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Birthing The New Birth: The Natural Philosophy Of Childbirth In The Theology Of Jonathan Edwards

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BIRTHING THE NEW BIRTH: THE NATURAL PHILOSOPHY OF CHILDBIRTH IN THE THEOLOGY OF JONATHAN EDWARDS

By

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ABSTRACT

"It may be in the new birth as it is in the first birth." So wrote theologian Jonathan Edwards in his "Miscellanies" note numbered 241, named "Regeneration". The "new birth" that he spoke of was the process of religious conversion whereby God takes away one's sinful nature and instills a new, regenerate nature. The process of the new birth is intricately linked to the "first birth," which refers to physical childbirth. This thesis explores the ways in which eighteenth-century conceptions of childbirth helped to shape the new birth theology of Edwards. While historians have tended to portray Edwards, the revivals that he spawned, and new birth theology as erasing the distinctions of gender, this thesis will argue that Edwardsian evangelicalism actually highlighted the sinfulness of women.

CHAPTER 1

WHAT "EXCEEDINGLY CAREFUL SCHOLARSHIP" HAS OVERLOOKED

Introduction

"It may be in the new birth as it is in the first birth."[1] So wrote Jonathan Edwards in his "Miscellanies" note numbered 241, named "Regeneration". The "new birth" that he spoke of was the process of religious conversion whereby God takes away one's sinful nature and instills a new, regenerate nature. This new birth is intricately linked to the "first birth," which refers to physical childbirth. One receives a sinful nature when one is physically born, which can be reversed if one undergoes the new, or second, birth. Although this second birth undoes the sinful nature of the first birth, these two births are similar in progression. Edwards believed that understanding the physical process of the first birth could help one understand the supernatural workings of the new birth.

In an argument parallel to Edwards', I would like to show that the historian in this context cannot divorce the new birth from childbirth, and therefore theology from what Edwards called natural philosophy. If theologians like Edwards understood spiritual rebirth in the terms of physical childbirth, then historians must understand eighteenth-century conceptions of childbirth in order to understand new birth theology. This argument is composed of four parts which validate it: the extent to which theologians, including but not limited to Edwards, in eighteenth-century revivalism dwelled on the childbirth aspects of the new birth; the significance of the genderedness of the new birth; the many ways in which views about reproduction and childbirth change over time; and the ways in which the historian can understand these views of childbirth in their eighteenth-century context.

First, Edwards was not the only one concerned with the new birth during the early eighteenth century. Many evangelical theologians and revival preachers in the colonies, in England and in Europe were beginning to think that the new birth was the heart of true Christianity. Renowned revivalist George Whitefield called "the doctrine of our regeneration, or our new birth in Christ Jesus . . . one of

[1] Smith, John, Harry S. Stout and Kenneth P. Minkema, editors. *A Jonathan Edwards Reader*. New Haven: Yale University, 1995: 42.

the most fundamental doctrines of our holy religion."[2] According to Whitefield, the new birth was required because of the consequences of the first birth: "Since that which was born of flesh would be flesh still, we should be the same carnal persons as ever, being derived from carnal parents, and consequently receiving the seeds of all manner of sin and corruption from them."[3] Because the first birth necessitated the new birth, theologians like Edwards and Whitefield could not help but refer to childbirth when they spoke of the new birth. While other new birth theologians like Whitefield, John Wesley, Isaac Ambrose, Anne Dutton and others also spoke about childbirth, I will only focus on Jonathan Edwards in this project. Edwards arguably stands alone in the history and the historiography, so that his influence is unrivaled. The entire corpus of Edwards's work and the historiography surrounding it is larger than the rest of the new birth theologians combined. In order to give proper treatment to Edwards, I must dedicate the entire thesis to him. This is a fortunate problem to have though, for Edwards has a lot of fascinating things to say about the new birth and its relationship to childbirth.

Secondly, the new birth is important because it gives historians a window through which to view theologies of gender in the eighteenth-century. By theologies of gender, I mean the ideology which invokes God or scripture to explain the relationship or innate "essence" of men and women. Theology is plural here because differing interpretations of the new birth led to differing theologies of gender. So how exactly did the new birth affect theologies of gender? If we interpret the new birth in terms of childbirth, as Edwards would have us do, then the new birth could potentially have a gendered aspect in a way similar to that of childbirth, which is inherently gendered. At least in the context of preaching on the new birth, pastors were oftentimes referencing the experience of women in childbirth. I will expand on this association throughout the thesis, but here I would like to mention a word about gendered practices. Due to the scope of this project, I will limit my analysis to show the explicit connection of the new birth to theologies of gender. In other words, this thesis will not explore how these theologies of gender affected gendered practices.

Thirdly, I will be distinguishing between two different discourses on reproduction. The first discourse on reproduction which I will address occurred within the realm of seventeenth- and eighteenth-century European natural philosophy. Natural philosophers who participated in the discourse

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[2] Whitefield, George. *The works of the Reverend George Whitefield, M.A. Containing all his sermons and tracts which have been already published: with a select collection of letters. Also some other pieces on important subjects, never before printed. To which is prefixed, an account of his life, compiled from his original papers and letters. Vol. VI.* Vol. 6 of 7. London, 1771: 257.

[3] Smith, Timothy L. *Whitefield and Wesley on the New Birth*. Grand Rapids: Francis Asbury Press, 1986: 68.

were usually highly educated, independently wealthy, and were the ones who made new discoveries about the reproductive process. In contrast, the second discourse will refer broadly to eighteenth-century Euro-American cultural conceptions of sexuality, reproduction, and childbirth. Some historians would call this popular science; yet Robert Orsi has pointed out the negative connotation associated with the use of the label "popular".[4] Historian of medicine Mary Fissell has no qualms about calling this popular science, but she prefers to call it "vernacular body culture".[5] By vernacular body culture, she means "the ways in which people talked about and imagined their own and other's bodies." While Fissell's work is groundbreaking and important to this current project, vernacular body culture does not fully encapsulate the idea that eighteenth-century colonial Americans actually thought that their own knowledge about their bodies was systematic and empirical. When unwed Sarah Grosvenor of Connecticut was coerced into taking oil of savin—a commonly used abortifacient—in 1742, she fully expected that it would kill her unborn fetus, which it did.[6] She did not believe that savin was magic, but rather it was tested and proven to be a medicine that caused abortions. When the boys involved in the Northampton Bad Book Case read midwifery pamphlets and then proclaimed that they knew more about women's bodies than women themselves, the boys thought that their knowledge came from expert doctors who were revealing nature's secrets.[7] Furthermore, such expert doctors who wrote midwifery pamphlets understood themselves to be disseminating real, physical facts about the human body. Therefore, when I write about popular cultural conceptions of reproduction, I am not discounting the way in which eighteenth-century Euro-Americans viewed these conceptions as real and empirical.

Throughout the thesis I will be explaining how these two discourses on reproduction affected theology. Although theology and these discourses may seem to share no epistemological relations on the surface, theology was constantly being informed by natural philosophy, and vice versa. By putting himself in conversation with such erudite thinkers as Newton and Locke, Edwards was especially adept at incorporating elite natural philosophy into his theological writings.[8] Natural philosophers who wrote about reproduction, like Nicolas Malebranche, had a large impact on the way in which Edwards thought

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[4]See Orsi, Robert. *The Madonna of 115th Street: faith and community in Italian Harlem, 1880-1950*. New Haven: Yale University, 2002.

[5] Rosenberg, Charles, ed. *Right living: an Anglo-American Tradition of Self-Help Medicine and Hygiene*. Philadelphia: JHU Press, 2003: 78; see also Fissell, Mary E. *Vernacular Bodies: The Politics of Reproduction in Early Modern England.* Oxford: Oxford University, 2004.

[6] See Dayton, Cornelia Hughes. "Taking the Trade: Abortion and Gender Relations in an Eighteenth-Century New England Village". *William and Mary Quarterly*, January 1991.

[7] Rosenberg 2003: 75.

[8] See Miller, Perry. J*onathan Edwards.* New York: Sloane, 1949.

about the new birth theology. Some historians might be eager to overlook eighteenth-century explanations of reproduction in relation to new birth theology because they assume that childbirth was the same then as it is now. However, the physical process of childbirth, along with connecting cultural explanations about conception, gestation, labor and delivery, have all changed drastically over time. Since Edwards did not have a twenty-first century perspective on childbirth, his theology of the new birth must be read in terms of an exclusively eighteenth-century lens.

Fourthly and finally, it could be difficult for the historian to get at such eighteenth-century conceptions of childbirth if they only analyzed theological treatises on the new birth. Yet, there was such a wealth of information printed and published about childbirth during this time that historians should find it easy to understand eighteenth-century views on birth. For the purposes of this project, I will focus specifically on the two discourses mentioned above—the discourse of the natural philosophy of reproduction and the more popular discourse that reflects common cultural conceptions of reproduction. I will analyze the first discourse by exploring a few natural philosophy treatises that Edwards read, and I will analyze the second discourse by exploring a few midwifery pamphlets which Edwards was familiar with. The natural philosophy treatises normally only included one section out of hundreds on the subject of reproduction, while midwifery pamphlets dedicated the whole work to reproduction. These pamphlets are basically how-to manuals for midwives, which usually start by describing the reproductive organs of a man, and then the female anatomy is described in terms of how it differs from the male anatomy. They go on to explain what happens during the act of coition, during conception, during gestation, and during childbirth. Although such pamphlets were supposedly written for midwives, they became very popular with the general public, among men and women alike. Published in London and circulated widely in the colonies, both natural philosophy treatises and midwifery pamphlets influenced and were influenced by cultural conceptions of gender, sexuality, and childbirth.

To my knowledge, historians have never explained early to mid-eighteenth-century new birth theology in terms of childbirth. In fact, very few historians of revivalism deeply analyze new birth theology at all, even though new birth theology was the cornerstone of evangelical revivalism, especially in the First Great Awakening. Yet, this does not mean that the historiography of revivalism in this time period is wholly impertinent to the current project. On the contrary, discussions of gender and sexuality in eighteenth-century revivalism connect directly to explanations of childbirth and the theology of the new birth. For the following historiographical review, I will focus upon these discussions of revivalism

and the First Great Awakening, especially ones that involve the theology of gender as espoused by Edwards.

Historiographical Review

One may wonder why Edwards stands at the center of this project. After all, Edwards has been analyzed by so many different historians using so many different angles that perhaps everything to say about him has been said already. In a historiographical essay about Edwards, Christopher Grasso writes, "The premise of the Yale edition of Edwards' works . . . is that reinterpretation can properly proceed only if all the puzzle pieces become generally available."[9] Apparently, many historians of religion believe that new scholarship on Edwards and the revivals is warranted as new little tidbits of information are discovered in the historical record. While this approach is not necessarily a negative thing, one wonders if such scholarship would benefit more from looking at the historical record with different theoretical lenses, rather than just looking at it over and over again in an effort to find new information with the same theoretical lens. Calling the recent explosion of scholarship on Edwards a "revival" in and of itself, historian Leigh Schmidt notes that this scholarship focuses disproportionately on Edwards as theologian and philosopher, when it should focus on Edwards as a man situated "in a colonial landscape of encounter," a man who was a product of his time and culture.[10] Furthermore, Schmidt charges historians of Edwards with ignoring "other modes of analysis" besides theology and philosophy, especially those modes "based on gender, sexuality, and the body, even though recent work (notably that of Chamberlain) has suggested that Edwards' voluminous writings repay such attention."[11] While I wholeheartedly agree with Schmidt's criticisms, his framing of this issue is less than helpful. He essentially equates these new modes of analysis with "fashionableness," a kind of intellectual trendiness that older scholars are unwilling to succumb to. Here I am borrowing the phrase "intellectual trendiness" from Marilyn Gottschall, who has pointed out the unfortunate fact that new modes of analysis, especially new feminist theories of gender, have "been dismissed by traditional scholars as intellectual trendiness, the latest in a series of graduate school fads that come and go leaving the real work of the

[9] Grasso, Christopher. "Images and Shadows of Jonathan Edwards." *American Literary History*. Volume 8, No. 4. 1996: 683.
[10] Schmidt, Leigh. "The Edwards Revival: Or, the Public Consequences of Exceedingly Careful Scholarship". *The William and Mary Quarterly*. Volume 58, No. 2. 2001: 485.
[11] Schmidt 2001: 481.

academy unscathed."[12] Instead of appropriating cutting-edge theories of gender, historians of Edwards and the revivals have been satisfied to comb the historical record for shards of new information, unwilling to take on new theoretical lens to reinterpret old data.

Perry Miller was one of the first modern scholars of Edwards to have been criticized for only focusing narrowly on Edwards' philosophy. In his prominent biography of Edwards, Miller's first sentence reads, "The real life of Jonathan Edwards was the life of his mind."[13] His mind was a brilliant one, Miller shows, because he was able to draw on such diverse intellectual fields as natural philosophy, Puritan theology, and English democratic political theory. One has to admire the fact that Miller himself has such a thorough understanding of these fields that he can recognize when Edwards is in dialogue with Locke or Newton or other such erudite thinkers. Although Miller has virtually nothing to say about Edwards' attitudes towards women or reproduction, he has a lot to say about Edwards' relationship to natural philosophy, which Miller equates with science. "Edwards was infinitely more than a theologian," Miller writes, because "he speaks from an insight into science and psychology so much ahead of his time that our own can hardly be said to have caught up with him."[14] Thus Edwards is portrayed as more modern than medieval, more scientist than theologian.

Historian Philip Greven breaks from Miller's philosophical line of analysis in his seminal book, *The Protestant Temperament: Patterns of Child-Rearing, Religious Experience, and the Self in Early America*.[15] This work is unique because it takes the often overlooked topic of child-rearing as its subject matter. Yet, it has been influential because Greven's comprehensive analysis shows how child-rearing practices have larger implications for such societal institutions as religion, gender, sexuality, education, etc. From the first page of the book, Greven declares that he seeks to get into the "inner" or private life of late seventeenth, eighteenth and early nineteenth century Americans, rather than focus on the traditional historical material of the "outer" or public life. In a time when Miller's model of intellectual history was being criticized but the new school of "lived religion" scholars had not been fully formed yet, Greven's insights were crucial. He states, "Miller's assumption thus has encouraged the concentration by historians upon religious doctrines at the expense of religious experience."[16] Instead of constructing an overarching, linear, master narrative of American religious history that insists upon the

[12] Gottschall, Marilyn. "The Ethical Implications of the Deconstruction of Gender." *Journal for the American Academy of Religion*. Volume 70, No. 2. 2002: 279.
[13] Miller, Perry. J*onathan Edwards.* New York: Sloane, 1949: 1.
[14] Opie, John, ed. *Jonathan Edwards and the Enlightenment*. Lexington: D.C. Heath and Co., 1969: 22-23.
[15] Greven, Philip. *The Protestant Temperament: Patterns of Child-Rearing, Religious Experience, and the Self in Early America*. New York: Alfred A. Knopf, 1977.
[16] Ibid., 5.

importance of intellectual ideas, Greven provides an alternative that employs an ethnographical method to discover patterns of behavior that recur in the American cultural landscape.

In this cultural landscape, Greven identifies three distinct social classes that were pervasive in early America: evangelicals, moderates, and the genteel. Evangelicals like Jonathan Edwards were defined by their "suppression" of the self and its bodily desires. Moderates like Charles Chauncy were, in contrast, "self-approving," and preoccupied with morality and virtue rather than sin and grace.[17] Genteel folk, like many Southerners, were self-confident and self-assertive, eager to experience all of life's pleasures without too much concern for the hereafter. For the purposes of my current project, Greven's exploration into evangelical thought and practice with regard to gender and sexuality is most pertinent. Greven, perhaps due to his Freudian background, makes good use of a conflict perspective that envisions the tensions and contestations over power and resources between men and women. Take, for instance, the marriage of Jonathan and Sarah Edwards. While some consensus historians have interpreted the Edwards's relationship as positive, loving, and beneficial to both parties, Greven points out that Jonathan Edwards unconsciously associated women with "danger and disappointment," and in at least one case used the vaginal cavity as an analogy for Hell.[18]

With the correlation of the vagina with Hell, it is no wonder that evangelical men were fundamentally uncomfortable with the idea and the act of sex itself, at least sex with a woman. Cotton Mather described the "Vileness" of sex, and Nicholas Gilman prayed that he would be like Christ, the "first of Virgins".[19] William Seward was assured by Christ that he would not be allowed "to fall by the hands of a woman". While Greven thoroughly proves that sexual feelings for women were condemned in evangelical culture, he also shows that not all sexual feelings were viewed negatively. Joseph Bean of Boston was certainly not the first or only evangelical man to have sexual dreams about Christ and recite marriage vows to him.[20] In fact, Greven insists that such imagery "make[s] sense only if latent homosexuality is assumed. To become the bride of Christ certainly carries this as one of several possible meanings."[21]

Greven's work was written at a time when many historians were championing the consensus model of American religious history, which emphasizes the unity and positive aspects of religion. For this reason, Greven's employment of a conflict model stands out in the historiography. Catherine

[17] Ibid., 13.
[18] Ibid., 132.
[19] Ibid., 130.
[20] Ibid., 126.
[21] Ibid., 132.

Albanese has defined "the conflict model" as one that "emphasizes contentiousness and contests for recognition, status," etc.[22] Greven shows how the religious ideology of evangelicalism in the eighteenth century leads to conflict between men and women. In contrast, Barbara Leslie Epstein's work, entitled *The Politics of Domesticity*, balances conflict and consensus. Her book compares men and women's conversion narratives in the eighteenth century to narratives from the nineteenth century and argues that women in the First Great Awakening "participated in these revivals, evidently in numbers equal to men, but no particular female consciousness, and for that matter no particular female role, seems to have emerged" as it did in the Second Great Awakening.[23] Themes of consensus are evident in her discussion of the First Great Awakening while more themes of conflict are identifiable in her description of the Second Great Awakening.

However, Epstein's main focus is not on the First Great Awakening. Only one out of five of her chapters is devoted to the eighteenth century. As her subtitle—*Women, Evangelism, and Temperance in Nineteenth-Century America*—suggests, the bulk of the book concentrates on the Second Great Awakening and women in the 1800s. Epstein's central thesis argues,

> The spheres of men and women were not so separate as they seemed in the nineteenth century, that domesticity allowed for an expansion of women's moral influence, but that influence is not the same thing as power and that women's power, such as it had been in the eighteenth century, was undermined by nineteenth century domesticity.[24]

Since the real focus of Epstein's work is on the nineteenth century, she only included the First Great Awakening in her analysis so that she could compare it with the Second Great Awakening. Because of this comparison, gender distinctions in the eighteenth century become downplayed so that a stark contrast can be made when looking at the nineteenth century. Even after conceding that men and women performed different kinds of economic work, that women were subordinate to their husbands, that women needed "the social life provided by the church" while men did not because of "trade," that women's lives were harder than men's, that men were more likely to "emphasize their sinful deeds" while women were more likely to "condemn their very beings," that women were viewed as inherently more evil than men, that women cared more about other people than men, even after conceding that gender "remained one of the fundamental structures of social life and as such shaped the experience and

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[22] Albanese, Catherine. "American Religious History: A Bibliographical Essay," in Currents in American Scholarship (Washington, D.C.: Study of the U.S. Branch, Bureau of Educational and Cultural Affairs, Department of State, 2002; booklet and on-line publication at http://exchanges.state.gov/education/amstudy/), pg. 6.
[23] Epstein, Barbara Leslie. *The Politics of Domesticity: Women, Evangelism, and Temperance in Nineteenth-Century America*. Middletown, CT: Wesleyan University Press, 1981: 1.
[24] Ibid., 148-149

outlook of both sexes," Epstein still concludes that women and men shared a common religious experience in the First Great Awakening.[25] In her effort to show the radical disconnect between men and women's experiences in the Second Great Awakening, she overlooks the constructedness of gender in eighteenth-century churches.

Yet, religion is not the only force that is central to Epstein's analysis. Social class and economics are, for Epstein, the real forces behind nineteenth-century gender relations. She argues that the process of industrialization and the rise of a market economy pushed women into a distinctively female religious sphere which was characterized by moralism and domesticity. In the eighteenth century, women were free to work alongside their husbands on the family farm in a domestic partnership wherein women had some degree of authority and prestige. This authority was extended to women in the religious sphere during the First Great Awakening. Yet, during the nineteenth century, women moved to the cities and "lost direct involvement . . . in economic production" because their husbands made enough money for them to stay at home.[26] This "economic dependence" on men brought greater subordination to men. In response to such economic pressures, women who were forced into powerless world of domesticity used religion to champion the domestic sphere, thereby giving themselves a sense of moral authority. Thus, for Epstein, the distinctly female, middle-class, Victorian Christian culture was born.

Yet, although it gave some feeling of empowerment, Epstein does not view religion as a positive aspect of a woman's life. While evangelical Christianity sometimes "represented a defense of women's interests," it did so "only within the framework of an acceptance of male dominance".[27] This acceptance of male dominance was viewed as necessary to keep the family unit stable. Family stability was the primary concern of nineteenth-century women evangelicals, Epstein insists, not gender equality. The moral code of evangelical women, with its emphasis on temperance, domesticity, and family values, ensured the success of the family, which was manifestly middle-class. The birth of a middle-class family consciousness, spawned by economics and reinforced by religion, meant the "confinement" of women to a "narrow set" of gender roles.[28] Therefore, Epstein believes that economics and religion had the power to relegate women to the domestic sphere, thereby propagating gender inequality in the nineteenth century.

[25] Epstein 1981: 21; 22; 28-29; 34; 37; 41; 43; 44.
[26] Ibid., 2.
[27] Ibid., 149.
[28] Ibid., 4.

Epstein's book is a landmark text, not necessarily because of its originality, but because of the ways in which it has been appropriated by subsequent historians. The following section will detail how Epstein's work has been misread and misinterpreted by Lindley, Juster, Braude, and Brekus. These historians of gender in the Great Awakening have used Epstein to support their claims that eighteenth-century evangelicalism was good for women. For example, Susan Hill Lindley's survey text, *"You Have Stepped Out of Your Place": A History of Women and Religion in America*, devotes one chapter out of twenty-two to the First Great Awakening. Here Lindley employs Epstein's work to show that the revivalism of the eighteenth century promoted gender equality, instead of reserving Epstein for the chapter on the Second Great Awakening, where it would have perhaps been more suitable.[29] Lindley blandly states, "Insofar as the Great Awakening was, in part, a challenge to traditional social and religious hierarchies, women, too, received some encouragement to step out of or at least to expand their place."[30] While Epstein's work engages the economic forces behind gender roles, Lindley's work only extracts a fragment of Epstein's argument, namely the small section on eighteenth-century gender equality, in the service of Lindley's declension narrative.

Also latching onto this theme of equality, historian Susan Juster has sought to prove that "the sexual egalitarianism implicit in evangelical faith, with its emphasis on individual rebirth and its undifferentiated sense of community, translated into a sharing of power between the sexes in the internal governance of the church."[31] In her book entitled *Disorderly Women: Sexual Politics & Evangelicalism in Revolutionary New England*, Juster traces the role of women in evangelicalism from the eighteenth century to the nineteenth century, much like Epstein. However, Juster does not accept Epstein's work uncritically like Lindley does. Juster has written, "Epstein's position is reminiscent of the 'golden' age thesis . . . that men and women . . . enjoyed a rough camaraderie born of shared responsibilities in rural colonial New England."[32] Note that Juster's sentence is critiquing Epstein's main argument that economics ("shared responsibilities") birthed gender equality. Besides the role of economics, Juster does not quibble with Epstein's secondary argument, which insisted that gender equality was found in evangelicalism (albeit because of economics). Twisting this argument around, Juster insists that this evangelicalism spawns gender equality. Take, for instance, the following sentence: "The term 'equality'

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[29] Lindley, Susan Hill. *"You Have Stepped Out of Your Place": A History of Women and Religion in America*. Louisville: Westminster John Knox Press, 1996: 42.
[30] Ibid., 47.
[31] Juster, Susan. *Disorderly Women: Sexual Politics & Evangelicalism in Revolutionary New England*. Ithaca: Cornell University Press, 1994: 3.
[32] Ibid., 52, n.12.

itself is probably misleading when applied to things of the Spirit, for it smacks of the kind of earthly considerations evangelicals eagerly left behind when they assembled in their congregations."[33] Juster problematizes the term "equality" so that she can show how evangelicals were so focused on heavenly things that they did not even pay attention to gender. While Epstein would not necessarily disagree with statement, one could assume that Epstein would be frustrated with Juster's dismissal of economic forces.

Ann Braude is another historian of religion who both criticizes and embraces Epstein's arguments. In an interesting chapter in Thomas Tweed's *Retelling U.S. Religious History*, Braude writes, "The model conversion experience of the Great Awakening encouraged an emotional and sensual surrender in which both male and female saints became 'brides' of Christ. The relative spiritual equality of the period produced remarkably similar accounts of the conversion experience from men and women."[34] In support of this statement, Braude cites Epstein. Braude references Epstein's work a total of three times, and Juster's once, in this short essay. Similar to Juster, Braude denounces declension narratives, whether they relate to gender or religion. Religious piety has been interpreted as a declension in the nineteenth century, Braude has shown, because male piety declined. Braude has explained, "Declension, feminization, and secularization incorporate into the story of American religion assumptions about women's powerlessness derived from the value systems of American Protestantism."[35] Such "undocumented normative assumptions about religion and gender," which oftentimes view religion as damaging to women's power, have plagued "the historiography of American religion."[36] Here Braude is explicitly attacking Anne Douglas, who views "the feminization of American religion" in the nineteenth century negatively, as caused by silly sentimental religion which made women think that they had power when they really had none at all.[37] In trying to counter Douglas' negative attitude toward a distinctly "feminine" version of religion, Braude employs Epstein's work, which is particularly ironic given the fact that Epstein relies heavily on Douglas.

Catherine Brekus' *Strangers and Pilgrims: Female Preaching in America, 1740-1845*, though interesting and groundbreaking, also fails to understand Epstein's argument in its entirety. The first section of Brekus' book is entitled "Neither Male Nor Female," where she details the ways in which gender roles in eighteenth-century churches were different from both the seventeenth century and the

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[33] Ibid., 12.
[34] Braude, Ann. "Women's History *Is* American Religious History". In *Retelling U.S. Religious History*, edited by Thomas A. Tweed, 87-107. Berkeley: University of California Press, 1997: 98.
[35] Ibid., 97.
[36] Ibid., 107.
[37] Douglas, Ann. *The Feminization of American Culture*. New York: Anchor Books, 1988.

nineteenth century. While women partnered with their husbands in "domestic manufacturing" and could even act as "deputy husbands," women were given very little institutional authority in most churches.[38] However, during the Great Awakening, Brekus explains, these gender roles would completely change. "Women refused to keep silence in the churches any longer" and the Great Awakening gave them the ability to assert their authority.[39] Disagreeing with Epstein's line of thought without even realizing it, Brekus has insisted that the Great Awakening was a "*religious* phenomenon with distinctively religious roots".[40] This religious phenomenon encouraged "differences of gender" to "fade".[41] Picking up on the inconsistency of Epstein's argument which I highlighted above, Brekus has stated that the revivals "did not completely erase" gender distinctions, for slight variations in word choice among conversion narratives reveals that women were more inclined to have a "greater sense of original sin than men".[42] In addition, this original sin was found in women's bodies, whereas for many men it was found in their hearts. Overall, though, Brekus maintains, "My analysis of these narratives largely agrees with the interpretations offered by Juster . . . and . . . Epstein."[43] Brekus does not recognize the ways in which Juster's work and Epstein's work are incompatible. Furthermore, she does not recognize the ways in which Epstein's work counteracts her own.

Breaking from Epstein's line of research and following instead in Greven's footsteps, historian of religion Ava Chamberlain is one of the few scholars who has explored the complicated relationship between Edwards' theology and natural philosophy regarding women and reproduction. In a fascinating article on the ways in which Edwards' conception of female reproductive organs influenced and was influenced by his theology, Chamberlain explains that the theory of the ovum and epigenesis was just coming to be accepted by the medical-scientific community during Edwards' time. Before this theory was developed, people believed in a one-sex model, which maintained that all human bodies—male and female—were the same. This is not to say that men and women were equal; on the contrary, men, though of the same kind as women, were greater in degree and closer to "metaphysical perfection".[44] If a body was "cool and weak," it was deemed female; if it was "hot and strong," it was deemed male.

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[38] Brekus, Catherine. *Strangers and Pilgrims: Female Preaching in America, 1740-1845*. Chapel Hill: University of North Carolina, 1998: 27-28.
[39] Ibid., 34.
[40] Ibid., 36; emphasis in original.
[41] Ibid., 38.
[42] Ibid., 39-40.
[43] Ibid., 355, n. 37.
[44] Chamberlain, Ava. "The Immaculate Ovum: Jonathan Edwards and the Construction of the Female Body". *The William and Mary Quarterly*, 3rd Ser., Vol. 57. Apr., 2000: 294.

However, during the eighteenth century, a two-sex model was becoming more prevalent among physicians and the general public. This model claimed that if men produced semen and women produced ova, then the reproductive organs, and by extension, the bodies of men and women, were essentially different. Edwards' referenced this theory of the ovum in some of his works. Chamberlain argues that Edwards accepted "ovism" because it flaunted the sovereignty of God in his choice to allow Christ to be born through the selection of an infinitely small ovum out of an infinite number of ova located in the "evil, dark, lifeless, impure environment" of the womb.[45] Edwards believed that the holiness of Christ was untainted by the sinfulness of his earthly mother, Mary, and the heritage of sinful women before her, such as Leah, Tamar, Rahab, etc. "Encased in the corrupt bodies of countless sinful women," writes Chamberlain, "Christ's human body passed through the ovaries of foreigners, poor people, sexual misfits, and prostitutes. Underneath this generation upon generation of sin God's electing love upheld Christ's immaculate ovum."[46] In other words, Christ was not corrupted by these women because God, in his sovereignty, sought to protect Christ's ovum from its start in Eve's body all the way down to its fulfillment in Mary's body. Christ himself did not require salvation and, moreover, could be the atoning sacrifice for others because of this protection from the sin that comes through the ovum of women. On the other hand, the rest of the human population is not so lucky. God did not protect any other person's ovum in this way, so that everyone besides Christ has indeed been corrupted by being born of a woman. This produces the need for everyone to experience the conversion process for themselves and thereby get rid of one's inherited depraved nature. The need for conversion, or the "vivification of the fetus in the womb," may have more to do with the original sin of the ovum, which equates to the original sin of being born of a woman, than previous historians have been willing to recognize. This negative "understanding of female anatomy" on the part of Edwards "reveals a tendency to naturalize women's subordination to men".[47]

The leaving behind of the one-sex model and the adoption of the two-sex model in its place not only indicates a shift in the natural philosophy of the body, but also cultural conceptions of proper roles for men and women. In the midst of the Puritan seventeenth century, the relationship between men and women in the form of marriage was imbued with divine symbolism, thereby "elevating marriage as the

[45] Ibid., 306.
[46] Ibid., 312.
[47] Ibid., 292.

proper context for Christian life".[48] As Amanda Porterfield has illustrated, this elevation of marriage led to the elevation of women, who were to be the "helpmeets" of their husbands. Filling this role of helpmeet did not necessitate the relegation of women to the domestic sphere. Chamberlain explains that this one-sex model allowed for "a fluid construction of gender, in which women and men hierarchically occupy one unified sphere."[49] However, during the eighteenth century, the rise of the two-sex model, along with other economic and political factors, led to the separation of men and women into two distinct and separate spheres: the public, political arena and the private, domestic space of the home, respectively.

Not only does Chamberlain have this insightful article on Edwards' encounter with ovism, but she has also examined the workings behind the Bad Book Case in Northampton. She explains that young men in the town had been reading midwifery pamphlets, of which two were specifically mentioned: Thomas Dawkes' *The Midwife Rightly Instructed*, and *Aristotle's Masterpiece* by anonymous authors. These young men were then using their newfound knowledge of the female body to taunt young girls. Eventually the matter was brought to Edwards, who sought to discipline the young men. Chamberlain has insisted that this incident was all about "sex . . . reading and talking about sex . . . disciplining men and boys for their sexual offenses."[50] However, delving into the content of these midwifery pamphlets and showing how they influenced eighteenth-century conceptions of sex, conception, and childbirth is outside the scope of Chamberlain's article. I would like this thesis to be an expansion of Chamberlain's work in this regard.

While I would like to build on Chamberlain's work, this project is specifically situated to counteract the trend in the historiography of eighteenth-century revivalism as explained above. This trend is to portray the Great Awakening as the last golden age of gender equality. Although no historian explicitly states it like this, Juster, Braude, Brekus and others want to say that the Great Awakening had a countercultural effect that gave women more authority in the churches than in other spheres of life. This thesis will not speak to such gendered religious practice, but rather it will show that the theological emphasis placed on the new birth was actually an ideological emphasis on the sinfulness of women. Instead of viewing revival theology as countercultural, the historian can look at it through the lens of

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[48] Porterfield, Amanda. *Female Piety in Puritan New England: The Emergence of Religious Humanism*. New York: Oxford University, 1992: 9.
[49] Chamberlain 2000: 314.
[50] Chamberlain, Ava. "Bad Books and Bad Boys: The Transformation of Gender in Eighteenth-Century Northampton, Massachusetts". *The New England Quarterly*, Vol. 75, No. 2. June, 2002: 180-181.

eighteenth-century New England culture and see how women were described in a negative, sinful way through this appeal to the new birth. Feminist theologian Rosemary Radford Ruether is one of the few scholars to make this argument when she points out the hostility towards women found in the Christian idea of what she labels "rebirth" in her work entitled *Sexism and God-Talk: Toward a Feminist Theology*. Ruether states that this idea "overcomes the carnal gestation and birth of human mothers from which we all receive sin and death . . . It then becomes possible to symbolize the female life-giving role as the source of 'death,' while expropriating the symbols of conception, birth, and nurture to males."[51] In other words, through an insistence upon the need for a second birth, male theologians are highlighting the insufficiency, the sinfulness, the death that accompanies the first birth. Here Ruether is referring specifically to the beliefs of early Catholics about baptism, which was controlled by male clergy, as a ritual of rebirth, but this argument can be extended to the evangelical emphasis on the new birth. Although Ruether's work is primarily theological and therefore appears ahistorical, her insight into the ways in which rebirth denigrates a woman's role as the bearer of children has influenced my thoughts regarding new birth theology. Following Ruether's line of analysis, my thesis will argue that eighteenth-century revivalism in general and new birth theology in particular highlighted the sinfulness of women, despite the claims of past historians of gender in the Great Awakening. This negative ideology towards women can only be seen in light of cultural conceptions of gender and explanations of the human body from the standpoint of natural philosophy.

Methodology

However, the general methodology of the history of religions is not necessarily conducive to exploring such cultural conceptions of reproduction. If the simple goal of historical analysis is to track change over time, then the ideology of a specific moment in time often gets lost in the larger picture. Furthermore, ideology concerning women and childbirth is an even smaller piece of the puzzle that is harder to see. Historical analysis is not conducive to the recovery of women. "Feminine work," according to Anne Douglas, "has always been ahistorical by the definition of male historians: raising children and keeping house have customarily been viewed as timeless routines capable of only minor variations."[52] Douglas is by no means defending feminine work. In fact, she adopts an overtly polemical

[51] Ruether, Rosemary Radford. *Sexism and God-Talk: Toward a Feminist Theology*. Boston: Beacon Press, 1983: 142-144.

[52] Douglas 1988: 184.

stance towards the feminization of history in particular and the feminization of culture in general. Yet, her point is well taken, namely that history tends to lack the conceptual tools to be able to describe the supposedly timeless routines of women, which could include reproduction and childbirth. A national, political or intellectual history concentrates on those historical actors who are involved in the affairs of the government and/or in producing collective knowledge, which traditionally does not involve women.[53]

Though the historical approach of studying religious practice lends itself towards the recovery of women's voices, as in the work of Epstein, Juster and Braude, it is still concerned with change over time, which allows certain aspects of women's lives to be overlooked. These overlooked aspects can include female sexuality and childbirth. While female sexuality and childbirth are hardly "timeless routines," it does become difficult for the historian who is tracking change over time to incorporate such things into a larger narrative about religious history. For these reasons I will seek to incorporate the method of ethnography into my historical analysis.

Ethnography is an anthropological methodology that investigates a specific culture in a specific moment in time. The main goal of ethnography is for the ethnographer to get inside a culture and describe how the world looks from there. Generally there is no time-depth to ethnographical studies. The ethnographer may choose to focus on one particular facet of a culture, like natural philosophy or gender. Ethnographer-historians such as Robert Orsi and Marie Griffith have demonstrated that employing an ethnographical method to make sense of historical data allows one to recover overlooked aspects of women's lives in religious contexts.[54] For the purposes of this thesis, ethnography will be used to explore the culture of early eighteenth-century colonial revivalism, with a special focus on conceptions of women, sexuality and childbirth. Instead of being concerned with the typical preoccupation of history, namely tracking change over time, I will concentrate more on describing and theorizing this specific moment in time.

[53] Ibid., 181.
[54] See, for instance, Orsi 2002 and Griffith, R. Marie. *God's Daughters: Evangelical Women and the Power of Submission*. Berkeley: University of California: 2000.

Summary

I am making two main arguments in this thesis, the first being a methodological argument and the second a theoretical one. Methodologically, I want to show that historians cannot fully understand the intellectual-theological thought of revivalists like Edwards until one understands their cultural background. This includes interpreting theology in terms of natural philosophy. The historian should not divorce intellectual or theological ideas from their cultural context. Theoretically, I will make the case that religious practice, which historians such as Epstein have focused on, is not necessarily an indicator of religious ideology. While many historians consider the early to mid-eighteenth century to be a time of gender equality in the churches, as gauged by church practice, they do not take into account the way in which natural philosophy gets appropriated to insist that women's bodies are the carriers of original sin. The theological emphasis on the new birth, it will be argued, specifically highlights the sinfulness of women. I will aim to prove this argument by answering the following questions: How did natural philosophy explain reproduction and childbirth during this time period? How did these understandings of childbirth shape understandings of the new birth, and vice versa? How did the new birth preachers and theologians conceive of gender relations? The answers to these questions will have larger implications for the history of revivalism, for ethnographical strategies of analyzing historical data, and for the place of gender and sexuality in the study of religion.

Before the new birth can be adequately understood in its historical/cultural context, one must explore eighteenth-century conceptions of childbirth. This will be the focus of the second chapter of this thesis. Edwards states that there are "two ways of being begotten, one natural, and the other spiritual; the first generation, and regeneration."[55] Simply titled "Generation," the second chapter details the way in which natural philosophy treatises and popular midwifery pamphlets explained reproduction and childbirth. Natural philosophy treatises and midwifery pamphlets give insight into eighteenth-century cultural assumptions about gender, the body, and the social order, all of which are intertwined. The treatises and pamphlets that are discussed in the second chapter are ones that Edwards read or was at least familiar with. The third and final chapter, entitled "Regeneration," will show how these treatises and pamphlets influenced the thought of Edwards. I will make explicit the connection between the

[55] Edwards, Jonathan. *The great Christian doctrine of original sin defended; evidences of it's [sic] truth produced, and arguments to the contrary answered. Containing, in particular, a reply to the objections and arguings of Dr. John Taylor, in his book, entitled, "The Scripture-doctrine of original sin proposed to free and candid examination, &c.* Boston, 1758: 254.

natural philosophy of childbirth and theological conceptions of the new birth. This will reveal the degree to which Edwards' theology was influenced by natural philosophy. The thesis will conclude by stating how these findings have larger implications for the study of religion and by listing suggestions for further scholarship.

CHAPTER 2
GENERATION

Introduction

Embryologists in the twenty-first century describe the reproductive process thus: during coitus, male semen is ejaculated into the female vagina, wherein male sperm are given the opportunity to unite with a female ovum which has descended from the ovaries. When a spermatozoon is able to join itself to an ovum, this constitutes an embryo, which will implant itself into the female womb and grow for approximately nine months until the fetus is ready to be delivered. This current knowledge regarding reproduction has been widely disseminated in Western culture, so that most people outside the scientific community can describe the basic mechanics of reproduction.

Yet, few realize that the mechanics of reproduction has a history. This is not to say that the biological process of a sperm and an ovum joining to become a fetus has changed over time—although surely it has in the evolutionary sense. Rather, I am suggesting that explanations of this process have changed drastically throughout history. How could anyone have understood that a sperm is one of two gametes needed to produce a fetus before Antoni van Leeuwenhoek discovered the sperm in the seventeenth century? How could anyone have understood mitosis or meiosis before Robert Hooke's discovery of cells? Modern scientific conventions which are taken for granted today, such as the sperm or the cell, were hotly debated among natural philosophers in the early modern period.

The current chapter seeks to explain, briefly, the history of embryology from the beginning of the seventeenth century to the middle of the eighteenth century. However, this history will be selective in that I will only be detailing the theories that are relevant to the thought of Jonathan Edwards. Where possible, I will be citing specific authors that Edwards read or was familiar with. The first part of the chapter will deal with seventeenth- and eighteenth-century debates about reproduction among educated natural philosophers. These debates will be explained through the lens of a very important natural philosopher and theologian, of whom Edwards was familiar: Nicolas Malebranche. The second part of the chapter will explore popular conceptions of childbirth, as put forth in more practical writings, such

as midwifery pamphlets. Although historians can recognize differences between "heady tomes of philosophical biology" and "popular books of practical physic," as Eve Keller puts it, the reader should keep in mind these two genres were neither mutually exclusive nor wholly divergent.[56]

Natural Philosophy

There was no such thing as a professional scientist in the seventeenth and eighteenth centuries as we understand the scientific profession today. In fact, the term "science," denoting an epistemologically-distinct field of inquiry that possessed a certain methodology for studying the natural world, did not emerge until the nineteenth century. Before the nineteenth century, the study of the natural world was undertaken by natural philosophers. Natural philosophy, while somewhat analogous in the object of study, had different preoccupations and methods than nineteenth-century science. For many natural philosophers, as well as for seventeenth- and eighteenth-century Christians in general, God had given humans two books by which to know Him: the book of revelation, known as the Bible, and the book of nature. As Cotton Mather states in *The Christian Philosopher*, there is "a Twofold Book of God: the Book of the Creatures, and the Book of Scripture: God having first of all . . . by his Works, did it afterwards . . . by his words."[57] These two books were complimentary, not contradictory. Studying the book of nature could reveal the ways in which God has arranged the world, which in turn could reveal the mind and character of God. Therefore, oftentimes the purpose of natural philosophy was to know God better, which is alien to the stated purpose of the supposedly secular endeavor of modern-day science. Religious people, especially priests and pastors like Mather, were at the forefront of the study of the natural world, which included the human body. This was inherent to their job as priests and pastors because it was "customary at that time for ministers to consider the cure of souls and the cure of bodies to have a vital interrelationship".[58]

Despite the fact that he anachronistically uses the term "science" to explain natural philosophy, historian Peter Thuesen rightly states that natural philosophy "covered the entire gamut of scientific fields, from astronomy and meteorology to anatomy and botany. Whereas science today is marked by clear disciplinary boundaries, science in colonial America was undifferentiated by field and unsupported

[56] Keller, Eve. *Generating Bodies and Gendered Selves: The Rhetoric of Reproduction in Early Modern England*. Seattle: University of Washington, 2007: 3.
[57] Quoted in Jeske, Jeffrey. "Cotton Mather: Physico-Theologian." *Journal of the History of Ideas*. Vol. 47, No. 4. Philadelphia: University of Pennsylvania, 1986: 589.
[58] Stearns, Raymond Phineas. *Science in the British Colonies of North America*. Urbana: University of Illinois, 1970: 404.

by academic infrastructure."[59] He goes on to quote Raymond Phineas Stearns, who writes, "The entire corpus of natural philosophy was still within the capacities of a single scholar." For this reason, natural philosophers who were working on, say, dissecting an insect, did not have any compunctions about relating their findings to other areas of inquiry, such as Newtonian physics. Everything in the natural world was interrelated because everything was designed by the same divine Designer.

Failing to distinguish early modern natural philosophy from modern-day science is problematic for two reasons. First, this allows historians to force their own normative views of what science is and is not, what it should and should not be, onto the historical data. Rather than explore what was considered to be "good" natural philosophy in the early modern period, historians are quick to presume that things like prodigies,[60] since they are not "good" science by today's standards, would not be "good" by early modern standards. Secondly, the conflation of natural philosophy and science causes historians to assume that the relationship between religion and natural philosophy in the early modern era was just as conflict-ridden as the relationship between religion and science is today. In other words, they assume that natural philosophy was just as opposed to religion as science. One wonders what historians have to gain by advancing such arguments. Perhaps some want to show that there has always been a conflict between religion and science. Perhaps some want to show that there has never been a conflict between religion and science. Historians in search of a useable past equate natural philosophy with science so that they can say that the essential nature of the relationship between science and religion today, as it was in the eighteenth century, is such-and-such. This thesis does not purport to make such grandiose claims. Rather, I would like to show that natural philosophy is distinct from modern science and that the two should not be conflated.[61]

Nicolas Malebranche as Natural Philosopher

Nicolas Malebranche was a figure who blurred the lines between theology and natural philosophy. He was a French priest who lived from 1638 to 1715 and his most famous work, entitled the

[59] See Thuesen's introduction to Edwards, Jonathan. *Catalogues of Books*. Peter Thuesen, ed. New Haven: Yale University, 2008.
[60] Prodigies were signs from the natural world that judgment from God was impending. They were especially popular with Cotton Mather and the Puritans. See Winship, Michael P. *Seers of God: Puritan Providentialism in the Restoration and Early Enlightenment*. Baltimore: Johns Hopkins University, 1996; and Hall, David. *Worlds of Wonder, Days of Judgment: Popular Religious Belief in Early New England*. New York: Knopf, 1989.
[61] Peter Harrison has a similar argument in his article "'Science' and 'Religion': Constructing the Boundaries". *The Journal of Religion*. Chicago: University of Chicago, 2006.

Search After Truth, was published in 1674. This book discusses everything from sensory awareness, to "the delicacy of the brain fibers . . . found in women," to the laws of motion, to the anatomy of the eye, to the nature of bodily passions, among others.[62] According to Malebranche, the project of his book was to "demonstrate in several ways that our senses, our imagination, and our passions are altogether useless for discovering the truth and our good."[63] As one historian writes, "his main interest was the discussion of morals and sin under the guiding lights of physics and mathematics."[64] The end goal of this project and his interests was to reveal the essential nature of humans, which then could reveal the relationship between humans and God. Ridiculing those who viewed natural philosophy as an end in itself, Malebranche contends, "Men were not born to become astronomers or chemists, spending their whole life hanging onto a telescope or attached to a burner, and then drawing useless conclusions from their painstaking observations."[65] Rather, natural philosophy should be pursued in order to better understand humans and God.

In his explanations of a wide range of topics, Malebranche stumbled upon the idea that has earned him a spot in embryology textbooks. This idea is the theory of encasement, or *emboitement*, as originally rendered in Malebranche's French. Malebranche appears to be the first natural philosopher, though definitely not the last, to use this term. Since the invention of the microscope, natural philosophers were coming to the conclusion that infinitely small "animals" could be found all over the natural world. Malebranche's theory of encasement took this conclusion seriously, positing that infinitely small seeds could be encased inside one another, much like Russian dolls. Malebranche writes,

> It does not seem unreasonable to say that there are infinite trees inside one single germ, since the germ contains not only the tree but also its seed, that is to say, another germ, and Nature only makes these little trees develop . . . Perhaps all the bodies of men and animals born until the end of times were created at the creation of the world, which is to say that the females of the first animals may have been created containing all the animals of the same species that they have begotten and that are to be begotten in the future.[66]

Here Malebranche starts off by developing his idea of encasement within the example of trees, but quickly suggests that this could apply to humans too. God created the first woman, Eve, with a certain number of seeds inside her body, each encased inside one another. In theory, this number of seeds could be infinite. However, since God has revealed that there will be an "end of times," and since

[62] Malebranche, Nicolas. *The Search After Truth*. Translated and edited by Thomas Lennon and Paul Olscamp. Cambridge Text in the History of Philosophy Series. Cambridge: Cambridge University, 1997: 130.
[63] Ibid., xxxix.
[64] Pinto-Correia, Clara. *The Ovary of Eve: Egg and Sperm and Preformation*. Chicago: University of Chicago: 1997: 16.
[65] Malebranche 1997: xl.
[66] Quoted in Pinto-Correia 1997: 19.

God does not make anything that will go to waste or that has no purpose, He placed a specific number of seeds in Eve's body which would each be born before the Parousia. The same is true of the first female animals, which held the seeds for all successive generations of their respective species. Not only is Malebranche espousing the theory of encasement, but he is also espousing what was later labeled as the theory of preformation. Preformationism was the contention that "all of the parts of the future organism were formed in the body of either one of its parents before conception."[67] Since he explained that the seeds of each organism were already preformed and encased inside the mother before the organism was even conceived, Malebranche is credited with the birth of preformationism, although he would not have recognized this term. Moreover, Malebranche took his preformationism one step further by not only proclaiming that all organisms were already preformed inside their immediate antecedent, the mother, but also that all organisms were already preformed inside the first mother, Eve. This position later came to be known as pre-existence, because it held that all of life pre-existed "since the moment of the creation of the universe".[68]

The theories of encasement, preformationism, and pre-existence were intertwined with one another, and natural philosophers who came after Malebranche spent a century debating and teasing out the implications of each. Within the school of preformationism, natural philosophers argued over whether embryos were preformed inside the mother or father, pre-existing inside the ovary of Eve or the loins of Adam. Those who believed, like Malebranche, that the embryo was encased inside the ovum, were called ovists. It should be noted that Malebranche never uses the words "ova" or "ovum," but he would still be considered an ovist in the sense that he believed that all of life came from Eve. Those who believed that the embryo was encased inside the sperm, and therefore passed down from Adam, were known as spermists, or animalculists. The technical definition of "animalcules" denotes microscopic animals, which is what Leeuwenhoek found "engendered in the semen".[69] Animalcules generally tended to refer to sperm when discussing the reproductive process.

Ovism and spermism were mutually exclusive. One could not be both an ovist and a spermist because the embryo was already complete before conception, containing all the necessary parts of life. This embryo could either be encased in the ovum or the sperm, not both. Such a construction begs the question: if the ovum held the embryo, then what was the purpose of the sperm? If the sperm held the embryo, then what was the purpose of the ovum? Generally speaking, ovists always had the option of

[67] Keller 2007: 139.
[68] Keller 2007: 139.
[69] Quoted in Pinto-Correia 1997: 66.

denying the existence or relevance of the sperm, and vice versa. Sometimes, though, ovists could admit the importance of the sperm while still maintaining that the ovum held the embryo, and the same goes for spermists. As one natural philosopher advocating ovism explained, semen was needed to initiate development because the female does not possess a liquid active enough to open the ovum to begin the development of the embryo.[70]

The debate that raged between the ovists and the spermists had far-reaching implications for theology and for natural philosophy outside the study of reproduction. In her highly original and insightful book, entitled *The Ovary of Eve: Egg and Sperm and Preformation*, Clara Pinto-Correia describes the ways in which ovists and spermists fought their battles on a terrain that was as much theological as it was scientific. Pinto-Correia has her Ph.D. in developmental biology and was employed as an embryologist before entering the field of the history of science. Not trained as a historian or as a scholar of religion, occasionally her work seems anachronistic and mildly unaware of deeper theological issues. Nevertheless, Pinto-Correia has produced a book which defies the conventional theory and method of the history of science because of the simple fact that she engages preformationism—a theory that is an anathema to modern science—on its own terms and takes its claims seriously. The previous generation of historians and embryologists who studied the history of reproduction in the seventeenth and eighteenth centuries tended to portray preformationists as "tradition-blinded ideologues who . . . could not admit the plain evidence of their senses when watching the development of the chick in the egg," as Stephen Jay Gould suggests.[71] Pinto-Correia challenges this typical portrayal by showing that preformationism made perfect sense within the cultural, religious, and natural philosophy worldview out of which preformationism was born.

Rather than focus on the internal debates among preformationists, as Pinto-Correia has done, most historians have placed the spotlight on the debates between preformationists and the cohort of natural philosophers labeled epigeneticists. Epigenesis is the process by which "each embryo is newly produced through gradual development from unorganized material."[72] In other words, epigeneticists do not believe that the embryo was already preformed in the ovum, nor that all the embryos preexisted back to the creation of the world. Rather, the embryo was formed anew at conception, through various means that epigeneticists argued over. Although there were variations within the school of epigenesis,

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[70] See ibid.
[71] Ibid., xiv.
[72] Roe, Shirley A. *Matter, Life, and Generation: Eighteenth-century embryology and the Haller-Wolff Debate*. Cambridge: Cambridge University, 1981: 1.

epigeneticists were "united in their opposition to preexistence". In the end, epigeneticists won the debate with preformationists, and epigenesis is still the thesis espoused in contemporary embryology. Epigeneticists of the eighteenth century tend to be valorized today, while the preformationists are derided as the religious conservatives who were unwilling to give up their theological commitments in order to arrive at scientific truth. However, such a rendering fails to recognize the fact that, by seventeenth- and eighteenth-century standards, preformationists were actually the ones being "scientific," while epigeneticists were the ones harboring "unscientific" ideas, such as spontaneous generation. This will be teased out below.

Epigeneticists usually advocated their theory from a position known as vitalism. Vitalism is the philosophy that life is unique to itself, that living organisms operate by a different principle than inanimate objects. Furthermore, living organisms have some sort of somatic *telos* which directs them and shapes them into what they should be.[73] In this way, vitalists believed that natural philosophy should undertake the study of the teleological principle in organisms. In the seventeenth century, there were epigeneticists like Nathaniel Highmore who posited a vitalistic theory in the process of reproduction, insisting that the soul "is transferred to the embryo through the father's semen and is therefore able to direct its progress."[74] Towards the start of the eighteenth century, epigeneticists like Georg Ernst Stahl, Pierre-Louis Maupertuis, and John Needham defended their own vitalist theories. For example, Stahl believed that "life could not be reduced to mechanical causes; rather the soul (*anima*) controls the vital functions."[75] For many early epigeneticists, reproduction was directed by the soul, which is the epitome of vitalism.

At some level, vitalism seemed to invoke God or the soul or another mysterious force to explain natural phenomena. While the general methodology of natural philosophy was not essentially opposed to incorporating God into its explanations of the natural world, natural philosophers over time became increasingly less satisfied with such explanations. Descartes famously insisted that the world in general and humans in particular are like machines, operating mechanically, with no outside force continually needed. Historian of science Stephen Gaukroger has shown that Descartes, in opposition to a rampant vitalism, postulated

> a single kind of matter in the universe and this matter is inert, homogeneous, and qualitatively undifferentiated. The boundaries of bodies are determined by motion relative to surrounding

[73] This is intertwined with the Aristotelian idea of final causes; see Gaukroger, Stephen. Gaukroger, Stephen. *Descartes' System of Natural Philosophy*. Cambridge: Cambridge University, 2002.
[74] Keller 2007: 143.
[75] Roe 1981: 107.

> matter, and any variation in properties is a function of the size, speed, and direction of the matter. It is with this notion of matter that Descartes attempts to account for all functions and behaviour of animals.[76]

In simpler terms, Descartes viewed human bodies as functionally similar to inanimate matter. The processes of the body can be described mechanically, without needing to invoke God or the soul or any other vitalistic principle. While Descartes explicitly sought to apply his mechanistic philosophy to the human body, many were unsatisfied with his epigenetic portrait of generation, insisting that it harbored vitalistic tendencies. In one of Stephen Gaukroger's other books, entitled *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*, he shows that Descartes was "even prepared to allow [for] spontaneous generation" to occur in reproduction, with Descartes quoted as saying, "Since so few things are required to make an animal, it is hardly surprising to see so many animals, worms, and insects form spontaneously in all putrefying matter."[77] Descartes was not entirely sure how to dispense of vitalism in favor of mechanism in his account of reproduction, but this was very important to him. According to Shirley Roe, "Descartes saw the generation of animals as the last segment to come under the wing of his mechanical philosophy, forming there the completion of Cartesian physiology."[78] Because Descartes himself was uncertain as to how mechanism could explain generation, reproduction was viewed as the final frontier among his followers.

Entrée Nicolas Malebranche. To answer the question of how preformationism explained generation as mechanistic rather than vitalistic, we must look to Malebranche, who is responsible, not only for laying the foundation for preformationism, but also for bringing Cartesian mechanism to the process of generation. According to his biographers, Malebranche converted to Cartesian philosophy in 1664, which necessitated his adoption of a mechanistic view of the world.[79] Malebranche famously "proclaimed that 'God is a geometer,' conceiving of a mode of divine action similar to a mathematical function."[80] Malebranche's main reason for broaching the subject of generation in the first place was to show how such a mathematical, mechanistic God could control the development of the human fetus without constantly interacting in the world every time a fetus was conceived. Preformationism, as expressed by Malebranche, gave God a central role in the formation of all humans, each encased inside one another in the ovaries of Eve, at the creation of the world. After God's initial act of creation, he no

[76] Gaukroger 2002: 21.
[77] Gaukroger, Stephen. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*. Oxford: Clarendon Press, 2006: 340.
[78] Roe 1981: 4.
[79] Malebranche 1997: ix.
[80] Ibid., 20.

longer needed to create anew. As Pinto-Correia explains, "The book of Nature was the manifest and visible expression of the book of Revelation, and only on the rarest occasions would God interfere with the admirable clockwork set in motion at Creation."[81] Although it is not certain that Malebranche used the metaphor of God winding up a clock and then letting it run mechanically, this is a accurate description of his views on mechanism and preformationism.

I have detailed this long and complicated debate between vitalists and mechanists to show that mechanistic preformationists would, oddly enough, be considered to be the more "scientific" party by today's standards. Although epigenesis won out in the debate over preformationism and continues to play an important role in contemporary embryology, Stephen Jay Gould asserts, "The leading preformationists had been, ironically, defenders of the general mechanistic attitude that modern science now honors, whereas the epigeneticists had tended to favor the vitalistic views now anathematized."[82] Because epigeneticists of the seventeenth and eighteenth centuries did not have the microscopic technology or the appropriate understanding of cell theory to discover and explain embryonic stem cells, they were forced to invoke vitalism, normally in the form of a soul, to describe the ways in which the joining of a sperm and an ovum could mature into a fully formed fetus. Preformationists, on the other hand, did not have to appeal to vitalism but could describe the process in purely mechanistic terms by insisting that the embryo was already encased inside the ovum of the mother, going all the way back to Eve. For the theory of preformation, Cartesian mechanism was an indispensable explanatory tool.

Despite Descartes' own personal piety, many theologians and some natural philosophers charged that mechanism was equivalent to atheism, equivalent to saying that God does not act in the world. The fear that natural philosophy would explain away God was widespread, and Cartesian mechanism was often the chief instigator of this fear. Take, for example, Pierre Gassendi, who like others felt that mechanism was acceptable until it sought to explain life in general and human life in particular:

> Your rejection of the final causes in natural philosophy might have been correct in other contexts [besides human physiology], but since we are dealing with God here, there is a danger that you might be abandoning the principal argument by which to establish, by natural light, the wisdom, providence, and power of God . . . No mortal can understand or explain the active principle.[83]

In other words, Gassendi chastises Descartes for single-handedly dismantling the *telos* of the human race which is embedded in the processes of the human body. How dare Descartes pass up an opportunity to prove the wisdom of God through natural philosophy! Invoking vitalism with his reference to the

[81] Pinto-Correia 1997: 172.
[82] Ibid., xv.
[83] As quoted in Gaukroger 2006: 341.

active principle, Gassendi was unwilling to give up the idea that Aristotelian final causes guide and direct the development of the human body.

However, Descartes himself did not view his philosophy as atheistic. Rather, he affirmed God's design, which is carried out through mechanism. Many of Descartes' followers also felt like mechanism was not threatening to theistic descriptions of the natural world and the theological uses of natural philosophy. In fact, Gaukroger argues that Cartesian mechanism was highly compatible with Augustinian interpretations of Christianity. Malebranche, having been heavily influenced by his reading of Augustine, "combined his Cartesianism with several distinctly Augustian doctrines".[84] Since—according to historian Peter Harrison, whose *The Fall of Man and the Foundations of Science* links the doctrine with the emergence of the scientific enterprise—Augustine was the first to "coin the expression 'original sin' (*peccatum originis*)," one is not surprised to find the doctrine of original sin weaving in and out of Malebranche's narrative.[85] For Malebranche, Augustine's notion of original sin was essential to the human condition. Natural philosophy could only be understood in light of original sin, and the workings of original sin could be understood through natural philosophy. Therefore, Malebranche's conception of original sin both influenced and was influenced by his work in natural philosophy.

Countless theologians have viewed original sin as essentially intertwined with the reproductive process, and Augustine and Malebranche were no different. During pregnancy, Malebranche writes,

> The communication found between the mother's body and that of her child . . . not only gives the dispositions of the mother's body to the bodies of her children, it also gives the dispositions of her mind to their mind. We can say then, as does Saint Paul, that *through man sin has entered into the world*; but nonetheless because of this communication it must also be said that *sin comes from woman*, that *through her we are subject to death*, and that *our mother has conceived us in iniquity*, as it is put in other places in Scripture.[86]

It may be admitted that the first man, Adam, sinned; but here Malebranche highlights the fact that sin is transmitted through the mother, going all the way back to Eve. This sin is transmitted from mother to child through the course of conception and childbirth. Although Malebranche does not explain this very clearly, one could venture to say that he believed that sin was passed down through the ovum, as preformationists after Malebrache state explicitly. As Pinto-Correia shows, preformation "could finally explain the irrevocability of original sin—we had all been soiled by it, since we had all been encased

[84] Ibid., 343.
[85] Harrison, Peter. *The Fall of Man and the Foundations of Science*. Cambridge: Cambridge University, 2007: 31.
[86] Malebranche 1997: 600.

within the first sinner."[87] Since Malebranche was an ovist within the school of preformationism, it is highly probable that he conceptualized Eve's sin as a kind of poison that affected her body and therefore affected her ovaries, which held the ova of every human that would ever live. In this way, preformationism and the doctrine of original sin could go hand-in-hand.

Thus were the themes of the debates about reproduction for a century in natural philosophy: preformationism vs. epigenesis; ovism vs. spermism; vitalism vs. mechanism. Each had theological implications, as seen in the discussion of the doctrine of original sin. I have detailed these debates mainly through the example of Nicolas Malebranche, who played an important role in framing the terms of such discussions. Natural philosophers like Malebranche were educated elites, who had the time and resources to read the works of others and to do their own experiments. The next chapter will connect natural philosophy, Malebranche and these debates to the thought of Jonathan Edwards; for now we turn to discussions that were not as erudite, but are just as interesting.

Popular Pamphlets

While natural philosophers pondered the questions that were raised by new reproductive theories, popular pamphlets dealing with reproduction were more concerned with recovering age-old wisdom. Oftentimes the authors of such pamphlets sought to trace this wisdom back to classical Greek philosophers, namely Hippocrates, Aristotle, and Galen. Authors of these seventeenth and eighteenth century pamphlets usually felt it necessary to place their work in conversation with at least one of these ancient philosophers. For example, Nicholas Culpeper, a prolific London medical author, denounced Galen numerous times for writing about the reproductive organs of women when he had never actually seen a woman "anatomized", or dissected.[88] He also blamed Galen for "so poison[ing] the World with th[e] doctrine" that women only have seven compartments in the womb.[89] Nicholas Venette, author of *Conjugal Love Reveal'd*, disagreed with Hippocrates "that the right Testicle is hotter than the left".[90] Furthermore, one of the most popular midwifery pamphlets, and certainly the one that caused the most

[87] Pinto-Correia 1997: 4.
[88] Culpeper, Nicholas. *A directory for midwives: or, a guide for women, in their conception, bearing, and suckling their children. The first part contains, 1. The anatomy of the vessels of generation. ... 9. Of nursing children. To cure all diseases in women, read the second part of this book. Newly corrected from many gross errors.* London, 1701.
[89] Ibid., 24.
[90] Venette, Nicolas. *Conjugal love reveal'd; in the nightly pleasures of the marriage bed, and the advantages of that happy state. In an essay concerning humane generation. Done from the French of Monsieur Venette by a physician.* The seventh edition London, 1720: 9.

mischief in the colonies, is entitled *Aristotle's Compleat and Experienc'd Midwife* or, alternatively, *Aristotle's Masterpiece*.[91] Obviously it was not written by Aristotle, but does reiterate some of his teachings.

As stated previously, the line between elite natural philosophy treatises and practical advice manuals was not clear-cut. For the most part, natural philosophers were highly educated, well-read, and independently wealthy. They conducted their own experiments and did their own research, sometimes employing others to help them. Natural philosophy treatises were published all over Europe, in different European languages and in Latin, and eventually translated into English so that those living in England and the colonies could read them. Popular pamphlets about reproduction, on the other hand, were written by authors who may have been trained vocationally in the medical field but who may not have had a formal scholastic education. These authors were often dependent on their medical vocation as their primary source of income, and sought to make extra money off of their writings. Such authors were occasionally unaware of emerging theories about reproduction, like epigenesis, or, as was usually the case, they were familiar with these theories but did not fully understand them. While most elite natural philosophers understood that a supporter of ovism could not also be a spermist, or that a supporter of preformationism could not also be an epigeneticist, those who wrote popular pamphlets were unlearned in the delineations of such debates, so that many authors combined mutually exclusive theories in a very inconsistent way. These authors typically did not do their own research or experimentation, but rather synthesized data garnered from other sources. This, paired with a shallow understanding of theories from natural philosophy, led many pamphlets to be a pastiche of convoluted and conflicting information. However, the main uniting theme within and among these pamphlets is that they were meant to offer practical advice. Classical explanations of reproduction and early modern theories of reproduction were only useful insofar as they could be employed in the service of helping real people with real reproductive needs. As Roy Porter and Lesley Hall point out in their book, *The Facts of Life: The Creation of Sexual Knowledge in Britain, 1650-1950*, natural philosophy "eagerly taken up by those associated with the founding of the Royal Society might have been expected to produce radically new teachings about sexual anatomy and sexual activity; but that was not so . . . What is new is that such

[91] Anonymous. *Aristotle's compleat and experienc'd midwife: In two parts. I. A guide for child-bearing women ... II. Proper and safe remedies for the curing all those distempers that are incident to the female sex ; ... Made English by W- S-, M.D.* The second edition London, 1711.

teachings were for the first time being condensed into handy, entertaining advice books targeted at the public at large."[92]

Many times these pamphlets were addressed to midwives themselves, warning that if women midwives did not succeed at their profession, then men would quickly take over. Some historians have insisted that the whole purpose of male physicians writing midwifery pamphlets was to denigrate women in one way or another. In a recent book entitled *Medicine and Religion in Enlightenment Europe*, Ole Peter Grell and Andrew Cunningham argue, "Different authors from disparate viewpoints asserted the need to solve the serious problems attributed to lack of male involvement in birth care, starting, for instance, with the openly populationist discourses whose aim was to strengthen the state and improve the kingdom's welfare by increasing the number of its subjects."[93] Distributing new theories of reproduction and classical wisdom in the form of these pamphlets was one way to help midwives be more successful in their delivery of babies, who were important to the king and the Empire. On the other hand, it can also be argued that these male physicians were writing for the benefit for other men, who had little knowledge of the birthing process, rather than for the sole benefit of midwives. Angus McLaren's work, *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century*, claims that a "separate female sexual culture in early modern England . . . . seems likely," so ordinary men rarely, if ever, knew exactly what went on during labor and delivery.[94]

Before male physicians became intimately involved in the birthing process, women partnered with their midwives to give birth. Some historians have given women a great degree of agency in this process, insisting that they had control over their reproductive cycles. After learning much from the anthropological literature which maintains that even pre-industrial peoples have some degree of control over reproduction, McLaren dismisses "the pessimistic notion that men and women before scientific advances in the 18th century were passive characters in an overly mechanical view of reproductive fate."[95] Unlike our perceptions of life before the condom and the birth control pill, "Early modern men and women did not have a rigid, mechanical view of reproduction. They perceived it as mutable—

[92] Porter, Roy and Lesley Hall. *The Facts of Life: The Creation of Sexual Knowledge in Britain, 1650-1950*. New Haven: Yale University, 1995: 35.
[93] Grell, Ole Peter and Andrew Cunningham. *Medicine and Religion in Enlightenment Europe*. Burlington: Ashgate Publishing, 2007: 51.
[94] McLaren, Angus. *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century*. New York: Methuen, 1984: 6.
[95] Ibid., 2.

conditioned by diet, exercise, potions and charms."[96] Women could control their fertility by avoiding premarital sex, by getting married later in life, through "post-partum taboos, extended lactation, observation of a woman's monthly cycle, employment of magical and herbal potions, recourse to coitus interruptus and the use of various barrier methods."[97] With all of these different methods of birth control available to them, McLaren makes the case that early modern women could fashion their reproductive cycles into "their own social creation".[98]

Other historians strongly disagree with McLaren. While admitting that "the insides of women's reproductive bodies provided a kind of open interpretive space, a place where many different models of reproductive processes might be plausible" and that "these models were profoundly shaped by cultural concerns," Mary Fissell argues in her book, *Vernacular Bodies: The Politics of Reproduction in Early Modern England*, that men tended to have more control over childbirth.[99] In some of these midwifery pamphlets, men were viewed as the main instigators and contributors to pregnancy. She contends, "Pregnancy was described, not so much as a feature of a female body, but with great attention to the roles of the father at conception and the fetus (always male) at birth."[100] Sometimes women were portrayed as merely containers which were filled with a man's seed and then incubated it until the child was born. Furthermore, women's cultural knowledge of their own bodies was undermined by male authors who insisted that they knew more about the female anatomy than women themselves. Fissell shows that with Nicholas Culpeper, mentioned above, this was especially true: "Talking about men as well as women became a way of making female bodies inferior to male ones in Culpeper's account. He belittled women's own ideas about their bodies and instead urged his readers to place their faith in the male science of anatomy."[101] Which paradigm is correct, whether it is McLaren's model of female agency or Fissell's model of domineering men, matters little for the purposes of this paper, mostly because both could be at play simultaneously.

Popular pamphlets oftentimes sent mixed messages and harbored ambivalence toward women. Male authors sometimes portrayed women as lustful agents of their own sexual destiny, while at other times reiterated that women were nothing but captive to the reproductive will of nature and, by extension, God. Although childbirth was viewed by such men as an act controlled by nature and by God,

[96] Ibid., 55.
[97] Ibid., 65.
[98] Ibid., 150.
[99] Fissell, Mary E. *Vernacular Bodies: The Politics of Reproduction in Early Modern England*. Oxford: Oxford University, 2004: 1.
[100] Ibid., 5.
[101] Ibid., 4.

there are many reasons to believe that seventeenth- and eighteenth-century women had their own separate ways of dealing with childbirth wherein it was viewed as a very culturally malleable activity. Therefore, as I explore the contents of a few midwifery pamphlets throughout the rest of this chapter, the reader should keep in mind that such pamphlets may or may not accurately describe the historical reality of early modern childbirth. Yet, as their popularity attests, these manuals surely conveyed some message which early moderns found to be true.

I would now like to turn to three manuals—William Cowper's *Anatomy of Humane Bodies*, Edmund Chapman's *A Treatise on the Improvement of Midwifery*, and the (in)famous *Aristotle's Masterpiece*—which Jonathan Edwards read, or at least was familiar with. Cowper's work blurs the lines between the two types of books about reproduction that I have identified: the natural philosophy treatise and the popular advice pamphlet. William Cowper was an anatomist and fellow of the Royal Society who lived from 1666 to 1709, mostly in London. His most famous work, *The Anatomy of Humane Bodies*, was originally published in 1698. It is composed of over a hundred "Tables," or anatomical sketchings, which cover a wide variety of human body parts. Despite the fact that it has now been proven that many of the sketchings in Cowper's work were plagiarized, the texts explaining these sketchings could be his own writing. In any case, Cowper's *Anatomy* was widely read and therefore was able to disseminate anatomical knowledge to the educated populace.

Cowper begins his introduction by laying out the contents of the book, which he says will "contain a General Descripition of the Fabrick of Humane Bodies".[102] Although Cowper covers a wide variety of topics, his sections on "the Structure of the Heart" and "the Organs and Process of Generation," and how they relate to each other, are most important for the purposes of this paper. Like Malebranche, Cowper suggests his support for preformationism in the form of ovism, asserting that "all Living Creatures . . . derive their Original from Eggs". He explains that "since the Discovery of these Eggs, the Ancient Doctrine that the *Foetus* was Form'd from the Commission of the Male and Female Seed, has been by all Rejected." However, unlike Malebranche and educated natural philosophers in general, Cowper seems to mix his preformationism with epigenesis. This can be seen in his androcentric mini-history of reproductive theory:

> Upon the Invention [or discovery] of these *Ova* . . . [some natural philosophers] began to Erect an Opinion, That the Female only furnish'd the Matter of the Foetus, and the Male serv'd to Actuate it by its Prolifick Influence. This Opinion, which derogates much from the Dignity of

[102] Cowper, William, *The anatomy of humane bodies, with figures drawn after the life ... in one hundred and forteen [sic] copper plates, ...To which is added an introduction explaining the animal oeconomy.* 2nd ed. Leyden, 1737: n.p.

> Male-Sex, prevail'd till *Mons. Leeuwenhoeck* by the Help of his Exquisite Microscope . . . detected Innumerable small *Animals* in the Masculine Sperm, and by this Noble Discovery, at once remov'd that Difficulty, and added much to the Theory of Generation: In his Letter to the *Royal-Society*, he Acquaintes them he had observ'd Incredible Numbers of these *Animalcula* in the Testicle of Frogs . . . Foecundation he esteems to proceed from one of these Numerous *Animalcula*, after Ejection, striking thro' the Pores of Perforations on the Sides of the *Ovum*.[103]

In explaining that conception occurs when sperm attach to an ovum, Cowper espouses the theory of epigenesis, although he never uses this term. If he had been "properly" educated, he might have realized that this position conflicts with his previous espousal of preformationism, where he states that the embryo comes forth from the ovum, not the combination of sperm and ovum.

Cowper is consistently inconsistent on other issues as well, such as mechanistic philosophy. Much like Malebranche and Descartes, Cowper wants to describe the processes of living organisms as based on mechanical motion. He states, "In my Opinion the Heart of an Animal bears a great Analogy to the Pendulums of those Artificial *Automata*, Clocks and Watches."[104] Also, the process of generation for Cowper is "not less Mechanical, than most other Operations in the *Animal Oeconomy*". Yet, Cowper seems to want to protect the human body from mechanical explanations, describing it as one of the "Inscrutable Mysteries of Nature. It is in this respect our Bodies differ from Artificial Machines; the Former having in themselves a perpetual Principle of Motion, which the Latter by no Invention of Men can arrive at." Although Cowper does not appeal to some sort of vitalistic principle here, he does want to limit the scope of mechanism.

For Cowper, there is one organ which fuses both vitalistic and mechanical principles: the heart. As quoted above, the heart is portrayed as a watch which is self-automated. Yet, this watch regulates the rest of the body and imbues life so that Cowper states, "The great Engine which sets all this Motion [of the body] on Foot, is the heart." Furthermore, the heart was generally regarded in early modern natural philosophy to be the seat of the soul, the literal place where the soul resides. Cowper does not dispute this claim, although he does write that a few natural philosophers have suggested that the brain is the seat of the soul. Whether or not it is the seat of the soul, the heart is very important to Cowper. He dedicates a large section to the ways in which the heart pumps blood through veins and arteries. He goes on to refer back to the workings of the heart when explaining other organs. It is clear that Cowper was

[103] Ibid., n.p.
[104] Ibid., n.p.

influenced by natural philosopher William Harvey,[105] and Cowper himself cites Harvey: "The Circular Motion of the Blood was first Explain'd, and the whole Demonstrated in a Treatise expressly Writ upon that Subject, and Published in the Year 1628 by our Learned and Ingenious Dr. Harvey."

William Harvey was the natural philosopher who discovered that "blood moves through the body in a closed circuit".[106] While Harvey's description of the heart as a pump sounds mechanistic, Harvey was actually a vitalist who believed that the blood carried spirits which gave off the heat necessary for life.[107] Because he was a vitalist, Harvey was an epigeneticist who opposed preformationism on the grounds that it was too mechanistic. Many preformationists accepted some of Harvey's conclusions about the heart while rejecting others. Harvey's findings led one proponent of preformationism to do his own experiments. This preformationist writes,

> I had myself believed that I had found in the heart of the chicken a proof for epigenesis . . . by the addition of several new parts [to the heart]: but experience itself has shown me that the changes in this principal organ are only superficial and that they are born from its primordial structure by successive degrees, which is a proof for [preformation] instead of being opposed to it.[108]

According to some preformationists, the heart is already present in the ovum before the embryo is conceived. This "tiny invisible heart" is stimulated at conception and "its subsequent beating produces the gradual unfolding and development of the preexisting embryo". In other words, "the heart exists at all stages of development" and helps the embryo to grow into full maturity.[109]

While a lot has been written about William Harvey and William Cowper, not much seems to be known about the obscure Edmund Chapman, despite the fact that many historians find his relatively short *A Treatise on the Improvement of Midwifery* to be fascinating. In the preface of this midwifery pamphlet, Chapman explains that he wrote this book because he "found that all Books hitherto written on this Subject were calculated more for the Instruction of my own Sex, than the other, to whose Hands the Majority of the Practice in this Profession ever has been."[110] Chapman insists that he does not want men to take over the profession of midwifery, if only because men midwives are too busy already.

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[105] For background information on Harvey, see French, Roger. *William Harvey's natural philosophy*. Cambridge: Cambridge University, 1994.
[106] Keller 2007: 8. Keller suggests that this new understanding of the body as a closed system gave rise to the liberal self as an autonomous individual.
[107] See Pagel, Walter. *William Harvey's Biological Ideas: Selected Aspects and Historical Background*. New York: Hafner Publishing, 1967.
[108] Ibid., 68.
[109] Roe 1981: 64.
[110] Chapman, Edmund. *An essay on the improvement of midwifery; chiefly with regard to the operation. To which are added fifty cases, selected from upwards of twenty-five years practice.* London, 1733: n.p.

Rather, women midwives should handle as many routine cases as they can, and should call on a man midwife if something goes wrong. Because he was expressly committed to giving practical advice to women midwives, Chapman does not deal with abstract theories about reproduction at all. The bulk of the work is composed of problematic childbirth cases, and instructions on how to handle them. Many of these are explicitly gruesome: "Case XXVI. A Dead Child extracted with the Hook," "CASE XXIX. A Head separated and left behind in the Womb, extracted with the Crotchet," "CASE XXXV. Of a Woman that was deliverd at the Anus," and "CASE XLI. Of a Woman that died in Labour by a violent Retention of the Urine". Any eighteenth-century man who was not familiar with the birthing process who happened to read Chapman's manual would have been horrified at the gruesome violence involved in delivering a child.[111]

One can be certain that Chapman's midwifery pamphlet was actually written for midwives and not for curious men. *Aristotle's Masterpiece*, on the other hand, was more than likely written for men who knew little about the birthing process. Some men even used it as a form of pornography, which may be why it was so popular. In one of the chapters in the recently published edited volume *Right Living: An Anglo-American Tradition of Self-Help Medicine and Hygiene*, Mary Fissell writes,

> By 1744, [*Aristotle's Masterpiece*] was the single most important popular book about reproduction. Twenty-three editions had been published since its first appearance in 1684, as had more than fifty editions of the other three pseudo-Aristotle texts related to it. The *Masterpiece* was a North American favorite in particular, though, like many others, the book was not actually published in America until after the revolution.[112]

The information contained in the *Masterpiece* is a hodgepodge of new discoveries in natural philosophy, outdated wisdom from the Classical era, and popular folklore. The *Masterpiece* seeks to say something about virtually every area of reproduction, and oftentimes provides some kind of spiritual corollary. For instance, it weighs in on the debate about where the soul lives, saying that there have been "many Disputes amongst the Learned, especially Philosophers, in what part of the Body the Soul chuses to reside; and some have given their Opinion that its Residence is in the middle of the Heart, and from thence communicates its self to every Part."[113] Yet, many who read the book probably were not reading it for its spiritual wisdom. The *Masterpiece* was one of the two books in question during the infamous

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[111] For more on Chapman, see "The Masculine Subject of Touch: Case Histories from the Birthing Room" in Keller 2007.
[112] Rosenberg, Charles, ed. *Right living: an Anglo-American Tradition of Self-Help Medicine and Hygiene*. Philadelphia: JHU Press, 2003: 70.
[113] Anonymous. *Aristotle's compleat and experienc'd midwife: In two parts. I. A guide for child-bearing women ... II. Proper and safe remedies for the curing all those distempers that are incident to the female sex ; ... Made English by W- S-, M.D.* The second edition London, 1711: 36.

"Bad Book Case" in Northampton while Edwards was a pastor there. The young men who were the culprits in the Bad Book Case gleaned very detailed information about the female sex organs and about the reproductive process in general. They then used this information to tease young women, calling them "nasty creatures".[114]

Conclusions

Through this chapter, I have sought to detail and contextualize some of the debates about the reproductive process which took place among seventeenth- and eighteenth-century natural philosophers. In a few short lines—especially considering the lengthiness of the rest of *The Search for Truth*—Nicolas Malebranche laid the foundation for the theory of preformation in his example of the seeds of trees, each encased inside one another like Russian dolls. Being a priest who studied natural philosophy for the edification of theology, he was deeply concerned with the ways in which his findings related to received church doctrine. Malebranche's preformationism went hand-in-hand with both the doctrine of original sin and Cartesian mechanistic philosophy. While Malebranche's thoughts about reproduction were situated within clearly delineated debates in natural philosophy, William Cowper either did not fully understand such debates or decided not to take sides. He was very ambivalent towards debates about preformationism, mechanical philosophy, and the development of the heart. Whereas Cowper's work was less philosophical than Malebranche's, it was definitely more philosophical than Edmund Chapman's midwifery manual. Chapman explained, in a very detailed and technical way, how to deliver a child. Oftentimes, this was a messy and violent process, and Chapman's work highlights the violence rather than downplays it. *Aristotle's Masterpiece* was supposed to be a practical midwifery guide like Chapman's, but was instead appropriated by men who wanted to educate themselves on female anatomy.

The reproductive issues that Malebranche, Cowper, Chapman and the *Masterpiece* address—encasement, preformationism, Cartesian mechanism, original sin, the development of the heart, the horrors of childbirth—are all discussed in the works of Jonathan Edwards. Not coincidentally, Edwards read these authors and absorbed their arguments. In the next chapter, I will describe how these authors and these reproductive issues influenced the theology of Edwards.

[114] See Chamberlain, Ava. "Bad Books and Bad Boys: The Transformation of Gender in Eighteenth-Century Northampton, Massachusetts". *The New England Quarterly*, Vol. 75, No. 2. June, 2002: 179-203.

CHAPTER 3
REGENERATION

Introduction

In 1930, Clarence H. Faust sought to tear down the then-popular image of Jonathan Edwards as a true scientist who was forced to turn away from his first love in pursuit of theology. Instead, Faust wanted to erect an image of Edwards as a mystic who was only tangentially interested in science as a way to prove the reality of his theological commitments. Faust writes, "There seems to have been a thin vein of scientific interest in the man," and then goes on to agree with Alexander V.G. Allen, who insists, "Science and metaphysics do not interest [Edwards] as ends in themselves, but as subordinated to a theological purpose."[115] Seventy years after Faust, this image of Edwards as a theologian employing science in the service of God still holds true for most historians. Ava Chamberlain, in her highly original article "The Immaculate Ovum: Jonathan Edwards and the Construction of the Female Body," advances a highly unoriginal thesis, namely that Edwards merely used science to defend religion. Referring to the ovist version of preformationism, Chamberlain states, "I argue that [Edwards] accepted this hypothesis and the model of gender relations that it entailed primarily because it advanced his previous theological commitments."[116] In other words, Edwards employed preformationism to defend his theology. She attempts to show that preformationism was, in Edwards' mind, a scientific theory that proved the sovereignty of God in the minute details of human history, which in turn could be used as a tool to dismantle Edwards' real foes, namely atheism and Arminianism.

While I greatly respect Chamberlain's work and have been inspired by it, I disagree with the underlying presumptions of her argument. First, her argument perpetuates a false dichotomy between science and religion. Rather than historicizing the category of eighteenth-century natural philosophy in an effort to understand that it was inseparable from Christianity, historians like Chamberlain project the

[115] Quoted in Opie, John, ed. *Jonathan Edwards and the Enlightenment*. Lexington: D.C. Heath and Co., 1969:41-2.
[116] Chamberlain, Ava. "The Immaculate Ovum: Jonathan Edwards and the Construction of the Female Body". *The William and Mary Quarterly*, 3rd Ser., Vol. 57. Apr., 2000: 291.

present-day difference/conflict between the epistemology of science and the epistemology of religion onto the past. Secondly, this false dichotomy usually portrays science as progressive and religion as regressive. Edwards is oftentimes characterized as a reactionary figure, as a Puritan theologian who was afraid that the new science would lead to atheism and Arminianism. In order to defend religion, he supposedly used the new science against itself. Religion as stasis, as married to the status quo, is typified as needing to be defended against the constant advancements of science. However, there are some who have grown bored of this trite paradigm. Historian of science Charles Webster opposes this portrayal of science and religion in his book entitled *From Paracelsus to Newton: Magic and the Making of Modern Science*. He shows that science does not always have to be a liberal (inclined to induce change) force in society and that religion does not always have to be a conservative (inclined to impede change) force.[117] Thirdly, Chamberlain presumes that Edwards had a clear theological agenda when he accepted preformationism. Yet, Chamberlain does not take into account the fact that Edwards wrote about preformationism when he was around twenty years old, long before he wrote any of his large theological treatises. Edwards was already a Calvinist in the Puritan tradition at age twenty, but the major events that shaped his theological views—such as his apprenticeship under his grandfather at Northampton, the Great Awakening, his dismissal from Northampton—had not occurred yet, so one should not assume that Edwards' thought was fully concretized by then. Lastly, Chamberlain fails to detail the place of preformationism within eighteenth-century natural philosophy. As explained in the previous chapter, preformationism was actually thought to be "good" natural philosophy. Its alternative, epigenesis, was viewed by the majority of natural philosophers as "bad" natural philosophy. Perhaps Edwards accepted preformationism for the simple reason that the only other alternative theory was viewed as vitalistic superstition, not good natural philosophy.

This chapter will trace the theory of preformationism in the writings of Edwards. I will describe how this theory formed the foundations of Edwards' theology, especially shaping his views on the doctrine of original sin and the new birth. Edwards was heavily influenced by natural philosophy early on in his life, particularly when he was a student at Yale. He read and was familiar with the natural philosophers discussed in the previous chapter, like Malebranche, Descartes, Cowper, Chapman, etc. Because of his background in natural philosophy, Edwards felt compelled to explain theological doctrines like original sin and the new birth in the terms of natural philosophy. The way in which

[117] Webster, Charles. *From Paracelsus to Newton: Magic and the Making of Modern Science*. Cambridge: Harvard University, 1982.

original sin gets physically passed down from generation to generation could be explained by preformationism, and the mechanics of conception and childbirth could give insight into the workings of the new birth. I will give evidence to substantiate my claim that Edwards actually believed that Eve's ovaries contained the ovum of every person who would ever live. When Eve first ingested the forbidden fruit, sin physically entered her body and thereby corrupted the entire human race contained in her ovaries. However, one ovum was protected from this sinful corruption—the ovum of Christ, who would later redeem humanity from this corruption by way of the new birth. Edwards never explicitly details this narrative in exactly the way I just did, but I will argue that this narrative is what he believed. To prove this argument, a chronology of Edwards' thought, especially regarding preformationism, will be given. At the conclusion of the chapter, I will show how my findings have larger implications for the methodology of the history of religion and science. I will then provide suggestions for further scholarship. But first, I must give some information on my sources.

Sources and Background

In the first chapter of this thesis, I criticized Christopher Grasso and Edwards scholars like him for combing the historical record for new pieces of the Edwards puzzle when really analyzing old puzzle pieces from new angles would prove more productive. However, after finding Peter Thuesen's *The Works of Jonathan Edwards: Catalogues of Books*, which was published last year, I began to realize how important it is to have such "new puzzle pieces" made available.[118] This volume is numbered twenty-six out of *The Works of Jonathan Edwards*, and it contains an introduction by Thuesen, Edwards' "Catalogues of Books," Edwards' "Account Book," along with several other appendices of library lists, Edwards' references, etc. The "Catalogues of Books" is Edwards' list of over seven-hundred books that he desired to read at some point in his life. Many of these books he did actually read, and to indicate that he had read them he crossed them out in the Catalogues. Edwards' "Account Book" is a list of people to whom he lent his books.

The most amazing aspect of Edwards' Catalogues is that they show the extent to which Edwards was influenced by European philosophers. Thuesen insists, "The book lists in this volume also reveal that political, social and intellectual milieu of Edwards and his circle, showing us how British these

[118] Edwards, Jonathan. *Catalogues of Books*. Peter Thuesen, ed. New Haven: Yale University, 2008.

colonials were (or at least aspired to be) and how thoroughly their outlook depended on developments across the Atlantic."[119] Thuesen labels this "intellectual milieu" as the European republic of letters, which dealt broadly with philosophical issues, notably natural philosophy. Edwards, "a full-fledged participant in the European republic of letters," read European books, newspapers and pamphlets; exchanged books with friends across the Atlantic; and exchanged ideas with European friends and foes alike.[120] As the Catalogues make obvious, Edwards' thought was not created in a vacuum, nor was it narrowly focused on theology. Edwards was not solely a theologian, in our modern sense of the term. The majority of eighteenth-century theologians believed that God could be found in the natural world; therefore, the natural world was not a realm which was ontologically different from the religious world. For Edwards and theologians like him, theology and natural philosophy were not entirely distinct epistemologies. Edwards felt compelled to study the natural world because it revealed divine handiwork, so he read widely in European natural philosophy. The importance of natural philosophy in the intellectual thought of Edwards inherently shows the importance of European influence, for most respectable natural philosophers were European.

"The Spider Letter" is Edwards' first real foray into natural philosophy. Written when he was a young student at Yale, Edwards sent the letter to a fellow of the Royal Society named Paul Dudley, hoping to get it published in the Royal Society's *Philosophical Transactions*. While still being empirical in his investigation, Edwards' ultimate goal in the letter was to show how an insect as detestable as a spider reveals the wisdom and goodness of the Creator. This short, early essay on spiders also reveals the extent to which young Edwards' life goals were defined by European natural philosophy: "Before I venture to publish in London . . . to play at small games first, that I may gain some experience in writing."[121] Such a dream was never realized, but the prestige of the Royal Society continued to capture Edwards' attention throughout his life. Edwards, in his "Catalogue of Books," put F.R.S. next to the names of authors who were fellows of the Royal Society, and sought to read works from the Royal Society, including *Philosophical Transactions* and *History of the Royal-Society*.[122]

Historians who have focused solely on Edwards as "America's First/Greatest Theologian" have failed to recognize Edwards' aspirations of becoming a natural philosopher renowned in London and throughout Europe. A few good historians have taken up a scientific, rather than theological, mode of

[119] Ibid., 3.
[120] Ibid., 36.
[121] Ibid., 21.
[122] Ibid., 94-95.

analysis, explaining how Edwards was influenced by such erudite natural philosophers as Newton, Berkeley, Boyle, etc. Sixty years ago Perry Miller spawned a paradigm shift with the view that "Edwards was more a product of the new thought of the Enlightenment than Puritan traditionalism."[123] Since then, figuring out the degree to which Edwards was influenced by Enlightenment thought and natural philosophy has been an important part of the scholarship surrounding Edwards. Yet, very little has been written on Edwards' immense interest in explanations of the human body from the standpoint of natural philosophy. I will now analyze Edwards' early interest in natural philosophy and then show how it later affected his views on the human body.

Edwards as Natural Philosopher

In the note numbered 130 in his "Catalogues of Books," Edwards records his desire to read "some of Malebranches writings".[124] Since the note was never crossed out, it is hard ascertain whether or not Edwards read the writings of Malebranche which he had in mind here. Later in the Catalogues, Edwards lists "Malebranche's Search after truth" in note 303.[125] This work has been crossed out, which shows that Edwards did in fact read the book. However, it is unclear when and where Edwards was able to read Malebranche. It has been confirmed that Malebranche's *Search After Truth* was available in the Yale University library, through the gift of Jeremiah Dummer, while Edwards was a candidate for the master's degree and while he was a tutor there.[126]

There is one particular passage in Edwards' "Things to be Considered an[d] written fully about" which sounds very reminiscent of Malebranche. Note numbered 48 reads:

> If the branches of the tree did really grow exactly in the same form as their pattern in the seed, this might indeed solve for the growing of one tree, but not for that infinite succession and endless offspring of trees that may proceed from it, except we suppose that in one seed are actually contained an infinite number of trees and seeds, one within another.[127]

Edwards wrote this in 1723, after he had finished his graduate studies and before he became a tutor at Yale, nearly fifty years after Malebranche published *The Search After Truth*. Just as Malebranche argued that the germs, or seeds, of trees are encased inside each other going back to the first tree, Edwards

[123] Opie 1969: 22.
[124] Thuesen 2008: 142.
[125] Ibid., 180.
[126] Ibid., 9-10.
[127] Edwards, Jonathan. *Scientific and Philosophical Writings*. Wallace E. Anderson, ed. New Haven: Yale University, 1980: 242.

supposes that there is "an infinite number of trees" in one seed. This idea of encasement is the essence of preformationism that was discussed in the previous chapter. However, Edwards does not immediately relate this to the seeds of humans, as Malebranche does. Neither does Edwards cite or mention Malebranche, so it is not certain whether Edwards received this encasement theory directly from Malebranche's writings. Edwards scholar Wallace Anderson suggests that perhaps Edwards had in mind the natural philosophers Nehemiah Grew and Marcello Malpighi, both preformationists, when he wrote this passage.[128] However, Grew and Malpighi are not mentioned in Edwards' "Catalogues of Books," whereas Malebranche is listed twice. In any case, even if Edwards was getting his information from other preformationists besides Malebranche, these preformationists have Malebranche as their intellectual predecessor.

Edwards does not immediately relate his tree example to the workings of God in the world, as Malebranche does. Edwards goes on to explain how seeds grow into sprouts which grow into trees. He drew a diagram which demonstrates how different kinds of trees produce different kinds of branches. While there are so many theological truths that could be drawn from the formation and development of trees, Edwards does not go beyond his findings on the natural philosophy of trees. The only time he mentions God in this note is in the last sentence, which states, "The trees, or seeds, or whatever they were that God first created, were only the beginning of this progress—enough to set it going."[129] This portrays God as setting in motion the life of every tree by creating the first tree. If the seed of the first tree had the seeds of all future trees inside it, then God does not have to continually interfere in the world by creating new trees. Later on in his life Edwards will argue that God set in motion the entire course of human history, including Christ's virgin birth, by merely creating Eve, who contained the embryos of every human inside her ovaries. As of 1723, Edwards had not made all of those connections yet. For now he was content to explain the encasement of tree seeds inside tree seeds without feeling compelled to add a theological corollary.

While Edwards does not relate trees to theology in this note, the next note, numbered 49, has nothing to do with trees but everything to do with theology. Edwards writes, "Tis not only necessary that God should tell the number of the stars and know the exact bigness, weight, density, number and distance of these greater bodies of the universe . . . [but He must also] know the exact number of particles of dust, the exact dimensions and weight of every atom," etc. Here God is portrayed as the

[128] Ibid., 242, footnote #2.
[129] Ibid., 246.

ultimate natural philosopher, as one who comprehends the minutest details of the universe. God "measure[s] the seas," "weigh[s] the mountains," and knows everything there is to know about the natural world because he created it. Edwards desires to imitate and understand the natural philosophy of God. Theology and natural philosophy could never be at odds for Edwards because he viewed God as the ultimate natural philosopher.

Some natural philosophers used evidence from natural philosophy to argue that God did not actively participate in a mechanical world, thereby causing some religious leaders to insist that natural philosophy was incompatible with the Christian life. Cotton Mather's *The Christian Philosopher*, published in 1721, sought to reassure religious leaders that natural philosophy and Christianity were actually complementary.[130] Edwards, like Mather, believed that natural philosophy could reveal the nature and character of God. Yet Mather, for all of his support of natural philosophy, never fully embraced the idea of a mechanical world order. Up until the end of his life, Mather saw God interfering in the natural world through lightning, volcanoes, and other prodigies to communicate divine warnings.[131] Edwards, on the other hand, was very comfortable with mechanistic philosophy, and even insisted on it. He was exposed not only to Malebranche's preformationism early on in his life, but also to Descartes' mechanism. Edwards was "nourished on an early diet of Cartesian rationalism".[132] His "Catalogues of Books" reveals that he was interested in authors who supported Cartesian mechanism and that he wanted to read Descartes himself. Note numbered 408 lists "des Cartes's treatise de Methodo which Chambers in his dictionary Calls an incomparable Treatise under the word Cartesians," which refers to Descartes' 1637 *Discours de la methode pour bien conduire sa raison & chercher la verite dans le sciences*, published in England in 1649 as *A discourse of a method for the well guiding of reason*.[133]

Note numbered 19 in "Things to be Considered an[d] Written fully about" shows Edwards' acceptance of mechanical philosophy through an example which many vitalists sought to protect from mechanistic explanations. The heart and reproduction were two areas that vitalists sought to protect. As stated in the last chapter, those opposed to preformationism, like early epigeneticists, oftentimes objected on the grounds that mechanistic explanations of the human body were not compatible with

[130] See the editor's introduction to Mather, Cotton. *The Christian Philosopher*. Winton Solberg, ed. Urbana: University of Illinois, 1994.
[131] See Winship, Michael P. *Seers of God: Puritan Providentialism in the Restoration and Early Enlightenment*. Baltimore: Johns Hopkins University, 1996.
[132] Thuesen 2008: 91.
[133] Ibid., 210-211.

Christian theology.[134] Similarly, the heart was viewed by many as an organ that was not only physical but metaphysical. The heart was the seat of the soul, the literal site where the soul lived.[135] To explain the heart as a purely mechanical organ was, for many, to explain away the soul.

However, young Edwards was not worried about such metaphysical implications when he described the mechanical workings of the heart in note numbered 19. He writes, "The weight of the descending blood in the veins completely answers to the weight of the ascending blood in the arteries, in parts above the heart, so that the weight of one exactly balances the weight of another."[136] The heart is portrayed as a machine, as an organ that regulates itself and needs no outside input from God or from the soul. No vitalistic principle is present, only the laws of mechanism. Edwards' interest in the mechanics of the heart is important here because it is the first time Edwards uses natural philosophy to describe the heart. He does not relate the mechanics of the heart to theological matters in this passage. But, as I will show below, later on in his life the heart will become of central importance to his theology. Edwards will use the heart as the site of the new birth. The heart needs to be reborn, Edwards will argue, because it has been corrupted by original sin.

Typology

In August of 1728, right around the time that his first child was born, Edwards began to write "Images of Divine Things," which is his manifesto on typology. Typology, put simply, is the study of people, things, or events that are symbolic of things to come. For instance, the Old Testament figure of David was believed, by Christian typologists at least, to be a type of Christ. David is the type, or the imperfect symbol, while Christ is the antitype, the fulfillment of the symbol. Typology has a long history in the Christian tradition, and Edwards was not even the first American theologian to promote typology. However, Edwards was original in that he sought to incorporate natural philosophy into his study of types. He believed that natural phenomena could be a type of divine phenomena, that the processes of the natural world mirrored the processes of the spiritual world. Natural phenomena were the types, or the symbols, or the manifest reality, of divine phenomena, which were the antitypes. Therefore,

[134] Although mechanists like Descartes and Malebranche viewed the world as a machine which could run without the interference of God, they also "maintain[ed] that God preserves the universe at every moment, implying that the conservation of matter and motion would cease instantly if God did not act to maintain it." Edwards' later writings on God's sovereignty confirm that he agreed with this view. See William Ashworth's "Christianity and the Mechanistic Universe" in Lindberg, David, and Ronald Numbers, eds. *When Science & Christianity Meet*. Chicago: University of Chicago Press, 2003: 74.
[135] See Erickson, Robert. *The Language of the Heart, 1600-1750*. Philadelphia: University of Pennsylvania, 1997.
[136] Anderson 1980: 223.

the study of the natural world—i.e., natural philosophy—could reveal truths about the spiritual world. Perry Miller insists in his introduction to "Images of Divine Things" that Edwards' typology implied a "radical break with the past: an exaltation of nature to a level of authority coequal with revelation—nature as seen by the regenerate eye, but still nature."[137] Moreover, Miller's argument stands in complete contrast to Chamberlain's viewpoint when Miller states, "Edwards was dramatically shifting the traditional emphasis: he was quoting Scripture to confirm the meaning of natural phenomena, not adducing natural images to confirm the meaning of Scripture."[138]

Edwards begins his treatise by asking a rhetorical question: "We see that even in the material world, God makes one part of it strangely to agree with another, and why is it not reasonable to suppose He makes the wholes as a shadow of the spiritual world?"[139] The material world has an inherent order and logic to it, and I have already discussed the fact that Edwards believed that this was an order in the mechanical sense. This mechanical order was certainly not created arbitrarily. Rather, God created the material world to correspond to the spiritual world. Of course Edwards would have understood this in terms of original sin brought on by the Fall, which means that the material world has been affected by sin so that it can no longer be a perfect type or image of the spiritual world. Although Edwards does not explicitly reference original sin here, he does write that, "The system of created being may be divided into two parts, the typical world, and the antitypical world. The inferiour and carnal, i.e. the more external and transitory part of the universe, that part of it which is inchoative imperfect, and subservient is typical of the superiour, it were, the substance and consummation of the other."[140] The material world is by no means superior to the spiritual world, so that it cannot be a perfect representation of the spiritual world. Yet, it is still a type of the spiritual world, so that eternal truths can be gleaned from the study of natural philosophy. In this passage Edwards concludes that "the material and natural world is typical of the moral, spiritual, and intelligent world, or the city of God."

The rest of "Images of Divine Things" is a detailed list of natural phenomena, the types, which correspond to spiritual phenomena, the antitypes. Edwards' notes on reproduction as a type are the most useful for this present project. Childbirth alone is mentioned at least four times in this work. Believing that the physical birth of a child corresponds to its spiritual birth, he writes, "Children's coming into the world naked and filthy and in their blood, and crying and impotent, is to signify the spiritual nakedness

[137] Edwards, Jonathan. *Images or Shadows of Divine Things*. Perry Miller, ed. New Haven: Yale University, 1948: 28.
[138] Ibid., 36.
[139] Ibid., 44.
[140] Ibid., 27.

and pollution of nature and wretchedness of condition with which they are born."[141] In other words, the physical filthiness of the newborn is a type of the newborn's spiritual filthiness. Edwards reiterates this point later on when he states, "Children's being born crying is a signification of their being born to sorrow."[142] Childbirth is not only a type revealing the sinfulness of newborns, but it is also a type of spiritual suffering and spiritual rebirth. Note numbered 18 reads: "Women travail and suffer great pains in bringing children [forth], which is to represent the great persecutions and sufferings of the church in bringing forth Christ and in increasing the number of his children; and a type of those spiritual pains that are in the soul when bringing forth Christ."[143] The church gives birth to new believers, and the pains of a woman in labor correspond to this. Also, one feels these same pains of childbirth when one is spiritually reborn.

For Edwards, reproduction is one of the most important types because it correlates to the new birth, which is fundamental to Edwards' theology. In note numbered 190, Edwards explains that natural philosophy teaches that the heart is the first organ to form in an embryo. This is a type of the new birth, wherein the heart also forms first. Edwards states:

> In the conception of an animal and formation of the embryo, the first thing appearing is the *punctum saliens* or the heart, which beats as soon as it exists. And from thence the other parts gradually appear, as though they all gradually proceeded and branched forth from that beating point. This is a lively image of the manner of the formation of the new creature. The first thing is a new heart, a new sense and inclination, that is a principle of a new life; a principle that, however small, is active and has vigor and power, and as it were beats and struggles, thirsts after holiness, aims at and tends to everything that belongs to the new creature, and has within it the foundation and source of the whole.[144]

The term *punctum saliens* literally means "leaping point," and it was William Harvey's phrase for the heart. While this shows that Edwards was at least somewhat familiar with Harvey's conclusions that the heart was a pump, there is no evidence to suggest that Edwards actually read Harvey directly. In fact, in this passage Edwards seems to disagree with Harvey more than he agrees with him. Recall that Harvey was a vitalist and an epigeneticist who believed that the heart appeared after conception. As shown above, Edwards accepted preformationism early in life, and he described the heart as a mechanical organ. Most preformationists contended that the heart always existed in the embryo—going all the way

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[141] Ibid., 45.
[142] Ibid., 48.
[143] Edwards, Jonathan. *Typological Writings*. Wallace E. Anderson, ed. New Haven: Yale University, 1993: 55.

[144] Ibid., 122-123.

back to Eve—and was jumpstarted at the moment of conception to pump blood to the other new-forming organs. Edwards seems to take that view here, although he does not spell every detail out explicitly. Rather, what he does say explicitly is that the development of one's physiological heart is a type of the development of one's spiritual heart after it has undergone the new birth. The heart is the central focus and force of one's spiritual life—the rest of one's spiritual "organs" grow out of the heart. Unfortunately, though, one's spiritual life cannot begin until one's heart is born again. Without the regenerating effects of the new birth, one's heart is dead in original sin.

The Original Sin Controversy

John Erskine, a minister in Scotland, greatly admired Edwards and began to send him books that were hard for Edwards to purchase on his own because he was not located near major European publishing presses like Erskine. Perhaps one of the most significant books that Erskine sent Edwards was John Taylor's *The Scripture-Doctrine of Original Sin*. Edwards first referenced this work in his "Catalogue of Books," number 479 as "the latest Books I hear of about Arminianism are Taylor against original sin."[145] Taylor was a Presbyterian "nonconforming" or "dissenting" minister in Norwich, England who caused controversy among more orthodox ministers.[146] A Calvinist minister in Ireland warned his congregation of Taylor's book: "I desire that none of you will read it; for it is a bad book, and a dangerous book, and a heretical book; and, what is worse than all, the book is unanswerable."[147] While Edwards may have agreed with this minister that Taylor's book was heretical, Edwards certainly did not believe it was unanswerable and he did not keep other people from reading it. On the contrary, Edwards lent out his copy of Taylor's *Original Sin* at least five times.[148]

Taylor argues that humans are born naturally good rather than naturally evil. Although everyone possesses "natural passions and appetites," which can sometimes lead to sin, every person also has "rational powers" which can lead one to do good.[149] Since God forms each human individually and human nature generally, Taylor concludes that humans cannot be born sinful because God cannot make anything that is sinful. Furthermore, Taylor urges his readers to contemplate the implications of the

[145] Thuesen 2008: 236.
[146] Opie 1969: 56.
[147] Sell, Alan P. *Dissenting Thought and the Life of the Churches: Studies in an English Tradition*. San Francisco: Mellen Research University, 1990: 195.
[148] Thuesen 2008: 349.
[149] Opie 1969: 56-57.

doctrine of original sin. This doctrine leads individuals to blame their sin on Adam, the original sinner, rather than taking responsibility for their sin.

Because Taylor did not believe in original sin, he had no use for the new birth. In fact, Taylor never uses the term new birth. Opposed to Taylor's so-called Arminian distaste for original sin is Edwards' belief that original sin is fundamental to the Christian faith. One does not need Christ's saving grace if there is no such thing as original sin. According to Edwards, original sin is "the proper and true reason, why a man must be born again".[150] The flesh, or one's sinful nature, is "born in the first birth, and furnishing a reason why there is a necessity of a new birth, in order to a better production."[151] The doctrine of original sin and the doctrine of the new birth together form the foundation of Edwards' systematic theology. These two doctrines are interdependent, so that, at least in Edwards' mind, if one is true then the other must be true also. Edwards writes, "To be *born again*, is to be born *anew*; which implies a becoming NEW, and is represented as becoming *new born babes*. But none supposes it is the *body*, that is immediately and properly new, but the *mind, heart, or spirit* . . . When Christ speaks of being *born again*, two births are supposed: a *first and a second, an OLD birth and a NEW one*."[152] In other words, the doctrine of the new birth presupposes the doctrine of original sin. He goes on to say that in the first birth the old man is born, but in the second birth the new man is born. The old man is flesh, represented by Adam; the new man is spirit, represented by Christ.

The important thing about the first birth is not merely that one is born, but that one is born of a woman. Edwards' explanation of the doctrine of original sin highlights the sinfulness of women, the womb, and the birthing process in general. The birthing process is the means by which original sin is passed from the mother to her child, from generation to generation. Edwards explains, "As mankind are represented in scripture, as being of a wicked heart *from their youth*, so in other places they are spoken of as being thus *from the womb*."[153] He quotes the Psalms, stating, "*The wicked are estranged FROM THE WOMB, &c.* The next verse is, *their poison is like the poison of a serpent*. Serpents are poisonous as soon as they come into the world; they derived a poisonous nature by their generation."[154] Thus the poison of original sin is derived from the womb, from the mother, from the birthing process.

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[150] Edwards, Jonathan. *The great Christian doctrine of original sin defended; evidences of it's [sic] truth produced, and arguments to the contrary answered. Containing, in particular, a reply to the objections and arguings of Dr. John Taylor, in his book, intitled, "The Scripture-doctrine of original sin proposed to free and candid examination, &c.* Boston, 1758: 246.
[151] Ibid., 242.
[152] Ibid., 321.
[153] Ibid., 234.
[154] Ibid.

This is in complete opposition to Taylor. To show Taylor's position, Edwards cites Taylor as saying that Scripture can be interpreted figuratively, so that "*from the womb*" can simply mean "early and settled habits," not necessarily an inherent nature that is evil.[155] Edwards is not convinced by Taylor's argument because Edwards is certain that the Bible does not use the phrase "from the womb" as a metaphor. For Edwards, the Scriptures are very clear about the cause and transmission of original sin. Allow me to quote Edwards at length:

> We are not only told, how wicked man's heart is, but also how men come by such wickedness; even by being of the race of mankind, by ordinary generation: *What is man, that he should be clean? and he that is born of a woman, that he should be righteous?* [Taylor] represents man being born of a woman, as a *periphrasis*, to signify man; and that there is no design in the words to give a reason, why man is not clean and righteous. But the case is most evidently otherwise, if we may interpret the book of *Job* by itself. It is most plain, that man's being *born of a woman* is given as a reason of his not being clean; chap. xiv. 4. *Who can bring a clean thing out of an unclean thing? Job* is speaking there expressly of man's being born of a woman, as appears in ver. 1. And here how plain is it, that this is given as a reason of man's not being clean? Concerning this [Taylor] says, *That this has no respect to any moral uncleanness, but only common frailty, &c.* But how evidently is this also otherwise? when that uncleanness, which a man has by being born of a woman, is expressly explained of *unrighteousness*, in the next chapter at the 14th verse.[156]

Edwards is arguing, *contra* Taylor, that the direct and immediate reason that humans are sinful and unclean is that they have been born of a woman. Being born of a woman does not simply mean that one is frail, like Taylor says, but that one is completely unrighteous. Edwards goes on to list other places in the Bible that emphasize the fact that humans are born or conceived in sin, sinful from the womb, which reveals more about his commitments to mechanical philosophy. He writes, "It is true, that God, by his own almighty power, creates the *soul* of the infant; and it is also true, as [Taylor] often insists, that God, by his immediate power, forms and fashions the *body* of the infant in the womb; yet he does both according to that *course of nature*, which he has been pleased to establish."[157]

While Taylor interprets the verse from Romans, "We were by nature children of wrath," as a metaphor, Edwards contends that "the proper sense of the phrase, is, being a child by *nature*, in the same sense as a child by birth or natural generation."[158] There is a literal sinful nature that is passed through childbirth, but how? From a physical standpoint, how does this passing of the poison of original sin occur during childbirth? Can this be explained in terms of natural philosophy in addition to being

[155] Ibid.
[156] Ibid., 236.
[157] Ibid., 339.
[158] Ibid., 264.

explained in theological terms? Of course, Edwards answers, original sin can be described in natural, rather than supernatural, terms. To fully answer these questions, one must go back to the first mother, Eve. Edwards quotes Eccles. xxv. 24 as stating, "Of the woman came the *beginning of sin, and through her we all die*."[159] If Eve had a sinful nature, and all humans come from Eve, then all humans must inherit that nature from the womb. Edwards cites "Jewish Rabbies" as stating that the serpent "emitted a mortiferous and corruptive poison into *Eve*".[160] When Eve ate the forbidden fruit, it poisoned her whole body with deadly, sinful corruption. This corruption extended into her ovaries, so that the ova of future generations were also poisoned. If Edwards believed, like other preformationists, that each ovum already contained the infinitely small preformed heart, then it would be plausible that everyone's heart was imbued with a sin nature the moment Eve sinned. However, Edwards does not address the issue of the hearts of everyone that would ever live being located in the ovaries of Eve explicitly, so there is no direct evidence to prove that he believed it. But one can be certain that Edwards believed that Christ's ovum was protected from the poison of Eve's sin.

The Ovum of Christ

"Miscellanies" entry number 769 states, "As [Christ] was the seed of the woman, so his sovereignty appears in his being the seed of such women as he was: as of Leah, the uncomely wife of Jacob, whom her husband had not chosen; and of Tamar, a Canaanitess and a harlot; and Rahab, a harlot; and Ruth, a Moabitess; and of Bathsheba, one that had committed adultery." Edwards is amazed that the perfect, holy, uncorrupted seed, or ovum as he later calls it, of Christ could be passed down through such imperfect, unholy, corrupted women. These women were not just your usual sinful women—they were worse; they were harlots, adulterers, and foreigners. Not only was Christ the seed of sinful women like Leah, Rahab, Ruth, and Bathsheba, but he was also "the immediate seed of Mary, a mean person". Edwards insists, "That Christ was conceived by the power of the Holy Ghost was a fruit of his election . . . So that it was owing to this election of God that the man Jesus was not one of the corrupt race of mankind." God was able to protect the ovum of Christ from such sinful women and His

[159] Ibid., 383.
[160] Ibid., 381.

"sovereignty appears in choosing [Christ's] individual seed of the woman to advance to such glory and blessedness." [161]

Edwards goes on to write that "all the future posterity of the woman were in the womb or ovary of Eve." This means that Christ's ovum was also in the ovary of Eve and was then passed down to her female descendants. Edwards concludes,

> There are the first principles, the stamina, of every human body, long before it becomes the body of the human being. There is a seed of the woman to be afterwards impregnated in the immediate mother, if not in the first mother of mankind. And what number of these ova or seeds should be impregnated, is determined of God beforehand, and so every individual human being that should have existence from thence . . . 'Tis this free, sovereign and gracious election that is the prime ground of any distinction among those seeds of the woman considered antecedent to this. They are all alike in circumstances: they are all alike seeds of the woman, all have the same nature, are all alike liable to being their proper human existence the same way, are all alike liable to the guilt and pollution, and so to the misery and damnation, that comes by the fall.[162]

This is the main passage that Ava Chamberlain offers as evidence to prove her argument that Edwards employed preformationism to defend his Calvinism against the attacks of atheism and Arminianism, that Edwards employed science to defend religion. While one cannot deny the fact that Edwards does view preformationism as going hand-in-hand with his Calvinism, this is not the most useful or interesting explanation. Instead, after analyzing Edwards' early interest in the natural philosophy of reproduction, I have sought to show that Edwards' theology of the new birth developed in tandem with his understanding of childbirth. When Edwards wrote about preformationism in the seeds of trees when he was twenty years old, he did not immediately understand that it was a bulwark against his theological foes who were not quite his foes yet. Neither did Edwards immediately understand that preformationism in trees related to humans or to the doctrine of original sin or to Christ's immaculate ovum. Rather, it is more plausible to think that Edwards accepted the preformationism of trees because it was the most mechanistic and therefore the most "scientific" reproductive theory at the time. As Edwards grew in his theology and in his natural philosophy, he began to make the connections between preformationism and the doctrines that would define his life as a theologian.

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[161] Edwards, Jonathan. *The "Miscellanies": Entry Nos. 501-832*. Ava Chamberlain, ed. New Haven: Yale University, 2000: 416-417.
[162] Ibid.

Conclusions

Jonathan Edwards understood the new birth in terms of the old birth or first birth. To argue his case, he quotes Isaac Newton: "The same principles must take place in things pertaining to *moral*, as well as natural philosophy." The same principles that occur in generation also occur in regeneration, because generation is a type of regeneration. In studying the principles of generation, Edwards came to accept the theory of preformationism. I have sought to show that this eighteenth-century natural philosophy of birth was integral to Edwards' theology. Rather than use "science" to defend religion, Edwards actually used natural philosophy to deepen his understanding of theological truths.

The theology of the new birth had great implications for Edwards' theology of gender. While previous historians of Edwards have argued that revivalism and the idea of the new birth gave women more agency, I have argued that new birth theology highlighted the sinfulness of women. It was outside the scope of this project to analyze the ways in which this gendered ideology affected gendered practices within revivalist churches. Future scholarship that does analyze this relationship between ideology and practice should take into account the fact that Edwards' new birth theology placed a great emphasis on woman's sinful nature.

However, this argument is not meant to essentialize new birth theology by saying that it is always about the denigration of women. There may have been other eras in history wherein new birth Christianity highlighted the sinfulness of men rather than women. Some sociologists and religious studies scholars might say that present-day Christian evangelicalism' emphasis on the new birth emphasizes the sinfulness of men and their sperm. Some evangelicals today would agree with the assertion that "the female ovum with the twenty-three uncontaminated chromosomes of the mother becomes contaminated at the time it is fertilized by the father's sperm cell, which is how the sin nature is passed on. The result of this process is offspring born with the genetically-formed sin nature."[163]

On the other hand, some evangelicals view sperm as a positive metaphor for God's Word. In her study of evangelical sex manuals, Amy DeRogatis has an interesting quote from an evangelical couple that illustrates the fact that evangelicals today, much like Edwards in the eighteenth century, still employ reproduction as a spiritual metaphor:

> God's Word is like His spiritual sperm. Knowing what we do about genetics, we could even say that, like the genes carried in the head of a sperm, God's Word carries God's characteristics. So,

[163] See the website of an evangelical professor at Charis Theological Seminary in Texas: <http://www.geocities.com/mariostudies/SINNATURE.htm>. Accessed April 20, 2009.

> for you to be 'born again,' God's Word, His sperm, must be implanted in your heart by the Holy Spirit. If your heart chooses to receive His Word, a new spirit will be birthed within you.[164]

Edwards would not have understood this reference to genetics or even to sperm, but he would have understood the strategy of using reproduction as a spiritual metaphor. Such physiological descriptions of theological doctrines like the new birth did not begin or end with Edwards. More work on this relationship between physiology and theology needs to be done. Mary Fissell has argued that this relationship is important because "it is not just that models of the body reflect historical change. Rather, men and women thought through the body, using ideas about reproduction as a kind of imaginative resource to understand and to justify their changing circumstances."[165] Certain physiological explanations of the body make certain conceptions of the self possible, and this is what I hope to study in the future.

[164] DeRogatis, Amy. "What Would Jesus Do? Sexuality and Salvation in Protestant Evangelical Sex Manuals, 1950s to the Present." *Church History*. March 2005: 97.
[165] Fissell, Mary E. *Vernacular Bodies: The Politics of Reproduction in Early Modern England*. Oxford: Oxford University, 2004: 1.

BIBLIOGRAPHY

Primary Sources

Ambrose, Isaac. *Prima; the first things, in reference to the middle and last things; or, the doctrine of regeneration, the new birth, the very beginning of a godly life. The sixth edition, compared and revised with the last London quarto edition, enlarged and corrected by the author.* Glasgow, 1737.

Anonymous. *Aristotle's compleat and experienc'd midwife: In two parts. I. A guide for child-bearing women ... II. Proper and safe remedies for the curing all those distempers that are incident to the female sex.* The second edition London, 1711.

Anonymous. *Bibliotheca anatomica, medica, chirurgica, &c. Containing a description of the several parts of the body: each done by some one or more eminent physician or chirurgeon; with their diseases and cures. Wherein are not only all the tracts of use that are in the second edition of the Bibliotheca anatomica.* London, 1711-14. 3 vols.

Anonymous. *The ladies dispensatory: or, every woman her own physician. Treating of the nature, causes, and various symptoms, of all the diseases, that most peculiarly affect the fair sex.* The second edition London, 1740.

Anonymous. *The man-midwife unmasqu'd: being the case of a certain young lady.* London, 1733.

Bracken, Henry. *The midwife's companion, or, a treatise of midwifery: wherein the whole art is explained. Together with an account of the means to be used for conception and during pregnancy; the causes of barrenness accounted for, and some remedies proposed for the cure. Also several remarkable cases.* London, 1737.

Bushman, Richard L. *The Great Awakening: Documents on the Revival of Religion, 1740-1745*. New York: Atheneum, 1970.

Browne, Thomas, Sir. *Religio medici: or, the Christian religion, as professed by a physician; freed from priest-craft and the jargon of schools.* The tenth edition London, 1736.

Bromley, Thomas. *The way to the Sabbath of rest: or the soul's progress in the work of the new-birth. To which are now added, two discourses of the author, never before printed, viz. The journeys of the children of Israel, And A treatise of extraordinary divine dispensations.* Leeds, 1744.

Chapman, Edmund. *An essay on the improvement of midwifery; chiefly with regard to the operation. To which are added fifty cases, selected from upwards of twenty-five years practice.* London, 1733.

Chapman, Edmund. *A reply to Mr. Douglass's Short account of the state of midwifery in London and Westminster. Wherein his trifling and malicious cavils are answer'd.* London, 1737.

Chauncy, Charles. *Enthusiasm described and caution'd against. A sermon preach'd at the Old Brick Meeting-House in Boston, the Lord's Day after the commencement.* Boston, 1742.

Chauncy, Charles. *The new creature described and considered, as the sure characteristick of a man's being in Christ: together with some seasonable advice to those who are new creatures. A sermon preached at the Boston.* Edinburgh, 1742.

Chauncy, Charles. *Seasonable Thoughts on the State of Religion in New-England*. Boston: Rogers and Fowle, 1743.

Cowper, William, *The anatomy of humane bodies, with figures drawn after the life ... in one hundred and forteen [sic] copper plates, To which is added an introduction explaining the animal oeconomy.* 2nd ed. Leyden, 1737.

Culpeper, Nicholas. *A directory for midwives: or, a guide for women, in their conception, bearing, and suckling their children. The first part contains, 1. The anatomy of the vessels of generation. ... 9. Of nursing children. To cure all diseases in women, read the second part of this book. Newly corrected from many gross errors.* London, 1701.

Dawkes, Thomas. *The nurse's guide: or short and safer rules for the management of women of each rank and condition in child-bed. With directions about the choice of a wet-nurse. In a dialogue betwixt a surgeon and a nurse. By the author of the Midwife rightly instructed.* London, 1744.

Deventer, Hendrik van. *The art of midwifery improv'd. Fully and plainly laying down whatever instructions are requisite to make a compleat midwife.* London, 1716.

Deventer, Hendrik van. *New improvements in the art of midwifery. Shewing I. The true causes of the most difficult births, IV. A detection of many errors daily committed in the practice of midwifery.* London, 1728.

Dionis, Mr. (Pierre). *A general treatise of midwifery.* London, 1719.

Douglas, John. *A short account of the state of midwifery in London, Westminster.* London, 1736.

Dutton, Anne. *A discourse concerning the new-birth: to which are added two poems; the one on salvation in Christ, by free-grace, for the chief of sinners: the other on a believer's safety and duty. With an epistle recommendatory, by the Reverend Mr. Jacob Rogers, B.A.* London, 1740.

Edwards, Jonathan. *A faithful narrative of the surprizing work of God in the conversion of many hundred souls in Northampton, ... In a letter to the Revd Dr. Benjamin Colman ...Written by the Reverend Mr. Edwards, ... and published, with a large preface, by Dr. Watts and Dr. Guyse.* 2nd ed. London, 1738.

Edwards, Jonathan. *The great Christian doctrine of original sin defended; evidences of it's [sic] truth produced, and arguments to the contrary answered. Containing, in particular, a reply to the*

objections and arguings of Dr. John Taylor, in his book, intitled, "The Scripture-doctrine of original sin proposed to free and candid examination, &c. Boston, 1758.

Edwards, Jonathan. *The Works of President Edwards*. Vols. I-III. Sereno E. Dwight, ed. New York: Burt Franklin, 1817.

Edwards, Jonathan. *Images or Shadows of Divine Things*. Perry Miller, ed. New Haven: Yale University, 1948.

Edwards, Jonathan. *The Freedom of the Will*. Paul Ramsey, ed. New Haven: Yale University, 1957.

Edwards, Jonathan. *Scientific and Philosophical Writings*. Wallace E. Anderson, ed. New Haven: Yale University, 1980.

Edwards, Jonathan. *Typological Writings*. Wallace E. Anderson, ed. New Haven: Yale University, 1993.

Edwards, Jonathan. *The "Miscellanies": Entry Nos. 501-832*. Ava Chamberlain, ed. New Haven: Yale University, 2000.

Edwards, Jonathan. *Catalogues of Books*. Peter Thuesen, ed. New Haven: Yale University, 2008.

Giffard, William. *Cases in midwifry. Written by the late Mr. William Giffard, surgeon and man-midwife. Revis'd and publish'd by Edward Hody.* London, 1734.

Gulliver, Lemuel. *The anatomist dissected: or the man-midwife finely brought to bed. Being an examination of the conduct of Mr. St. Andre. Touching the late pretended rabbit-bearer; as it appears from his own narrative.* The second edition Westminster, 1727.

Land, Tristram. *A letter to the Rev. Mr. Whitefield. Designed to correct his mistaken account of regeneration, or the new birth. With a previous letter, addressed to the religious societies. The second edition.* London, 1739.

Land, Tristram. *A second letter to the Rev. Mr. Whitefield, upon the former subject of regeneration, or the new birth.* London, 1741.

Law, William. *The grounds and reasons of Christian regeneration, or, the new-birth. Offer'd to the consideration of Christians and Deists.* London, 1739.

Malebranche, Nicolas. *The Search After Truth*. Translated and edited by Thomas Lennon and Paul Olscamp. Cambridge Text in the History of Philosophy Series. Cambridge: Cambridge University, 1997.

Mather, Cotton. *A glorious espousal. A brief essay, to illustrate and prosecute the marriage, wherein our great Saviour offers to espouse unto himself the children of men. And thereupon to recommend from that grand pattern a good carriage in the married life among them. An essay proper and useful in the hands of those who travel on the noble design of espousing the*

souls of men unto their Saviour. But more particularly and seasonably to be presented, where a marriage is upon a celebration. Boston, 1719.

Mather, Cotton. *The Christian Philosopher*. Winton Solberg, ed. Urbana: University of Illinois, 1994.

Maubray, John. *The female physician, containing all the diseases incident to that sex, in virgins, wives, and widows; together with their causes and symptoms, To which is added, the whole art of new improv'd midwifery.* London, 1730.

Maubray, John. *Midwifery brought to perfection, by manual operation; illustrated in a lecture.* London, 1725.

Pottinger, Israel. *The Methodist, a comedy: being a continuation and completion of the plan of The minor, written by Mr. Foote: as it was intended to have been acted ... With the original prologue and epilogue.* The third edition. London, 1761.

Sharp, Jane, Mrs. *The compleat midwife's companion: or, the art of midwifry improv'd. Directing child-bearing women how to order themselves in their conception, breeding, bearing, and nursing of children. In six books. The fourth edition.* London, 1725.

Smellie, William. *[A cour]se of lectures upon midwifery, wherein the theory and practice of that art are explain'd in the clearest manner.*London, 1742.

Smith, John, Harry S. Stout and Kenneth P. Minkema, editors. *A Jonathan Edwards Reader*. New Haven: Yale University, 1995.

Stebbing, Henry. *A caution against religious delusion. A sermon on the new birth: occasioned by the pretensions of the Methodists.* The second edition. London, 1739.

Stone, Sarah. *A complete practice of midwifery. Consisting of upwards of forty cases or observations in that valuable art, selected from many others, in the course of a very extensive practice. Recommended to all female practitioners in an art so important to the lives and well-being of the sex.* London, 1737.

Venette, Nicolas. *Conjugal love reveal'd; in the nightly pleasures of the marriage bed, and the advantages of that happy state. In an essay concerning humane generation. Done from the French of Monsieur Venette by a physician.* The seventh edition London, 1720.

Wesley, John. *The Works of the Rev. John Wesley.* Joseph Benson, ed. London: Thomas Cordeux, 1812.

Whitefield, George. *The nature and necessity of our new birth in Christ Jesus, in order to salvation. A sermon preached in the church of St. Mary Radcliffe, in Bristol.* London, 1737.

Whitefield, George. *The marks of the new birth. A sermon preached at the parish church of St. Mary, White-Chapel, London.* London, 1739.

Whitefield, George. *The works of the Reverend George Whitefield, M.A. Containing all his sermons and tracts which have been already published: with a select collection of letters. Also some other pieces on important subjects, never before printed. To which is prefixed, an account of his life, compiled from his original papers and letters. Vol. VI.* Vol. 6. London, 1771-72. 7 vols.

Young, Thomas. *A course of lectures upon midwifery.* Edinburgh, 1750.

Secondary Sources

Albanese, Catherine. "American Religious History: A Bibliographical Essay," in Currents in American Scholarship. Washington, D.C.: Study of the U.S. Branch, Bureau of Educational and Cultural Affairs, Department of State, 2002; booklet and on-line publication at http://exchanges.state.gov/education/amstudy/.

Badaracco, Claire Hoertz. *Prescribing Faith: Medicine, Media, and Religion in American Culture*. Waco: Baylor University, 2007.

Braude, Ann. "Women's History *Is* American Religious History". In *Retelling U.S. Religious History*, edited by Thomas A. Tweed, 87-107. Berkeley: University of California Press, 1997.

Brekus, Catherine. *Strangers and Pilgrims: Female Preaching in America, 1740-1845*. Chapel Hill: University of North Carolina, 1998.

Burns, William. *Science and Technology in Colonial America*. Westport: Greenwood Press, 2005.

Bushman, Richard L. *From Puritan to Yankee: Character and the Social Order in Connecticut, 1690-1765*. Cambridge: Harvard University, 1967.

Chai, Leon. *Jonathan Edwards and the Limits of Enlightenment Philosophy*. New York: Oxford University, 1998.

Chamberlain, Ava. "The Immaculate Ovum: Jonathan Edwards and the Construction of the Female Body". *The William and Mary Quarterly*, 3rd Ser., Vol. 57. Apr., 2000: 289-322.

Chamberlain, Ava. "Bad Books and Bad Boys: The Transformation of Gender in Eighteenth-Century Northampton, Massachusetts". *The New England Quarterly*, Vol. 75, No. 2. June, 2002: 179-203.

Collins, Patricia Hill. *Fighting Words: Black Women and the Search for Justice*. Minneapolis: University of Minnesota, 1998.

Conrad, Lawrence, Michael Neve, Vivian Nutton, Roy Porter, and Andrew Wear. *The Western Medical Tradition: 800 BC to AD 1800*. Cambridge: Cambridge University, 1995.

Cowing, Cedric B. “Sex and Preaching in the Great Awakening”. *American Quarterly*. Vol. 20. Autumn, 1968: 624- 644.

Daniels, Arthur. “The New Life: A Study of Regeneration”. *The American Journal of Psychology*. Vol. 6. Oct., 1893: 61-106.

Daston, Lorraine and Katherine Park. “Unnatural Conceptions: The Study of Monsters in Sixteenth- and Seventeenth-Century France and England”. *Past and Present*. Vol. 92. 1981.

Davis-Floyd, Robbie E. and Carolyn F. Sargent, eds. *Childbirth and Authoritative Knowledge: Cross-Cultural Perspectives*. Berkeley: University of California Press, 1997.

Dayton, Cornelia Hughes. “Taking the Trade: Abortion and Gender Relations in an Eighteenth-Century New England Village”. *William and Mary Quarterly*, January 1991.

de Beauvoir, Simone. “The Second Sex” in *Theorizing Feminisms: A Reader.* Elizabeth Hackett and Sally Haslanger, editors. New York; Oxford University, 2006.

DeRogatis, Amy. “What Would Jesus Do? Sexuality and Salvation in Protestant Evangelical Sex Manuals, 1950s to the Present.” *Church History*. March 2005.

Douglas, Ann. *The Feminization of American Culture*. New York: Anchor Books, 1988.

Easlea, Brian. *Witch-hunting, Magic, and the New Philosophy: An Introduction to the Debates of the Scientific Revolution 1450-1750*. Brighton: Harvester Press, 1980.

Eccles, Audrey. *Obstetrics and Gynaecology in Tudor and Stuart England*. Kent: Kent State University, 1982.

Epstein, Barbara Leslie. *The Politics of Domesticity: Women, Evangelism, and Temperance in Nineteenth-Century America*. Middletown, CT: Wesleyan University Press, 1981.

Erickson, Robert. *The Language of the Heart, 1600-1750*. Philadelphia: University of Pennsylvania, 1997.

Faust, Clarence H. “Jonathan Edwards as a Scientist”. *American Literature*, Vol. 1, No. 4. January, 1930: 393-404.

Fissell, Mary E. *Vernacular Bodies: The Politics of Reproduction in Early Modern England*. Oxford: Oxford University, 2004.

French, Roger. *William Harvey’s natural philosophy*. Cambridge: Cambridge University, 1994.

Foucault, Michel. “What is Enlightenment?” in Paul Rabinow, ed. *The Foucault Reader*. New York: Pantheon Books, 1984.

Gaukroger, Stephen. *Descartes' System of Natural Philosophy*. Cambridge: Cambridge University, 2002.

Gaukroger, Stephen. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*. Oxford: Clarendon Press, 2006.

Gauchet, Marcel. *The Disenchantment of the World.* Princeton: Princeton University Press, 1999.

Gaustad, Edwin. *The Great Awakening in New England*. New York: Harper and Brothers, 1957.

Gildrie, Richard P. *The Profane, the Civil & the Godly: The Reformation of Manners in Orthodox New England, 1679-1749*. University Park: Pennsylvania State University, 1994.

Gottschall, Marilyn. "The Ethical Implications of the Deconstruction of Gender." *Journal for the American Academy of Religion*. Volume 70, No. 2. 2002.

Grasso, Christopher. "Images and Shadows of Jonathan Edwards." *American Literary History*. Volume 8, No. 4. 1996.

Griffith, R. Marie. *God's Daughters: Evangelical Women and the Power of Submission*. Berkeley: University of California: 2000.

Griffith, R. Marie. *Born Again Bodies: Flesh and Spirit in American Christianity*. Berkeley: University of California, 2004.

Grell, Ole Peter and Andrew Cunningham. *Medicine and Religion in Enlightenment Europe*. Burlington: Ashgate Publishing, 2007.

Greven, Philip. *The Protestant Temperament: Patterns of Child-Rearing, Religious Experience, and the Self in Early America*. New York: Alfred A. Knopf, 1977.

Hall, David. *Worlds of Wonder, Days of Judgment: Popular Religious Belief in Early New England*. New York: Knopf, 1989.

Harrison, Peter. "'Science' and 'Religion': Constructing the Boundaries". *The Journal of Religion*. Chicago: University of Chicago, 2006.

Harrison, Peter. *The Fall of Man and the Foundations of Science*. Cambridge: Cambridge University, 2007.

Horder, T.J., J.A. Witkowski and C.C. Wylie, eds. *A History of Embryology*. Cambridge: Cambridge University, 1986.

Hunter, Michael. *Establishing the New Science: The Experience of the Early Royal Society*. New York: Boydell Press, 1989.

Hunter, Michael. *Science and the Shape of Orthodoxy: Intellectual Change in Late Seventeenth-Century Britain*. New York: Boydell Press, 1995.

Jacobs, Alan. *Original Sin: A Cultural History*. New York: Harper One, 2008.

Jay, Nancy. *Throughout Your Generations Forever: Sacrifice, Religion and Paternity*. Chicago: University of Chicago Press, 1992.

Jeske, Jeffrey. "Cotton Mather: Physico-Theologian." *Journal of the History of Ideas*. Vol. 47, No. 4. Philadelphia: University of Pennsylvania, 1986.

Johnson, Thomas H. "Jonathan Edwards and the 'Young Folks' Bible'." *The England Quaterly*. Vol. 5, No. 1. January, 1932: 37-54.

Juster, Susan. *Disorderly Women: Sexual Politics & Evangelicalism in Revolutionary New England*. Ithaca: Cornell University Press, 1994.

Karlsen, Carol F. *The Devil in the Shape of a Woman: Witchcraft in Colonial New England.* New York: W.W. Norton, 1987.

Keller, Eve. *Generating Bodies and Gendered Selves: The Rhetoric of Reproduction in Early Modern England*. Seattle: University of Washington, 2007.

Kidd, Thomas S. *The Great Awakening: The Roots of Evangelical Christianity in Colonial America*. New Haven: Yale University, 2007.

Killeen, Kevin and Peter J. Forshaw. *The Word and the World: Biblical Exegesis and Early Modern Science*. New York: Palgrave Macmillan, 2007.

Klaaren, Eugene. *The Religious Origins of Modern Science*. Eerdmans: Grand Rapids, 1972.

Ladurie, Emmanuel Le Roy. *Montaillou: Cathars and Catholics in a French Village 1294-1324.* London: Scolar Press, 1978.

Lambert, Frank. "'I Saw the Book Talk': Slave Readings of the First Great Awakening". *The Journal of African American History*. Vol. 87. Winter, 2002: 12-25.

Lambert, Frank. *Inventing the 'Great Awakening'*. Princeton: Princeton University, 1999.

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

Lindberg, David, and Ronald Numbers, eds. *When Science & Christianity Meet*. Chicago: University of Chicago Press, 2003.

Lindley, Susan Hill. *"You Have Stepped Out of Your Place": A History of Women and Religion in America*. Louisville: Westminster John Knox Press, 1996.

Lippy, Charles H. *Do Real Men Pray? Images of the Christian Man and Male Spirituality in White Protestant America*. Knoxville: University of Tennessee Press, 2005.

Madden, Deborah. *'A Cheap, Safe and Natural Medicine': Religion, Medicine and Culture in John Wesley's* Primitive Physic. New York: Rodopi, 2007.

Mauceri, Joseph. *The Great Break: A Short History of the Separation of Medical Science from Religion*. Barrytown: Pulse, 1986.

May, Henry. "The Problem of the American Enlightenment". *New Literary History*. Vol. 1, No. 2. Baltimore: Johns Hopkins University, 1970.

May, Henry. *The Enlightenment in America.* New York: Oxford University, 1976.

May, Henry. *The Divided Heart: Essays on Protestantism and the Enlightenment in America*. New York: Oxford University, 1991.

McDermott, Gerald R. *One Holy and Happy Society: The Public Theology of Jonathan Edwards*. University Park: Pennsylvania State University Press, 1992.

McLaren, Angus. *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century*. New York: Methuen, 1984.

Merchant, Carolyn. *Reinventing Eden: The Fate of Nature in Western Culture.* New York: Routledge, 2004.

Merchant, Carolyn. *Earthcare: Women and the Environment*. New York: Routledge, 1995.

Miller, Perry. J*onathan Edwards.* New York: Sloane, 1949.

Miller, Perry. *The New England Mind: From Colony to Province*. Cambridge: Harvard University, 1953.

Narayan, Uma. "Cross-Cultural Connections, Border-Crossings, and 'Death by Culture'" in *Theorizing Feminisms: A Reader*. Elizabeth Hackett and Sally Haslanger, editors. New York: Oxford University, 2006.

Norton, Mary Beth. *Founding Mothers and Fathers: Gendered Power and the Forming of American Society.* New York: Alfred A. Knopf, 1996.

Norton, Mary Beth. "'My Resting Reaping Times': Sarah Osborn's Defense of Her 'Unfeminine' Activities, 1767". *Signs*, Vol. 2. Winter, 1976.

Oppenheimer, Jane M. *Essays in the History of Embryology and Biology*. Cambridge: M.I.T. Press, 1967.

Opie, John, ed. *Jonathan Edwards and the Enlightenment*. Lexington: D.C. Heath and Co., 1969.

Orsi, Robert. *The Madonna of 115th Street: faith and community in Italian Harlem, 1880-1950*. New Haven: Yale University, 2002.

Pagel, Walter. *William Harvey's Biological Ideas: Selected Aspects and Historical Background*. New York: Hafner Publishing, 1967.

Pinto-Correia, Clara. *The Ovary of Eve: Egg and Sperm and Preformation*. Chicago: University of Chicago: 1997.

Porter, Roy and Lesley Hall. *The Facts of Life: The Creation of Sexual Knowledge in Britain, 1650-1950*. New Haven: Yale University, 1995.

Porter, Roy. *Quacks: Fakers and Charlatans in English Medicine*. Charleston: Tempus Publishing, 2000.

Porter, Roy. *Bodies Politic: Disease, Death, and Doctors in Britain, 1650-1900*. Ithaca: Cornell University, 2001.

Porterfield, Amanda. *Female Piety in Puritan New England: The Emergence of Religious Humanism*. New York: Oxford University, 1992.

Porterfield, Amanda. *Feminine Spirituality in America: From Sarah Edwards to Martha Graham*. Philadelphia: Temple University Press, 1980.

Raven, Charles. *Science, Religion and the Future*. New York: MacMillan, 1943.

Risman, Barbara J. "Gender as a Social Structure: Theory Wrestling with Activism". *Gender and Society*, Vol. 18. Aug., 2004: 429-450.

Roberts, Michael. *Evangelicals and Science*. Westport: Greenwood Press, 2008.

Ruether, Rosemary Radford. *Sexism and God-Talk: Toward a Feminist Theology*. Boston: Beacon Press, 1983.

Roe, Shirley A. *Matter, Life, and Generation: Eighteenth-century embryology and the Haller-Wolff Debate*. Cambridge: Cambridge University, 1981.

Rosenberg, Charles, ed. *Right living: an Anglo-American Tradition of Self-Help Medicine and Hygiene*. Philadelphia: JHU Press, 2003.

Schmidt, Leigh. "The Edwards Revival: Or, the Public Consequences of Exceedingly Careful Scholarship". *The William and Mary Quarterly*. Volume 58, No. 2. 2001.

Sell, Alan P. *Dissenting Thought and the Life of the Churches: Studies in an English Tradition*. San Francisco: Mellen Research University, 1990.

Smith, Timothy L. *Whitefield and Wesley on the New Birth*. Grand Rapids: Francis Asbury Press, 1986.

Stearns, Raymond Phineas. *Science in the British Colonies of North America*. Urbana: University of Illinois, 1970.

Stewart, Larry. *The Rise of Public Science: Rhetoric, Technology, and Natural Philosophy in Newtonian Britain, 1660- 1750.* New York: Cambridge University, 1992.

Tracy, Joseph. *The Great Awakening*. Edwin S. Gaustad, editor. New York: Arno Press, 1969.

Tracy, Patricia J. *Jonathan Edwards, Pastor: Religion and Society in Eighteenth-Century Northampton*. New York: Hill and Wang, 1979.

Taves, Ann. "Sexuality in American Religious History." In *Retelling U.S. Religious History*, edited by Thomas A. Tweed, 27-56. Berkeley: University of California Press, 1997.

Trouillot, Michel-Rolph. *Silencing the Past: Power and the Production of History*. Boston: Beacon Press, 1995.

Webster, Charles. *From Paracelsus to Newton: Magic and the Making of Modern Science*. Cambridge: Harvard University, 1982.

Westerkamp, Marilyn J. *Women and Religion in Early America, 1600-1850: The Puritan and Evangelical Traditions*. New York: Routledge, 1999.

Winship, Michael P. *Seers of God: Puritan Providentialism in the Restoration and Early Enlightenment*. Baltimore: Johns Hopkins University, 1996.

Zakai, Avihu. *Jonathan Edwards's Philosophy of History: The Reenchantment of the World in the Age of Enlightenment*. Princeton: Princeton University, 2003.

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