galenic division between “material” feminine and “spiritual” masculine contributions to generation. Even the non-ovist Nathaniel Highmore, who put forward a modified “atomist” version of two-seed theory, continued to distinguish between male and female seeds in the same quasi-Aristotelian terms, describing the male seed as possessing more “spiritual” atoms and the female as possessing more “material.” Highmore, *Corporis Humani*, 102-3, 106-7. On embryological theorists who perpetuated the spiritual/material division of the two seeds into the seventeenth century, see Sister Prudence Allen, *The Concept of Woman, Vol. III: The Search for Communion of Persons, 1500-2015* (Grand Rapids: William B. Eerdmans, 2016), 243.

⁷¹⁸ De Graaf, *De mulierum*, 141.

structures altogether, something that the language of both male and female “testicles,” he claimed, had tended to obscure. In his 1672 follow-up to his study on the organs of men, the aptly-named *On the organs of women serving generation*, De Graaf insisted that not only were the male testicles solely responsible for male fecundity, but that women in no way possessed anything that could be appropriately called “testicles” because they “contribute nothing in the way of semen to generation.”⁷¹⁹ In his dissections of female animals, De Graaf had failed to find any analogous “tubules” full of semen as he had in the male testicles, but rather observed large, round structures inside the so-called “female testicles” which he mistakenly believed to be the mammalian eggs (today, eponymously referred to as the Graafian follicles, which in fact contain many, much smaller eggs).⁷²⁰ This discovery suggested to De Graaf that men and women did not possess mostly analogous structures and that the structure of the “testicles” appeared only in male bodies, foreshadowing a shift towards a more testicular or genito-focused view of male bodies.

De Graaf further reiterated the distinctiveness of the male and female reproductive matter, dismantling the old theory of the two, unequal seeds by maintaining that only men produced semen of any kind. Although De Graaf claimed that women did have structures that he still referred to as “spermatic vessels” he claimed that the purpose of these organs was not to produce a female “seed,” as had been previously held among Galenist physicians, but rather to “serve the generation of the eggs, the nutrition of

⁷¹⁹ De Graaf, *De mulierum*, 137. In this respect, De Graaf echoed and amplified the earlier observations of Fallopio, who had also noted that “The *testes* in women do not seem to be made for the production of seed,” as well as those of Vesalius who had also noticed that the female testicles differed substantially from those of males “in shape and make-up.” Fallopio, 438; Vesalius, 46. Quoted in Winfried Schleiner, “Early Modern Controversies About the One-Sex Model,” *Renaissance Quarterly* 53, no. 1 (2000): 183.

⁷²⁰ Pinto-Correia, 43. Unlike the spermatozoa, the existence of the human egg was mostly theoretical and was not directly observed under microscope until the nineteenth century, by Karl Ernst von Baer (1792-1876).

the fetus and the solid parts and the purgation of the menses.”⁷²¹ De Graaf claimed that eggs existed inside of animals prior to any action on them by the “virtue of semen,” as Harvey had claimed, and already contained the germ of the human organism within them, which was stimulated to grow following a “fertilizing act of coitus.”⁷²² Hence, De Graaf suggested that the use of the term “testicles” to refer to both male and female reproductive structures made no sense and that the female testicles ought to be instead called “ovaries” to reflect their differing functionality and reproductive products, “especially as they bear no similarity either in shape or content to the male testicles properly so-called.”⁷²³ Effectively, then, De Graaf’s anatomy established that the testicles and semen exclusively appeared in male bodies, and defined male embodiment, as women possessed their own unique reproductive structures (the ovaries) and gamete (the egg).

Other structural discoveries seemingly undermined any residual Galenic notion about the existence of a similar, if less perfect, female seed or similar reproductive organs. Discoveries related to accessory organs of the penis and testicles also increasingly amassed a number of structures that seemingly appeared only in male, and not female, reproductive bodies. As William Cowper noted, the excretory glands he had discovered did not occur “in females, like those in males,” and he described them separately as male-specific structures that aided in the movement of the male semen only. Although Cowper pointed out that De Graaf and Caspar Bartholin the Younger had described “analogous” structures, known as the “prostates of women [*mulierum prostatae*],” which also excreted a fluid at the opening of the female urethra during coitus, seventeenth-century anatomists ended up describing these glands as male- and female-specific, only the male having a role in the emission of semen.⁷²⁴ Rather than describing these structures as emitting a, “female semen,” as a two-seed Galenist might have concluded,

⁷²¹ De Graaf, *De mulierum*, 130.

⁷²² De Graaf, *De mulierum*, 81, 170.

⁷²³ De Graaf, *De mulierum*, 135.

⁷²⁴ Cowper, 446. De Graaf, *De mulierum*, 67.

both De Graaf and Bartholin agreed that the female versions of these glands were distinct from the male because they did not facilitate the movement of a “semen,” but only aided in lubricating the vagina. As Bartholin, wrote, siding with De Graaf’s ovism, “women do not have any fluid semen, as men do, in their testicles” and therefore labeled them not as “female prostates,” but sex-specific structures in their own right, today known as Bartholin’s glands.⁷²⁵ These discoveries therefore served to further amass the number of anatomical structures that could be regarded as exclusively male, further challenging the notion that unequally heated seeds constituted the essential difference between male and female bodies and re-orienting definitions of difference towards the anatomical solids of the body that distinguished men and women.

Alongside new theories of the mammalian egg, parallel developments in the study of the male reproductive matter among seventeenth-century embryologists further undermined the older theory of the two, mostly similar seeds. The development of ovism’s rival, “spermism” particularly served to establish that men possessed their own, unique reproductive matter that differed fundamentally in its form, rather than in mere differences of heat or fluid composition. In 1677, the Dutch scholar Antoni van Leeuwenhoek first reported seeing seemingly alive particles, which he termed “animalcules,” swimming in a sample of male semen placed under a microscope. Following further investigations, Leeuwenhoek became convinced that these animalcules were not only alive, just like other microscopic “animals” he had seen swimming in other fluids, but in fact contained pre-formed human individuals. In a 1683 letter to the Royal Society, Leeuwenhoek argued against the ovist camp, denying the existence of the female egg altogether, and claimed that his observations provided “sufficient proof of the fruits coming from the Male seed,” with no analogue in a supposedly similar, if inferior, “female seed.”

Leeuwenhoek also further distinguished the male animalcules from the female reproductive matter because he supposed that the animalcules served to transport a pre-existing life form to the womb,

⁷²⁵ Caspar Bartholin the Younger, *De ovariis mulierum et generationis historia* (Rome, 1677), 27.

which served only to nourish the fetus during gestation.⁷²⁶ Effectively, this claim reversed the view of ovists like De Graaf, who believed that the human individual was actually partly pre-formed in the ovum, by arguing that the supposed female egg or ovaries contributed nothing to the formation of a new individual. Rather than stimulating the growth of a fetus from inside the female egg with fertile “spirits,” as Harvey and De Graaf had theorized, Leeuwenhoek claimed that the female ovaries acted only as a passive recipient for the contents of the animalcules, where he believed that the pre-formed individual resided. That Leeuwenhoek described these animals as “worms” or “tadpoles” with a real, material substance that could be observed was a very distant idea from the older, spiritualized conception of the seed as a more ethereal substance composed of soul-like “*pneuma*” and the soul-inspiring essence of the stars. Leeuwenhoek in fact denied altogether the “spiritous” quality of the male seed, as maintained by contemporary ovists like Harvey, and argued that the animalcules did not transmit some kind of “aura seminalis,” a contagion, or a “Vapour which causes fruitfulness,” working at a distance to make the womb fertile. Rather, he claimed that the animalcules did enter into the uterus and took up residence there, suggesting that the male reproductive matter and organs had an entirely different physical composition and purpose than those of the female.⁷²⁷

Although Leeuwenhoek took the opposite view of the ovists by developing an opposing “spermist” interpretation of embryological development, in many ways both gamete-based theories suggested that male reproductive bodies differed from female much more deeply than an “unequal two-seed” theory had previously suggested. Spermism especially suggested that the male semen differed

⁷²⁶ Antoni van Leeuwenhoek, “De natis e semine genitali animalculis,” *Philosophical Transactions of the Royal Society of London* 12, no. 142 (1677-8): 1040-6.

⁷²⁷ Leeuwenhoek claimed to have demonstrated that the semen entered the uterus this in experiments in which he observed dog semen in the uterus post-coitus, “An Abstract of a Letter of Mr. Leeuwenhoeck Fellow of the R. Society, dated March 30th 1685. To the R.S. Concerning Generation by an Insect,” *Philosophical Transactions* 15 (1686): 1120.

radically from the decidedly non-seminal female contribution. Leeuwenhoek and his followers disavowed older theories of the male seed, which proposed that it was composed of blood that had been heated to varying degrees and enlivened by the body's vital spirits. Rather, the existence of animalcules suggested that the male semen was literally alive rather than merely containing the spiritual potential for life. As Leeuwenhoek claimed, although some of his contemporaries "imagine as well that these animalculi are not alive, but are simply the fire present in the sperm," that the sperm in fact contained in miniature all the material parts of the human body, marking yet another step away from Aristotelo-Galenic humoral notions of "fire," "heat," and "spirits" as the agents of male generativity.⁷²⁸

As Laqueur has suggested, the development of competing ovist and spermist views of male and female reproductive bodies perhaps marked a move away from thinking about sex difference in terms of degrees of heat to one more based on Laqueur's notion of "incommensurable difference" between male and female bodies, which supposedly came to dominate in eighteenth-century thinking on sex difference.⁷²⁹ Several scholars, including Michael Stolberg, Amy Cislo, and others have modified Laqueur's timeline by proposing that this shift in fact occurred earlier than the eighteenth century or was less completely accepted in eighteenth-century European society than Laqueur suggested.⁷³⁰ However, the introduction of these new theories, whether broadly accepted or not, certainly marked a departure from the predominance of unequal, two seed theories of sexual difference between men and women and further served to center male embodiment on the possession of entirely unique anatomical structures and reproductive matter. According to the ovist and spermist formulations, men and women were supposedly born with entirely different reproductive morphology (testicles as opposed to ovaries), which each

⁷²⁸ Leeuwenhoek, *The Collected Letters of Antoni van Leeuwenhoek*, vol. 3 (Amsterdam: Swets & Zeitlinger, 1939), 20-1.

⁷²⁹ Laqueur, *Making Sex*, ix.

⁷³⁰ Stolberg, "A Woman," 274; Amy Cislo, *Paracelsus's Theory of Embodiment: Conception and Gestation in Early Modern Europe* (London: Pickering, 2010), 2. See also Harvey, "Substance of Sexual Difference," 205.

produced entirely different reproductive matter (eggs as opposed to animalcules), leading to the “elaboration of the idea of two distinct sorts of building blocks for the new creation.”⁷³¹ Spermism especially figured the male contribution as entirely unlike the female, but living and animal-like. Ovism too implied that the two substances of generation—whatever they were—differed radically, as eggs certainly were nothing like semen, whether it contained “animalcules” or not. Even ovists like Harvey that only the male contribution was fluid, active, and “spiritous,” while the female contribution was theorized to be entirely non-fluid, but a wholly passive, inert solid.

The rise of ovism and spermism widened the gap between how medical scholars described the degree of difference between male and female bodies. It also narrowed the number of bodily sites in which they located that difference in male bodies. Both theories tended to reinforce the notion that maleness resided not in more general systems of the body, like the digestive process of the liver, or the movement of vital spirits, but rather in the genital organs specifically. Contemporaneously with anatomical discoveries that increasingly undermined older one-sex theories of genital homologies, and revealed more structural differences between the male and female reproductive organs, gamete-based embryological theory thus tended to figure the male reproductive organs more as solid, isolated systems focused on the testicles and local glands rather than parts of a fluid, humoral whole.

While novel anatomical and embryological theories disrupted the older, heat-based conception of maleness and male sexual difference, another set of developments in the realm of nerve anatomy and physiology also tended to sever the “solid” genital organs from a humoral system of fluids. The emphasis on nerve physiology in male sexuality and embodiment emerged out of the work of early seventeenth-century medical and natural philosophers who, dissatisfied with vague Galenic categories like heat, sought to replace it with physiological models built on corpuscular or mechanical rather than humoralist views of the body. René Descartes most notably entirely dispensed with the notion of heat and the bodily

⁷³¹ McLaren, *Reproductive*, 25.

fluids as having inherent, physiological qualities that fulfilled the functions of separate natural, animal, and rational souls. Rather, he regarded the human body as a purely material object, composed of solid parts that interacted in a predictable fashion, much like the cogs in a clock, rather than according to the whims of partly immaterial, “spiritous” fluids.

Descartes’ mechanism also served to substantially modify some of the core pieces of the three-organ, humoralist model of male embodiment. Even though both accepted the heart as an organ crucial for supplying heat, and hence life, to animal bodies, Descartes rejected Harvey’s understanding of the role of heat in physiological processes like the circulation. Descartes envisioned the heat of the heart not as an in-born faculty but a part of a mechanical process of combustion or boiling, which fueled the compression action that caused blood to circulate through it. In Descartes’ view, the action of expansion and contraction, fueled by the heat of the heart, functioned to produce tiny corpuscles of motion-inducing matter, which he referred to as “animal spirits.” These animal spirits were not, however, quite the same as the animal spirits of the tripartite Galenic system of three “fluids” or “souls” that worked on the body through some kind of unspecified, spirituous force. Consequently, he did away with the vistalistic properties that Harvey had read into the heart and the blood, arguing that like hydraulic fluid in a machine, that the rate of motion and size of these tiny corpuscles, rather than any innate soul-like quality like “heat” that they possessed, inspired motion in the body. This Descartes found more convincing explanation for blood circulation than Harvey’s discussions of heat as an “innate,” quasi-divine quality that defied precise explanation and that Descartes regarded as a “holdover from scholastic philosophy.”⁷³² Instead, Descartes regarded qualities like heat and cold, which in the Galenic mold had a real, objective

⁷³² Wrote Descartes of the innate heat in the circulation of the blood, “If we suppose that the heart moves in the manner in which Harvey described it, we shall have to imagine some faculty which causes this movement, the nature of which is much more difficult to conceive than everything he claims to explain by it.” Quoted in Mendehlson, 37.

existence, as mere subjective or “secondary qualities” of matter rather than the vitalistic foundation of life and the animation of bodies.

Along with the humoral concept of humoral heat, Descartes dispensed with the notion that any soul existed in the material body, but argued that the material body functioned entirely at the “disposition of an immaterial and immortal rational soul,” separate from the body, which communicated with the body only through the pineal gland in the brain.⁷³³ Consequently, Descartes regarded the mind as the sole site of the ensouled functions of sensation, motion, and thought (and with it, the “ensouling” functions of generation) previously located in the various fluids of the heart, liver, and material brain together.⁷³⁴ Consequently, then, Descartes’ mechanism served to destabilize the importance of the three fluids from the heart, liver, and brain as composing the “spiritous” or soul-like portion of the male semen, which had supposedly made it unique.

Descartes’ arguments anticipated yet another shift in thinking on the character of male bodies: the rise of “nerve-based” theories of male sexual and reproductive function. Descartes’ emphasis on the importance of the mind anticipated a broader rise of interest in nerve physiology in the 1660s and 1670s, which further displaced Harvey’s insistence on the heart and the heated blood as the origin of motion, growth, and, by extension, generative capacity in men. As Darren Wagner has argued, seventeenth-and eighteenth-century anatomy and physiology, following on Descartes’ theories of the disembodied mind, increasingly described the functions and sensations of the genitalia through “nerve theory.” Nerve theory explained how, in the absence of embodied Galenic souls, the mind communicated motion to the rest of the body. It also provided a mechanistic, materialist explanation for male sexual and reproductive

⁷³³ Temkin, 179.

⁷³⁴ René Descartes, *The Method, Meditations and Philosophy*, trans. John Veitch (London, 1901), 187.

function in place of “the older and vaguer schemes of heats, passions, sympathies, or vapours” that had previously served to explain the composition and motion of male bodies.⁷³⁵

Nerve-based theories of male reproductive physiology further destabilized the significance of three separate humoral fluids, flowing haphazardly from the liver, heart, and brain to the testicles. Instead, nerve-based theory eliminated the significance of the heart and liver to male physiology altogether and centered male reproductive function almost exclusively on the brain and nerves. In place of hematogenetic theories of semen formation that centered on the greater heat of male bodies, or the blood-based origins of the seed, a number of anatomists put a greater stress on the “nervous” aspects of the male organs, and the affinity of the male genitals with the brain, over and above the humoral movement of heat and spirits which had prevailed in the last century.

Like Descartes, anatomists increasingly attributed the functions and movements of the genital organs to that of “animal spirits” suffusing the body through the nerves, rather than the result of seminal digestion taking place in the blood vessels (as Harvey had maintained). Most nerve theorists understood animal spirits to work differently than “spirit” as it was often used in the humoral sense, as something interchangeable with “air” or “winds.” Animal spirits were not airy or soul-like, as their association with the soul-like *pneuma* in the Renaissance had suggested, nor did they travel through the arteries or the veins (as vital spirit supposedly did), but were rather a purely material substance, composed of a white fluid that flowed through the nerves. Because animal spirits were a material, non-humoral substance, self-styled theorists “animal economy” tended to discuss their function independently of humoral notions of temperament or character which depended on the regulation of the whole body’s heat or coldness. Rather, anatomists interested in the nerves tended to treat animal spirits exclusively as the material function of mind, in which the operation of “the passions” became the focal point of discussion of nervous

⁷³⁵ Darren Wagner, “Sex, Spirits, and Sensibility: Human Generation in British Medicine, Anatomy, and Literature, 1660-1780,” Ph.D. diss (University of York, 2013), 166.

phenomena. Although humoralism had also held a place for the passions among the six non-naturals, and Hippocratic encephalogenesis had proposed a literal, fluid connection between the brain and the semen, nerve-based theories differed in that they tended to supplant the role formerly shared with the quality of “heat”—something supposed to originate in the heart or the liver—entirely with the operation of “animal spirits”—a material substance operating at the behest of a superior, rational, disembodied soul.

A new generation of anatomists thus revised the Hippocratic theory of encephalogenesis to conform to a novel mechanical or atomistic conception of the male body.⁷³⁶ They replaced the older, multi-fluid system of humors with nerve-based “animal spirits” alone, as the explanatory force behind a number of physiological phenomena, including the origin of the semen and operation of the genital organs, described by Bernhard Albinus, among other, as the “most exquisitely sensitive organs.”⁷³⁷ A number of anatomists even went so far as to propose that semen was not primarily composed of digested venous blood from the liver, as Galenic and Aristotelian teaching had long held, but rather constituted entirely of animal spirits circulating in the nerves, a theory which, in the minds of so-called “nerve theorists” explained the intensity of emotions and sensations associated with sexual activity. This new generation of nerve anatomists included, among many others, the English physician Francis Glisson. Glisson had found little evidence for the supposed connection between the male genital organs and the liver in his 1665 study of the organ, confirming Harvey’s claim that the liver did not supply a separate venous system of blood to the testicles. Glisson instead proposed that the semen was not digested blood at

⁷³⁶ Pomata, “Innate Heat,” 205.

⁷³⁷ Bernhard Albinus, *Disputatio medica inauguralis de sterilitate* (Frankfurt, 1693), 3. On the decline of humoralism and the rise of nerve-based theories of “animal spirits,” see George Rousseau, “Temperament and the Long Shadow of Nerves in the Eighteenth Century,” *Brain, Mind and Medicine: Essays in Eighteenth-Century Neuroscience* (New York: Springer, 2007), 360.

all and did not come from the veins or arteries supplying the genitals. Rather, he argued, that semen was in fact a “nervous sap [*succus nerveus*]” drawn from the nerves supplying these parts.⁷³⁸

Glisson’s conclusions echoed the work of Walter Charleton, who, eager to situate male generativity in the new “animal economy,” had similarly theorized that semen was not drawn from the blood, but from the animal spirits supplying the nerves of the genital organs.⁷³⁹ The physicians Giovanni Alfonso Borelli and Thomas Willis also theorized that the seminal matter contained in the testicles was not formed from blood at all—as Harvey had claimed—but the animal spirits from nerves, travelling directly from the brain via the spinal cord.⁷⁴⁰ Belief in a nervous rather than bloody origin for the semen made more sense from the perspective of anatomy at least because no direct, arterial or venous connection between the brain and the testicles existed, as Hippocrates had claimed in the case of the supposed “juvenile vein,” but at least two nerves did connect the testicles to the spinal cord. Theorists of the latter seventeenth century therefore re-located the origin of semen from the blood to the system of the nerves, thereby placing what was an ancient idea (encephalogenesis) on a new, materialist basis.

Although nerve theory did in some sense reinforce much older ideas about the brain-based origins of the male semen, it did also mark something of a move away from purely humoral, fluid explanations for male sexual function. While sixteenth-century humoralism tended to attribute erection to the hydraulic pressure created by the accumulation of semen “seeking its own release” in the testicles, or the inflation of the penis with winds, theorists of the nerves tended to see the functions and sensations associated with

⁷³⁸ Francis Glisson, *Anatomia hepatis* (Amsterdam, 1665), 382-3.

⁷³⁹ Walter Charleton, *Exercitationes physico-anatomicae de oeconomia animalii* (Amsterdam, 1659), 190-1.

⁷⁴⁰ Thomas Willis, *Cerebri anatome: cui accessit nervorum descriptio et usus* (London, 1666), 23-4. Giovanni Alfonso Borelli, *On the Movements of Animals*, trans. Paul Maquet (New York: Springer-Verlag, 1989), 378-82. Originally published, 1680. On Borelli’s theory of the semen as being composed of nervous spirits, see Maria Conforti, “Testes Alterum Cerebrum. Succo Nerveo e Succo Seminale nella Macchina del Vivente di Giovanni Alfonso Borelli,” *Medicina nei Secoli Arte e Scienza* 13, no. 3 (2001): 577-95.

the male genital organs as phenomena intimately intertwined with the “spiritous” economy of nerves and the impressions of the mind.

Neuro-sexual theories also tended to unseat the centrality of semen in discussions of male sexual physiologies, as theorists proved much more interested in explaining how the nerves worked to produce action in the parts of the body’s “solids,” particularly in organs that seemed to move on their own. Glisson, for instance, argued that while the nerves connected the brain directly to the individual parts of the body, that the nerves were also independently “irritable” or “excitable” and could act independently of the brain, producing both voluntary and involuntary motion. This meant that, although one’s thoughts could powerfully influence one’s health, that individual organs had their own functions that could operate independently of the will or the full-body system of the humors, as in the case of involuntary muscle contractions.⁷⁴¹

This notion that the nervous “organs functioned according to their own autonomous processes” was thought to especially apply to penis, which was framed as a particularly “irritable” organ.⁷⁴² The surgeon John Marten, for one, used the language of nervous irritation to describe the “Glans in Man” as a part prone to “exceeding Tickling and inexpressible Pleasure of the Spirits,” such that he remarked that “we cannot but admire we are...preserv’d from using them unlawfully, and ought to bless God for the Restraint.”⁷⁴³ The functions of the penis therefore preoccupied proponents of nerve theories, who increasingly attributed much greater independence to the male genital organs, as active, “nervous” parts

⁷⁴¹ Arikha, 235.

⁷⁴² Of the nervous muscles of the penis, wrote the surgeon Nikolai Detlef Falck, “it is wonderful, that sometimes they should be so alert and ready, nay, even at times without desire or will, and at other times as sluggish in their function...Suffice it therefore to observe, that a stimulus on the nerves will irritate these muscles to contraction as soon, or even sooner, than any other.” *A Treatise on the Venereal Disease* (London, 1772), 19.

⁷⁴³ John Marten, *A Treatise of the Venereal Disease* (London, 1711), 1-2.

of the body that seemingly moved on their own, rather than subsuming their function to the movement of internal fluids.

Theories of involuntary nerve function especially helped to explain for physicians such as Glisson, Willis, and Borelli, why the male genitalia were so powerfully affected by the emotions and the imagination but, sometimes, seemed to act “against one’s mind.”⁷⁴⁴ Borelli was not the only one who made the point that the uniquely nervous qualities of the male genitalia made it possible to consider them as, practically, “another brain on its own.”⁷⁴⁵ The anatomist Thomas Bartholin (1616-1680) also argued that the “nervous” nature of the penis was responsible for the seeming independence and self-willed nature of the organ. Bartholin revised Plato’s description of the seed as a “little animal” that seeks its own release to instead describe the penis as a “certain living Creature” with all the restlessness of a “Live-wight”—something strongly suggested by his animated depiction of the member, notably depicted independently of the testicles, in Fig. 31. The presence of many “nervous bodies” in the flesh of the penis, Bartholin demonstrated, gave it both a direct affinity with the “Faculty of Appetite seated in the brain,” as well as a certain degree of nervous independence, a striking contrast to the old fluid economy of seminal digestion, which supposedly mediated the movements of the penis.⁷⁴⁶

The notion that the penis had a nervous “mind of its own” carved out a space for greater recognition of the relative independence of the male genital organs from other functions of the body and

⁷⁴⁴ Quoted in Thomas Gibson, *The Anatomy of Humane Bodies* (London, 1694), 168.

⁷⁴⁵ Borelli, 378. Furthermore, Borelli argued, the notion that male semen had nervous origins explained the expulsive motion of semen and why, during ejaculation, men often experienced full-body convulsions, a sensation of “fainting,” and subsequent weakness. As Borelli explained, “such excitement indicates that spirituous juices rapidly rush from the brain and all parts of the animal to vivify the semen, mix with it, and be driven into the womb of the female,” while the subsequent sensation of weakness stemmed from a loss of enervating animal spirits throughout the whole body. Borelli, 397.

⁷⁴⁶ Thomas Bartholin, *Bartholinus Anatomy: Made from the Precepts of His Father* (London, 1668), 59.

pointed to an increased emphasis among medical writers on genital, rather than fluid, markers of maleness. Whereas sixteenth-century anatomical descriptions of the penis had often subordinated its functions to that of generation, and especially the fluid motions of the semen, seventeenth-century descriptions of the penis as a uniquely “nervous” organ tended to describe its functions as independent and self-willed, though also intimately connected to a man’s mental state. As Thomas Willis explained, erection of the penis often occurred involuntarily not because of the “turgency of the Seed” contained in the seminal vessels, as had been previously thought, but because of the communication between the penis and the “Intercostal Nerve, [which] according to the impressions made on the Senses or Brain, are wont to be irritated...into consent wherewith the Penis is presently excited.”⁷⁴⁷

Along with these statements on the nervous nature of the penis, mechanical explanations of muscular function, in combination with theories of the nerves, also tended to support the notion that the penis was an organ uniquely capable of moving on its own. Already in the early seventeenth century, Jean Riolan had proposed that erection was partly caused by the mechanical action of muscles he termed “erectors,” which functioned by extension, in addition to fluid movements of spirit and blood.⁷⁴⁸ The Flemish anatomist and physician Adriaan van den Spiegel (1578-1625) in 1632 further modified Riolan’s muscular explanation of penile erection to exclude fluid causes altogether, emphasizing the importance of mechanical, muscular contraction over fluid pressure in erection. Rather than filling with spiritous “air” from the arteries, or even blood moving of its own accord, Spiegel claimed that the erection of the penis was controlled by involuntary contractions of four separate muscles [Fig. 32]. When, these muscles were stimulated by the nerves, they contracted (rather than extended) to prevent blood from exiting the spongy inner cavities of the penis, resulting in erection. Blood had an entirely passive role to play in the process.

⁷⁴⁷ Quoted Gibson, *The Anatomy of Humane Bodies*, 169.

⁷⁴⁸ Jean Riolan the Younger, *Manuel anatomique et pathologique*, trans. François Sauvin (Paris, 1661), 243.

It was the muscles and nerves working together that interrupted its normal circulation through the organ.⁷⁴⁹

The physician Louis Barles also echoed Spiegel's emphasis on the muscular-nervous mechanism for male sexual function, which he claimed had become particularly prominent among the "Modernes," arguing that the "Ancient's" explanation based on the "circulation of the humors" alone did not suffice. As he proposed, the action of erection had to be sought out in "the parts of the penis itself," particularly in the especially "sensitive" construction of the organ, which so easily responded to nervous stimulation or the emotions, in ways that often frustrated the rational control of a man.⁷⁵⁰ By the eighteenth century, even the *Encyclopédie* reiterated the willfulness of the penis, an organ highly subject to "nervous irritation," recording that:

The erection is certainly not an action of the will, which can neither produce nor immediately impede it. It is one of those movements which result from the mechanism of the animal body.⁷⁵¹

In the latter half of the seventeenth century, male pathologies that had formerly rested on the system of excessive heat, coldness, dryness, or moisture were likewise more often explained by the involuntary nervous or muscular action of the genital "solids" rather than the seminal fluids. The Leipzig physician Michael Etmüller (1644-83), for instance, described "immoderate Erection of the Yard," or priapism, as a condition stemming from "the Contraction of the Muscles at the Root of the Yard" contrary to one's own desire, rather than an excess of heat or the accumulation of semen in the testicles, as humoralists had described it. Impotence, inversely, Etmuller described as a condition brought on by the "Relaxation of the two Pairs of Muscles" or a condition of the nerves, brought on by "Passions of the

⁷⁴⁹ Adriaan van den Spiegel (Adrianus Spigelius) and Giulio Casseri, *De humani corporis fabrica, libri decem* (Frankfurt, 1632), 322-3.

⁷⁵⁰ Louis Barles, *Les Nouvelles découvertes sur les organes des femmes*, vol. 3 (Lyon, 1680), 146-7.

⁷⁵¹ Diderot, *Encyclopédie*, vol. 21 (Paris, 1777), 281.

Mind, such as Bashfulness or Fear.”⁷⁵² Anti-masturbation tracts especially tended to describe conditions like gonorrhea, priapism, and impotence as the result of muscular “slackening” or nervous “relaxation” of the muscular fibers of the penis, arguing that the friction of masturbation, more so than semen loss, caused “localized, mechanical damage” to the genital organs.⁷⁵³ By 1725 even popular editions of *Aristotle's Problems*, which had previously held tightly to humoral, fluid-centric descriptions of male sexual function were describing erection, and its lack, as a result of nervous stimulation and muscular contraction.⁷⁵⁴ Similarly, the French physician Jean-Henri Imbert (fl. 1712) categorized impotence not so much as a condition of humoral coldness and seminal lack, but as profoundly nervous condition in which some disruption existed which prevented one’s “spirits,” and consequently one’s desires, “from easily communicating with the muscles” of the penis.⁷⁵⁵

The influence of medical models which stressed the nervous or muscular independence of the penis as a self-willed organ found an especially supportive home in arguments against schematic judgments of male sexual ability like that of the congress in France. Whereas in the early seventeenth century, medical experts had based their evaluations solely on the presence or absence of “heat” as the

⁷⁵² Michael Etmüller, *Etmullerus abridg'd* (London, 1699), 573-4.

⁷⁵³ Michael Stolberg, “An Unmanly Vice: Self-Pollution, Anxiety, and the Body in the Eighteenth Century,” *Social History of Medicine* 13, no. 1 (2000): 4. The physician Richard Wiseman (ca. 1622-76) for instance claimed that male masturbation caused the “relaxation of the seminal vessels, leading to their inability to retain semen,” as did the cautionary *Letters of Advice...about a Weighty Case of Conscience* (1676), which also claimed that masturbation led to the slackening of the “muscles which extend the penis,” leading to a “constant flow of semen” and impotence. Both quoted in Stolberg, “An Unmanly Vice,” 3.

⁷⁵⁴ Psuedo-Aristotle, *Aristotle's New Book of Problems* (London, 1725), 50-1.

⁷⁵⁵ Jean-Henri Imbert, “*Question de Medecine qui doit se résoudre dans les Ecoles de Medecines Jeudi matin 17. Du mois de Novembre de l'année 1712*,” in *Recueil General, Des Pieces Contenues Au Procez De Monsieur le Marquis de Gesvres*, vol. 1 (Rotterdam, 1714), 3-4.

sole motive force behind male sexuality, critics of the congress argued that even if a man did possess sufficient heat that the interference of the passions or nervous activity of the penis could just as easily undermine it. In 1684, the surgeon Nicolas de Blégnny cited this recognition as among the principle “motives for the abolition of the congress.” As he pointed out, the passions could too easily interfere in such a delicate sexual demonstration because “coitus is an action much more natural than voluntary,” and would be practically impossible with a wife who had become a man’s “most cruel enemy, the cause of his dishonor,” awakening only feelings of hatred and repulsion.⁷⁵⁶ The physician Nicolas Venette in 1696 similarly cited the pressing effects of the passions and the imagination on the penis as invalidating the practice of the congress because too often:

Our natural parts do not obey us when we want them to, much less do they obey judges. They wither often against our will and often they are in ice, when our heart is the most afire. If we are ready to animate ourselves, courage fails us, fear seizes us, hatred grabs our heart and modesty opposes these shameless liberties.⁷⁵⁷

Critics looking back on the practice in the eighteenth century similarly decried the congress not only because it was morally offensive, but because it betokened a fundamental misunderstanding of the importance of the passions and the imagination for men’s sexual ability, which often defied the will of the owner. As Louis François Luc de Lignac argued in his 1772 “physical” examination the bodies of married men and women, the congress was a useless form of proof for determining male impotence because “the publicity given to the Congress must necessarily augment the disorder of imagination, and deaden the organs which we would command.” In point of fact, he argued,

⁷⁵⁶ Nicolas de Blégnny, *La doctrine des rapports de chirurgie fondée sur les maximes d'usage et sur la disposition des nouvelles ordonnances* (Lyon, 1684), 73-5.

⁷⁵⁷ Venette, 578.

the action that it has for its object cannot be commanded. It is not the slave of the edict of the Pretor. It is essentially free, capricious, enemy of broad daylight, of witnesses, and of those controllers, whose view suffices to trouble the truth of its operations... This infamous usage will always disconcert any man with feelings of propriety and modesty and the husbands who are most potent in a state of liberty, where Nature is not constrained, will often succumb in a proof which is contrary to reason and to all the sentiments which are inseparable from virtue.⁷⁵⁸

Buffon (1707-88), similarly, cited the failures of the congress as proof positive of the nervous independence and capriciousness of the genital organs, exclaiming that:

Everyone knows that the mechanism of these parts is independent of the will. One does not command these organs, the soul cannot make them react: it is the part of the human body the most animal... How many young men raised in purity, and living in perfect innocence and total ignorance of pleasure have felt the most animated feelings without being able to divine the cause of this object! How many men, on the contrary, remain in the most cold languor despite all the efforts of their senses and their imagination, despite the presence of objects, despite all the help of the art of debauchery!... Therefore... how were men able to order the congress, who must know themselves, and know that nothing depends less on them[selves] than the action of these organs... who cannot ignore that all emotion of the soul, and above all shame, are contrary to this state...?⁷⁵⁹

In cases of impotence generally, surgeons like Daniel de la Roche also increasingly granted much more psychological depth to the condition, emphasizing the nervous and muscular origins of the disorder, rather than ascribing to more general deficiencies of heat or other humoral fluids. De la Roche treated

⁷⁵⁸ Louis François Luc de Lignac, *De l'homme et de la femme, considérés physiquement dans l'état du mariage* (Lille, 1772), 254-5.

⁷⁵⁹ Georges Louis Leclerc, comte de Buffon, *Chefs-d'œuvre littéraires de Buffon*, vol. 2 (Paris: Garnier Frères, 1864), 83-4.

impotence less to a vague “defect of heat” and instead described it as a psychosomatic condition in which the movement in the nerves and muscles of the penis were disturbed by one’s state of mind. In De la Roche’s opinion, sex was a “purely physical act” which depended partly on the provision and functioning of the physical organs, in combination with what he referred to as the “feeling principle,” “the soul,” or the “instinct.” Thus, barring castration or some other physical defect, de la Roche argued that a man who suffered from an otherwise unexplained impotence must suffer from some kind of affliction of the mind or the soul that inhibited him from completing the act, either due to feelings of shame, fear, embarrassment, or apprehension. He therefore advised that the practitioner summoned in a case of impotence should “inform himself exactly of the state of the soul” and seek out any “error of the imagination” which might cause “the organs of generation to refuse to fulfill the functions for which nature destined them.” For sufferers, he stressed that “the state of the soul should be calm in all regards, and be absolutely disengaged from any idea which might trouble it.” No physical remedies depending on correspondences of heat and cold, in his opinion, could solve this affliction—only mental practices of calmness and focus.⁷⁶⁰

The growing centrality of “nervous” passions and mental self-control, over the management of variable heat and coldness, can also be detected in how late-seventeenth and eighteenth-century practitioners thought about magically caused impotence. At the same time that critics of the congress and practitioners treating impotence granted a greater role for the passions over the movement of fluid humors in male sexual ability, discourses on magical knot-tying also increasingly tended to attribute a much greater place to the vicissitudes of the imagination and the emotional mind. Increasingly, physicians and other learned commentators attributed supposedly magically induced impotence to psychological disturbances alone, communicated via the nerves, rather than any real demonic action on the seminal fluids.

⁷⁶⁰ Daniel de la Roche, *Encyclopédie méthodique. Chirurgie*, vol. 1 (Paris, 1740), 680-1.

Nerve-based or psychosomatic explanations for magically-induced impotence had their origins in the latter sixteenth century, when a number of more skeptical witchcraft theorists speculated that most cases of male impotence probably did not result from the actual physical interposition of demons in the humoral body, but rather from purely psycho-somatic afflictions. Renaissance occultists and practitioners of “natural magic” like Agrippa and Pietro Pomponazzi (1462-1525) had long suggested that just as certain objects, like knots, or the intentions of a spell-caster, could produce particular changes in the body that, likewise, the human imagination or soul could also inspire real physical effects in the individual—most notably, in the case of pregnant women who could supposedly “impress” what they saw on the physical form of a developing fetus.⁷⁶¹ Many following this line of thinking argued that male impotence probably more often resulted from a person’s own personal anxieties or fears rather than the real, external influence of demons. Pomponazzi, for one, doubted that demons could control men’s sexuality, which he saw as a matter of the will having more to do with one’s innate feelings of “love or hatred” rather than purely physical, fluid causes.⁷⁶² The physician Girolamo Cardano too departed from the common opinion of his profession in that he generally discounted demonic explanations for male impotence, instead suggesting that the vagaries of a man’s imagination alone could cause “inappropriate cooling of the affected part and overheating of the blood,” resulting in impotence.⁷⁶³

Perhaps most famously, the essayist Michel de Montaigne rejected demonological explanations for male impotence in favor of causes more rooted in psychology in his 1580 essay “On the Force of the

⁷⁶¹ Agrippa recounted how the force of the imagination could produce physical changes in the body, “as in setting the teeth on edge at the sight or hearing of something, or because we see or imagine another to eat sharp or sour things: so he which sees another gape, gapes also; and some when they hear anyone name sour things, their tongue waxeth tart.” Heinrich Cornelius Agrippa, *De occulta philosophia libri tres* (Cologne, 1533), cap. LXIV.

⁷⁶² Pietro Pomponazzi, *De naturalium effectuum causis sive de incantationibus* (Basel, 1567), 191-2.

⁷⁶³ Quoted in Nancy Siraisi, *The Clock and the Mirror: Girolamo Cardano and Renaissance Medicine* (Princeton: Princeton University Press, 1997), 169.

Imagination.” He argued that the “impressions of apprehension and fear” that tales of knot-tiers probably more often caused supposed cases of bewitchment than any actual magical affinity that inhered in the spell. As an example, he cited the case of a friend who had become convinced that he was bewitched after hearing these tales. He was cured by placebo, however, after Montaigne gave him a metal talisman as a remedy and told him to perform a series of ceremonies much like those used to cause the spell. The groom did so and was cured of his impotence, although the talisman was intended to cure sunstroke. Montaigne thus concluded that the force of the imagination was such that it could both induce physical effects and also cure them, particularly in afflictions of the male genitals, which, he noted, very often defied the individual’s own will.⁷⁶⁴ Michel de Montaigne thus anticipated a broader shift towards the recognition of the penis as a sensitive, irrational organ particularly subject to the imagination and the emotions.⁷⁶⁵ In the later sixteenth century, he had suggested that the knot drew its physical efficacy not by literally “tying up” the seminal fluids or the heat through demonic action, but because the mere suggestion of it induced such a disturbance in the passions or the soul that its effects became real, if only in the mind of the afflicted.

This trend tracked onto both rising skepticism about the reality of witchcraft generally in the seventeenth century, as well as changing models of the male body which stressed the link between the mind and the genital organs. The rise of nerve-based theories of independent, penile action and decline of humoralism made the view that magically-caused impotence was no more than the product of psychological suggestion much more common in the seventeenth century. François Bernier’s 1684

⁷⁶⁴ Michel de Montaigne, *Essais de messire Michel de Montaigne* (Paris, 1595), 46-9. See also Lee R. Entin-Bates, “Montaigne’s Remarks on Impotence,” *MLN* 91, no. 4 (1976): 640-54.

⁷⁶⁵ Wrote Montaigne, “We are right to note the undocile liberty of [the penis] which thrusts itself forward so inopportunely when we do not want it to, and so inopportunely lets us down when we most need it: it so imperiously contests for authority with our will, it stubbornly and proudly refuses all our incitements, both mental and manual.” Montaigne, 49.

abridgment of the atomist Pierre Gassendi's works, for instance, banished the efficacy of occult qualities like those attributed to the *nouement de l'aiguillette*, erecting in their place the mechanical action of "the imagination, persuasion, hope or fear," which he reasoned must "do something" to induce real, physical effects on the male body and especially the particularly "sensitive" male genitals. This phenomenon, Bernier noted, was not unlike how the mere faith that a sick person had in a doctor or certain remedies could produce a seemingly miraculous recovery, suggesting that the force of the emotions or imagination must have some kind of nervous correspondence with the larger state of the body and, especially, the innately "sensitive" penis.⁷⁶⁶ Indeed, seventeenth- and eighteenth-century commentators recounted many instances of men rendered impotent by the mere suggestion that they had been tied and cured by the mere suggestion that they had been untied. As proof that the spell only worked through "the force of the imagination," Venette recounted how he had once threatened a man who insulted him that he would "tie the *aiguillette* when he married." Even though he was only joking, the man so believed what he said that,

...these vain threats made a great impression on his spirit, already preoccupied with charms, that after marrying, he could not sleep with his wife for a month. He sometimes wanted to embrace her tenderly, but when he had to execute what he had resolved, he found himself impotent; his imagination being so struck by ideas of sorcery.

Even after Venette explained that what he said was "only a jest," the man so persisted in his belief that he was not made potent again until a priest convinced him that he had somehow "broken the charm."⁷⁶⁷

⁷⁶⁶ François Bernier, *Abregé de la philosophie de Gassendi*, vol. 3, 3rd ed. (Lyon, 1684), 313.

⁷⁶⁷ Venette, 596-7. The jurist Antoine Gaspard Boucher d'Argis recorded that French royal and ecclesiastical courts also, by the eighteenth century regarded magically-induced impotence as only an effect of the imagination, "In an enlightened century like ours, and especially at the Parlement of Paris, one has little faith in all these supposed *maléfices* and *nouemens d'aiguillette*... A stricken imagination often has a part in these so-called *maléfices*. A man that one menaced with the *nouement de l'aiguillette* finds himself impotent, even though nothing was done that was capable of producing this defect in him, but because being struck with the idea that one used the effort of magic

Lignac similarly denied the reality of magically-induced witchcraft and claimed that threats of the *aiguillette* only worked on “weak and credulous minds,” especially uneducated rural people, for whom the mere threat of the knot was sufficient to cause literal effects, such as those that plagued the man in Venette’s story.⁷⁶⁸ Consequently, physicians generally replaced cures for magical impotence based on fluid counter-magic, like urinating through a wedding ring, with regimes of psychological self-control and management of the passions. Lignac, for instance, argued that the only real cure, other than “magical” placebos like that used by Venette’s priest, was the practice of psychological fortitude, particularly focusing on managing the “tranquility and calmness of the passions.”⁷⁶⁹

By the time of Lignac’s writing in the eighteenth century, learned people could reject the reality of the spell in favor of psychological explanations that presented the penis as especially susceptible to the passions. Even male litigants before the Officialité of Paris in the eighteenth themselves increasingly entered complaints that centered on the psychological dimensions of their impotence, rather than its literal

against him, this idea comes to him at the moment that he wants to fulfill his conjugal duty, obscures all his senses, dissipates and transports the spirits which must direct his movements.” D’Argis, 73-4.

⁷⁶⁸ “The threat to render impuissant a man whose intellects are weak, is sufficient to bind his powers; that, by averring to this man, and which he solely imagines, that he has interested enemies, who oppose his pleasures, he will quickly be unable to enjoy them.” Lignac, 237. De la Roche, similarly, argued that mere “fear of a bewitchment” or “the imagination stricken with threats of *nouveurs d'aiguillette*” was sufficient to interfere with the erection of the penis because it “so strikes their imagination and the idea that imprints itself there suffices to destroy momentarily their virility.” De la Roche credited these opinions exclusively to “ignorant and credulous people” whom he believed to be particularly susceptible to the power of suggestion. De la Roche, 680. Wrote another author, “the vulgar attribute [impotence] to a bewitchment or to knots of *aiguillettes*, a purely chimeric idea of weak minds, because one can well think, that if a man is armed with a good penis, capable of erection, spurred on by love, this so-called magic will be a weak means to oppose the perfect action of congress.” Anon., *Nouveau traité des maladies vénériennes*, vol. 1 (Amsterdam, 1753), 231-2.

⁷⁶⁹ Lignac, 234.

connection to witchcraft. A nobleman named Rancurel in 1787, for instance, argued that he did not suffer from a true “bewitchment” that had prevented the non-consummation of his marriage, but that the hatred of his wife for him had made him “impotent for her.” As he claimed “the true bewitchments are the affections of the heart and the spirit,” suggesting that laypeople too were more inclined by the close of the eighteenth century to accept a view of impotence as a principally nervous, psychological condition that afflicted the particularly sensitive male genitals, rather than one based on flows of seminal heat and humors that could be manipulated.⁷⁷⁰

The emphasis that Venette and Lignac placed on moderating passions of the mind, and limiting fanciful flights of the “imagination,” like those inspired by rumors of witchcraft, also found voice in a number of other therapeutic contexts, which also treated male bodies as particularly susceptible to nervous emotions more so than imbalances of the seminal fluids. Whereas the humoral view regarded the temperaments of heat and cold, wetness and dryness as the most important targets of medical scrutiny, by the close of the period it was these “transient passions” and their interactions with physical, nervous bodies that instead became the most important objects of masculine moderation and a key element of male sexual and reproductive health.⁷⁷¹ Humoral discourses of “self-mastery” of course had also encouraged men to avoid emotional extremes and, on the surface at least, seventeenth- and eighteenth-century therapies differed little from those of before, as health reform literature still urged men to carefully manage “all of the ‘appetites’ that threatened to ‘soften’ the body through modern luxuries or sedentary lifestyles.” As historian Christopher Forth has proposed, “new developments in physical comfort,” in the seventeenth and eighteenth centuries, accompanied by “a greater emphasis on mental rather than manual labor, and the growing expansion of consumer luxuries were all thought to diminish

⁷⁷⁰ *Plaidoyer pour le Sieur Rancurel, accusé d'impuissance, contre la Dame Louise Lerré, son épouse* (Aix, 1787), 7, 23.

⁷⁷¹ Jacques Bos, “The Rise and Decline of Character: Humoral Psychology in Ancient and Early Modern Medical Theory,” *History of the Human Sciences* 22, no. 3 (2009): 43.

the male body even as they celebrated the putative superiority of Western manhood,” further enflaming an existing medical discourse that preached the necessity of stoic bodily moderation and the avoidance of moral excesses like idleness, luxury, and venereal indulgences for men—a tendency little different from Galenic practices of humoral moderation.⁷⁷²

However, the humoralism of the sixteenth and earlier seventeenth centuries had tended to treat psychology as something continuous with the body’s overall temperament, lumping conditions of mind and body together on the same continuum. Men who were too hot and choleric, for instance, were supposed to be prone to anger and lustfulness because of the heat present in the rest of the body, not the other way around. It was also principally cured through holistic practices centered on the whole body, by ingesting or applying cooling substances, rather than exclusively through practices of mental restraint, immoderate passions being more often treated as a symptom, rather than a cause, of humoral imbalance.

Neuro-sexual theories of the body, by contrast with humoralism, reinforced both the duality and the often oppositional interrelationship between mind and body. This was a trend at once further entrenched by a so-called “culture of sensibility,” which in the eighteenth century “reformulated the relationship between body and mind, and more strongly linked the sexual and mental,” as well as the contrary eighteenth-century impulse to laud reason over superstition and high-minded “civilization” over base, bodily sensations and desires.⁷⁷³ Cartesianism represented the most obvious expression of mind-body dualism, as it theorized the existence of an immaterial soul entirely separate from the material body. Even those who did not expressly embrace Cartesianism, however, such as the English nerve theorists previously mentioned, tended to describe the body as intimately connected to the rational mind, through

⁷⁷² Christopher Forth, “Manhood Incorporated: Diet and the Embodiment of ‘Civilized’ Masculinity,” *Men and Masculinities* 11, no. 5 (2009): 580.

⁷⁷³ On the ideal of rational, “civilized” man in the eighteenth century and its intersections with nerve-based medical discourses, see Forth, 578-601.

the system of the nerves, but also often irrational and uncontrolled, acting in a seemingly “self-willed” fashion, according to nervous sensations from without, or even involuntary desires or emotions from within.

Nerve theorists thus also tended to erect an additional duality, between the rational and controlled mind and the irrational passions. As they often stressed, the mind, too, was not always entirely rational, but could be clouded by passions or flights of imagination that might produce physical effects, as they did in the case of Venette’s tale of psychosomatically induced impotence. Neuro-sexual theories of the body thus tended to construct the physical body—and especially very nervous organs like the penis—as the enemy of the rational mind, which could only be controlled through exercises of rational control, especially those intended to reign in the irrational extremes of the emotional mind.

It is no coincidence then that around the same time that nervous descriptions of the penis as an irrational, uniquely nervous organ that could act independently of the mind moved into the mainstream of medical discourse, that therapeutic texts stressed the importance of subordinating it to the rational mind, as much as was possible. Much as before, excessive yielding to the irrational urges and sensations of the penis were regarded as detrimental to a man’s overall constitution. However, the mind was thought to be particularly damaged by excessive yielding to the passions or sensations of the body, especially those linked to sexual indulgence. As John Mullan has shown in the case of other male-specific nervous disorders of the eighteenth century, like hypochondria, male sexual excess became increasingly bound up with pathologies of willful nerves and irascible passions, representing “a symptom of creeping ‘unreason’ which haunt[ed] supposedly triumphant ‘reason.’”⁷⁷⁴ As irrationality and emotionality became increasingly “feminized” qualities in eighteenth-century medical discourses, which spoke of female

⁷⁷⁴ John Mullan, “Hypochondria and Hysteria: Sensibility and the Physicians,” *The Eighteenth Century* 25, no. 2 (1984): 142.

“sensibility” and emotional fragility, management of the nervous passions thus became a newly important aspect of normative maleness.⁷⁷⁵

Bernard Mandeville’s (1670-1733) oppositional typology between the “Man of Pleasure” and the “Man of Business” especially speaks to how neuro-sexual constructions of the genital organs played into ideals of masculine self-control over the body in the eighteenth century. In his view, both types of men, no matter how much serious “business” they had to attend to, could never stop the natural urges of sexual desire in the nervous organs. The difference between them arose from the willingness of the Man of Pleasure to cede to such passions, so much so that they allowed their “Lust” to change “its Residence from the *Glans Penis* to the *Glandula Penealis*,” where it permanently imprinted itself on the mind. The Man of Business, in contrast, “who leads a sober regular Life,” exhibited the ability to more readily “curb this Passion.” Mandeville undoubtedly viewed the life of the Man of Pleasure as unenviable because of the negative health effects that could stem from allowing the body to rule the mind. By making “this copulative Science his whole study,” mind and body would very quickly grow weak due to nervous exhaustion,

...for the Animal Spirits being exhausted by this Anticipation, his Body must be weaken’d, and his Nerves relax’d; neither will his irregular effeminate Life assist them in recovering their former Force. Besides, those Parts which more particularly suffer the Violence of this Exercise, are liable to many Accidents; and Men of Pleasure, though otherwise pretty healthy, are often troubled with Gleets [gonorrhea] and Weaknesses...or else some violent Over-straining, which occasions this Relaxation.

Inevitably, this state of excessive “relaxation” of the penile muscles and weakening of the animal spirits would result in impotence altogether:

⁷⁷⁵ See G. J. Barker-Benfield, *The Culture of Sensibility: Sex and Society in Eighteenth-Century Britain* (Chicago: University of Chicago Press, 1992).

These Men, ‘tis true, will talk very lusciously of Women, but, pretend what they please, they can never had that burning Desire which they had formerly, when their Vessels were in full Vigour.

The Truth is, their Lust lies chiefly in their Brain, kept alive by the Impression of former Ideas, which are not so easily rubb’d out as the Titillation which created them.⁷⁷⁶

Such descriptions of the miseries of the Man of Pleasure, who lacked the mental strength to resist the passions and sensations of the body, formed a mainstay in eighteenth-century therapeutic texts. Citing many of the same symptoms of decline into “weakness,” “relaxation,” and loss of physical and mental vigor, moral-medical discourses on masturbation in the eighteenth century also stressed the importance of rational restraint from sensations of sexual desire and, most especially, penile manipulation. Nervous explanations for male sexual impulse and function only heightened the moral dimension of self-pollution because they reinforced the notion that the male genitalia had a special relationship with the mind. Although the “sin of Onan” had been known and condemned for centuries, sixteenth- and seventeenth-century medical texts had scarcely mentioned the subject of masturbation.⁷⁷⁷ Instead, sixteenth-century physicians appeared much more preoccupied with the danger of excessive sex with humorally colder women for men, which in excess could supposedly drain a man of his vital heat. In the eighteenth century, however, popular medical tracts railed against the dangers of “self-pollution” for men not only because excessive semen loss might cause a loss of masculine heat, but because it allowed the irrational penis to rule the mind, to the mind’s detriment. It represented a dangerous surrender to one’s own desires and passions, a surrender that in the long term would cause numerous ill physical and mental effects.

⁷⁷⁶ Irwin Primer, *Bernard Mandeville’s “A Modest Defense of Public Stews”: Prostitution and its Discontents in Early Georgian England* (New York: Palgrave Macmillan, 2006), 66-7.

⁷⁷⁷ For Renaissance doctors, masturbation only “occupied an obscure corner of the far more general problem of regulating sexual pleasure within a framework that sanctioned it within marriage and only for the purposes of procreation.” Laqueur, *Solitary Sex: A Cultural History of Masturbation* (New York: Zone Books, 2003), 92.

The anonymous author of the sensational 1715 tract, *Onania; or The heinous sin of self-pollution*, which went through countless editions in the early century, especially described masturbation in terms that pitted the rational “self” of the pure mind against the irrational, and harmful, urges of the genital organs, in a “Conflict betwixt Lust and Chastity.”⁷⁷⁸ The author described masturbation not just as a moral surrender to sin, but as a mental surrender of the “self” to the polluting urges of the body, speaking of the condition as a “yielding to filthy Imaginations,” and the “Effect of a disorderly Passion,” which marked a loss of control over one’s own body.⁷⁷⁹ Succumbing to these passions would supposedly cause innumerable mental and physical maladies that tended towards the self-destruction of both body and mind. The muscular and nervous construction of the male genital organs, and consequently their physical integrity, could especially be damaged due to excessive strain, causing phymosis, not to mention other “Stranguries, Priapisms, and other Disorders of Penis and Testicles.” Gonorrhea could be caused by excessive strain and relaxation of the muscles of the seminal vessels, which would lose their ability to retain the semen, as well as impotence, due to weakness in the muscles of the penis.

The correspondence between the penis and the brain could also cause many “nervous” ill effects, including “fainting Fits and Epilepsies,” memory loss, diminished intelligence, and a loss of strength throughout the rest of the body.⁷⁸⁰ The author naturally thus recommended that readers ought to steel themselves against the urges of the flesh again, through practices of mental fortitude and prayer, so as to “set a watchful Guard upon their Thoughts and Fancies, but that some foul or filthy Desires would in Spight creep in.”⁷⁸¹ Samuel-Auguste-André-David Tissot’s 1760 influential treatment of the same subject,

⁷⁷⁸ Anon., *Onania; or The heinous sin of self-pollution, and all its frightful consequences in both sexes, considered* (London, 1715), 21.

⁷⁷⁹ *Onania*, 1, 5.

⁷⁸⁰ *Onania*, 17-18, 47. The author of *Onania* condemned masturbation in both men and women, but described these as conditions specific to men and the male genital organs.

⁷⁸¹ *Onania*, 15.

L'onanisme, also stressed the “irritating and debilitating effects on the nervous system” that could come from moral submission to the will of the genital organs.⁷⁸² Tissot too regarded masturbation as a condition that betokened the submission of the mind to the will of the body, the effects of “a reason seduced and subjugated, which comes to obey like a slave, [though] it ought to be the master.”⁷⁸³

The importance of subsuming the nervous passions of the willful genital organs to the rational mind also figured prominently in late-seventeenth and eighteenth-century discussions of gonorrhea and other venereal diseases. Much as before, gonorrhea was described as any kind of involuntary seminal emission, whether caused by infection, an internal fluid imbalance, or, increasingly, muscular or nervous weakness of the genital organs, such as that caused by masturbation. The loss of semen was also still believed to be potentially harmful for male health as a whole, causing, in the words of Thomas Willis, the “pining away of the whole body.”⁷⁸⁴ In the eighteenth century, though, the myriad symptoms attributed to gonorrhea were more often connected to diseases of the mind and disorders of the passions than an excess of moisture in the seminal composition. Eighteenth-century medical writers regarded excessive emissions as all the more harmful because of the particular association between the genitals, the animal spirits circulating in the nerves, and the mind. As Darren Wagner has shown, medical cures for gonorrhea also stressed the importance of avoiding anything that might stir up sexual desire and provoke erection, including even reading.⁷⁸⁵ Herman Boerhaave, for instance, cautioned men seeking to escape the affliction to avoid anything which might provoke an erection, arguing that “Whatsoever...sets the Imagination to Work, whether it be Meat, Drink, or Medicine, or Conversation with the Amiable Sex, or

⁷⁸² Stolberg, “An Unmanly Vice,” 9.

⁷⁸³ Samuel-Auguste-André-David Tissot, *L'Onanisme: dissertation physique et morale* (Paris, 1760), 22.

⁷⁸⁴ Willis, .

⁷⁸⁵ Wagner, “Leaky Bodies, Bawdy Books: Gonorrhea and Reading in Eighteenth-Century Britain,” *Literature and Medicine* 34, no. 2 (2016): 320-40.

Pictures, or Stories, or Reading; should be avoided as Things which will probably produce the worst consequences.”⁷⁸⁶

Although the material targets of therapeutic writers had clearly changed in eighteenth-century writing on male bodies, from a matter of seminal, fluid balance to one suffused with a language of nerves, passions, and “animal spirits,” the implicit figuration of masculine identity and its relationship to the body had changed little since the sixteenth century. Medical discourses still tended to read an ideal of masculine identity as one focused on self-control and moderation into their discussions of male bodies. The question of male generativity also continued to be central to concerns about masculine self-mastery. Often, male impotence and infertility were listed as the most common result of unrestrained indulgence in, or inability to moderate, one’s sexual passions. The *Ladies Physical Directory* cautioned that men who too often succumbed to their desire for “Venus” would become infertile, as would “those who constantly study and think too Intensely, or any way injure their Nervous System,” such that they impaired the circulation of “animal spirits” in the genital parts.⁷⁸⁷

Anti-masturbation tracts and texts on venereal disease similarly connected impotence and infertility to an excessive propensity for passions, especially of a venereal nature. These texts tended to treat a lack of progeny as the mark of a man’s ultimate downfall, as what he may have thought were harmless, private vices came to accrue significant social and financial consequences, particularly in marriage. The author of *Onania* claimed that those given to the vice of masturbation, if they did not bring about their own deaths, would become both impotent and utterly incapable of procreation. Even those men who did prove themselves “capable of Marrying” would still find that they were:

...render’d infertile, so as to make them unfit for Procreation, by its changing the Crasis [balance] of the Spermatick parts, making them become barren, as Land becomes poor by being over-till’d;

⁷⁸⁶ Boerhaave, *A Treatise on the Venereal Disease and its Cure* (London, 1729), 57-8.

⁷⁸⁷ Anon., *The Ladies Physical Directory* (London, 1727), 61.

and few of those that have been much accustom'd to this Vice in their Youth, have ever much Reason to boast of the Fruits of their Marriage-Bed; for if by Nature's extraordinary Helps, they should get any Children, which happens not often, they are commonly weak little ones, that either die soon, or become tender, sickly People.⁷⁸⁸

The physician John Floyer similarly cautioned that men who contracted venereal diseases, even if they appeared to be cured by remedies, would suffer weaknesses of the genital parts that would make them “broke and Bankrupt in his Bed-Tackle” and “infertile and incapable (ever after) of begetting Children.”⁷⁸⁹

These cautions do not sound terribly different from earlier sixteenth- and seventeenth-century discussions, which had also connected male sexual excess to infertility, as certain elements of humoral thinking did persist through the latter part of the period. Indeed, the notion that men were uniquely capable of, and especially expected to, regulate and restrain their bodies according to broader cultural standards of moderation or self-mastery was not a new idea. Humoral medicine had tended to treat the physical state of being male as a fragile condition that had to be balanced between multiple, variable fluids and that depended, precariously, more on active demonstrations of vague qualities like “heat” rather than the evidence of the external organs.

However, these discussions differed in that they overwhelmingly treated excessive male desire as much more problematic than a lack of it. The prospect of coldness, and its associations with sexual and reproductive inability, had dominated earlier discussions of problematic male bodies and medical texts had dedicated much more energy to provoking male desire, rather than curbing it. Eighteenth-century texts, by contrast, tended to focus much more intently on the problem of reigning in male sexual excess and over-indulgence, as the emphasis on masturbation, the risks of venereal disease, and the importance

⁷⁸⁸ *Onania*, 19.

⁷⁸⁹ John Floyer, *Psycholusia Or, the History of Cold-Bathing, Both Ancient and Modern* (London, 1732), 282-3.

of sexual self-restraint and stimulation, either mental or manual, suggested. As George Cheyne claimed, “the chief Source of Infertility in the Male Sex...besides Accidents and a Malformation, is chiefly owing to the Luxury of the Individual himself,” whereas he ascribed many more natural, non-moral causes of infertility in women owing to what he perceived to be the natural weakness of their bodies.⁷⁹⁰ As the 1727 edition of the *Ladies Physical Directory* noted in the case of male sterility, although some men did “want that Inclination to Venery,” it was much more often the case that, “Men rather want a Bridle to Restraine, than a Spur to Quicken them in their Addresses that Way.”⁷⁹¹

The migration of these concerns, away from encouraging male desire and towards better restraining it or, at least, directing it in an appropriate direction, mapped onto corresponding changes to how medical discourses conceptualized male embodiment. The construction of the penis as a particularly nervous organ, more strongly affected by the mind than the fluid movements of “heat” or semen, and the increased focus on the solid structures of the male genitals, as organs that functioned mostly apart from the rest of the body, did not only coincide with the more general decline of more holistic, humoral views of the body. Eighteenth-century discourses also seemed to express a greater faith in the genital organs to unambiguously signify maleness. Anatomists and physicians of the eighteenth century were much more inclined to describe the penis and testicles as uniquely male organs that produced a reproductive material with no female counterpart. Because the male and female “testicles” and the male and female gametes were distinctly different, there was no chance that mere incidental changes in the temperament of the body could effeminate a man. While eighteenth-century practitioners obviously still saw semen as a precious fluid, whose loss could cause numerous ailments in men, including infertility and impotence, these conditions did not make men literally effeminate, as humoralism had claimed of temperamentally “cold” men. They were in fact inclined to dispense with categories of “hot” and “cold” to describe the

⁷⁹⁰ George Cheyne, *The Natural Method of Cureing the Diseases of the Body and the Disorders of the Mind* (London, 1742), 283.

⁷⁹¹ *The Ladies Physical Directory*, 59-60.

functioning of male bodies altogether. Semen, it was established by the end of the seventeenth century, was not a product of men's superior heat suffusing the entire body but was created through mechanical processes local to the testicles and closely related glands. Thus, eighteenth-century writers argued that, short of some kind of demonstrable, physically-caused ailment that compromised the structural inter-operation of the genitals, that all men, independent of whether their disposition appeared to be "cold" or "hot," ought to be capable for sex and generation (and thus, more likely to be in need of restraint from lust, rather than encouragement towards it). Similarly, in medico-legal spheres like the *Officialité* of Paris, unless a man demonstrated some kind of obvious anatomical defect, jurists and medical experts alike agreed that a "good conformation" alone provided sufficient evidence to establish a man's ability.

For eighteenth-century medical writers, masculine moderation also centered much more on matters of the mind, or more specifically the effect of the mind on the nerves, which came to replace the humoral fluids as the more problematic sphere for male-specific sexual ailments. Excessive desire for sex, susceptibility to venereal infection, masturbation, and even impotence were treated less as symptoms of an imbalance of hot or cold and more as the result of mental disturbances and the inability of the rational mind to restrain them. In an age which tended to trumpet the value of reason and rationality as the mark of "civilization," and that strongly associated passionate sensibility with effeminacy, it is perhaps no surprise that medical writers were more inclined to see ideal maleness as something defined in the dualistic struggle between sensuality and rationality and between body and mind, more than in bodily balance or imbalance. While humoralism had tended to collapse together rather arbitrarily the cultural character of masculinity, the physical embodiment of manhood, and the performance of the male sexual and reproductive roles, as facets of an all-pervading "heat," the eighteenth-century separation between male body and the purportedly more "rational" male mind speaks to a greater willingness on the part of medical writers to differentiate between an internalized sense of a gendered, masculine, disembodied "identity" and the sexed body.

In sum, by the beginning of the eighteenth century, a number of substantial modifications to the model of humoral, fluid-centric manhood described at the beginning of this project had emerged. First, innovations in the realm of anatomy had unseated the three-organ, three-fluid origins of the male semen. The discoveries of Harvey, Highmore, and Cowper all served to demonstrate the importance of the testicles and the secretions of local glands, to semen formation, unseating the heart-liver-brain triad of the sixteenth century and focusing discussions of male sexual and reproductive ability more narrowly on the solid genital organs than distributed humoral systems of fluids.

Secondly, revisions to anatomical models of male-female sex difference in the seventeenth century revealed many more thoroughgoing differences between the male and “female” testicles. The rise of gamete-based theories of ovism and spermism unseated the notion that men possessed a similar, though more heated, spirituous version of the same “seed” found in female bodies. This led seventeenth-century anatomists and physicians to increasingly regard the testicles as specifically male organs, which in turn played a significant role in the production of a uniquely male reproductive matter, the spermatozoa. By redefining the testicles as a uniquely male feature with a major role in the production of a uniquely male sperm, medical models of maleness thus focused more narrowly on the testicles as important distinguishing features of manhood, more so than more fluid, humoral notions of “heat,” which suffused the entire body.

Finally, the rise of mechanism, nerve-based theories of the body, and a new emphasis on nervous “sensibility” and the irritability of the genital organs also served to solidify a more genito-centric, solid-based vision of maleness, compared to the fluid-centric humorism of previous centuries. The new anatomical emphasis on nerves and the interaction between mind and body via nerves and muscles, rather than “spirits,” led a number of anatomists to characterize the male genital organs, especially the penis, as self-willed and independent from the rest of the physical body, having a close “sensitive” or nervous relationship to the mind and the passions. This characterization did not only influence how medical writers characterized male sexuality—increasingly viewed as potentially unruly and uncontrollable—but

held therapeutic consequences for the conceptualization and treatment of male sexual and reproductive disorders. Masturbation and excessive male desire, brought on by the independent movements of the penis, attracted much greater therapeutic attention in the eighteenth century than previous discourses that centered more so on the maintenance and promotion of male fertility through practices of fluid regulation.

In describing the penis as an independent or self-willed organ, anatomists also implicitly decoupled the movements of the penis from internal seminal flows internal to the body, previously thought to control all male generative functions, including erection. In turn, they also effectively decoupled male sexual function from male reproductive function, meaning erection and sexual intercourse did not necessarily depend on one's underlying fertility, or the presence of semen, but rather on "nervous" sensations of pleasure having nothing to do with reproduction. Whereas early modern medical writers tended to treat sex and reproduction and hence male sexual and reproductive ability as indistinct, interrelated categories, the decline of seminal-based explanations for male physiology foretold the possibility of separating male sexual pleasure from reproductive function. No longer a subordinate organ, controlled by the movement of internal fluids and overshadowed by medical discussions of heat or seed quality, the penis and its propensity to induce male sexual excess, also became an object of therapeutic interest to eighteenth century medical writers and an organ valued for its ability to independently signify masculine identity and sexual prowess.

What emerges from all of this by the end of the eighteenth century is a view of manhood much more centered on genital markers like the penis and testicles, but still only ambiguously modern. While eighteenth-century conceptions of impotence as a psychosomatic disorder and the emphasis on the interconnection of body and mind via the nerves certainly bear a strong resemblance to modern ideas about the psychology of sex, the language of "animal spirits" and "passions" speaks to how this particular conception of masculine embodiment remained inseparably rooted in the eighteenth-century context. Nevertheless, the seventeenth and eighteenth centuries clearly saw some substantial revisions to the classical model of maleness as a condition based in a hierarchy of heat and seeds and male sexual

function as something subordinated to the flows of various seminal fluids. Rather, what emerges is an emphasis on manhood as something that is a given, by virtue of the possession of a penis and testicles, though rationally constructed through particular practices of mind and nervous, rather than fluid, regulation.

FIGURES: CHAPTER VI

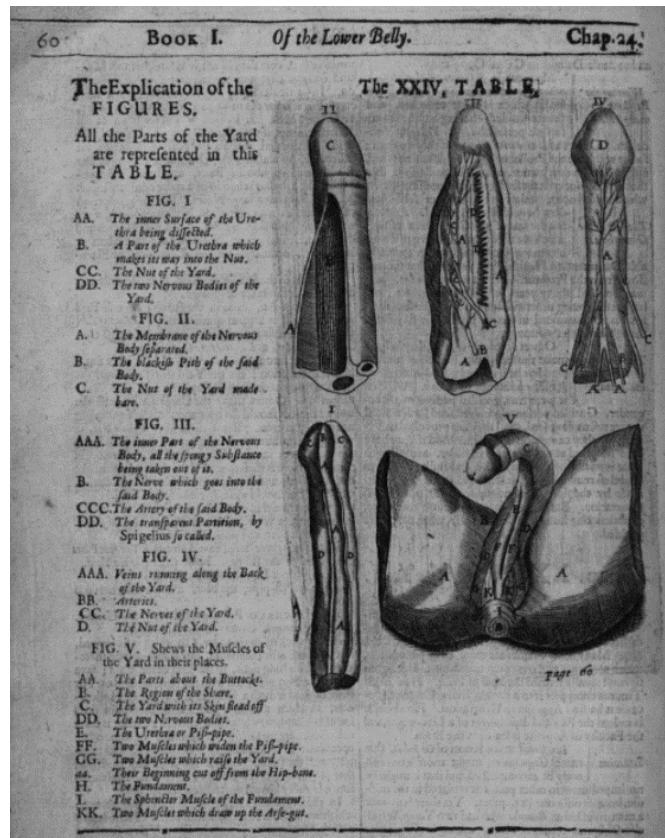


Fig. 31. Illustration of the “nervous bodies” of the penis, from Thomas Bartholin’s anatomy (1668). Notably, the penis in Fig. V is depicted independent of the testicles, suggesting an emphasis on the independent nervous functions of the penis alone, independent of seminal flows or the action of the testicles. Bartholin, 60.

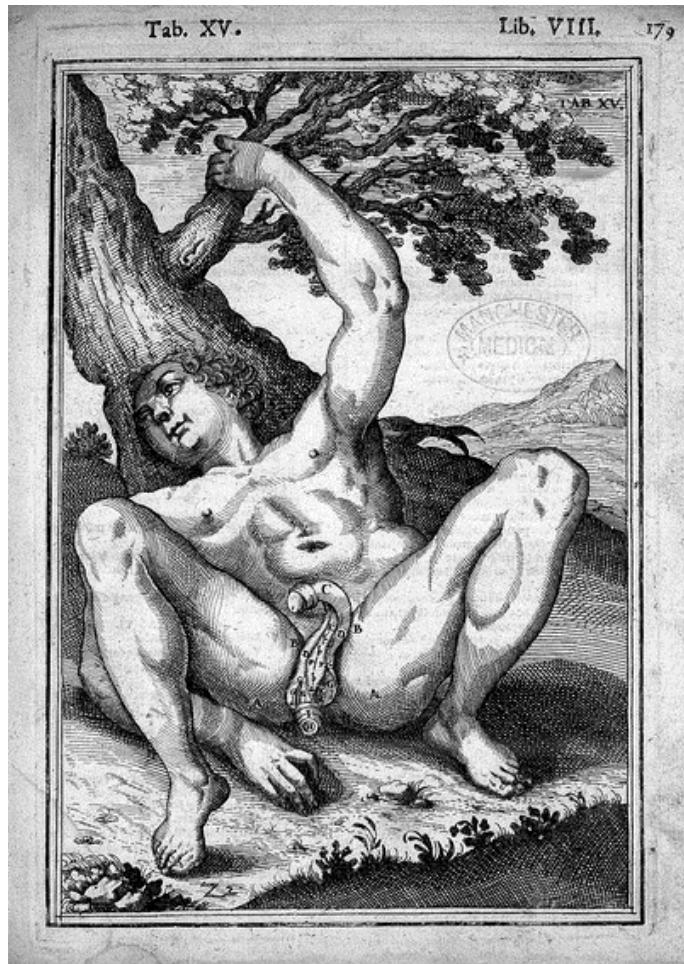


Fig. 32. Adriaan van den Spiegel's depiction of the exterior muscular construction of the penis (1632). Like Thomas Bartholin's later depiction, Spiegel notably represented the penis without of the testicles and, implicitly, independent of the action of seminal flows, calling more attention to the neuro-muscular independence of the organ. The depiction is also unusual compared to earlier anatomies because of the passively supine, rather than standing, position of the male figure. Female anatomical figures were more often depicted laying down, to highlight the internal structures of the womb, while males were usually shown standing. This oddly passive positioning, along with the serpent-like curvature of the penis, seem to suggest that it is the penis that is in control of the man here, an interpretation that would align with Spiegel's emphasis on the nervous independence of the male genitals.

Spiegel and Casseri, 78. Credit: Wellcome Collection. Attribution 4.0 International (CC BY 4.0)

CONCLUSION

This project began with the question “What is a man?” By the end of it, I have shown that the answer to that question may be far from obvious to modern historians looking back on the context of early modern culture. Modern definitions of maleness in the physical, embodied sense tend to define manhood in highly genito-centric terms, associating male sex strongly with the possession of a penis and testicles. The context of sixteenth- and seventeenth-century medicine, however, offers an example of how male embodiment and definitions of normative maleness were constructed differently in the past, in terms other than exclusively genito-centric models. Early modern medical writers often privileged the humoral and fluid aspects of manhood over the penis and testicles alone. The tradition of classical medicine differentiated male and female bodies primarily on the basis of heat and on men’s supposed greater generativity, as exemplified by their greater ability to generate and concoct seed. Early modern medical writers also inherited models of manhood that privileged three key internal organs—the heart, liver, and brain—as the principal reproductive organs in men, crucial for the production of three seminal fluids—heat, spirits, and moisture.

Because early modern medical models of privileged generative, fluid balance as a constitutive aspect of maleness, therapeutic texts of the sixteenth and seventeenth centuries expressed significant concern for the preservation of male fertility. Therapeutic and pharmaceutical texts conceptualized male infertility and other reproductive problems in terms of humoral balance and stressed the importance of male fluid regulation to prevent excess or lack in any of the three fluids of heat, spirits, or moisture. The fact that therapeutic texts valued fluid balance as the ideal, normative state of male bodies both further attests to the importance of fluid-centric models of manhood in early modernity and to the importance of male fertility and the preservation of male fertility to male identity.

The importance attached to male fertility and fluid balance also translated to early modern discussions of impotence. Unlike in modernity, in which impotence or sexual inability can be thought of in terms distinct from sterility or reproductive inability, early modern medical sources often treated male

infertility and male impotence as indistinct categories, as they often described both male sexual and reproductive ability as dependent on internal flows of the seminal fluids. In this project, I therefore made the case for reconceptualizing male impotence as one among many possible male reproductive disorders that existed on a spectrum of seminal balance. I also argued that impotence in early modernity did not represent so much a manifestation of phallic anxieties and preoccupations as a manifestation of anxieties surrounding male fluid balance and fertility, nor did impotence as it was understood among early modern medical writers neatly map onto the modern disease category of erectile dysfunction. Even in the case of magically-caused impotence, it was this particular understanding of male fluid balance which supposedly made men much more susceptible to witchcraft that could interfere with both male sexual and reproductive ability, affecting both a man's sexual ability as well as his fertility more generally. In legal spheres as well, although canon law in principle strictly distinguished male sterility and male impotence, in practice medico-legal experts often approached impotence as an issue stemming from more general issues of fluid balance that bore directly on a man's fertility. For instance, the justification behind the institution of the congress in seventeenth-century France represented a particular model of impotence that defined the condition both as a lack of an erection and as a more general defect of heat, spirits, or seminal moisture.

Finally, the last chapter of this project points ahead to how certain core elements of the humoral, three-fluid model of maleness declined in significance into the later seventeenth century. Rather than focusing on the timeline for a supposed “one sex” to “two sex” transition in the seventeenth and eighteenth centuries, as other scholars have, I propose that thinking on male bodies underwent several significant changes during this period, which deserve individual treatment. First, an improved understanding of the anatomy of the testicles and glands caused anatomists to increasingly center models of male generativity on the local productions of the male genital organs, rather than distributed bodily systems like the heart-liver-brain triad. Secondly, the rise of gamete-centric theories like spermism and ovism eroded the older idea of two unequally heated or concocted seeds possessed by both men and

women and more narrowly focused explanations for the male role in reproduction on the local production of spermatozoa in the testicles. Finally, the introduction of mechanist and neuro-sexual theories of the body served to differentiate male sexual function more clearly from an underlying reproductive function controlled by fluid flows within the body. Most especially, neuro-sexual theories of the male body emphasized the independence and irritability of the penis. Consequently, eighteenth-century anatomists and medical writers expressed greater concern about managing the nervous passions controlling the movements of the penis, more so than managing male fluid balance in the humoral mode. I have therefore suggested that more so than a transition from “one-sex” to “two-sex,” thinking that a transition from an emphasis on internal “fluids” to external, genital “solids” may better express changes to thinking on the nature of maleness in the late seventeenth and eighteenth centuries.

For all the changes I have identified, a number of continuities with previously established, humoral discourses may be detected even into modernity. As novel as spermism and ovism seemed by comparison with two-seed theories of conception, in some respects both only worked to support ancient theorizations about male superiority in generation, even if seventeenth-century experimental anatomists routinely decried the “authority of the ancients.” Even ovism, which at least acknowledged that the mother made a material contribution to the fetus, still described the male spermatic matter as having some kind of “spiritual” essence that it communicated to the egg to initiate reproduction—a description, again, not far off from humoral theorizations about the “formative” or “spiritous” virtues of the male seed. As Prudence Allen has found, later seventeenth-century theorists often merely displaced “Aristotelian sex polarity” onto new terminology, so that in each case, the male contribution very often triumphed above the material feminine.⁷⁹² Harvey’s notion of the male semen having a magnetic or spiritous power to inspire changes in the mostly passive, inert egg is perhaps the most obvious example of how modern embryology preserved the same male-female reproductive hierarchy of “unequal two-seed theory,” albeit with different terminology.

⁷⁹² Allen, *Concept of Woman*, 244.

Spermism, while more crudely materialist in its discussion of “spermatick worms” than high-minded notions of seminal “spiritousness,” also tended to support traditional notions of the superior activity and formative virtue of the male reproductive contribution. Even though Leeuwenhoek’s discovery of motile animalcules in the male semen was indeed novel, spermism lent considerable support to ancient Aristotelo-Galenic notions of the superiority of the male seed, as Leeuwenhoek considered the female contribution to be entirely nourishing and passive. The spermist Herman Boerhaave, for instance, took a position that in fact differed little from the Aristotelian interpretation of by arguing that through the animalcules, “the father communicates the embryo and first rudiments of life,” whereas the mother only passively retained and nourished the fetus.⁷⁹³

The seventeenth-century neuro-sexual linkage between the penis and mind via the nerves also bore many similarities to much older theories of encephalogenesis, or the belief that at least part of the seminal matter originated in the brain. Furthermore, although neuro-sexual thinking tended to place much greater emphasis on the management of nerves, passions, and psychic factors in male reproductive disorders, in place of heat and other humoral qualities, eighteenth-century medical texts still privileged the importance of masculine bodily self-mastery and moderation, albeit extended more into the realm of the mind. Medical and therapeutic texts also continued to counter-poise masculine moderation against a threatening specter of effeminacy and weakness, which often entailed a loss of characteristically male sexual and generative ability. Many assumptions about the relationship between normative male embodiment and generativity thus spanned the entirety of the period under consideration in this project, although the material terms in which maleness was described evolved substantially.

With these caveats in mind, the transitions identified in this project speak to the myriad ways in which the relationship between male body and masculine gender identity has been configured in the past. Far from something straightforwardly and in all instances identified with the penis or testicles, maleness was something that historically has also been vested in other parts of the body: in the heat, in the seminal

⁷⁹³ Quoted in Pinto-Correia, 90.

fluids, in the heart, the liver, the brain—even in physiological functions like ejaculation more so than in any distinctly solid “part.” The story of how the sex of men came to reside principally in the penis and testicles matters because it is also the story of how masculinity came to reside principally in the mind, as a disembodied quality that tends to disguise its own historicity and its own rootedness in the body. Through this tentative exploration into how maleness has changed over time, I have offered some insight into how histories of masculinity may further combat some of these assumptions, by integrating male bodies as objects of change and concern, properly within the preserve of history.

BIBLIOGRAPHY

A. ARCHIVAL AND MANUSCRIPT SOURCES

Archives nationales de France (AN), series Z1O.

Bibliothèque Interuniversitaire de Santé (BIU), Ms. Latin 2007.

Bibliothèque Nationale de France (BNF), Ms. 4-T18-121 ; Ms. Fr. 2030 ; Ms. Dupuy 630 ; Z Thoisy 188, 192, 416, 455.

British Library (BL), Sloane Ms. 2839, Add. Ms. 21995.

Bodelian Library, Oxford University (BLO), Ms. Ashmole 399.

Cambridge, Gonville and Caius College, Ms. 190/223.

Wellcome Library (WL), Ms. 290.

B. PRINTED PRIMARY SOURCES

Agrippa, Heinrich Cornelius. *De nobilitate & præcellentia foeminei sexus*. Antwerp, 1529.

Agrippa, Heinrich Cornelius. *De occulta philosophia libri tres*. Cologne, 1533.

Akaia, Martin. *Medici regii de morbis muliebribus*. In *Gynaeciorum sive de mulierum*, edited by Israel Spach, 745-802. Strasbourg: Lazar Zetzner, 1597.

Albinus, Bernhard. *Disputatio medica inauguralis de sterilitate*. Frankfurt, 1693.

Alciato, Andrea. *Les emblemes latin-francois*. Paris, 1584.

Ancillon, Charles. *Eunuchism Display'd*. London: Edmund Curr, 1718.

Anneau, Barthélemy. *Imagination poétique*. Paris, 1552.

Anonymous. *Arrêt notable de la cour de parlement du 18 février 1677 donné dans la cause de Monsieur le Marquis de Langey, servant de Règlement de l'abolition du Congrès*. Paris: Denys Thierry, 1677.

- Anonymous. *The compleat doctoress*. London, 1656.
- Anonymous. *De conceptus impedimento*. In *Natura sit Nobis Semper Magistra: Über den Umgang mit Patienten, die Diät bei akuten Erkrankungen, Sterilität von Mann und Frau, Augenleiden, Vier Mittelalter Schriften*, edited by Hermann Grensemann. Hamburg: Lit Verlag, 2001.
- Anonymous. *The Ladies Physical Directory*. London, 1727.
- Anonymous. *Le réveil du chat qui dort, par la cognoissance de la perte du pucelage de la plupart des chambrieres de Paris*. Paris, 1616.
- Anonymous. *Les raisons naturelles et morales de toutes choses qui tombent ordinairement en devis familiers*. Paris, 1560.
- Anonymous. *Liber Minor de Coitu: Tratado Menor de Andrologia Anonimo Salernitano*. Translated by Enrique Montero Cartelle. Valladolid: University of Valladolid Press, 1987.
- Anonymous. *Nouveau traité des maladies vénériennes*, vol. 1. Amsterdam, 1753.
- Anonymous. *Onania; or The heinous sin of self-pollution, and all its frightful consequences in both sexes, considered*. London, 1715.
- Anonymous. *Plaidoyer pour le Sieur Rancurel, accusé d'impuissance, contre la Dame Louise Lerré, son épouse*. Aix, 1787.
- Anonymous. *Quinze marques approuvées pour cognoistre les faux cons d'avec les légitimes*. Paris, 1620.
- Anonymous. *Thesoro di secreti naturali, Raccolti per fedel honestii*. Florence, 1600.
- Aquinas, Thomas. *Commentary on the Sentences: Book IV, Distinctions 26-42*. Translated by Beth Mortensen. Edited by Peter Kwasniewksi and Jeremy Holmes. In *Opera Omnia of St. Thomas Aquinas*, vol. 9. Lander: Aquinas Institute, 2018. .
- Aquinas, Thomas. *Summa Theologiae: Supplementum, q.1-68*. Translated by Fr. Laurence Shapcote. In *Opera Omnia of St. Thomas Aquinas*. Green Bay, WI: Aquinas Institute, 2018.
- Aretaeus the Cappadocian. *Of Chronic Diseases*. In *The Extant Works of Aretaeus, the Cappadocian*. Translated by Francis Adams. London: Sydenham Society, 1856.

Aristotle. *De Caelo [On the Heavens]*. Translated by W. K. C. Guthrie. Cambridge, MA: Harvard University Press, 1963.

Aristotle. *Generation of Animals*. Translated by A.L. Peck. LCL 366. Cambridge, MA: Harvard University Press, 1943.

Aristotle. *Physics, Volume II: Books 5-8*. Translated by P. H. Wicksteed and F. M. Cornford. LCL 255. Cambridge, MA: Harvard University Press, 1934.

Arnaldus de Villa Nova. *Opera omnia*. Basel, 1585.

Aubery, Claude (Vauclius Dathirius Bonglarus). *Testis Examinatus*. Florence, 1658.

Aubery, Jean. *L'antidote d'amour*. Paris, 1599.

Augustine of Hippo. *De Nuptiis et Concupiscentia ad Valerium Comitem*. In *A Select Library of the Nicene and Post-Nicene Fathers of the Christian Church, Volume 5: St. Augustin: Anti-Pelagian Writings*, edited by Philip Schaff, translated by Peter Holmes and Robert Ernest Wallis. Grand Rapids, MI: William B. Eerdmans, 1887.

Avicenna. *A Treatise on the Canon of Medicine of Avicenna*. Translated by Oskar Cameron Gruner, vol. 1. New York: AMS Press, 1930.

Bacon, Francis. *History Naturall and Experimentall, of Life and Death, or, Of the Prolongation of Life*. In *The Works of Francis Bacon, Lord Chancellor of England*. Edited by Basil Montagu. Vol. 3. Philadelphia, PA, 1842.

Bailly, Pierre. *Questions naturelles et curieuses*. Paris, 1628.

Bairo, Pietro. *Secreti medicinali di m. Pietro Bairo da Turino, già medico di Carlo secondo duca di Savoia*. Venice: Francesco Sansovino, 1561.

Barbatium, Johannes. *Barbae Maiestas hoc est De Barbis*. Frankfurt, 1614.

Barles, Louis. *Les Nouvelles découvertes sur les organes des femmes*. Lyon, 1680.

Baron, Hyacinthe Théodore. *Quaestionum medicarum quae circa medicinae theoriam et praxim*. Paris, 1752.

Barrough, Philip. *The methode of phisicke*. London, 1583.

- Bartholin the Younger, Caspar. *De ovaris mulierum et generationis historia*. Rome, 1677.
- Bartholin, Thomas. *Bartholinus Anatomy: Made from the Precepts of His Father*. London, 1668.
- Bavarius, Johannes de Bavariis (Johannes Baverii de Imola). *Consilia Baverii*. Pavia, 1521.
- Bayle, Pierre. *Dictionnaire historique et critique de Pierre Bayle*. 2nd ed. Vol. 11. Paris, 1820.
- B.E. *A new dictionary of the terms ancient and modern of the canting crew*. 1st ed. London, 1699.
- Beauvais, Vincent de. *Speculi maioris Vincentii Burgundi praesulis Beluacensis*, vol. 4. Venice, 1591.
- Benedetti, Alessandro. *Anatomice sive historia corporis humani libri V*. Venice, 1498.
- Benoît, René. *Traité enseignant en bref les causes des maléfices, sortilèges & anchanteries*. Paris: J. Poupy, 1579.
- Bernard de Gordon (Gordonius). *Practica seu Lilium medicinae*. Lyon, 1491.
- Bernier, François. *Abregé de la philosophie de Gassendi*, vol. 3. 3rd ed. Lyon, 1684.
- Blégny, Nicolas de. *La doctrine des rapports de chirurgie fondée sur les maximes d'usage et sur la disposition des nouvelles ordonnances*. Lyon, 1684.
- Boaistuau, Pierre. *Bref discours de l'excellence et dignité de l'homme*. Paris, 1559.
- Bodin, Jean. *De la démonomanie des sorciers*. Paris, 1580.
- Boerhaave, Herman. *A Treatise on the Venereal Disease and its Cure*. London, 1729.
- Boguet, Henri. *Discours exécitable des sorciers: ensemble leur procez*. Rouen, 1606.
- Boileau, Nicolas. *Oeuvres de Boileau-Despréaux*. Vol. 1. Paris: J.J. Blaise, 1821.
- Bonet, Théophile. *Mercurius compitalitus: or, A guide to the practical physician shewing, from the most approved authors, both ancient and modern, the truest and safest way of curing all diseases, internal and external*. London, 1686.
- Boorde, Andrew. *The breviarie of health wherin doth folow, remedies, for all maner of sicknesses & diseases, the which may be in man or woman*. London, 1587.
- Border, Daniel. *Polypharmakos kai chymistes, or, The English unparalell'd physitian and chyrurgian*. London, 1651.

Borelli, Giovanni Alfonso. *On the Movements of Animals*. Translated by Paul Maquet. New York: Springer-Verlag, 1989.

Bottoni, Alberto. *De Morbis muliebribus Liber*. In *Gynaeciorum sive de mulierum*, edited by Israel Spach, 338-393. Strasbourg: Lazar Zetzner, 1597.

Bouchet, Guillaume. *Les Serées*. Poitou, 1584.

Bouhier, Jean. *Traité des moyens qui sont en usage en France pour la preuve de l'impuissance de l'homme et quelques pièces curieuses sur le même sujet*. Luxembourg: Van der Kragt, 1735.

Bourgeois Boursier, Louise. *Observations diverses*. Paris, 1609.

Brantôme, Pierre de. *Oeuvres completes*. Edited by Ludovic Lalanne. Vol. 8. Paris: Renouard, 1875.

Bretonnayau, René. *La Generation de l'homme et le Temple de l'âme*. Paris, 1583.

Broomhall, Thomas. *An history of apparitions, oracles, prophecies, and predictions with dreams, visions, and revelations and the cunning delusions of the devil*. London, 1658.

Bulwer, John. *Anthropometamorphosis: man transform'd: or, The artificiall changling*. London, 1653.

Burton, Robert. *Anatomy of Melancholy*. Oxford, 1638.

Cabrol, Barthélémy. “Epistre repulsive.” In Laurent Joubert, *Segonde partie des Erreurs populaires*. Paris: Lucas Breyer, 1579.

Calvin, Jean. *Institution de la religion chrestienne*. Geneva, 1561.

Castiglione, Baldassare. *Les quatre livres du Courtisan*. Lyon, 1585.

Castro, Rodrigo de. *De universa mulierum medicina*. Hamburg, 1603.

Chamberlayne, Thomas (attributed). *The Compleat Midwifes Practice*. London, 1656.

Champier, Symphorien. *La nef des dames vertueuses*. Lyon: Jacques Arnollet, 1503.

Champier, Symphorien. *Periarchon*. Lyon, 1533.

Champier, Symphorien. *Practica nova*. Lyon, 1517.

Charleton, Walter. *Exercitationes physico-anatomicae de oeconomia animalii*. Amsterdam, 1659.

Charron, Pierre. *De la Sagesse*. Paris, 1604.

Chasles, Hugo. *An congressus publicus virilitatis virginitatisque examen ?* Paris, 1636.

Chasles, Hugo. *Quaestio medica, quodlibetariis disputationibus mane discutienda in scholis medicorum, die Jovis, XVII. decembris, M. Pet. de Beaureains doctore medico, moderatore.* Paris, 1647.

Chauliac, Guy de. *Inventarium sive chirurgia magna.* Edited by M.R. McVaugh, vol. 1. New York: E.J. Brill, 1997.

Chauliac, Guy de. *La grande chirurgie de M. Gui de Chauliac.* Translated and edited by Laurent Joubert. Lyon, 1580.

Cheyne, George. *The Natural Method of Cureing the Diseases of the Body and the Disorders of the Mind.* London, 1742.

Chrysostome, John. *On Virginity.* Translated by Sally Rieger Shore. Lewiston, NY: E. Mellen Press, 1983.

Clark, Timothy. "The Vasa Deferentia." *The Philosophical Transactions of the Royal Society of London, to the End of the Year 1700*, vol. 3. 2nd ed. Edited by John Lowthorp. London, 1716.

Cogan, Thomas. *The Haven of Health.* London, 1636.

Condronchi, Giovanni Battista. *De morbis veneficis ac veneficiis, libri quattuor.* Venice, 1595.

Constantine the African. *De Coitu.* In *Medieval Medicine: A Reader*, edited by Faith Wallis, 511-23. Toronto: University of Toronto Press, 2010.

Constantine the African. *Omnia opera Ysaac.* Lyon, 1515.

Constantine the African. *Constantini Africani Opera.* Basel: Henricus Petrus, 1536.

Conticelli, Giovanni Angelo. *Practica rationalis de medendis morbis per causas & signa.* Rome, 1590.

Cooper, Thomas. *The mystery of witch-craft.* London, 1617.

Corbeius, Theodorus. *Pathologia, sive, Morborum et affectuum omnium præter naturam.* Nuremberg, 1647.

Cortese, Isabella. *I secreti della S. Isabella Cortese.* Venice, 1561.

Cotgrave, Randle. *A Dictionarie of the French and English Tongues.* London, 1611.

Courtin, Germain. *Leçons anatomiques et chirurgicales de feu m.e Germain Courtin.* Edited by Estienne Binet. Paris, 1612.

Cowper, William. "An Account of Two Glands and their Excretory Ducts Lately Discovered in Human Bodies." In *The Philosophical Transactions of the Royal Society of London, From Their Commencement, in 1665 to the Year 1800*, vol. 4. Edited by Charles Hutton, George Shaw, and Richard Pearson, 445-7. London, 1809.

Cremonini, Cesare. *De calido innato et semine*. Lyon, 1634.

Crespet, Pierre. *Deux livres de la hayne de Sathan*. Paris: Guillaume de la Noüe, 1590.

Crooke, Helkiah. *Mikrokosmographia: A Description of the Body of Man*. London, 1615.

Culpeper, Nicholas. *A Directory for Midwives: or, A guide for women*. Vol. 1. London: George Sawbridge, 1675.

Da Carpi, Jacopo Berengario. *Anatomia Carpi, Isagoge breves*. Bologna, 1523.

D'Amerval, Nicolas. "Testament de Nicolas d'Amerval, décembre 1594." *Bulletin de la Société Académique de Laon* 19. Paris, 1872.

D'Argis, Antoine Gaspard-Boucher. "Frigidité." In *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, etc.*, edited by Denis Diderot and Jean Le Rond d'Alembert. Vol. 7. Paris, 1757.

D'Argis, Antoine Gaspard-Boucher. "Impuissance." In *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, etc.*, edited by Denis Diderot and Jean Le Rond d'Alembert. Vol. 8. Paris, 1765.

D'Argis, Antoine-Gaspard Boucher. *Principes sur la nullité du mariage, pour cause d'impuissance. Par M avocat en Parlement, avec le traité de M. le président Bouhier, sur les procédures...* London, 1756.

Decombes, Pierre. *Recueil tiré des procédures criminelles faites par plusieurs officiaux, et autres juges du royaume*. Paris: Nicolas Le Gras, 1700.

De Graaf, Regnier. *De virorum organis generationi inservientibus, de clysteribus et de usu siphonis in anatomia*. In *Regnier de Graaf on the Human Reproductive Organs: An Annotated Translation of Tractatus de virorum organis generationi inservientibus (1668) and De mulierum organis*

generationi inservientibus tractatus novus (1672). Translated by H.D. Jocelyn and B.P. Setchell.

Oxford: Blackwell Scientific Publications, 1972.

De Graaf, Regnier. *De mulierum organis generationi inservientibus*. In *Regnier de Graaf on the Human Reproductive Organs: An Annotated Translation of Tractatus de virorum organis generationi inservientibus* (1668) and *De mulierum organis generationi inservientibus tractatus novus* (1672). Translated by H.D. Jocelyn and B.P. Setchell. Oxford: Blackwell Scientific Publications, 1972.

De Lancré, Pierre. *Incrédulité et mécréance du sortilège*. Paris, 1622.

De Lancré, Pierre. *Tableau de l'inconstance des mauvais anges et demons*. Paris, 1612.

De la Roche, Daniel. *Encyclopédie méthodique. Chirurgie*, vol. 1. Paris, 1740.

De la Roche, Nicolas. *De morbis mulierum curandis*. Paris, 1542.

De Monte Verd, Raoul. *Se[n]uit les fleurs et secrets de medecine*. Paris, 1531.

De Serres, Louis. *Discours de la Nature, Causes, Signes, et Curation des Empechemens de la conception & de la sterilité des femmes*. Lyon: Antoine Chard, 1625.

Della Porta, Giambattista. *De humana physiognomia Libri IV*. Frankfurt, 1608.

Del Rio, Martin. *Disquisitionum magicarum libri sex*. Mainz, 1603.

Descartes, René. *The Method, Meditations and Philosophy*. Translated by John Veitch. London, 1901.

Diderot, Denis, ed. *Encyclopédie*, vol. 21. Paris, 1777.

Dodoens, Rembert. *A Nieuwe Herball, Or Historie of Plantes*. Translated by Henry Lyte. London, 1578.

Donne, John. *The Sermons of John Donne*. Edited by George R. Potter and Evelyn M. Simpson. 7 vols.

Berkeley and Los Angeles: University of California Press, 1959.

Drage, William. *Daimonomageia a small treatise of sicknesses and diseases from witchcraft, and supernatural causes*. London, 1665.

Dubois, Jacques (Jacobus Sylvius). *De mensibus mulierum et hominis generatione*. Paris, 1555. Reprinted in *Gynaeciorum sive de mulierum*, edited by Israel Spach, 148-65. Strasbourg: Lazar Zetzner, 1597.

Du Laurens, André. *Toutes les oeuvres de M. André Du Laurens*. Translated by Theophile Gelée. Paris, 1621.

Duval, Jacques. *Traité des hermaphrodits*. Rouen: David Geuffroy, 1612.

Elyot, Thomas. *The Castel of Helthe*. London, 1536.

Estienne, Charles. *De dissectione partium corporis humani*. Paris, 1545.

Estienne, Charles. *L'agriculture et maison rustique*. Rouen, 1579.

Estienne, Charles. *Maison Rustique, Or The Countrie Farme*. Translated by Richard Surflet. London, 1600.

Etmüller, Michael. *Etmullerus abridg'd*. London, 1699.

Falck, Nikolai Detlef. *A Treatise on the Venereal Disease*. London, 1772.

Falcucci, Niccolò. *Sermo sextus de membris generationis*. Venice, 1491.

Falloppio, Gabriel. *Observationes anatomicae*. Venice, 1562.

Fernel, Jean. *Jean Fernel's On the Hidden Causes of Things*. Edited and translated by John M. Forrester. London: Brill, 2005.

Fernel, Jean. *The Physiologia of Jean Fernel (1567)*. Translated by John M. Forrester. Philadelphia: American Philosophical Society, 2003.

Fernel, Jean. *Universa medicina*. Paris, 1567.

Ferrand, Jacques. *De la maladie d'amour, ou Melancholie erotique*. Toulouse, 1623.

Fevret, Charles. *Traité de l'abus et du vray sujet des appellations qualifiées de ce nom d'abus*. Dijon: Palliot, 1653.

Fidele, Fortunato. *De relationibus medicorum libri quatuor*. Palermo, 1602.

Floyer, John. *Psycholusia Or, the History of Cold-Bathing, Both Ancient and Modern*. London, 1732.

Fludd, Robert. *Utriusque cosmi maioris*. 2 vols. Oppenheim, 1617.

Fonteyn, Nicholas. *The Womans Doctour*. London, 1652

Fromageot, Jean-Baptiste. *Consultation pour M. l'Abbé de ***, vice-gérent dans l'officialité de ***, sur le “Traité de la dissolution du mariage pour cause d'impuissance,” imprimé à Luxembourg en 1735.* Dijon, 1739.

Fuchs, Leonhart. *De historia stirpium.* Basel, 1542.

Funcke, Christoph. *Theses de sterilitate muliebri.* Paris, 1615.

Furetière, Antoine. *Dictionnaire universel.* La Haye, 1690.

Gaddesden, John of. *Rosa medicinae, ca. 1400-1499.* Ms. 261. Parker Library Manuscripts, Corpus Christi College, Cambridge.

Galen. *De usu partium corporis humani.* In *Oeuvres anatomiques, physiologiques et médicales de Galien*, edited and translated by Charles Victor Daremberg, vol. 2. Paris: J. B. Baillière, 1854-1856.

Galen. *De usu partium.* Edited and translated by Niccolo da Reggio. Paris, 1528.

Galen. *Galeni opera omnia VIII.* Basel, 1542.

Galen. *Galen on the Affected Parts: Translation from the Greek Text with Explanatory Notes.* Translated by Rudolph E. Siegel. New York: Karger, 1976.

Galen. *On Semen [De semine].* Edited and translated by Phillip de Lacy. Berlin: Akademie Verlag, 1992.

Gendry, René. *Les moyens de bien rapporter à Justice les indispositions et changemens qui arrivent à la santé des hommes.* Paris, 1650.

Geminus, Thomas (Thomas Lambert). *Compendiosa totius anatomiae delineatio.* London, 1545.

Gibson, Thomas. *The Anatomy of Humane Bodies.* London, 1694.

Gilbert of England (Gilbertus Anglicus). *Compendium Medicinae.* Lyon, 1510.

Glisson, Francis. *Anatomia hepatis.* Amsterdam, 1665.

Gratian. *Decretum Magistri Gratiani.* In *Corpus Iuris Canonici*, edited by Emil Freiberg. Vol. 1. Leipzig: Akademische Druck-u. Verlagsanstalt, 1959.

Gregory IX. “*De frigidis et maleficiatis, et impotentia coeundi.*” In *Liber extravagantium decretalium*, edited by Emil Friedberg, liber IV, titulus XV. In *Corpus Iuris Canonici*, vol. 2. Leipzig: Bernhard Tauchnitz, 1881.

- Grillandus, Pauli. *Tractatus de hereticis et sortilegiis*. Lyon: Jacques Giunta, 1536.
- Guaineri, Antonio. *Practica*. Lyon, 1525.
- Guglielmo da Saliceto (Guilielmus). *Summa conservationis et curationis*. Venice, 1502.
- Guillemeau, Jacques. *Les Oeuvres de chirurgie de Jacques Guillemeau*. Paris, 1598.
- Harvey, William. *An Anatomical Disquisition on the Motion of the Heart and Blood in Animals (De motu cordis)*. In *The Works of William Harvey*. Translated by Robert Willis. Philadelphia, PA: University of Pennsylvania Press, 1989.
- Harvey, William. *Anatomical Exercises on the Generation of Animals (Exercitationes de generatione animalium)*. In *The Works of William Harvey* Translated by Robert Willis, 145-573. Philadelphia, PA: University of Pennsylvania Press, 1989.
- Hecquet, Philippe. *Question de Médecine: S'il est des signes qui assurent de la puissance des hommes, autant que le sont ceux qui répondent de la sagesse des filles?* Paris, 1713.
- Hesiod. *Theogony*. Edited and translated by Glenn W. Most. LCL 57. Cambridge, MA: Harvard University Press, 2018.
- Hesnard, Louis (attributed). *Traite de l'enchantement qu'on appelle vulgairement le nouement de l'esguillette, en la celebration des mariages en l'Eglise reformee & des remedes a L'encontre pour le soulagement des fideles*. La Rochelle, 1591.
- Hester, John. *The pearle of practise, or Practisers pearle, for phisicke and chirurgerie*. London, 1594.
- Highmore, Nathaniel. *Corporis Humani Disquisitio Anatomica*. The Hague, 1651.
- Hildegard of Bingen. *Scivias*. Translated by Mother Columba Hart and Jane Bishop. New York: Paulist Press, 1990.
- Hippocrates. *De genitura liber*. In *The Hippocratic Treatises*, translated by Iain M. Lonie. New York: De Gruyter, 1981.
- Hippocrates. *Diseases of Women*, In *Oeuvres Complètes d'Hippocrate*, translated by Émile Littré, vol. 8. Paris: J.B. Baillière, 1853.

Hippocrates. *Nature of Man*. Translated by W.H.S. Jones. Cambridge, MA: Harvard University Press, 1957.

Hippocrates. *On Airs, Waters, Places*. Translated by Émile Littré and Francis Adams. London: Wyman and Sons, 1881.

Hispanus, Petrus. *Thesaurus Pauperum*. Florence, 1497.

Holywood, John of (Johannes de Sacrobosco). *De sphaera mundi*. Ferrara, 1485.

Hotman, Antoine. *Traité de la dissolution du mariage par l'impuissance et froideur de l'homme ou de la femme*. Paris: Pepingue, 1581.

Huarte de San Juan, Juan. *Examen de ingenios para las sciencias*. Baeça, 1594.

Huarte de San Juan, Juan. *The examination of mens vvits*. London, 1594.

Hucher, Jean. *De Sterilitate utriusque Sexus opus*. Geneva, 1609.

Imbert, Jean-Henri. “Question de Medecine qui doit se résoudre dans les Ecoles de Medecines Jeudi matin 17. Du mois de Novembre de l’année 1712.” In *Recueil General, Des Pieces Contenues Au Procez De Monsieur le Marquis de Gesvres*, vol. 1. Rotterdam, 1714.

Innocent VIII. *Summis desiderantes affectibus* (1484). In *Witchcraft in Europe, 400-1700: A Documentary History*, edited by Alan Charles Kors and Edward Peters. 2nd ed. Philadelphia: University of Pennsylvania Press, 2001.

Isidore of Seville. “Isidore of Seville: The Medical Writings.” Translated and edited by William D. Sharpe. *Transactions of the American Philosophical Society* 54, pt. 2 (1964): 1-75.

Jacquier, Nicolas. *Flagellum haereticorum fascinariorum*. Frankfurt, 1581.

Jewell, Richard. *Good Huswives Jewell*. London, 1587.

Joubert, Laurent. *Erreurs populaires au fait de la médecine et régime de santé*. Paris, 1578.

Johannes de Ketham. *Fasciculus medicinae*. Venice, 1522.

Johannes de Tornamira. *Clarificatorium super nono Almansorio*. Lyon, 1490.

Junius, Hadrianus. *Emblemata*. Antwerp, 1565.

Kassell, Lauren, et al., eds. *The casebooks of Simon Forman and Richard Napier, 1596–1634: A Digital Edition*. Retrieved from <https://casebooks.lib.cam.ac.uk/cases>

Kramer, Heinrich. *Malleus Maleficarum*. Translated by Christopher S. Mackay. Cambridge: Cambridge University Press, 2009.

Kruschius, Johannes. *De impotentia virili*. Erfurt, 1607.

Laertius, Diogenes. *Diogenes Laertius: Lives of the Eminent Philosophers*. 2 vols. Edited and translated by R. D. Hicks. LCL 185. Cambridge, MA: Harvard University Press, 1925.

Laguna, Andrés a. *Anatomical Procedure, or a Survey of the Dissection of the Human Body (1535)*. In *Studies in Pre-Vesalian Anatomy: Biography, Translations, Documents*, edited and translated by L.R. Lind, 263-96. Philadelphia: The American Philosophical Society, 1975.

Lamoignon, Chrétien-François de. *Plaidoyé sur le congrès*. Paris, 1680.

La Perrière, Guillaume. *Le miroir politique, contenant diverses manières de gouverner & policer les républiques qui sont & ont été par cy devant*. Paris, 1567.

Leclerc, comte de Buffon, Georges Louis. *Chefs-d'œuvre littéraires de Buffon*, vol. 2. Paris: Garnier Frères, 1864.

Lignac, Louis François Luc de. *De l'homme et de la femme, considérés physiquement dans l'état du mariage*. Lille, 1772.

Lignac, Louis François Luc de. *A Physical View of Man and Woman in a State of Marriage*. Vol. 1. London, 1798.

Leeuwenhoek, Antoni van. “De natis e semine genitali animalculis.” *Philosophical Transactions of the Royal Society of London* 12, no. 142 (1677-8): 1040-46.

Leeuwenhoek, Antoni van. “An Abstract of a Letter of Mr. Leeuwenhoeck Fellow of the R. Society, dated March 30th 1685. To the R.S. Concerning Generation by an Insect.” *Philosophical Transactions* 15 (1686): 1120.

Leeuwenhoek, Antoni van. *The Collected Letters of Antoni van Leeuwenhoek*. Amsterdam: Swets & Zeitlinger, 1939.

- Lemnius, Levinus. *De habitu et constitutione corporis*. Antwerp, 1561.
- Lemnius, Levinus. *Occulta Naturae Miracula*. Antwerp, 1559.
- Lemnius, Levinus. *The Touchstone of Complexions*. Translated by Thomas Newton. London, 1576.
- Le Pois, Antoine. *Discovrs svr les medalles et gravevres antiques, principalement romaines*. Paris, 1579.
- Le Riche, Michel. *Journal de Guillaume et de Michel le Riche, avocats du roi à Saint-Maixent, (de 1534 à 1586)*. Edited by A. D. de la Fontenelle de Mandoré. Saint-Maixent, 1846.
- Levens, Peter. *A right profitable booke for all diseases. Called The path-way to health*. London, 1587.
- Liddel, Duncan. *Ars medica, succincte et perspicue explicate*. Hamburg, 1608.
- Liébault, Jean. *Trésor des remèdes secrets pour les maladies des femmes*. Paris, 1585.
- Lombard, Peter. *Sentences in IV libris distinctae*. Edited by Ignatius Brady. 3rd ed. vol. 2. Grottaferrata: Editiones Collegii S. Bonaventurae ad Claras Aquas, 1981.
- Lonitzer, Adam. *Omnium corporis humani affectuum explicatio methodica*. Frankfurt, 1594.
- Louis, Antoine. *Mémoire à consulter [Sur l'impuissance du mari de la plaignante]*. Paris, 1772.
- Lull, Raymond (Reymundus Lullus). *Practica compendiosa artis*. Lyon, 1523.
- Magnus, Albertus. *Questions Concerning Aristotle's On Animals*. Translated by Irven M. Resnick and Kenneth F. Kitchell, Jr. Washington, D.C.: Catholic University of America Press, 2008.
- Mamoris, Pierre (Petrus). *Flagellum maleficorum*. Toulouse, 1486.
- Manfredi, Girolamo. *Opera intitulata il Perche alla conservatione della Sanità*. Venice, 1553.
- Marinella, Lucrezia. *La nobiltà et l'eccellenza delle donne*. Venice, 1601.
- Marinello, Giovanni. *Le medicine partenenti alle infermità delle donne*. Venice, 1574.
- Marten, John. *A Treatise of the Venereal Disease*. London, 1711.
- Massaria, Alessandro. *Praelectiones de morbis mulierum*. Leipzig, 1600.
- Massaria, Alessandro. *De Morbis Fæmineis, the Womans Counsellour: Or, the Feminine Physitian*. London, 1657.
- Mattioli, Pietro. *Commentarii denuo aucti in libros sex Pedacii Dioscoridis Anazarbei de medica materia*. Lyon, 1563.

Mercado, Luis de (Ludovicus Mercato). *De affectionibus mulierum*, vol. 4. Cordoba, 1579. Reprinted in *Gynaeciorum sive de mulierum*, edited by Israel Spach, 803-1079. Strasbourg: Lazar Zetzner, 1597.

Mercuriale, Girolamo (Hieronymous Mercurialis). *De morbis muliebribus*. In *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerperarum affectibus*, edited by Israel Spach, 209-302. Strasbourg: Lazarus Zetzner, 1597.

Mesue, Johannes. *Mesue et omnia quae cum eo imprimi consueuerunt*. Venice, 1549.

Molitor, Ulrich. *De lamiis et pythonicis mulieribus*. Strasbourg, 1489.

Mondino de' Liuzzi (Mundinus). *Anatomia Mundini*. Edited by Johann Dryander. Marburg, 1541.

Montaigne, Michel de. *Essais de messire Michel de Montaigne*. Paris, 1595.

Montagna, Bartholomeus de. *Consilia medica*. Venice, 1525.

Montana de Monserrate, Bernadino. *Libro de la Anothomia del hobre*. Valladolid, 1551.

Montani, Johannes Baptista. *De Affectibus uterinis libellus: cum eiusdem X. Consiliis Muliebribus*. In *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerperarum affectibus*, edited by Israel Spach, 303-329. Strasbourg: Lazarus Zetzner, 1597.

Morieri, Louis. *The great historical, geographical, and poetical dictionary*. London, 1694.

Mousin, Jean. *Discours de l'yuresse*. Toulouse, 1612.

Nider, Johannes. *Formicarius*. Strasbourg, 1516.

Palfin, Jean. *Anatomie du corps humain*. Paris, 1726.

Paré, Ambroise. *De la generation de l'homme*. Paris, 1573.

Paré, Ambroise. *De hominis generatione*. In *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerperarum affectibus*, edited by Israel Spach, 403-41. Strasbourg: Lazarus Zetzner, 1597.

Paré, Ambroise. *Les Oeuvres d'Ambroise Paré*, 9th ed. Paris, 1633.

Partibus, Jacobus de. *Commentary on Avicenna's Liber Canonis*. Lyon, 1498.

Patin, Guy. "Impuissance et frigidité masculines." In *Correspondance complète et autres écrits de Guy Patin*. Edited by Loïc Capron. Paris: BIU, 2018.

Peacham, Henry. *Minerva Britanna, or a Garden of Heroical Devises*. London, 1612.

Pechey, John. *The compleat midwife's practice enlarged*. London, 1698.

Péléus, Julien. *Quaestio singularis de solutione matrimonii ob defectum testium apparentium in Senatu tractata et iudicata*. Paris, 1602.

Pemell, Robert. *Tractatus de simplicum medicamentorum facultatibus*. London, 1652.

Philatros. *Natura exenterata: or Nature unbowelled by the most exquisite anatomizers of her*. London, 1655.

Piccolomini, Alessandro. *La sfera del mondo*. Venice, 1579.

Pigray, Pierre. *Epitome des préceptes de médecine et chirurgie*. Rouen, 1625.

Pierre de la Palud. *Scriptum in librum quartum sententiarum*. Venice, 1493.

Platina, Bartolomeo. *De honesta voluptate et valetudine*. Venice, 1480.

Plato. *Timaeus. Critias. Cleitophon. Menexenus. Epistles*. Translated by R. G. Bury. LCL 234.

Cambridge, MA: Harvard University Press, 1929.

Platter, Felix. *A Golden Practice of Physick*. London: Peter Cole, 1662.

Platter, Felix. *Observationes in hominis affectibus plerisque, libri tres*. Basel, 1614.

Platter, Felix. *Ordinarii praxeos medicae tomi tres*. Basel: Johannes Schroeteri, 1625.

Platter, Felix. *Quaestionum medicarum paradoxarum et endoxarum*. Basel, 1625.

Platter, Thomas the Younger. *Journal of a Younger Brother: The Life of Thomas Platter, as a Medical Student in Montpellier at the Close of the Sixteenth Century*. Translated by Seán Jennett. London: Frederick Muller, 1963.

Pliny the Elder (Plinius Major). *Historia naturalis*. Venice, 1469.

Pliny the Elder (Plinius Major). *Natural History*. Edited and translated by H. Rackham, D. E. Eichholz, and W. H. S. Jones, vol. 7. Cambridge, MA: Harvard University Press, 1938-63.

Pomponazzi, Pietro. *De naturalium effectuum causis sive de incantationibus*. Basel, 1567.

- Plutarch. *Les Oeuvres Morales & meslees de Plutarque*. Translated by Jacques Amyot. Paris, 1575.
- Prévost, Nicole. *Prepositas his practise a vvorce very necessary to be vsed for the better preseruation of the health of man*. London, 1588.
- Primer, Irwin, ed. *Bernard Mandeville's "A Modest Defense of Public Stews": Prostitution and its Discontents in Early Georgian England*. New York: Palgrave Macmillan, 2006.
- Primaudaye, Pierre de la. *Suite de l'académie françoise en laquelle est traité de l'homme*. Basel, 1587.
- Priscianus, Theodorus. *Rerum Medicarum Libri Quatuor*. In *Medici antiqui omnes*. Venice: Aldo Manuzio, 1547.
- Pseudo-Albertus Magnus. *Women's Secrets: A Translation of Pseudo-Albertus Magnus' De Secretis Mulierum with Commentaries*. Translated by Helen Rodnite Lemay. New York: State University of New York Press, 1992.
- Pseudo-Aristotle. *Aristotle's Last Legacy*. London, 1769.
- Pseudo-Aristotle. *Aristotele's Master-Piece, Or the Secrets of Generation displayed in all the parts thereof*. London, 1648.
- Pseudo-Aristotle. *Aristotle's New Book of Problems*. London, 1725.
- Pseudo-Aristotle. *The problemes of Aristotle with other philosophers and phisitions*. Edinburgh, 1595.
- Pseudo-Arnaldus de Villa Nova. *Trésor des povres qui parle des maladies qui peuvent venir au corps humain*. Paris, 1512.
- Pseudo-Arnaldus de Villa Nova. “*Tractatus de sterilitate*.” Edited and translated by Enrique Montero Cartelle. Valladolid: Universidad de Valladolid, 1993.
- Pseudo-Galen. *De Spermate*. In *Medieval Embryology in the Vernacular: The Case of De spermate*. Edited by Päivi Pahta. Helsinki: Société Néophilologique, 1998.
- Purchas, Samuel. *Microcosmus, or the historie of Man*. London, 1627.
- Rabelais, François. *Gargantua*. Lyon: François Justel, 1534.
- Rabelais, François. *Tiers livre des faictz et dictz heroïques du noble Pantagruel*. Paris, 1546.

Reisch, Gregor. *Natural Philosophy Epitomised: Books 8-11 of Gregor Reisch's Philosophical Pearl (1503)*. Translated and edited by Andrew Cunningham and Sachiko Kusukawa. Aldershot: Ashgate, 2010.

Riolan the Younger, Jean. *Manuel anatomique et pathologique*. Translated by François Sauvin. Paris: Gaspar Meturas, 1661.

Riolan the Younger, Jean. *Les Oeuvres anatomiques de M. Jean Riolan*. Vol. 2. Translated by Pierre Constant. Paris: Denys Moreau, 1628.

Ripa, Cesare. *Nova iconologia*. Padua, 1618.

Rivière, Lazare. *Praxis medicae*. Goudae, 1649.

Robert, Anne. *Quatre Livres des arrests et choses jugées par la cour*. Paris: Michel Soly, 1627.

Roche, Nicholas de la. *De morbis mulierum curandis*. Paris, 1542. Reprinted in *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerarum affectibus*, edited by Israel Spach, 61-108. Strasbourg: Lazarus Zetzner, 1597.

Rondelet, Guillaume. *Methodus curandorum omnium morborum corporis humani*. Paris, 1573.

Rösslin, Eucharius. *The Byrth of Mankynd*. Translated by Thomas Raynalde. London, 1545.

Rösslin, Eucharius. *Der schwanngeren Frawen und Hebammen Rosengarte*. Augsburg: Heinrich Steiner, 1529.

Rouillard, Sébastien. *Capitulaire auquel est traicté qu'un homme nay sans testicules apparens & qui ha neantmoins toutes les autres marques de virilité: est capable des oeuvres du Mariage*. Paris: François Jacovin, 1600.

Roulliard, Sébastien. *Les reliefs forenses*. 2nd ed. Vol. 2. Paris, 1610.

Rueff, Jacob. *De conceptu et generatione hominis*. Zurich, 1554. Reprinted in *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerarum affectibus*, edited by Israel Spach, 166-208. Strasbourg: Lazarus Zetzner, 1597.

Rueff, Jacob. *The Expert Midwife*. London, 1637.

Ruel, Jean. *Dioscorides Materia Medica*. Paris, 1516.

- Sadler, John. *The Sicke Woman's Private Looking-Glasse*. London, 1636.
- Salvatico, Benedetto di. *Consiliorum et responsorum medicinalium centuriae quatuor*. Geneva, 1662.
- Sánchez, Tomas. *Disputationem de sancto matrimonii sacramento*. Antwerp: M. Nutieux, 1607.
- Sánchez, Tomas. *Disputationum de sancto matrimonii sacramento*. Vol. 2. Antwerp: M. Nutii, 1620.
- Savonarola, Giovanni Michel. *Practica maior Ioannis Michaelis Sauonarolae*. Venice, 1547.
- Scève, Maurice. *Microcosme*. Edited by Enzo Guidici. Paris, 1976.
- Schenck von Grafenberg, Johannes (Johannes Schenckius). *Observationum medicarum rariorum, libri VII*. Frankfurt, 1643.
- Schurig, Martin. *Spermatologia historico-medica, h. e. seminis humani consideratio physico-medico-legalis*. Frankfurt, 1720.
- Scot, Reginald. *The Discoverie of Witchcraft*. Edited by Montague Summers. New York: Dover, 1972.
- Sennert, Daniel. *Practica medicina*. Wittenberg, 1635.
- Sennert, Daniel. *Practical Physick; The Fourth Book*. London: Peter Cole, 1664.
- Sennert, Daniel. *The sixth book of Practical physick of occult or hidden disease*. London: Peter Cole, 1662.
- Shakespeare, William. *The Second Part of Henry the Fourth*. In *Mr. William Shakespeares comedies, histories, & tragedies: published according to the true originall copies*. London, 1623.
- Sharp, Jane. *The Midwives Book, Or the Whole Art of Midwifry Discovered*. Edited by Elaine Hobby. New York: Oxford University Press, 1999.
- Sixtus V. *Cum frequenter*, June 27, 1587. In *Codicis iuris canonici fontes*, edited by Pietro Gasparri. Vol. 1, no. 169. Rome: Typis Polyglottis Vaticanis, 1926.
- Smythe, Sir John. *A Certain Discourse of Weapons*. London, 1590.
- Spach, Israel, ed. *Gynaeciorum sive de mulierum tum communibus, tum gravidarum, parientium, et puerarum affectibus et morbis*. Strasbourg: Lazar Zetzner, 1597.
- Stuart, James (King James I of England). *Daemonologie, in forme of a dialogue*. Edinburgh: Robert Waldegrave, 1597.

- Tabourot, Étienne. *Les Bigarrures du seigneur Des Accords, quatrième livre*. Paris, 1585.
- Tagereau, Vincent. *Discours sur l'impuissance de l'homme et de la femme*. Paris : A. Du Brueil, 1611.
- Tauvry, Daniel. *Anatomia rationalis*. Ulm, 1694.
- Thiers, Jean-Baptiste. *Superstitions anciennes et modernes*, vol. 2. Amsterdam: Jean Frederic Bernard, 1736.
- Thurneisser zum Thurn, Leonhart. *Quinta Essentia*. Leipzig, 1574.
- Tissot, Samuel-Auguste-André-David. *L'Onanisme: dissertation physique et morale*. Paris, 1760.
- Tornamira, Johannes de. *Clarificatorium super nono Almansorio*. Lyon, 1490.
- Trotula of Salerno (attributed). *Trotulae curandarum aegritudinum muliebrium*. In *Medici Antiqui Omnes*. Venice: Aldo Manuzio, 1547.
- Trotula of Salerno (attributed). *The Trotula: A Medieval Compendium of Women's Medicine*, edited and translated by Monica Green. Philadelphia : University of Pennsylvania Press, 2001.
- Ulmus, Marcus. *Physiologia Barbae Humanae*. Bologna, 1603.
- Valverde de Amusco, Juan. *Historia de la composición del cuerpo humano*. Rome, 1556.
- Van Beverwijck, Johannes. *Schat der gesontheydt (Treasure of Health)*. Dordrecht, 1640.
- Van den Spiegel, Adriaan (Adrianus Spigelius) and Giulio Casseri. *De humani corporis fabrica, libri decem*. Frankfurt, 1632.
- Van de Passe, Crispijn. *Les abus du marriage*. Amsterdam, 1641.
- Van Diemberbroeck, Isbrand. *The Anatomy of Human Bodies*. London, 1689.
- Van Eynatten, Maximillian. *Manualis Exorcismorum*. Antwerp, 1648.
- Van Haecht, Laurentius (Laurentius Haechtanus) and Gérard de Jode. *Mikrokosmos. Parvus Mundus*. Antwerp, 1579.
- Varolio, Constanzo. *Anatomiae sive de resolutione corporis humani libri III*. Frankfurt, 1591.
- Vaughan, William. *Directions for health, naturall and artificiall: derived from the best physicians, as well as moderne as antient*. London, 1626.
- Vicary, Thomas. *Anatomie of the Body of Man*. London, 1577.

- Vignati, Ambrogio. *Elegans ac vtilis tractatus de haeresi*. Rome, 1581.
- Vincent de Beauvais. *Speculi maioris Vincentii Burgundi praesulis Beluacensis*. Vol. 4. Venice, 1591.
- Virgil. *Eclogues. Georgics. Aeneid: Books 1-6*. Translated by H. Rushton Fairclough. Edited by G. P. Goold. LCL 63. Cambridge, MA: Harvard University Press, 1916.
- Venette, Nicolas. *De la generation de l'homme ou Tableau de l'amour conjugal*, 7th ed. Paris, 1696.
- Vesalius, Andreas. *On the Fabric of the Human Body. Book V: The Origins of Nutrition and Generation*. Translated by William Frank Richardson and John Burd Carman. Novato, CA: Norman, 2007.
- Vesling, Johann. *The anatomy of the body of man wherein is exactly described every part thereof in the same manner as it is commonly shewed in publick anatomies*. London: Peter Cole, 1653.
- Vittori, Lionello de'. *Practica medicinalis*. Ingolstadt, 1545.
- Vives, Juan Luis (Joannes Ludovicus Vives). *The office and duetie of an husband*. Translated by Thomas Paynell. London, 1555.
- Voltaire. *Oeuvres complètes de Voltaire: Dictionnaire philosophique*. Vol. 7. Paris, 1855.
- Von Gersdorff, Hans. *Feldtbuch der Wundartzney*. Strasbourg, 1517.
- Wecker, Johann Jacob. *De secretis libri XVII*. Basel, 1662.
- Wecker, Johann Jacob. *Les secrets et merveilles de nature*. Lyon: S. Rigaud, 1653.
- Weyer, Johann. *De praestigiis daemonum*. In *Witches, Devils, and Doctors in the Renaissance: Johann Weyer*. Edited by George Mora and Benjamin Khol. Translated by John Shea. Binghampton, NY: Medieval and Renaissance Texts and Studies, 1991.
- Willis, Thomas. *Cerebri anatome: cui accessit nervorum descriptio et usus*. London, 1666.
- Wirsung, Christof. *The general practise of physicke*. Translated by Jacob Mosan Germane. London, 1605.
- Wittich, Johannes. *Nobilis(imo)rum ac Doctis(imo)rum Germaniae Medicorum Consilia*. Leipzig, 1604.
- Wolff, Caspar, ed. *Gynaecorium, hoc est, de mulierum tum aliis, tum grauidarum, parientium & puerarum affectibus & morbis*. Basel: Thomas Guarinus, 1566.

Zacchia, Paolo. *Quaestionum medico-legalium tomus posterior, quo continentur liber nonus et decimus necnon decisiones sacrae Rotae Romanae ad praedictas materias spectantes*. Lyon: Ravaud, 1661.

Zacchia, Paolo. *Quaestionum medico-legalium tomus prior*. Lyon: Ravaud, 1661.

C. SECONDARY SOURCES

- Abel, Ernest L. “‘Who Goes Drunk to Bed Begets but a Girl’: The History of a Renaissance Medical Proverb.” *Journal of the History of Medicine and Allied Sciences* 54, no. 1 (1999): 5-22.
- Adams, J. N. *The Latin Sexual Vocabulary*. London: Duckworth, 1982.
- Albala, Ken. *Eating Right in the Renaissance*. Berkeley: University of California Press, 2002.
- Allen, Sister Prudence. *The Concept of Woman, Vol. III: The Search for Communion of Persons, 1500-2015*. Grand Rapids: William B. Eerdmans, 2016.
- Arikha, Noga. *Passions and Tempers: A History of the Humors*. New York: Harper Collins, 2007.
- Bajada, Joseph. *Sexual Impotence: The Contribution of Paolo Zacchia (1584-1659)*. Rome: Editrice Pontificia Università Gregoriana, 1988.
- Barker-Benfield, G. J. *The Culture of Sensibility: Sex and Society in Eighteenth-Century Britain*. Chicago: University of Chicago Press, 1992.
- Beecher, Dominique. “Erotic Love and the Inquisition: Jacques Ferrand and the Tribunal of Toulouse, 1620.” *Sixteenth Century Journal* 20, no. 1 (1989): 41-53.
- Behrend-Martínez, Edward. “Manhood and the Neutered Body in Early Modern Spain.” *Journal of Social History* 38, no. 4 (2005): 1073-93.
- Behrend-Martínez, Edward. *Unfit For Marriage: Impotent Spouses On Trial In The Basque Region Of Spain, 1650-1750*. Reno, NV: University of Nevada Press, 2007.
- Behringer, Wolfgang. “*Malleus Maleficarum*.” In *Encyclopedia of Witchcraft: The Western Tradition*, vol. 3, edited by Richard M. Golden, 717-23. Santa Barbara, CA: ABC-CLIO, 2006.
- Bell, Rudolph M. *How to Do It: Guides to Good Living for Renaissance Italians*. Chicago: University of Chicago Press, 1999.
- Bellorini, Cristina. *The World of Plants in Renaissance Tuscany: Medicine and Botany*. New York: Ashgate, 2016.

Berry, Helen and Elizabeth Foyster. "Childless Men in Early Modern England." In *The Family in Early Modern England*. Edited by Helen Berry and Elizabeth Foyster, 158-83. Cambridge: Cambridge University Press, 2007.

Biller, Peter. *The Measure of Multitude: Population in Medieval Thought*. Oxford: Oxford University Press, 2000.

Blum, Carol. *Strength in Numbers: Population, Reproduction, and Power in Eighteenth-Century France*. Baltimore: Johns Hopkins University Press, 2002.

Bos, Jacques. "The Rise and Decline of Character: Humoral Psychology in Ancient and Early Modern Medical Theory." *History of the Human Sciences* 22, no. 3 (2009): 29-50.

Breen, Michael. "An Uncertain, Useless, and Disgraceful Means of Proof: Marriage, Law, and Authority in the *Épreuve Du Congrès*." *The Journal of Modern History* 87, no. 4 (2015): 771-808.

Breitenberg, Mark. *Anxious Masculinity in Early Modern England*. Cambridge: Cambridge University Press, 1996.

Brenot, Philippe H. *Impuissance Masculine: perspectives historiques*. Paris: L'Esprit du Temps, 1994.

Brockliss, Laurence and Colin Jones. *The Medical World of Early Modern France*. Oxford: Oxford University Press, 1997.

Broedel, Hans Peter. *The Malleus Maleficarum and the Construction of Witchcraft: Theology and Popular Belief*. New York: Manchester University Press, 2003.

Broomhall, Susan. *Women's Medical Work in Early Modern France*. Manchester: Manchester University Press, 2004.

Brown, Deborah J. *Descartes and the Passionate Mind*. Cambridge, UK: Cambridge University Press, 2006.

Brundage, James A. "The Problem of Impotence." In *Sexual Practices and the Medieval Church*, eds. James Brundage and V. Bullough, 135-40. Buffalo, 1982.

Brundage, James A. *Law, Sex, and Christian Society in Medieval Europe*. Chicago: Chicago University Press, 1987.

- Brundage, James A. "Sex and Canon Law." In *Handbook of Medieval Sexuality*, edited by Vern L. Bullough and James Brundage, 33-50. Independence: Taylor and Francis, 1996.
- Bullough, Vern L. "On Being a Male in the Middle Ages." In *Medieval Masculinities*. Edited by Clara Lees, 31-45. Minneapolis: University of Minnesota Press, 1994.
- Butler, Judith. *Bodies That Matter: On the Discursive Limits of 'Sex.'* New York: Routledge, 1993.
- Byloff, Fritz. "Nestelknüpfen und -lösen." *Archiv für Geschichte der Medizin* 19 (1927): 203-8.
- Cadden, Joan. *The Meanings of Sex Difference in the Middle Ages: Medicine, Science, and Culture*. Cambridge: Cambridge University Press, 1993.
- Camporesi, Piero. *Bread of Dreams: Food and Fantasy in Early Modern Europe*. Translated by David Gentilcore. Chicago: University of Chicago Press, 1989.
- Carlin, Claire. "The Staging of Impotence: France's Last Congrès." In *Theatrum Mundi: Studies in Honor of Ronald W. Tobin*. Edited by Claire Carlin and Kathleen Wine. Charlottesville, VA: Rookwood Press, 2003.
- Cartelle, Enrique Montero, ed. *Dictionarium latinum andrologiae, gynecologiae et embryologiae: Ab antiquitate usque ad XVI saeculum*. Barcelona, 2018.
- Cartelle, Enrique Montero. "Sobre el autor árabe del *Liber de coitu* y el modo de trabajar de Constantino el Africano." *Medizinhistorisches Journal* 23 no. 3-4 (1988): 213-223.
- Caroppo, Ettore. "Male Reproductive Medicine: Anatomy and Physiology." In *An Introduction to Male Reproductive Medicine*. Edited by Craig Niederberger. Cambridge: Cambridge University Press, 2011.
- Cerami, Cristina. "Function and Instrument: Towards a New Criterion of the Scale of Being in Aristotle's *Generation of Animals*." In *Aristotle's Generation of Animals: A Critical Guide*. Edited by Andrea Falcon and David Lefebvre, 130-50. Cambridge, MA: Harvard University Press, 2018.
- Clark, Stuart. *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe*. Oxford: Clarendon Press, 1997.

- Conforti, Maria. "Testes Alterum Cerebrum. Succo Nerveo e Succo Seminale nella Macchina del Vivente di Giovanni Alfonso Borelli." *Medicina nei Secoli Arte e Scienza* 13, no. 3 (2001): 577-95.
- Connell, R.W. *Masculinities*. Berkeley: University of California Press, 1995.
- Connell, R. W. *The Men and the Boys*. Berkeley: University of California Press, 2000.
- Connell, Sophia M. *Aristotle on Female Animals: A Study of the Generation of Animals*. Cambridge: Cambridge University Press, 2016.
- Coward, Matthew, et al. "Fertility Related Quality of Life, Gonadal Function and Erectile Dysfunction in Male Partners of Couples with Unexplained Infertility." *The Journal of Urology* 202, no. 2 (2019): 379-84.
- Crawford, Catherine. "Legalizing Medicine: Early Modern Legal Systems and the Growth of Medico-Legal Knowledge." In *Legal Medicine in History*, edited by Catherine Crawford and Michael Clark, 89-116. Cambridge: Cambridge University Press, 1994.
- Crawford, Katherine. *Eunuchs and Castrati: Disability and Normativity in Early Modern Europe*. New York: Routledge, 2019.
- Crawford, Katherine. *Perilous Performances: Gender and Regency in Early Modern France*. Cambridge: Harvard University Press, 2004.
- Crawford, Patricia. "The Construction and Experience of Maternity in Seventeenth-Century England." In *Women as Mothers in Pre-Industrial England*. Edited by Valerie Fildes. New York: Routledge, 1990.
- Cryle, Peter and Alison Moore. *Frigidity: An Intellectual History*. New York: Palgrave, 2011.
- Cyrino, Monica S. *Aphrodite*. New York: Routledge, 2010.
- Darmon, Pierre. *Le tribunal de l'impuissance : Virilité et défaillances conjugales dans l'ancienne France*. Paris: Éditions Seuil, 1979.
- Daston, Lorraine and Katharine Park. "The Hermaphrodite and the Orders of Nature: Sexual Ambiguity in Early Modern France." *GLQ* 1, no. 4 (1995): 419-38.
- Davis, Natalie Zemon. *The Return of Martin Guerre*. Cambridge, MA: Harvard University Press, 1983.

Demaitre, Luke E. *Doctor Bernard de Gordon: Professor and Practitioner*. Toronto: Pontifical Institute of Medieval Studies, 1980.

De Plancy, Collin. *Dictionnaire Infernal ou répertoire universel*. Paris: Plancy, 1853.

De Renzi, Silvia. “Medical Competence, Anatomy and the Polity in Seventeenth-Century Rome.” *Renaissance Studies* 21, no. 4 (2007): 551-67.

De Renzi, Silvia. “Medical Expertise, Bodies, and the Law in Early Modern Courts.” *Isis* 98, no. 2 (2007): 315-22.

De Renzi, Silvia. “Per una biografia di Paolo Zacchia: nuovi documenti e ipotesi di ricerca.” In *Paolo Zacchia: Alle Origini Della Medicina Legale, 1584-1659*, edited by Alessandro and Giovanni Rossi Pastore, 50-73. Milan: Franco Angeli, 2008.

De Renzi, Silvia. “Witnesses of the Body: Medico-Legal Cases in Seventeenth-Century Rome.” *Studies in History and Philosophy of Science* 33 (2002): 219-42.

Deslauriers, Marguerite. “Marinella and Her Interlocutors: Hot Blood, Hot Words, Hot Deeds.” *Philosophical Studies* 174 (2017): 2525-37.

Duni, Matteo. “Doubting Witchcraft: Theologians, Jurists, Inquisitors during the Fifteenth and Sixteenth Centuries.” *Studies in Church History* 52 (2016): 203-31.

Duni, Matteo. “Impotence, Witchcraft and Politics: A Renaissance Case.” In *Cuckoldry, Impotence and Adultery in Europe (15th-17th century)*. Edited by Sara F. Matthews-Grieco. New York: Ashgate, 2014.

Entin-Bates, Lee R. “Montaigne’s Remarks on Impotence.” *MLN* 91, no. 4 (1976): 640-54.

Erickson, Amy Louise. *Women and Property in Early Modern England*. New York: Routledge, 2002.

Esmein, A. *Le mariage en droit canonique*. 2 vols. Paris, 1891.

Evans, James. “Ptolemy’s Cosmology.” In *Encyclopedia of Cosmology (Routledge Revivals): Historical, Philosophical, and Scientific Foundations of Modern Cosmology*. Edited by Norriss S. Hetherington, 528-544. New York: Routledge, 1993.

Evans, Jennifer. “‘They Are Called Imperfect Men’: Male Infertility and Sexual Health in Early Modern England.” *Social History of Medicine* 29, no. 2 (May 2016): 311–32.

Evans, Jennifer. *Aphrodisiacs, Fertility, and Medicine in Early Modern England*. Rochester, NY: Boydell Press, 2014.

Farr, James R. “The Pure and Disciplined Body: Hierarchy, Morality, and Symbolism in France During the Catholic Reformation.” *Journal of Interdisciplinary History* 21 (1991): 391-414.

Fausto-Sterling, Anne. *Sexing the Body: Gender Politics and the Construction of Sexuality*. New York: Basic Books, 2000.

Ferckel, Christoph. “Diagramme der Sexualorgane in mittelalterlichen Handschriften.” In Karl Sudhoff, “Weitere Beiträge Zur Geschichte Der Anatomie Im Mittelalter. Aus Dem Institut Für Geschichte Der Medizin in Leipzig. VI.” *Archiv Für Geschichte Der Medizin* 10, no. 5 (1917): 251-63.

Ferraro, Joanne M. *Marriage Wars in Late Renaissance Venice*. Oxford: Oxford University Press, 2001.

Filipczak, Zirká Z. *Hot Dry Men, Cold Wet Women: The Theory of Humors in Western European Art, 1575-1700*. New York: American Federation of Arts, 1997.

Finucci, Valeria. *The Manly Masquerade: Masculinity, Paternity, and Castration in the Italian Renaissance*. Durham, NC: Duke University Press, 2003.

Finucci, Valeria. *The Prince’s Body: Vincenzo Gonzaga and Renaissance Medicine*. Cambridge, MA: Harvard University Press, 2015.

Finucci, Valeria. “The Virgin’s Body and Early Modern Surgeons.” In *Masculinities, Childhood, Violence: Attending to Early Modern Women--and Men*. Edited by Amy E. Leonard and Karen L. Nelson, 195-222. Newark: University of Delaware Press, 2011.

Finucci, Valeria. “‘There’s the Rub’: Searching for Sexual Remedies in the New World.” *Journal of Medieval and Early Modern Studies* 38, no. 3 (2008): 523-57.

Fischer-Homberger, Esther. *Krankheit Frau: und andere Arbeiten zur Medizingeschichte der Frau*. Huber, 1979.

Fischer-Homberger, Esther. *Medizin vor Gericht: Gerichtsmedizin von der Renaissance bis zur Aufklärung*. Bern: Hans Huber, 1983.

Fisher, Will. "The Renaissance Beard: Masculinity in Early Modern England." *Renaissance Quarterly* 54 (2001): 155-87.

Fissell, Mary. *Vernacular Bodies: The Politics of Reproduction in Early Modern England*. Oxford: Oxford University Press, 2004.

Fitzpatrick, Joan. *Food in Shakespeare: Early Modern Dietaries and the Plays*. New York: Routledge, 2016.

Fletcher, Anthony. *Gender, Sex, and Subordination in England, 1500-1800*. New Haven, CT: Yale University Press, 1995.

Forbes, Thomas R. *The Midwife and the Witch*. New Haven, CT: Yale University Press, 1966.

Forster, Thomas A. "Deficient Husbands: Manhood, Sexual Incapacity, and Male Marital Sexuality in Seventeenth-Century New England." *William and Mary Quarterly* 56 (1999): 723-44.

Forth, Christopher. "Manhood Incorporated: Diet and the Embodiment of 'Civilized' Masculinity." *Men and Masculinities* 11, no. 5 (2009): 578-601.

Foucault, Michel. *The History of Sexuality, Volume One: An Introduction*. Translated by Robert Hurley. New York: Pantheon Books, 1978.

Foucault, Michel. *The History of Sexuality, Volume Two: The Use of Pleasure*. New York: Vintage Books, 1985.

Foyster, Elizabeth A. *Manhood in Early Modern England: Honour, Sex and Marriage*. London: Longman, 1999.

Freud, Sigmund. *On the Sexual Theories of Children (1908)*. New York: Read Books, 2014.

Freudenthal, Gad. *Aristotle's Theory of Material Substance: Heat and Pneuma, Form and Soul*. New York: Clarendon Press, 1999.

Gélis, Jacques. *History of Childbirth: Fertility, Pregnancy and Birth in Early Modern Europe*. Translated by Rosemary Morris. Boston: Northeast University Press, 1991.

- Georgakellos, Nicos I. *Empedocles of Acragas: His Theory and the Exact Sciences*. Newcastle Upon Tyne, UK: Cambridge Scholars Publishing, 2019.
- Getz, Faye Marie. *Healing and Society in Medieval England: A Middle English Translation of the Pharmaceutical Writings of Gilbertus Anglicus*. Madison: University of Wisconsin Press, 1991.
- Gibbs, Robert. "Illuminated Impotence: Ruskin's Pictorial 'Gratian' Manuscript." *The British Art Journal* 2, no. 3 (2001): 46-47.
- Gouwens, Kenneth, Brendan Kane, and Laurie Nussdorfer. "Reading for Gender." *European Review of History: Revue européenne d'histoire* 22, no. 4 (2015): 527-35.
- Gouwens, Kenneth. "Emasculation as Empowerment." *European Review of History: Revue européenne d'histoire* 22, no. 4 (2015): 536-62.
- Gowing, Laura. *Common Bodies: Women, Touch and Power in Seventeenth-Century England*. New Haven: Yale University Press, 2003.
- Gowing, Laura. *Gender Relations in Early Modern England*. New York: Routledge, 2012.
- Green, Monica H. "From 'Diseases of Women' to 'Secrets of Women': The Transformation of Gynecological Literature in the Later Middle Ages." *Journal of Medieval and Early Modern Studies* 30, no. 1 (2000): 5-39.
- Green, Monica. "The Sources of Eucharius Rösslin's 'Rosegarden for Pregnant Women and Midwives' (1513)." *Medical History* 53, no. 2 (2009): 167-192.
- Green, Monica. *Making Women's Medicine Masculine: The Rise of Male Authority in Premodern Gynaecology*. Oxford: Oxford University Press, 2008.
- Grmek, Mirko D. *Diseases in the Ancient Greek World*. Translated by Mireille and Leonard Muellner. Baltimore: Johns Hopkins University Press, 1989.
- Guinsburg, Arlene Miller. "The Counterthrust to Sixteenth-Century Misogyny: The Work of Agrippa and Paracelsus." *Historical Reflections/Réflexions historiques* 8 (1981): 3-28.
- Guthrie, W.K.C. *A History of Greek Philosophy*. 2 vols. Cambridge: Cambridge University Press, 1965.
- Halberstam, Judith (Jack). *Female Masculinity*. Durham, NC: Duke University Press, 1998.

Halperin, David. *One Hundred Years of Homosexuality: And Other Essays on Greek Love*. New York: Routledge, 1990.

Hamilton, Tom. *Pierre de L'Estoile and his World in the Wars of Religion*. Oxford: Oxford University Press, 2017.

Hanley, Sarah. "Engendering the State: Family Formation and State Building in Early Modern France." *French Historical Studies* 16, no. 1 (1989): 4–27

Hanley, Sarah. "Family and State in Early Modern France: the Marriage Pact." In *Connecting Spheres: Women in the Western World, 1500–Present*, edited by Marilyn J. Boxer and Jean H. Quataert, 61–72. New York: Oxford University Press, 1987.

Hardwick, Julie. *The Practice of Patriarchy: Gender and the Politics of Household Authority in Early Modern France*. Pennsylvania State University Press, 1998.

Harrington, Joel F. *Reordering Marriage and Society in Reformation Germany*. Cambridge: Cambridge University Press, 1995.

Harvey, Karen. "The Substance of Sexual Difference: Change and Persistence in Representations of the Body in Eighteenth-Century England." *Gender & History* 14, no. 2 (2002): 205-16.

Hellwarth, Jennifer Wynne. "Pneuma—Sexuality—Sex Difference: From Arabic to European Philosophy and Medical Practice." In *The Early History of Embodied Cognition, 1740-1920: The Lebenskraft-Debate and Radical Reality in German Science, Music, and Literature*. Edited by John A. McCarthy, et al., 53-74. Boston: Brill, 2016.

Helmholz, R.H. *Marriage Litigation in Medieval England*. Cambridge: Cambridge University Press, 1974.

Hendrix, Scott and Susan Karant-Nunn, eds. *Masculinity in the Reformation Era*. Kirksville, MO: Truman State University Press, 2008.

Henry, Devin. "Understanding Aristotle's Reproductive Hylomorphism." *Apeiron* 39, no. 3 (2006): 272-300.

- Héritier-Augé, Françoise. "Semen and Blood: Some Ancient Theories Concerning Their Genesis and Relationship." In *Fragments for a History of the Human Body*, vol. 3. Edited by Michel Fehrer, Ramona Naddaff, and Nadia Tazi, 159-75. New York: Zone Books, 1989.
- Hollander, Anne. *Seeing Through Clothes*. Berkeley: University of California Press, 1993.
- Hollewand, Karen. "Eggs, Sperm and Desire: Sex and Science in the Dutch Golden Age." *Journal for Eighteenth-Century Studies* 42 (2019): 415–432.
- Horden, Peregrine. "Medieval Medicine." In *The Oxford Handbook of the History of Medicine*. Edited by Mark Jackson. Oxford: Oxford University Press, 2011.
- Horowitz, Elliot. "The New World and the Changing Face of Europe." *Sixteenth Century Journal* 28, no. 4 (1997): 1181-1201
- Jacquart, Danielle and Claude Thomasset. *Sexuality and Medicine in the Middle Ages*. Translated by Matthew Adamson. Princeton: Princeton University Press, 1988.
- Jacquart, Danielle. "Le Regard d'un Médecin sur son Temps: Jacques Despars (1380?-1458)." *Bibliothèque de l'école des Chartes* 138 (1980): 35-86.
- Jolly, Penny Howell. "Pubics and Privates: Body Hair in Late Medieval Art." In *Meanings of Nudity in Medieval Art*, edited by Sherry Lindquist, 183-206. Aldershot: Ashgate, 2012.
- Jones, Peter Murray. "Medical Literacies and Medical Culture." In *Medical Writing in Early Modern English*. Edited by Irma Taavitsainen and Päivi Pahta. Cambridge, UK: Cambridge University Press, 2011.
- Jordan, Constance. *Renaissance Feminism: Literary Texts and Political Models*. Ithaca: Cornell University Press, 1990.
- Jordan, Mark. "The Fortunes of Constantine's *Pantegni*." In *Constantine the African and 'Alī Ibn Al-Abbās Al-Magūsī: The Pantegni and Related Texts*. Edited by Charles Burnett and Danielle Jacquart. 286-302. New York: Brill, 1994.
- Kane, Bronach. *Impotence and Virginity in the Late Medieval Ecclesiastical Court of York*. York: Borthwick Publications, 2008.

Kassell, Lauren. "Medical Understandings of the Body, c. 1500-1750." In *The Routledge History of Sex and the Body, 1500 to the Present*. Edited by Sarah Toulalan and Kate Fisher. New York: Routledge, 2013.

Katz, Joshua and Katharina Volk. "Erotic Hardening and Softening in Vergil's Eighth Eclogue." *Classical Quarterly*, 56, no. 1 (2006): 169–74.

Katz, Joshua T. "Testimonia Ritus Italici: Male Genitalia, Solemn Declarations, and a New Latin Sound Law." *Harvard Studies in Classical Philology* 98 (1998): 183-217.

Keele, Kenneth David and Jane Roberts, eds. *Leonardo da Vinci: Anatomical Drawings from the Royal Library, Windsor Castle*. New York, 1983.

Keele, Kenneth D. *Leonardo Da Vinci's Elements of the Science of Man*. New York: Academic Press, 1983.

Keller, Eve. "Making Up for Losses: The Workings of Gender in William Harvey's *De Generatione animalium*." In *Inventing Maternity: Politics, Science, and Literature, 1650-1865*. Edited by Susan C. Greenfield and Carol Barash, 34-56. Lexington, KY: University Press of Kentucky, 1999.

King, Helen. *Hippocrates' Woman: Reading the Female Body in Ancient Greece*. New York: Routledge, 1998.

King, Helen. *Midwifery, Obstetrics and the Rise of Gynaecology: The Uses of a Sixteenth-Century Compendium*. New York: Ashgate, 2007.

King, Helen. *The One-Sex Body on Trial: The Classical and Early Modern Evidence*. Farmham: Ashgate, 2013.

Kuin, Robert and Anne Lake Prescott. "The Wrath of Priapus: Rémy Belleau's 'Jean qui ne peult' and its Traditions." *Comparative Literature Studies* 37, no. 1 (2000): 1-17.

La Barre, Weston. *Muelos: A Stone Age Superstition about Sexuality*. New York: Columbia University Press, 1984.

- Ladurie, Emmanuel Le Roy. "The Aiguillette: Castration by Magic." In *The Mind and Method of the Historian*. Translated by Siân and Ben Reynolds. Brighton: Harvester Press, 1981.
- Lang, Helen S. "Why Fire Goes Up: An Elementary Problem in Aristotle's *Physics*." *The Review of Metaphysics* 38, no. 1 (1984): 69-106.
- Laqueur, Thomas. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge: Harvard University Press, 1990.
- Laqueur, Thomas. *Solitary Sex: A Cultural History of Masturbation*. New York: Zone Books, 2003.
- Lawn, Brian. *The Prose Salernitan Questions*. Oxford: Oxford University Press, 1979.
- Lefebvre-Teillard, Anne. *Autour De L'Enfant*. Leiden: Brill, 2008.
- Lefebvre-Teillard, Anne. *Les Officialités à la veille du Concile De Trente*. Bibliothèque D'histoire Du Droit Et Droit Romain. Paris, 1973.
- Lesky, Erna. *Die Zeugungs- und Vererbungslehren der Antike und ihr Nachwirken*. Wiesbaden: Akademie der Wissenschaften und der Literatur, 1950.
- Leong, Elaine. "Making Medicines in the Early Modern Household." *Bulletin of the History of Medicine* 82, no. 1 (2008): 145-68.
- Levy, Donald. "Macrocosm and Microcosm." *The Encyclopedia of Philosophy*, ed. Paul Edwards, 121-125. 5 vols. New York, 1967.
- Lindemann, Mary. *Medicine and Society in Early Modern Europe*. 2nd ed. Cambridge: Cambridge University Press, 2010.
- Lind, L.R. *Studies in Pre-Vesalian Anatomy: Biography, Translations, Documents*. Philadelphia: The American Philosophical Society, 1975.
- Lindgren, Amy. "The Wandering Womb and the Peripheral Penis: Gender and the Fertile Body in Late Medieval Infertility Treatises." Ph.D. diss. University of California-Davis, 2005.
- Lloyd, G. E. R. "The Hot and the Cold, the Dry and the Wet in Ancient Greek Philosophy." *Journal of Hellenic Studies* 84 (1964): 92-106.
- Long, Kathleen. *Hermaphrodites in Renaissance Europe*. Aldershot: Ashgate, 2006.

- Long, Kathleen, ed. *High Anxiety: Masculinity in Crisis in Early Modern France*. Kirksville, MO: Truman State University Press, 2002.
- Long, Kathleen. *Hermaphrodites in Renaissance Europe*. Aldershot: Ashgate, 2006.
- Lotti, Francesco and Mario Maggi. "Sexual Dysfunction and Male Infertility." *Nature Reviews Urology* 15 (2018): 287–307.
- Lüttenberg, Thomas. "The Cod-Piece—A Renaissance Fashion between Sign and Artefact." *The Medieval History Journal* 8, no. 1 (April 2005): 49-81.
- Luys, Georges. *A Textbook on Gonorrhoea and Its Complications*. Translated by Arthur Foerster. London: Baillière, Tindall and Cox, 1913.
- Maclean, Ian. "The Reception of Medieval Practical Medicine in the Sixteenth Century: The Case of Arnau de Vilanova." In *Learning and the Marketplace: Essays in the History of the Early Modern Book*, 87-106. Leiden: Brill, 2009.
- Maclean, Ian. *The Renaissance Notion of Woman: A Study of the Fortunes of Scholasticism and Medical Science in European Intellectual Life*. Cambridge: Cambridge University Press, 1980.
- Mandressi, Rafael. "La chaleur des hommes: Virilité et pensée médicale en Europe." In *Histoire de la virilité: l'invention de la virilité de l'Antiquité aux lumières*. Edited by Georges Vigarello, 231-54. Paris: Éditions du Seuil, 2011.
- Margolf, Diane C. *Religion and Royal Justice in Early Modern France: The Paris Chambre de l'Edit, 1598–1665*. Kirksville, Mo.: Truman State University Press, 2004.
- Martin, Ruth. *Witchcraft and the Inquisition, Venice, 1550-1650*. Oxford: Oxford University Press, 1989.
- Matthews-Grieco, Sara F., ed. *Cuckoldry, Impotence and Adultery in Europe (15th-17th century)*. New York: Routledge, 2014.
- McClive, Cathy. "The Hidden Truths of the Belly: The Uncertainties of Pregnancy in Early Modern Europe." *Social History of Medicine* 15, no. 2 (2002): 209-27.
- McClive, Cathy. "Masculinity on Trial: Penises, Hermaphrodites and the Uncertain Male Body in Early Modern France." *History Workshop Journal*, no. 68 (2009): 45-68.

McClive, Cathy. "Blood and Expertise: The Trials of the Female Medical Expert in the Ancien-Régime Courtroom." *Bulletin of the History of Medicine* 82, no. 1 (2008): 86-108.

McClive, Cathy. *Menstruation and Procreation in Early Modern France*. Burlington, VT: Ashgate, 2015.

McGrath, Aidan. *A Controversy Concerning Male Impotence*. Rome: Editrice Pontificia Università Gregoriana, 1988.

McLaren, Angus. *Impotence: A Cultural History*. Chicago: University of Chicago Press, 2007.

McLaren, Angus. *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth to the Nineteenth Century*. London: Methuen, 1984.

McLaughlin, T.P. "The Formation of the Marriage Bond according to the *Summa Parisiensis*." *Medieval Studies* 15 (1953): 208-12.

Mendelsohn, Everett. *Heat and Life: The Development of the Theory of Animal Heat*. Cambridge, MA: Harvard University Press, 1964.

Mendelson, Sara and Patricia Crawford. *Women in Early Modern England 1500-1720*. Oxford: Oxford University Press, 1998.

Mercader, Patricia and Laurence Tain. *L'Éternel Masculin*. Lyon: Presses universitaires de Lyon.

Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper Collins, 1980.a

Merrick, Jeffrey. "Impotence in Court and at Court." *Studies in Eighteenth-Century Culture* 25 (1996): 187-202.

Middlemass, Rachel. "Disabling Masculinity: Manhood and Infertility in the High Middle Ages." In *Social Dimensions of Medieval Disease and Disability*, edited by Sally Crawford and Christina Lee, 47-58. Oxford: Archaeopress, 2014.

Moulin, H. *Le carnaval et les causes grasses au parlement: Dernier procès pour impuissance et abolition du congrès (1659-1677)*. Paris, 1885.

- Moulton, Ian Frederick. *Before Pornography: Erotic Writing in Early Modern England*. Oxford: Oxford University Press, 2000.
- Mullan, John. "Hypochondria and Hysteria: Sensibility and the Physicians." *The Eighteenth Century* 25, no. 2 (1984): 141-74.
- Murray, Jacqueline. "On the Origins and Role of 'Wise Women' in Causes for Annulment on the Grounds of Male Impotence." *Journal of Medieval History* 16 (1990): 235-49.
- National Institutes of Health. *Impotence: NIH Consensus Statement* 10, no. 4 (Dec 7-9, 1992): 1-31.
- Needham, Joseph. *A History of Embryology*, 2nd ed. Cambridge, MA: Harvard University Press, 1959.
- Noble, Denis, et al. "Leonardo da Vinci and the Origin of Semen." *Notes and Records of the Royal Society of London* vol. 68, no. 4 (2014): 391-402.
- Norri, Juhani. *Dictionary of Medical Vocabulary in English, 1375-1550*. New York: Routledge, 2016.
- Nutton, Vivian. *Ancient Medicine*. New York: Routledge, 2004.
- Nutton, Vivian. "Humoralism." In *Companion Encyclopedia of the History of Medicine*, edited by W.F. Bynum and Roy Porter. New York: Routledge, 1993.
- O'Neill, Ynez Violé. "The Fünfbilderserie—A Bridge to the Unknown." *Bulletin of the History of Medicine* 51, no. 4 (1977): 538-49.
- Oren-Magidor, Daphna. *Infertility in Early Modern England*. London: Palgrave Macmillan, 2016.
- Orrells, Daniel. *Sex: Antiquity and Its Legacy*. London: Tauris, 2015.
- Ostorero, Martine. *Le diable au sabbat : littérature démonologique et sorcellerie (1440-1460)*. Florence: Edizioni del Galluzzo, 2011.
- Pagano, Antonella. "La virilità indagata: L'andrologia tra ginecologia e igiene di coppia in un medico del '500." *Medicina nei secoli arte e scienza* 13, no. 3 (2001): 549-76.
- Pahta, Päivi. *Medieval Embryology in the Vernacular: The Case of De spermate*. Helsinki: Société Néophilologique, 1998.
- Park, Katharine. *Secrets of Women: Gender, Generation, and the Origins of Human Dissection*. New York: Zone Books, 2006.

Park, Katherine. "Was There a Renaissance Body?" In *The Italian Renaissance in the Twentieth Century*.

Edited by Walter Kaiser and Michael Rocke. Olschki, 2001.

Park, Katherine and Robert A. Nye. "Destiny is Anatomy." *The New Republic* 204, no. 7, February 18,

1991: 53-7.

Parker, Patricia. "Gender Ideology, Gender Change: The Case of Marie Germain." *Critical Inquiry* 19,

no. 2 (1993): 337-64.

Paster, Gail Kern. *The Body Embarrassed: Drama and the Disciplines of Shame in Early Modern*

England. Ithaca: Cornell University Press, 1993.

Paster, Gail Kern. "Unbearable Coldness of Female Being: Women's Imperfection and the Humoral

Economy." *English Literary Renaissance* 28, no. 3 (1998): 416-40.

Pedersen, Frederik. "Privates on Parade: Impotence Cases as Evidence for Medieval Gender." In *Law and*

Private Life in the Middle Ages: Proceedings of the Sixth Carlsberg Academy Conference on

Medieval Legal History 2009, eds. Per Anderson, Mia Münster-Swendsen, Helle Vogt, 81-104.

Djøf, 2011.

Perkins, Wendy. *Midwifery and Medicine in Early Modern France: Louise Bourgeois*. University of

Exeter Press, 1996.

Petit, Joseph. *Registre des causes civiles de l'Officialité de Paris, 1384-1387*. Paris: Imprimerie

Nationale, 1919.

Petry, Yvonne. "'Many Things Surpass our Knowledge': An Early Modern Surgeon on Magic,

Witchcraft and Demonic Possession." *Social History of Medicine* 25, no. 1 (2012): 47-64.

Pinheiro, Cristina Santos. "The Ancient Medical Sources in the Chapters About Sterility of Rodrigo de

Castro's *De universa mulierum medicina*." In *The Palgrave Handbook of Infertility in History*.

Edited by Gayle Davis and Tracey Loughran, 291-310. New York: Palgrave Macmillan, 2017.

Pinto-Correia, Clara. *The Ovary of Eve: Egg and Sperm and Preformation*. Chicago: University of

Chicago Press, 1997.

- Pomata, Gianna. "Blood Ties and Semen Ties: Consanguinity and Agnation in Roman Law." In *Gender, Kinship and Power: A Comparative and Interdisciplinary History*, edited by Mary Jo Maynes, et al., 43-66. New York: Routledge, 1996.
- Pomata, Gianna. "Innate Heat, Radical Moisture, and Generation." In *Reproduction: Antiquity to the Present Day*. Edited by Lauren Kassell, Nick Hopwood, and Rebecca Flemming, 195-208. Cambridge: Cambridge University Press, 2018.
- Pomata, Gianna. "Menstruating Men: Similarity and Difference of the Sexes in Early Modern Medicine." In *Generation and Degeneration: Tropes of Reproduction in Literature and History from Antiquity through Early Modern Europe*, edited by Valeria Finucci and Kevin Brownlee, 109-52. Durham, NC: Duke University Press, 2001.
- Pomata, Gianna. "Vollkommen oder verdorben? Der männliche Samen im frühneuzeitlichen Europa." *L'Homme* 6, no. 2 (1995): 59-85.
- Pomata, Gianna. "Was There a *Querelle des Femmes* in Early Modern Medicine?" *Arenal* 20, no. 3 (2013): 313-41.
- Pommeray, Léon. *L'Officialité Archidiaconale de Paris aux XVe-XVIe siècles: sa composition et sa compétence criminelle*. Paris, 1933.
- Prinz, Otto, ed. *Mittellateinisches Wörterbuch, bis zum Ausgehenden 13. Jahrhundert, Band I: A-B*. Munich: C.H. Beck, 1967.
- Puff, Helmut. *Sodomy in Reformation Germany and Switzerland, 1400-1600*. Chicago: University of Chicago Press, 2003.
- Reeser, Todd W. *Moderating Masculinity in Early Modern Culture*. Chapel Hill, NC: UNC Press, 2006.
- Richardson, Linda Deer. *Academic Theories of Generation in the Renaissance: The Contemporaries and Successors of Jean Fernel (1497-1558)*. Edited by Benjamin Goldberg. London: Springer, 2018.
- Rider, Catherine. *Magic and Impotence in the Middle Ages*. New York: Oxford University Press, 2006.

Rider, Catherine. "Men's Responses to Infertility in Late Medieval England." In *The Palgrave Handbook of Infertility in History*. Edited by Gayle Davis and Tracey Loughran, 273-90. New York: Palgrave Macmillan, 2017.

Robbins, Kevin C. "Magical Emasculation, Popular Anticlericalism, and the Limits of the Reformation in Western France, c. 1590." *Journal of Social History* 31 (1997): 61-83.

Rocke, Michael. "Sodomites in Fifteenth-Century Tuscany: The Views of Bernardino of Siena." In *The Pursuit of Sodomy: Male Homosexuality in Renaissance and Enlightenment Europe*, edited by Kent Gerard and Gert Hekma, 7-32. New York: Harrington Press, 1989.

Roger, Jacques. *The Life Sciences in Eighteenth-Century French Thought*. Edited by Keith R. Benson. Translated by Robert Ellrich. Stanford: Stanford University Press, 1993.

Roper, Lyndal. *Oedipus and the Devil: Witchcraft, Sexuality and Religion in Early Modern Europe*. New York: Routledge, 1994.

Rosenmeyer, Patricia A. "Tracing the Medulla as a Locus Eroticus." *Arethusa* 32, no. 1 (1999): 19-47.

Rothstein, Marian. *The Androgynous in Early Modern France: Contextualizing the Power of Gender*. New York: Palgrave, 2015.

Rousseau, George. "Temperament and the Long Shadow of Nerves in the Eighteenth Century." In *Brain, Mind and Medicine: Essays in Eighteenth-Century Neuroscience*. New York: Springer, 2007.

The Routledge Encyclopedia of Philosophy. New York: Routledge, 1998.

Rublack, Ulinka and Pamela Selwyn. "Fluxes: The Early Modern Body and the Emotions." *History Workshop Journal*, no. 53 (2002): 1-16.

Ruggiero, Guido. *Binding Passions: Tales of Magic, Marriage, and Power at the End of the Renaissance*. Oxford: Oxford University Press, 1993.

Rycroft, Eleanor. "Hair, Beards, and the Fashioning of English Manhood in Early Modern Travel Texts." In *New Perspectives on the History of Facial Hair: Framing the Face*, edited by Jennifer Evans and Alun Whitey, 69-89. New York : Palgrave Macmillan, 2018.

Schäfer, Daniel. *Old Age and Disease in Early Modern Medicine*. Translated by Patrick Baker. London: Pickering & Chatto, 2011.

Schäfer, Jürgen. "When They Marry, They Get Wenches." *Shakespeare Quarterly* 22, no. 3 (1971): 203-11.

Schiebinger, Londa. *The Mind Has No Sex? Women in the Origins of Modern Science*. Cambridge: Harvard University Press, 1989.

Schleiner, Winfried. "Early Modern Controversies About the One-Sex Model." *Renaissance Quarterly* 53, no. 1 (2000): 180-91.

Shepard, Alexandra. *The Meanings of Manhood in Early Modern England, 1560-1640*. Oxford: Oxford University Press, 2003.

Simons, Patricia. "Manliness and the Visual Semiotics of Bodily Fluids in Early Modern Culture." *Journal of Medieval and Early Modern Studies* 39, no. 2 (2009): 331-73.

Simons, Patricia. *The Sex of Men in Premodern Europe: A Cultural History*. New York: Cambridge University Press, 2011.

Singer, Charles. "Note on a Thirteenth-Century Diagram of the Male Genitalia." *Proceedings of the Royal Society of Medicine* 9 (1916): 212-214.

Siraisi, Nancy. *Avicenna in Renaissance Italy: The Canon and Medical Teaching in Italian Universities after 1500*. Princeton: Princeton University Press, 2014.

Siraisi, Nancy. *The Clock and the Mirror: Girolamo Cardano and Renaissance Medicine*. Princeton: Princeton University Press, 1997.

Siraisi, Nancy. *Medicine and the Italian Universities, 1250-1600*. Brill: Boston, 2001.

Siraisi, Nancy. *Medieval and Early Renaissance Medicine*. Chicago: University of Chicago Press, 2009.

Sissa, Giulia. "Subtle Bodies." In *Fragments for a History of the Human Body*, vol. 3. Edited by Michel Fehrer, Ramona Naddaff, and Nadia Tazi, 132-57. New York: Zone Books, 1989.

Smith, Lisa. "The Body Embarrassed? Rethinking the Leaky Male Body in Eighteenth-Century England and France." *Gender & History* 23, no. 1 (2010): 26-46.

- Smith, Moira. "The Flying Phallus and the Laughing Inquisitor: Penis Theft in the *Malleus Maleficarum*." *Journal of Folklore Research* 39, no. 1 (2002): 85-117.
- Steinberg, Leo. *The Sexuality of Christ in Renaissance Art and Modern Oblivion*, 2nd ed.. Chicago: University of Chicago Press, 1996.
- Stephanson, Raymond. *The Yard of Wit: Male Creativity and Sexuality, 1650-1750*. Philadelphia: University of Pennsylvania Press, 2004.
- Stephens, Walter. "Witches Who Steal Penises: Impotence and Illusion in the *Malleus Maleficarum*." *Journal of Medieval and Early Modern Studies* 28, no. 3 (1998): 495-529.
- Michael Stolberg, "An Unmanly Vice: Self-Pollution, Anxiety, and the Body in the Eighteenth Century." *Social History of Medicine* 13, no. 1 (2000): 1-22.
- Stolberg, Michael. "A Woman Down to Her Bones: The Anatomy of Sexual Difference in the Sixteenth and Early Seventeenth Centuries." *Isis* 94 (2003): 274-99.
- Sudhoff, Karl. "Graphische Darstellungen innerer Körperorgane." *Archiv für Geschichte der Medizin* 7, no. 6 (1914): 363-78.
- Taylor, Gary. *Castration: An Abbreviated History of Western Manhood*. New York: Routledge, 2000.
- Temkin, Owsei. *Galenism: Rise and Decline of a Medical Philosophy*. Ithaca: Cornell University Press, 1973.
- Thomas, Leah D. "Manifesting Manhood: The Regulation of the Male Body in English Portraits, c. 1587-1595." M.A. thesis. University of North Carolina-Chapel Hill, 2014.
- Thomasset, Claude. "Le médiéval, la force et le sang." In *Histoire de la virilité: l'invention de la virilité de l'Antiquité aux lumières*, edited by Georges Vigarello, 141-76. Paris: Éditions du Seuil, 2011.
- Thesaurus linguae Latinae*. Berlin: De Gruyter, 1900-.
- Todd, Edwin M. *The Neuroanatomy of Leonardo da Vinci*. Park Ridge, IL: American Association of Neurological Surgeons, 1991.
- Toulalan, Sarah. "'To[o] Much Eating Stifles the Child': Fat Bodies and Reproduction in Early Modern England." *Historical Research* 87, no. 235 (2014): 65-93.

Tuana, Nancy. "The Weaker Seed: The Sexist Bias of Reproductive Theory." *Hypatia* 3, no. 1 (1988): 35-59.

Ursin, Frank, Giovanni Rubeis, and Florian Steger. "The Pathophysiology and Therapy of Erectile Dysfunction in a Newly Discovered Treatise by Wolfgang Reichart (1486-circa 1547)." *Urology* 139 (2020): 22-26.

Van Houts, Elisabeth. *Married Life in the Middle Ages, 900-1300*. Oxford: Oxford University Press, 2019.

Van Marle, Raimond. *Iconographie de l'Art Profane au Moyen-Age et à la Renaissance, et la Décoration des Demeures*. La Haye: M. Nijhoff, 1931-32.

Veldman, Ilja M. "Seasons, Planets and Temperaments in the Work of M. van Heemskerck: Cosmological Allegory in Sixteenth-Century Netherlandish Prints." *Simiolus: Netherlands Quarterly for the History of Art* 11, no. 3-4 (1980): 149-76.

Vicary, Grace Q. "Visual Art as Social Data: The Renaissance Codpiece." *Cultural Anthropology* 4, no. 1 (1989): 3-25.

Von Staden, Heinrich. *Herophilus: The Art of Medicine in Early Alexandria: Edition, Translation and Essays*. Cambridge, UK: Cambridge University Press, 1989.

Wagner, Darren N. "Leaky Bodies, Bawdy Books: Gonorrhea and Reading in Eighteenth-Century Britain." *Literature and Medicine* 34, no. 2 (2016): 320-40.

Wagner, Darren. "Sex, Spirits, and Sensibility: Human Generation in British Medicine, Anatomy, and Literature, 1660-1780." Ph.D. diss. University of York, 2013.

Wear, Andrew. *Knowledge and Practice in English Medicine, 1550-1680*. Cambridge, UK: Cambridge University Press, 2000.

Wiesner-Hanks, Merry E. *Women and Gender in Early Modern Europe*, 2nd ed. Cambridge: Cambridge University Press, 2000.

Wilson, Adrian. *The Making of Man-Midwifery: Childbirth in England, 1660-1770*. Cambridge, MA: Harvard University Press, 1995.

Witte, John and Robert M. Kingdon. *Sex, Marriage, and Family in John Calvin's Geneva, Volume One: Courtship, Marriage, and Engagement*. Grand Rapids: Eerdmans, 2005.

Worth-Stylianou, Valerie. *Les traités d'obstétrique en langue française au seuil de la modernité*. Librairie Droz, 2007.