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A Case Study: The Development of Obstetrics in Eighteenth-Century Northern Europe Through Printed Medical Illustrations

Kayleigh Ross

A Case Study: The Development of Obstetrics in Eighteenth-Century Northern Europe Through Printed Medical Illustrations

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Kayleigh A Ross

Thesis Advisor: Sarah Cohen, Ph.D.

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Abstract

The eighteenth century in Europe was a time of intellectual and cultural advancement, with new systems of thought rooted in observation. Medically, observable evidence and experimentation served to advance the understanding of how the body operated. During an age of curiosity, the growing professionalization of medicine, increasingly literate population, and the expansion of print culture into scientific learning created a market for the popularization of medical texts. Medical manuals often included illustrated prints, as these images were integral modes for learning and teaching. As the reproductive female body became included in the study of anatomy and appeared in medical manuals, it marked the gendered shift in the attitudes of childbirth from a female midwife dominated affair to a male medical professional one. With the medical professionalization of midwifery and obstetrics came the growing requirement for education and training, especially regarding instrumentation developments like the forceps and anatomical knowledge, including that of the pelvis. Through the medical texts and illustrations produced under three practitioners in Northern Europe, the developments within the field of obstetrics in the eighteenth century can be observed. The Dutch physician Hendrik van Deventer became the author of *The art of midwifery improv'd* (1701), the Scottish physician William Smellie wrote *A sett of anatomical tables with explanations and an abridgment of the practice of midwifery with a view to illustrating a treatise on that subject and a collection of cases* (1754), and the French midwife Angélique Marguerite Le Boursier du Coudray published *Abrégé de l'art des accouchements* (1769). As such, the three medical texts and illustrations can serve as a case study of the sexual politics and cultural, geographic, religious, and temporal differences in the advancements of gynecology and obstetrics, especially in the conception of the pelvis and the application or elimination of forceps in practical procedure.

Keywords: *Eighteenth century, Obstetrics, Midwifery, Medical illustrations, Man-midwifery*

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Obstetrical Texts and Practices in Northern Europe: A Case Study

The eighteenth century in Europe was a time of intellectual and cultural advancement, aptly referred to as the Enlightenment or the Age of Reason. With a growing movement of emphasizing reason over superstition, the century marked a severance from the church as the only authority for knowledge. In the realm of science, new systems of thought rooted in observation and evidence prevailed with the principle of empiricism. Medically, observable evidence and experimentation served to advance the understanding of how the body operated. With an increasingly literate population, an age of curiosity, and the growing professionalization of medicine, the expansion of print culture into scientific learning created a market for the popularization of medical texts. The developments and changes within the field of obstetrics in the eighteenth century can be observed through the medical texts and illustrations produced under three practitioners in Northern Europe. The Dutch physician Hendrik van Deventer became the author of *The Art of Midwifery Improv'd* (1701), the Scottish physician William Smellie wrote *A sett of anatomical tables with explanations and an abridgment of the practice of midwifery with a view to illustrating a treatise on that subject and a collection of cases* (1754), and the French midwife Angélique Marguerite Le Boursier du Coudray published *Abrégé de l'art des accouchements* (1769). Variations in geographical cultural difference, sexual politics, and religion are notable through their publications. Each professional published medical manuals with illustrated prints to educate their peers and advance the field of medicine. The images were integral modes for learning and teaching in the development of obstetrics in eighteenth-century Northern Europe.

The eighteenth century marked a widening and prosperous middle class, with

economic and political factors contributing to a consumer–orientated society. More people had the means to travel, attend lectures, build laboratories, and pursue cultural and educational means of knowledge. The Enlightenment saw the beginnings of fast-growing among the middle and upper classes.[i] Therefore, as the literacy rates increased, the demand for literature also increased. This resulted in the number of books published to increase as well. As more books were published and printed, the increased availability allowed costs to decline making printed media an economical source of knowledge for the public.[ii] More so, the distribution of medical literature increased, with translations in several languages, allowing it to be read across Europe, and subsequently, medical science and practice progressed rapidly. The portability, reproducibility, and affordability of printed media contributed to the exchange of information and ideas nationally and internationally.[iii]

It was only until the twelfth century that anatomy became a legitimate aspect of the study of medicine. Many countries had political and religious laws restricting the use of human specimens for study, with cadavers difficult to acquire and inadequate preservation methods available. At the end of the fifteenth century, however, there was a conversion of art and science as artists looked to the human body for subject matter. Physicians also began to look at anatomical relationships for medical advancements. The modern study of anatomy began in the sixteenth century.

Before the fifteenth century, medical practitioners relied on texts that were handwritten and recopied through the centuries. Distributing medical information was slow, limited to a few translations, and illustrations were frequently altered through the process of copying. However, after 1450 with the invention of the printing press, medical text reproductions were able to be replicated closer to the original text. For medicine, one of the most immediate and important

additions to medical writing was the ability for more illustrations and clearer diagrams of anatomy, procedures, and instruments to be produced.

At the level of their production, in most cases, medical illustrations were executed by professional artists who worked in close proximity with medical professionals who wrote the corresponding text. This type of close collaboration, as well as new graphic technologies, such as the invention of copper engraving and color printing, resulted in increasingly accurate images. With the availability of more elaborate representational techniques, illustrations were able to better convey their purpose within the medical realm. To this extent, illustrations from medical texts demonstrate the scope of visual information communicated to doctors and students.

Just as technological developments enabled more detailed and accurate representations of flesh, bone, and systems, they also allowed artists to use a broader range of techniques and create books that better explain the body to the reader. Greater understanding provided by one doctor and artist leads to further research and representation by others, sparking a repeating cycle that gains momentum with every medical and printing breakthrough.[iv] The rise of technology that enabled the reproduction of repeatable illustrations made it possible to convey more reliable information about the structure of the body to medical professionals. Anatomical images aided in the standardization of procedures by providing visual instructions.

The history of obstetrics is inextricably linked with the history of midwifery.[v] The first obstetric pamphlets were printed in Latin or German but were not widely sold. In 1513, however, an obstetric textbook was published that became a bestseller. *Der Schwangern Frauen und Hebamen Rosengarten*, known as "The Rosengarten", was translated into Dutch in 1516 and reprinted numerous times in Dutch, German, French, and English over the subsequent decades.[vi] It has been suggested that the popularity of these textbooks led to tensions between doctors and

midwives because doctors, who were barred as men from attending normal childbirth, could now learn midwifery from the printed medium.[vii]

Social and medical histories of early modern midwifery point to several historical factors that may have contributed to the gendered shift in the attitudes of childbirth. One crucial element was the emergence in the eighteenth century of a new genre of scientific publication, the illustrated obstetric atlas. This was a large-scale, anatomical publication filled with high quality engravings of the gravid, or pregnant, uterus. Both dependent on and distinctive from the many standard anatomical atlases that preceded them, obstetric atlases broke with tradition by limiting their scope to the female body and offering the viewer a series of startling, detailed, pictorial descriptions of pregnancy and birth.[viii] As such, childbirth became regarded as a medical condition rather than a domestic process. With the medical professionalization of midwifery and obstetrics came the growing requirement for education and training, especially regarding instrumentation developments like the forceps.

Henrick van Deventer in the Netherlands, William Smellie in Britain, and Angélique Marguerite Le Boursier du Coudray in France were all gynecological practitioners and authors of medical texts in the eighteenth century. These were working texts, purposed for an audience with the practical application to the practitioner's peer's trades.[ix] With maternal and infant death rates rising, pregnancy and birth were dangerous events. Therefore, improved instruction served to help remedy this issue in a period of medical and scientific advancement. As such, the three can serve as a case study of geographic and temporal difference in the advancements of gynecology, especially in the conception of the pelvis and the application or elimination of forceps in practical procedure.

Hendrik van Deventer (1651-1724)

Hendrik van Deventer was born in the Netherlands in 1651, and in his early adulthood he moved to Germany and joined the Labadists, an orthodox Protestant sect. Van Deventer became a medical assistant for the parish, and then became the community's private physician. At the age of 28, he started to practice as a man-midwife in Friesland.[x] In 1694, at the age of 43, van Deventer was granted the degree of Doctor of Medicine by the University of Groningen, allowing him to practice medicine outside the parish.[xi]

The Labadists ate an ascetic diet, often resulting in a vitamin D deficiency, which causes bone deformation. Infantile rickets was common in the population due to a lack in vitamin D. Van Deventer applied his orthopedic knowledge to obstetrics and is believed to be the first obstetrician to acknowledge the dangers in childbirth of a disproportionately flat pelvis due to rickets.[xii] Van Deventer was the first to focus on the physical structure of the pelvis and its importance in childbirth in his *The Art of Midwifery Improv'd* (1701). Van Deventer believed that determining the shape and size of a pregnant woman's pelvis, as well as understanding the relationship between the fetus and mother's pelvic bones were essential for a midwife.

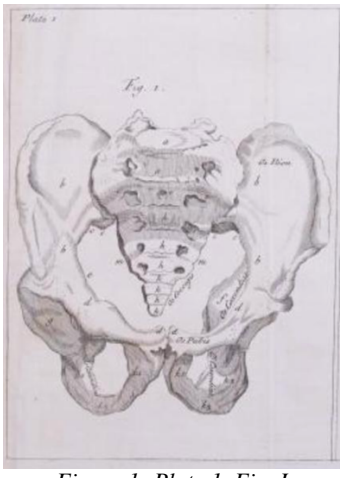

Figure 1: Plate 1, Fig. I

(Source: van Deventer, 1746, p. 329)

Indeed, the very first plate and figure in van Deventer's text illustrates the anatomy of a female pelvis (Figure 1). Van Deventer addresses that the pelvic bones are not the same form in all men and women, differing in shape and size, according to different habits of the body.[xiii] Usually, the lower part of the seat bones is more distant in the female skeleton, nor are they bent as much inwards down towards the point of the *ox coccyis* as in a male skeleton. As van Deventer describes, this serves to avoid many difficult births and understanding the relationship between the fetus and pelvic bones were essential for a midwife. The bones of the pelvis are held together by ligaments, that can be disjointed, moved out of place, or relaxed, which may or may not be seen in childbirth.[xiv] Moreover, van Deventer concludes that an ill-formed pelvis, being too narrow or too smooth, may hinder the birthing process. Thus, it was the midwife's duty to judge if the womb and infant were turned or well positioned, and if the pelvis was too small or rounded by touch.[xv]

First and foremost, he wrote, midwives should have knowledge of the female anatomy. Unlike many of his predecessors, van Deventer's work featured accurate illustrations of the pelvis. In turn, many authors of eighteenth-century medical treatises after van Deventer emphasized the formation of the female pelvis, considering it the foundation of obstetrical knowledge.[xvi] Images of the pelvis appear in the medical texts by William Smellie in 1754 and du Angélique Marguerite Le Boursier Coudray in 1769.

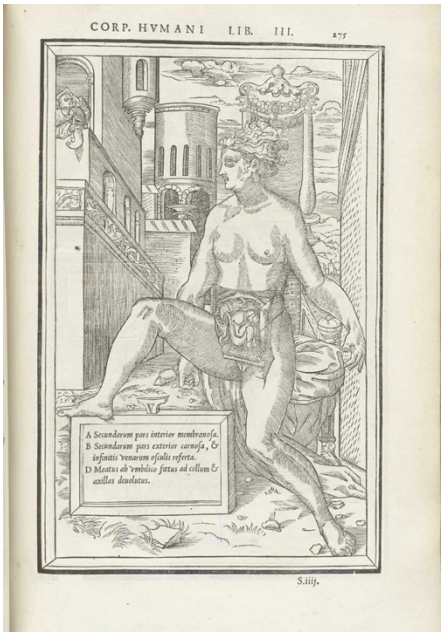

Figure 2: Charles Estienne, De Dissectione Partium Corporis Humani Libri Tres, 1545

(Source: National Library of Medicine from https://circulatingnow.nlm.nih.gov/2021/05/27/dissecting-gender-reframing-anatomical-history-through-the-female-body/#jp-carousel-21238)

Figure 3: Adriaan van de Spiegel, De Formato Foetu Liber Singularis, 1626

(Source: National Library of Medicine from https://circulatingnow.nlm.nih.gov/2021/05/27/dissecting-gender-reframing-anatomical-history-through-the-female-body/#jp-carousel-21240)

Van Deventer takes care to advise the reader that it is difficult to represent all the bones of the pelvis and their natural position at once, with different views obscuring

different parts. The illustration opposes the previous majority of medical artistic illustrations which seemed to favor artistry over anatomical accuracy. Europe in the eighteenth century represented a shift in medicine, not only with the increased production of medical texts, but also with the goals of the medical illustrations themselves. Throughout the sixteenth and seventeenth centuries, the anatomical representations that were used to instruct students about the human body were images of artistry, not forms true to observation (Figure 2). Until the seventeenth century, anatomists and their artistic assistants mostly transferred their observations from the dissecting table to figures placed in landscapes or indoor environments (Figure 3). Artistic images and anatomical images were one in the same; art as a discipline was not separated from the notions of medicine or anatomy.[xvii] As such, the role of the artist in medicine remained unclear, with predominant classically inspired renderings of the human body at odds with the factual visual appearance of body parts.

The distinction of scientific images from artistic ones emerged in the eighteenth century as anatomists began to criticize the idealized and allegorical human bodies of tradition. In turn, anatomical illustrations were redefined as methods for teaching.[xviii] This sparks a desire to remove scientific illustration from the domain of expressive art during the Enlightenment. Yet, another perspective describes the merging of science and art with form and function. Artists were called upon to create medical images deviating from artistic principles for the sake of reality, to be functional and educational, while at the same time intuitively pleasing to the eye.

Hendrik van Deventer's image is becoming increasingly "scientific", in the way that he is accurately portraying the human body, and not censoring the anatomy. With the Enlightenment preaching the accuracy of anatomical illustrations as of higher importance over artistic principles, it is intriguing to see an earlier eighteenth-century illustration more indicative of this

idea than examples of middle and late-eighteenth century illustrations. The Enlightenment became an age of critique of merely beautiful anatomical images, hoping instead for a practical scientific functionality. However, the visual qualities and functionality of images are not wholly separate. As perceptions and understandings of the body developed, the artistic methods of depicting the body also advanced. Van Deventer's pelvis offers a clinical anatomical view, devoid of a compositional background or contextual surrounding body parts (Figure 1). Nevertheless, that is not to say that the artistic principles of shading and line quality do not pertain to the image. The engraving's detailed cross-hatching and shading describe the form and texture of the pelvis.

Contextually, Hendrik van Deventer's *The Art of Midwifery Improv'd* was originally published in Latin as *Operationes chirurgicae novum lumen exhibentes obstetricantibus*, translating to *Operations which are a New Light for Male and Female Midwives* in 1701, often referred to as *Manuale Operations* or *New Light for Man-Midwives and Midwives*. In 1716, van Deventer's publication was translated from Dutch and Latin into English, taking on the full title *The Art of Midwifery Improv'd: Fully and plainly laying down whatever Instructions are requisite to make a Complete Midwife. And the many Errors in all the Books hitherto written upon this Subject clearly refuted. Illustrated with thirty-eight Cuts curiously Engraven on Copper Plates, representing in their due Proportion, the several Positions of a Foetus. Also a New Method, demonstrating, How Infants ill situated in the Womb, whether obliquely, or in a strait Posture, may, by the Hand only, without the Use of any Instrument, be turned into their right Position, without hazarding the Life either of Mother or Child*. The text was

published in two parts, the first in 1701 for both Latin and Dutch editions, the second in 1719 (Dutch) and 1724 (Latin).[xix]

Fifty-three editions of van Deventer's text were published between 1701 and 1746 in five languages: English, Dutch, Latin, French, and German.[xx] Therefore, van Deventer's medical manual served as a crucial and pioneering text and illustrations for practitioners in the eighteenth century. *The Art of Midwifery Improv'd* included thirty-eight engraved copper plates, which were engraved by Philibertus Bouttats the elder and Philibertus Bouttats the younger.[xxi]

The intaglio process of engraving emerged in Germany in the 1430s and was used throughout other areas of northern and southern Europe by the second half of the fifteenth century, with intaglio being a category of printmaking including engraving, drypoint, and etching. Engraving remained a common method for printmaking through the end of the eighteenth century, until the invention of planographic techniques like lithography. Engraving is rooted in the tradition of gold and silversmith workshops where niello plaques, small plates of gold or silver, were originally used over copper. By the early 1600s, the new reproduction technique of engraving became popular with copper or zinc plates.[xxii]

A product of considerable manual labor, the printmaker must carve into a metal plate in engraving. The engraving printing process is accomplished by incising a design into a metal plate, where ink is rubbed into the carved grooves and the surface cleaned. Damp paper is placed over the plate and, using a felt blanket under great pressure in a roller press, the paper or printing medium is forced down into the excised lines. Developments in the engraving and etching processes permitted the reproduction of much finer lines.[xxiii]

The Art of Midwifery Improv'd and images serve as a step-by-step guide to

circumstances and particulars for midwives to foresee difficulties and prevent them early on in childbirth.[xxiv] Unlike many of his contemporaries, van Deventer held midwives in high esteem and was a supporter for better education for midwives, who at the time largely lacked formal training in Western Europe. However, he recognized that many were poorly trained and proposed that schools for their instruction should be established in every city. While in 1551 Dutch midwives had to undergo three years of training before obtaining her license, new laws in 1663 kept midwives from attending women outside of childbirth. By 1687 midwives were outlawed from giving medicine to their patients, documenting the degradation of the duties of midwives in favor for the specialization of childbirth within medicine.

Indicative of one of the many titles, *New Light for Man-Midwives and Midwives,* van Deventer's text interestingly regards instructing both men and women in the practice of midwifery.[xxv] As such, the eighteenth century brought an interesting cultural phenomenon: the shift in the gendered work force in midwifery from a female affair to a male dominated one. Early in the century, professional categorization was blurred. To this effect, man-midwives, or *accoucheurs*, joined the occupational vocabulary with the medicalization of childbirth from a domestic process to a scientific one. Even so, van Deventer held the titles of physician, surgeon, and man-midwife, establishing them as not mutually exclusive terms. In *The Art of Midwifery Improv'd* van Deventer often describes midwives as females, man-midwives as any male practitioner, and medical professionals and surgeons who aided in childbirth as those practicing midwifery, i.e., "a surgeon who practices midwifery."[xxvi] It was only in the twentieth century that the subject taught in medical schools changed from being called "midwifery" to "obstetrics".[xxvii]

Prior to the seventeenth century, the birthing process was a predominantly female life event, with babies born into rooms of female friends, family, and a midwife. In a natural birth with no complications, the midwife's duty was ultimately a hands-off approach in assisting the mother with no tools involved. Men, even husbands and doctors, were traditionally not allowed to be within the birthing room. Men were only allowed in the room in the case of a difficult or obstructed birth requiring a Caesarean section, when a mother died in labor, or in the event of a stillbirth. Midwifery was traditionally thus an activity confined to female midwives from which men were rigidly excluded. Yet, as analyzed over the course of this case study, the medicalization of childbirth, knowledge of anatomy, and the introduction of instrumentation contribute to possible explanations for the origin of man-midwifery.[xxviii]

As introduced with his illustration of the female pelvis, *The Art of Midwifery Improv'd* brought forth important ideas that had not been studied prior to its publication. Hendrik van Deventer laid the groundwork for a focus on orthopedics within the field of obstetrics.[xxix] As such, the images in van Deventer's publication break from tradition by portraying the orientation of the uterus and pelvis in relation to the unborn child. Previously, illustrations sought to depict the child's position exclusive from the pelvis (Figure 2).

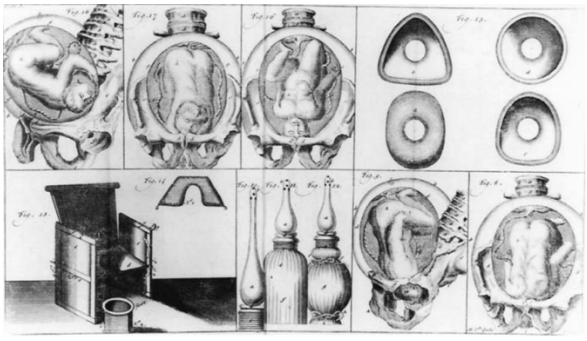

Figure 4: Plate 3. Fig. 8-18

(Source: van Deventer, 1746, p. 333)

Plate 2 of *The Art of Midwifery Improved* includes a diagram of fetal positions, a birthing chair, and three clyster pipes (Figure 4). Medically, clyster pipes were used to inject herbal remedies into the mother's gut to clear it to allow an easier passage for the baby. Dominating the plate, however, is the intense contrast of lights and darks used in the depiction of the birthing chair. Reminiscent of earlier anatomical images that included ornamented interior backgrounds in the presentation of the female anatomy, van Deventer contextualizes the female uterus, pelvis, and fetus with the location of the birthing chair. Even so, the plate grounds the fetus in the female anatomy, references the practitioner's role in childbirth with the pipe instrumentation, and the location with the birthing chair, yet the female herself is specifically absent. This turns the birthing process into a standardized medical procedure rather than a social and cultural event.

Nonetheless, the birthing chair enabled the midwife assisting the birth easier access to the baby, as well as a pictorial example to which the text describes its application in adjusting the mother's position. Consequentially, van Deventer rejected the use of manual instruments, and instead emphasized a method of childbirth based on adjusting the position of the mother. Where other medical professionals focused on the presentation of the child, van Deventer reconceptualized childbirth as engaging the body's posture. He believed that the uterus could be oriented to favor a natural birth through the turning and repositioning of the mother and applying manual pressure to the coccyx. Even when the use of forceps became popularized in the 1730's, van Deventer's method became the principal alternative to the use of instrumentation, favoring a less interventionist approach.[xxx]

Van Deventer's methodology was based on the importance of touch in midwifery procedure. As such, the first thing the midwife was to do, would be to touch the woman

to understand how the entrance of the pelvis is formed, whether round, smooth, large, or narrow. For example, if the pelvis is smooth and the vertebrae of the *os sacrum* and the *os pubis* are a little distant, the head of the infant might be stopped by the woman's anatomy. Therefore, extra care would be taken in the delivery of the birth, with the midwife helping to direct the infant's head into a larger space.[xxxi] Moreover, by touch the midwife could find if the infant is positioned with its head foremost and forward, or if the arms, legs, or umbilical cord are in the way.[xxxii]

Figure 5: Plate 3, Fig. 16

(Source: van Deventer, 1746, p. 333)

Despite van Deventer's stressed importance on the hands and physical touch being implemented into midwifery procedure, hands are not depicted in any of the engravings within *The Art of Midwifery Improv'd*. Instead, the images of the positions of the fetus are cropped and selectively portray the vertebrae, pelvis, and womb. The artistic choices of which anatomical structures to present, interestingly result in the pelvis presenting as the cervix and birth canal (Figure 5). The female reproductive system is placed outside of the context of genitalia and has become abstracted. Even so, the fetus becomes the main subject of the illustration, in movement and dynamic, with the female body passively absent.[xxxiii] With a growing desire for anatomical accuracy in medical illustrations, the presentation of the baby with the proportions of a mini

adult points to artistic notions of proportion instead of clinical observation. Yet, van Deventer chooses to include the umbilical cord and placenta in his illustrations, a detail lacking in du Coudray's later publications.

As van Deventer clearly defines, midwifery is the work of the hands.[xxxiv] In opposition to instrumentation, he believed that the most difficult occurrences in childbirth were best remedied by skill and knowledge. Perhaps viewing instruments like forceps as unnatural, van Deventer emphasized natural deliveries without the use of forceps, because of his belief that a child was made in the image of God. Van Deventer's theories on childbirth were linked to spiritual contemplations of creation and divine providence. In fact, the preface written by an "eminent physician" states, "What is more inconsistent with God's Providence, than a frequent use of cruel instruments, so much recommended by all other authors?."[xxxv] Instead of the instruments recommended by authors of the time, Van Deventer, detailed on the importance of uterine contractions, the upright posture for delivery, and applying physical touch in examination.[xxxvi]

Figure 6: Plate 4, Fig. 26

(Source: van Deventer, 1746, p. 333)

Forceps and medical instruments were integrated into general use in the case of a breech birth by 1733, with the publication of Edmund Chapman's design.[xxxvii] Instead, van Deventer concludes in *The Art of Midwifery Improv'd* that hooks or other medical instruments are never required for live births and therefore should be rejected by midwives and surgeons who practice midwifery.[xxxviii] Alternatively, van Deventer advised the need for manual assistance from the midwife.[xxxix] The knowledge of touch in difficult births and the manner of turning the infants was needed to ease and assist the mother or infant.[xl] However, again, in the illustration of a breech birth, the technique and positioning of the midwife's hands remain absent (Figure 6).

Peculiarly, the uterus is illustrated as a rounded bubble encompassing or stemming from the pelvis. The similar tones and shades and lack of contrast make distinguishing the pelvis from the uterus difficult. Moreover, the use of shading around the baby helps to describe the womb as an enclosed space and works to push the baby into the foreground of the layered composition, followed by the uterus, and vertebrae behind that. Yet, the use of highlights and shadow can be perplexing, with a light source suggested as being in the top center or left of the illustration with the darker shading utilized on the right side of the vertebrae. However, the pelvis presents darker shadows on the left side surrounding the baby, suggesting a different location to the light source. The illustration seems to present as proportionally inaccurate, with the baby as the same width of the vertebrae of the spine. Moreover, as van Deventer's publication was distinguished and contributed to the scientific function of anatomical imagery, it was not without its artistic principles which impede on the accuracy of such images.

William Smellie (1697-1763)

In the case of the Scottish physician William Smellie, he was famously regarded as the "Master of British Midwifery". Smellie began his medical career in Scotland, having joined the Glasgow Medical School and became a professor of midwifery during his studies. Aware of the forceps, he sought out training in London in 1737 and then in France to study with Gregoire the younger at the Hotel-Dieu hospital. Notably, this hospital was founded by Ambrose Paré who taught Angélique Marguerite Le Boursier du Coudray. He returned to London in 1740 and became a teacher of midwifery to mostly male students, but also some female as well.

Smellie made many innovations in improving childbirth, including developing a technique for delivering breech babies. A breech presentation is much more likely to lead to difficulties in childbirth, including complete obstruction. The breech, being smaller and softer than the head, dilates the cervix less effectively, and the rotation of the head may require manual assistance.[xli] However, before 1720 English midwives and few English male practitioners had left any record of their practice, therefore there is limited knowledge on the techniques most of them used in the case of a breech birth.[xlii] Smellie, however, outlined how to use forceps safely, and invented better tools involving locks or curved blades.

William Smellie's *A sett of anatomical tables, with explanations and an abridgement, of the practice of midwifery, with a view to illustrate a treatise on that subject, and collection of cases*, also called *A sett of anatomical tables* is a large folio with thirty-nine engraved plates, each with a letterpress explanation. Originally published in London by subscription in 1754, an edition of one hundred copies were sold at two guineas a set. A second edition appeared in 1764,

with the spelling of 'set' in the title corrected, as multiple editions were published within the eighteenth century in London and Edinburgh.[xliii] In 1790, the manual was reprinted with revised and corrected plates by Alexander Hamilton, and published as widely as Worchester, Massachusetts and Philadelphia, Pennsylvania.[xliv]

Man-midwifery reached Britain in the seventeenth century but remained less fashionable than in France. However, by the latter part of the eighteenth century, *accoucheurs* were fashionable in England.[xlv] As such, Smellie's illustrated medical atlas was directed towards the specific audience of male practitioners and anatomists. The text even parts from using the term man-midwife or midwife, instead favoring "Operator" or "Practitioner."[xlvi] However, as well as the targeted male practitioners, his work was absorbed by some midwives. Barred from many medical institutions and surgical lectures, midwives did not have unrestricted access to atlases or other anatomy texts, and this limited their reception of obstetric science. Even reasons of cost and education prevented many midwives from purchasing medical publications, such as Smellie's, as they were generally members of the lower and middle classes which also still had quite low rates of literacy for women. Smellie, however, had female students, and it is apparent that some of his other publications were read by educated midwives.[xlvii]

Intended as a birth manual, *A sett of anatomical tables* relies primarily on elaborate engravings rather than text to convey medical procedure and scientific content. Like many physicians in London, Smellie obtained his initial expertise through watching dissections. Smellie also performed several of his own dissections, including some on pregnant cadavers. Smellie hired artists to reproduce these dissections in a series of drawings, thereby rooting his medical illustrations in scientific observation rather than the imagination of artistic principles.[xlviii] From the early modern period, as perceptions of the internal and external workings of the body

developed, the methods of depicting the body also advanced, allowing anatomical art as a genre to flourish.[xlix]

Of the thirty-nine engraved images in *A sett of anatomical tables,* twenty-five of the plates were drawn by Jan van Rymsdyk, a Dutch artist. Eleven plates were drawn by one of Smellie's Dutch students, Pieter Camper, who became a physician, anatomist, and midwife. The remaining two plates are thought to have been drawn by William Smellie himself, with the images engraved and etched by Charles Grignion. A fortieth plate was added to the 1785 edition, edited by Thomas Young, illustrating improvements in obstetrical instruments.[l] The illustrated plates depicted the female anatomy, various positions of the child in the uterus, and the use of forceps in child delivery.

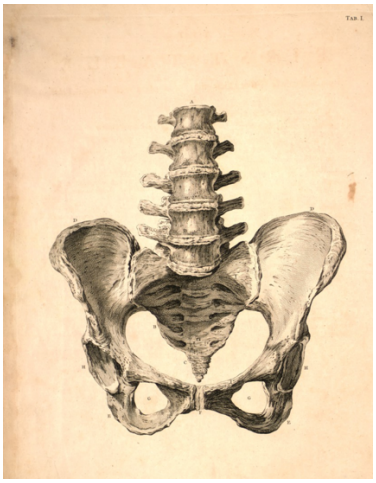

Figure 7: Tab. 1 "The First Table: Represents in a Front-View the Bones of a well-formed Pelvis"

(Source: Smellie, 1754, p. 12)

Similar to van Deventer's *The Art of Midwifery Improv'd*, Smellie's *A sett of anatomical tables* also represents a female pelvis as the first illustration (Figure 7). As the table's title describes, the pelvis is an idealized "well-formed" example, outlining the anterior view of the pelvic bones, sacrum, coccyx, and lumbar vertebrae. Yet, Smellie explicitly warns the reader to not conclude that every pelvis is like the figure and dimensions presented.[li] Instead, it is

accounted for that even well-formed pelvises differ from each other. While the image itself describes an idealized pelvis, Smellie offers textual contextualization to counteract this conclusion in its application in anatomical accuracy.

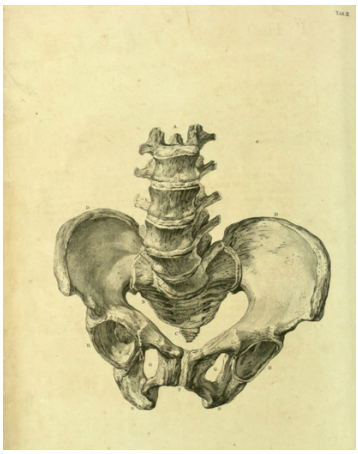

Figure 8: Tab. III

(Source: Smellie, 1754, p. 18)

From Smellie's dissections, he was able to observe how rickets could distort the pelvic region.[lii] In contrast to the first table, the third in *A sett of anatomical tables* offers the depiction of abnormal pelvic bones, twisted, and transformed by rickets (Figure 8). Recalling van Deventer's emphasis on pelvic deformities and their role in challenging childbirths, Smellie and his students took careful measurements of the pelvis. This led to the creation of standards in differentiating a normal pelvic structure from an abnormal one.[liii] By revealing anatomical pelvic distortions, the engravings present the viewer with a graphic image of something that would obstruct the birth yet remain hidden during live childbirth.[liv]

The Table I and III engravings offer an almost photorealistic depiction of the pelvis, with intricate textures and shadows depicted (Figures 7 and 8). The variation in tones and shading creates a three-dimensionality that references the incredibly impressive skill of the artist. However, the preface to *A sett of anatomical tables* suggests that Grignion's engravings do not

offer the delicacy and elegance of the drawings of the images, instead producing a strong and distinct style to allow cheaper reproductions for more general use.[lv]

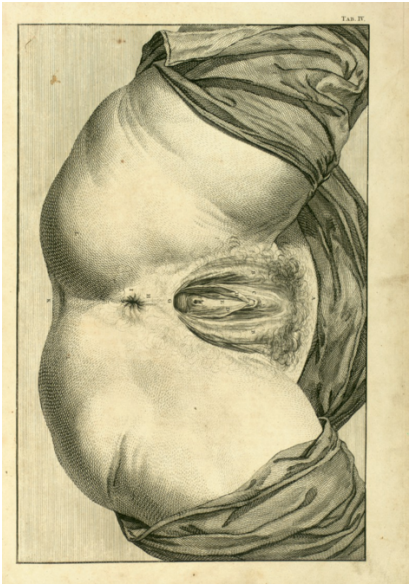

Figure 9: Tab IV

(Source: Smellie, 1754, p. 23)

Smellie also illustrates not only internal images with describing fetal development and childbirth, but also the external images of what the midwife would have seen: a woman's legs draped with cloth and open to reveal her external genitalia before birth (Figure 9).[lvi] Care is taken to illustrate the folds and drapery of the cloth, as well as the folds and wrinkles of the skin. Jan van Rymsdyk's style of illustration sought to portray the particularities of the individual specimen. The darkness and texture of the cloth serves to contrast the relative smoothness and whiteness of the female's legs. A somewhat circular outline is created from the shadows of the draped cloth and underneath the legs and behind, serving to further emphasize the anatomical subject of the female external genitalia.

More so, it was believed that sex was a means for order and hierarchy imposed on the body. Sex, therefore, was inextricably linked to power. Pertaining to the gendered

spheres of society, the public world was overwhelmingly male, with man as the measure of all things.[lvii] Therefore, the standard of representing the human body, particularly in medical illustrations, was to show the male body. The female body was only depicted to show the reproductive system, which was not popularized until the eighteenth century. With ultimately fewer representations of the female body available in print, anatomical books on the study of the female reproductive system and pregnant womb did gain popularity with the integration of obstetrics and midwifery into the medical professional domain.[lviii]

The growing interest in obstetrics and gynecology presented issues with the portrayal of female anatomy. For thousands of years, it was believed that women had the same genitals as men, simply inverted. The vagina was imagined as an interior penis, the uterus as scrotum, and the ovaries as testicles. Language even operated within the distinctions of sexual difference, as the ovary did not have a name of its own, but was referred to in French as *orcheis,* male testes. There was no technical term in Latin, Greek, or in the European vernacular languages until around 1700, when vagina was used to indicate the sheath into which the penis, its opposite, fits and through which an infant is born. By the late seventeenth century, an increasing specialization in anatomy led to more fully particularized representations of individualized organs and structures. Correspondingly, by the late eighteenth century, a new model of biological divergence described a separate and opposite anatomy and physiology in the representation of women in relation to man, which Thomas Laqueur aptly names the "two-sex model" as opposed to the previous "one-sex model" (Laqueur, 1990, 150).[lix]

Thus, the new understanding of sex models renewed interest in the understanding of the female reproductive anatomy. Not only within the medical or academic realm, matters of reproduction intrigued the eighteenth-century public. With enhanced printing culture, the

Enlightenment enabled midwifery to become an area of knowledge available to the educated and literate through learned discussions, the press, pamphlets, and medical treatises.[lx]

In a broader sense, Smellie's *A set of anatomical tables* marks when the medical discipline of obstetrics began to shape against midwifery. The atlas demonstrates specialized knowledge with the growing normalization of childbirth as medical care. As such, the British experience in the eighteenth century describes the displacement of the female midwife with the man-midwife, or *accoucheurs*. Male midwives, including William Smellie, became public figures in the early eighteenth century, where they established research and education institutions and gave public lectures.

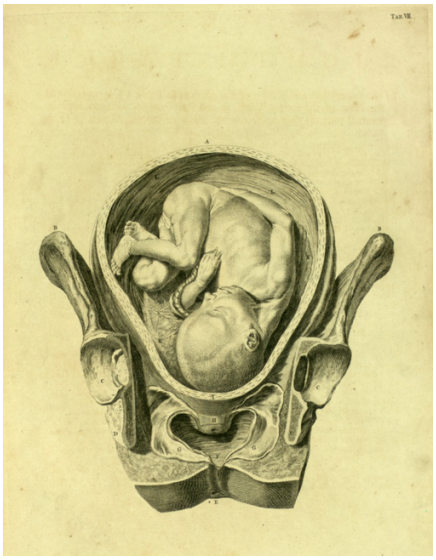

Figure 10: Tab VIII "The Eighth Table: In the same View and Section of the parts as in Table VI is represented the Uterus of the former Table, in order to show its contents, and the internal parts as they appear in the sixth or seventh Month of Pregnancy"

(Source: Smellie, 1754, p. 34)

It has been suggested that Smellie's publication was of the first illustrations to accurately reproduce the image of the fetus in utero from an anatomical point of view.[lxi] Within *A sett of anatomical tables,* Table VIII illustrates the pelvis, uterus, and fetus at the sixth or seventh month of pregnancy (Figure 10).[lxii] Smellie's illustration departs from

the idealized, classicized human form, representing instead the realistic, dissected cadaver. The fetus is meticulously illustrated, even in the detailed crooked fingers and curled toes. Moreover, the intricacies of Smellie's engravings situate them within the contemporary regard for anatomically accurate medical illustrations.[lxiii]

Before the eighteenth century, the illustrated obstetric atlas was not an established genre.[lxiv] There were books written for midwives as early as the sixteenth century, but none had the detailed images concerned with their scientific presentation and biological and anatomical accuracy that appeared in Smellie's publication.[lxv] Students and teachers used these highly detailed illustrated atlases when bodies were not readily available for dissection.[lxvi]

Like van Deventer, Smellie also chooses to leave the hands of the practitioner absent from *A sett of anatomical tables'* engravings. The image of hands is even excluded when Smellie deliberately describes the uterus in the Table as being sufficiently stretched to receive the practitioner's hand to help extract the fetus if the *os internum* can be safely dilated.[lxvii] However, perhaps a consideration of the artist, Rymsdyk's eighteenth-century engravings diverged from the earlier artistic conventions by stripping the figures down to the essentials of the organ of scientific focus. Rymsdyk utilizes a tightly cropped composition to focus the viewer's attention on the rounded, bulging uterus, limiting the other parts of the body included in the illustration.

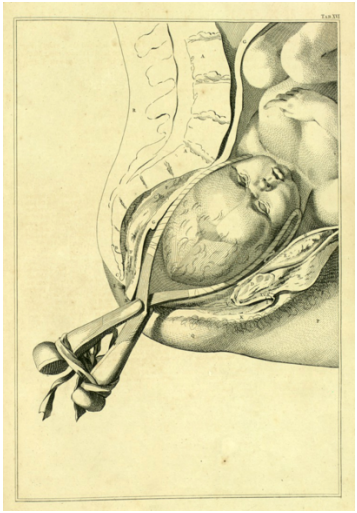

Figure 11: Tab. XVI "The Sixteenth Table: And the three following show in what Manner the Head of the Foetus is helped along with the Forceps as artificial Hands, when it is necessary to assist with the same for the safety of either Mother or Child. In this Table the Head is represented as forced down into the Pelvis by the Labour-pains, from its former Position in Table XII"

(Source: Smellie, 1754, p. 57)

Unique to Smellie's illustrations from those of van Deventer and du Coudray is their inclusion of the imagery and methodology of using forceps in childbirth. Another facet of medical illustrations is demonstrated through the study and application of the tools and instrumentation within medicine. Table XVI portrays the delivery of a fetus using forceps (Figure 11). Altering compositionally from previous anatomical images, the illustration follows a diagonal and linear composition from the ends of the forceps in the lower left of the page to the knees of the fetus in the upper right of the page. In previous images, it has seemingly been standard for the subject to be centered on the page. Even the external flesh of the female's thighs was included, when the only other image to do so belongs to the anatomical table illustrating the female external genitalia (Figure 9).

Forceps were introduced in the seventeenth century by the Chamberlen family, a group of prominent surgeons and man-midwives. Instrumental delivery was restricted to stillborn babies and involved the use of hooks, destructive instruments, or compressive forceps. The Chamberlen forceps were straight, designed to grasp the baby's head. The

first account of the forceps was published by Edmund Chapman, an English surgeon and man-midwife, in 1733.[lxviii] The forceps were a tool that was tied to specific education and training, often not available to female midwives. Aiding in the gendered medical professionalization of midwifery, Amsterdam even decreed in 1746 that only those that could demonstrate proficiency in the "Chamberlen technique" would be allowed to deliver children. The use of forceps was confined to skilled specialists, specifically those being male. Of those specialists was William Smellie, who introduced the modification of the pelvic curve to the forceps independently and around the same time as André Levret in France and Benjamin Pugh in England.[lxix] Smellie also adopted the "English lock", enabling each blade of the forceps to be inserted into the vagina separately before being put together.[lxx]

At the forefront of analyzing the gendered shifts in the professionalization of midwifery and obstetrics from a female to male dominated profession, is the development of instrumentation within childbirth. With the advancements of gynecology and obstetrics came the tool development and popularization of the use of forceps. Female midwives were not trusted to use forceps, as they were not considered strong or skilled enough to handle them, despite any training or qualifications they had. Even Hendrick van Deventer states in *The Art of Midwifery Improv'd* that, "no woman ought to make use of any instruments; for it is most certain that an expert surgeon, who by custom is skillful in surgical operations, can behave himself with more dexterity than a midwife."[lxxi] The preface by an eminent physician clarifies van Deventer's statement by concluding, "He has shown… that no instrument is to be used against infants, except they are monsters [deformed], or are surely dead, and useless members of human kind," (Van Deventer, 1746, preface). While van Deventer believed that a woman should not handle

medical instruments at all, the instruments themselves should only be used in specific circumstances by men.

Moreover, the standard procedure of the early eighteenth century of a female midwife in charge with a male surgeon or man-midwife only being summoned in the case of a stillbirth or breech began to change. The perceived incapability of women to use forceps became one of the ways in which the opportunity opened for men to take over the field of midwifery. When surgeons began to successfully employ forceps in difficult births, sometimes saving the life of both mother and infant, male practitioners became increasingly acceptable.[lxxii]

Importantly, forceps delivery was not the preferred method of delivery for all surgeons or men-midwives in eighteenth-century Britain. Several prominent men-midwives followed the methods of Hendrik van Deventer. Instead of employing instruments, he advocated procedures such as manually adjusting the position of the coccyx to facilitate an obstructed birth and turning the fetus in the womb early, before the delivery.[lxxiii] Even in Smellie's detailed procedural account of instructing the reader how to use the forceps, the application of manual touch remains evident. Smellie describes that if by introducing a finger at the *pubes* or *groins,* and the ear or back of the fetus cannot be felt, the *os externum* must be gradually dilated with the practitioner's fingers until the whole hand can be introduced into the vagina. Then, the hand is to be placed between the posterior part of the pelvis and the child's head to know the position of the head and allow space for the advancement of the head into the pelvis. If there is no effect from this maneuver, the fingers are to be introduced again and one of the blades of the forceps is then applied along the inside of the hand or fingers, with the other blade placed

opposite.[lxxiv] It is therefore interesting that the educational illustrations would depict the forceps instrumentation and still leave the hands as absent, as in Table XVI (Figure 11).

Although the services of medically trained man-midwives were accepted in the last half of the eighteenth century, the majority of babies were still delivered by traditional female midwives in Northern Europe. Universities and institutions of medicine had not yet produced enough physicians and surgeons to meet the needs of the population. Nevertheless, the practice of obstetrics flourished in Britain, but did not completely take the place of midwifery. By the end of the century, however, university medical schools and private institutions of medicine flourished across Europe that included obstetrics in the curriculum.[lxxv]

The presentation of man-midwifery in the eighteenth century in England was unique.[lxxvi] Although male practitioners acquired new skills in midwifery, elsewhere in Europe they were largely restricted to delivering difficult births until 1800.[lxxvii] However, in England, where surgeons and physicians treated only difficult births in earlier centuries, medical professionals could treat all births in the second half of the eighteenth century.[lxxviii] While forceps do not solely explain the shift from female to male authority in midwifery in the eighteenth century, the increased attention given to forceps reveals how normal births and pregnancies progressively began to be treated as medical conditions rather than domestic processes. Male obstetric knowledge up to the mid-eighteenth century centered primarily on the cases of abnormal births, those with an ill mother or a difficult orientation of the fetus, and often required the invasive use of instruments.[lxxix] As such, man-midwifery gained prominence when physicians and surgeons sought to understand normal births, rather than just problematic ones, approaching pregnancy and birth as medical affairs more generally. Aiding in the process of medicalizing childbirth was the emergence of the illustrated obstetric atlas, where visual references to anatomical dissection

and the science of anatomy could bring the pregnant female body and process of childbirth into the scope of the male medical specialist.[lxxx]

In obstructed labor, the procedural obstetric intervention of extracting the baby, usually by the breech, is to save the mother's life. Similarly, Smellie outlines the use of forceps in obstructed or breech births. However, Table XVI does not show a breech birth (Figure 11). Instead of attempting to reposition the child, Smellie outlines the procedure to fix the forceps along the sides of the baby's head, where the face is then turned to the side of the brim of the pelvis, so the wide part of the head is to the wide part of the brim. The child's head is then brought lower, with gradually increasing force gradually.[lxxxi] The illustration portrays the baby after it is turned, as the face of the baby is towards the viewer in a sagittal view of the female body.

Figure 12: Tab XXXV "The Thirty-Fifth Table: Shows in a lateral View of the Pelvis the method of assisting the delivery of the Head of the Foetus with the long-curved Forceps in praeternatural Cases, when it cannot be done with the Hands as described in Table XXIX"

(Source: Smellie, 1754, p. 116)

However, Table XXXV specifically illustrates the delivery of the fetus using forceps in a breech presentation (Figure 12). The corresponding text to the image describes the use of the curved forceps when it could have not otherwise been done with

the hands.[lxxxii] The image and method is thus presented as a last option, unlike the unclear distinction with the position of the fetus in Table XVI (Figure 11). Unlike Table XVI, the engraving is centered compositionally on the page. However, like van Deventer and Smellie's other engravings, the hands of the practitioner are absent from the image despite their integral role in the maneuver. Of the three practitioners analyzed in this case study, it is only du Coudray who artistically chooses to represent the hands of the midwife within her instructional images.

Angélique Marguerite Le Boursier du Coudray (1714-1794)

During the seventeenth century, *accoucheurs* became fashionable in France.[lxxxiii] Nevertheless, there developed a social and professional tension between male and female midwife practitioners. In the eighteenth-century man-midwives and medical professionals that practiced midwifery were turning midwifery into a science in France. Notably, André Levret and François Mauriceau developed the Mauriceau-Levret manipulation for breech deliveries and Jean-Louis Baudelocque worked with William Smellie to modernize obstetric instrumentation. From the eighteenth century onwards, increasing competition between female midwives and male practitioners relied on the question of formal training and the ability to use obstetrical instruments.

While perhaps not all midwives received education and training, especially those in rural France, that was not the case for Paris' highly organized accreditation process. In 1740 at twenty-five years old, after completing her three-year apprenticeship and passing her qualifying examinations at the College of Surgery, Angélique Marguerite Le Boursier du Coudray became a mistress matron midwife of the city of Paris. At this time, only a small number of midwives were allowed to practice in the city.

Following 1740, the Parisian School of Surgery decided to no longer allow midwives to attend its surgery lectures, one of many developments that sought to exclude female midwives. Midwives were continually denied instruction as in 1743 surgeons began to practice in the field of midwifery when the King granted an elevated and prestigious status to surgeons. Nonetheless, Parisian midwives, including du Coudray, challenged surgeons with petitions, arguing that their refusal to educate midwives neglected their professional duties. Consequentially, midwives were not being thoroughly trained and not becoming officially accredited, which resulted in a shortage of midwives in the city. Male medical professionals thus stepped in both to educate themselves in this field and fill the occupational gap. Likewise, it was an impressive feat, du Coudray excelled in a once exclusively female profession that was quickly becoming dominated by men.

In 1759, King Louis XV charged du Coudray with the responsibility of educating rural midwives. In the wake of the Seven Years War, concerns had arisen over a high death toll and a simultaneous decrease in the French birth rate. Healthy pregnancies, safe deliveries, and the survival of infants suddenly became a national concern. Therefore, at the King's request, du Coudray began touring the French countryside to deliver medical lectures to rural midwives who would have had less educational resources available. In her lectures, du Coudray discusses the female reproductive organs and instructs readers on deliveries, including how to handle common obstetric problems. Angélique Marguerite Le Boursier du Coudray's *Abrégé de l'art des accouchemens* (1759) compiles these lectures into a printed format, thereby enabling an even more expansive dispersion of instruction to midwives in the country.[lxxxiv]

Du Coudray first published her *Abrégé de l'art des accouchemens* (*Abrégé*), translating to *Abstract of the Art of Childbirth*, in 1759 in France as a low-cost, non-engraved version. Five editions were published in France during the eighteenth century, with the second edition in 1769 including a black and white portrait of the author as well as twenty-six color engravings to impact illiterate audiences as well.[lxxxv] Whereas the first edition was sold for fifty sols bound, the inclusion of the engravings affected a commercial difference in the price of seven pounds four sols.[lxxxvi] Unlike Smellie's large-formatted atlas, du Coudray printed her book in small format and plain binding in order to keep costs down.

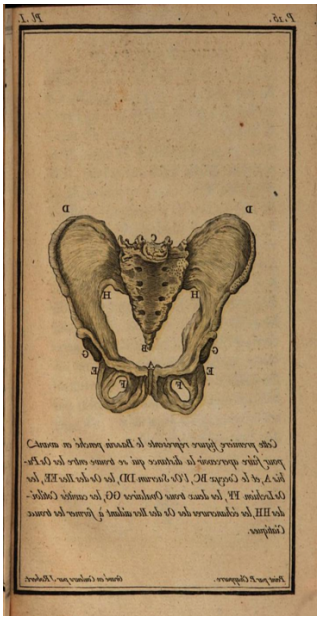

Figure 13: Plate I

(Source: Boursier Du Coudray, 1785, p. 15)

The first of the illuminated intaglio figures included in the second edition copies of the *Abrégé* is of a pelvis tilted forward to show the distance between anatomic parts (Figure 13). Harkening back to van Deventer's introduction of the importance of the pelvis in childbirth, du Coudray likewise acknowledges the importance of anatomical skeletal understanding. Interestingly, the engraving depicts a somewhat narrow and elongated pelvis, instead of a proportionally accurate depiction. This could be because of women's lack of access to

dissections, unlike van Deventer and Smellie who would have been able to view such events. Yet, the printed illustration includes dramatic highlights and shadow, enabling a greater sense of space and shape of the pelvis.

The *Abrégé*'s twenty-six colored plates were drawn by P. Chaparre, whose exact identity remains unknown, and printed by the official printer of the Royal Academy of Surgery. However, these plates, engraved by Jean Robert, a student of Jacob Christoph Le Blon, are among the first tri-color printing attempts made using the color re-composition process. Le Blon was the inventor of the color engraving technique which relied on superposing three copper plates of different colors, and thus created the possibility of mixtures of colors.[lxxxvii] Jean Robert, therefore, used colored plates by superimposing a yellowish green ink for the pelvis and black for the shadows. The result of the addition of colors makes the engravings easier to distinguish, testifying to the educational purpose of the book. As such, colored images were a marker of luxury in eighteenth-century France, therefore illustrations are used only when necessary and must depict information that benefits from visual aid than words alone.

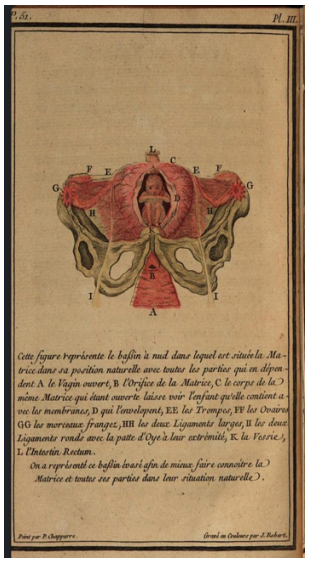

Figure 14: Plate III
(Source: Boursier Du Coudray, 1785, p. 51)

Du Coudray includes an image of a fetus in its "natural position" within the womb (Figure 14). Again, following van Deventer's depiction of the womb in association with the pelvis, du Coudray also presents the uterus and pelvis simultaneously, contributing to the developed canon for the representation of fetuses. What is interesting, is that du Coudray does not include an image of the placenta or umbilical cord where they are generally prominent in van Deventer's and Smellie's illustrations. More so, despite the exclusion in Smellie and van Deventer's depictions, du Coudray chooses to include the fallopian tubes, ovaries, cervix, and birth canal, at least in Plate III.

Despite pointing to greater anatomical accuracy and knowledge of the female reproductive organs with the inclusion of the fallopian tubes and ovaries, the proportions of the illustration warrant questioning. Notably, the seemingly large birth canal and small fetus to the pelvis and womb describe an artistry in composition over anatomical accuracy. Even so, the fetus is illustrated as a tiny, fully formed human with long legs and arms proportionally to that of an adult. As such, the fetus is neither positioned in the anatomically correct location nor is it the correct size.

However, an element in medical illustrations that has persisted, and seen in the examples of van Deventer, Smellie, and du Coudray is the fetus as an active inhabitant of the womb juxtaposed with the passive or absent female body. In the case of Plate III, no reference is made to the greater female form, besides the organs themselves (Figure 14). And even then, the female reproductive organs are included for the purpose of holding the fetus, who is crouching and moving within the space.[lxxxviii]

Additionally, the *Abrégé* illustrations demonstrate artistic technological developments with the inclusion and implementation of color printing. The yellow green of the pelvis and

reddish pink of the uterus and fetus aid in the readability of the image. With such a condensed composition, color helps to distinguish the separation of bone from reproductive organ. However, with multi-plate printing comes the enhanced risk of misregistration. Indicative of the challenges of the medium, areas where the plates do not align perfectly can be seen along the lower left of the birth canal near letter A and underneath letters E and F and can be seen in other plates within the *Abrégé*.

Figure 15: Plate VIII

(Source: Boursier Du Coudray, 1785, p. 69)

Similar to van Deventer, du Coudray outlines the importance and proper procedure of a midwife utilizing their hands during childbirth within her *Abrégé*. Plate VIII illustrates the proper hand position at the sides of the head to help the baby's head emerge in a normal delivery (Figure 15). Differing from van Deventer's illustrations, however, is du Coudray's inclusion of portraying the hands of the midwife. Perhaps due to differences in audiences, van Deventer's publication was intended for both a female midwife and man-midwife audience. Du Coudray, however, was targeting solely female

midwives and not necessarily the larger medical community. As such, the hands of the midwife are undoubtedly female.

Figure 16: Samuel Smith and Benjamin Walford, Plate 2: the female body (front), 1698

(Source: William Cowper, The Anatomy of Humane Bodies, 1698 from https://www.royalacademy.org.uk/art-artists/work-of-art/plate-2-the-female-body-front)

Figure 17:Modes de 1789 Fashion Plate featuring caraçao jacket and skirt

(Source: Digital Commons Bucknell University from https://digitalcommons.bucknell.edu/cgi/viewcontent.cgi?article=1119&context=honors_theses)

The effects of the color printing process seem to emphasize the whiteness of the ornamental cuffs du Coudray includes, compared to the yellow-green pelvis and red flesh of the baby and hands. Moreover, while earlier anatomical illustrations from the sixteenth and seventeenth centuries were classically inspired with ornamental drapery, du Coudray's addition of stylistic fabric at the wrists of the midwife's hands mirrors eighteenth-century fashion (Figure 16 and 15). While it is questionable whether a midwife would wear a dress with flowing white cuffs during the process of aiding childbirth, which would most certainly become soiled, the cuffs serve as a signifier for gendered hands.

Nonetheless, women's fashion in the mid-eighteenth century consisted of many layers, including a shift, or *chemise*, which was often lined with lace at the edge of the neck and sleeves. The cuffs adorning the hands in du Coudray's illustrations could thus be depicting this *chemise* layer's ornamental trim. Around 1740 dress resembling men's country-dress and riding habit became fashionable, especially as attire for working class women. As such, a coat or waistcoat with lace or trimming became common for members of the upper, middle, and working classes (Figure 17).[lxxxix] Aesthetically, where styles and silhouettes varied little among all classes, the garments and trimmings usually differed in fabric and material based on socioeconomic status.[xc]

Likewise, a fashionable solution to the costly nature of lace and popularization of the textile as trim in the seventeenth to mid-eighteenth century, *engageantes* were removeable cuffs to use on multiple garments.[xci] Made of lace, muslin, linen, or cotton, the fabric reflected the socioeconomic class of the wearer.[xcii] Therefore, the ruffled white cuffs adorning the midwife's wrists could either be *engageantes* or the trim of a *chemise,*

yet it is evident that the fabric is not lace, reflecting the working-class status of the female's occupation (Figure 15).

Besides the inclusion of the hands and white cuffs, du Coudray's exclusion of any female reproductive organ imagery is another interesting artistic choice. Instead, the pelvis and uterus are presented as one and the same, with the anatomy of the pelvis acting as the cervix and birth canal. Unlike du Coudray's illustration of the fetus's natural position (Figure 14) where she includes an overly inclusive representation of the womb, her illustration of the midwife's hand placement mirror's van Deventer's portrayal of the pelvis and womb as converging anatomical parts (Figure 15 and 5).

Figure 18: Plate XVII

(Source: Boursier Du Coudray, 1785, p. 113)

In addition to the procedures of natural deliveries, those without complications, du Coudray addresses what to do in the instances of various complications. In the case of a breech birth with the feet positioned before the head of the fetus, du Coudray describes using the hands to attempt to reposition the baby (Figure 18). Whereas Smellie helped refine the technique for implementing forceps in breech deliveries, du Coudray's text is devoid of the imagery or

description of instrumentation. This is perhaps due to the sexual differences in the perceived understanding that women could not utilize medical instruments or du Coudray's own religious beliefs.

Interestingly, midwifery in Paris was tied to the Church and state. In fact, all sworn midwives were expected to attend services at the church of St. Côme, dedicated to the patron saints of surgery.[xciii] While speculatory, perhaps religious grounds similar to van Deventer, just as sexual politics, influenced the perpetuation of females being barred from using instrumentation in live childbirth. With the Catholic belief in the sanctity of life, including a fetus's, it would pose a threat to the babies lives to have untrained individuals utilize the forceps. As women were not trained or educated properly to use medical instrumentation, they would thus be in a greater position to cause harm to the mother or baby, therefore more likely by the Church to encourage instrumental intervention by female midwives.[xciv]

Angélique Marguerite Le Boursier du Coudray held a prominent position as city midwife in Paris into the 1780s. At that time, du Coudray's pupils comprised two-thirds of the country's midwives.[xcv] Not only was du Coudray a high-achieving woman of the eighteenth century, but she gained fame when men were taking over the field of midwifery.

Case Study

Through the exploration of three eighteenth-century midwifery practitioners' medical illustrations, the historical narrative of the developing field of obstetrics can be observed. A growing print culture of the Enlightenment, developing technologies to depict anatomically accurate medical illustrations, the medicalization of childbirth, sexual differences in the use of medical instrumentation, and accessibility to education mark the changes and developments in the field of obstetrics in eighteenth-century Northern Europe.

Hendrick Van Deventer pioneered the relationship between orthopedics and childbirth with determining the pelvis' potential implications in the birthing process. *The Art of Midwifery Improv'd* (1701) became a publication to educate midwives and man-midwives within the Netherlands and beyond. His methods were devoid of instrumentation and praised the skill of manual examination and touch in childbirth. The black engravings included in the publication were produced at a time when scientific accuracy was increasingly desired in anatomical representations over artistic idealism.

William Smellie targeted an audience of man-midwives in medical professions with *A sett of anatomical tables, with explanations and an abridgement, of the practice of midwifery, with a view to illustrate a treatise on that subject, and collection of cases*, also called *A sett of anatomical tables* (1754), yet he instructed female midwives as well. The publication marked a new genre of medical texts as an illustrated obstetric atlas. It represents the medicalized and gendered work force of midwifery in England, although the atlas was published beyond Britain. Unlike van Deventer and du Coudray's publications, Smellie's outlines the procedures for the use of forceps and instrumentation in difficult births. Characteristically, his black engravings offer a scientific realism to dissection and the subject of fetal development and childbirth.

Angélique Marguerite Le Boursier du Coudray's *Abrégé de l'art des accouchemens*, translating to *Abstract of the Art of Childbirth* (1759) offers a compilation of her lectures given to midwives all over France. The publication, however, was limited to printing in France in the eighteenth century. Du Coudray does not describe the use of instrumentation, a demarcation in the abilities of a man and woman in midwifery. Instead, she develops and educates midwives on methods for dealing with difficult births using the hands, and even includes imagery of feminine hands in her engravings. The *Abrégé* engravings are colored, integrating color as a tool for the clarity of instruction. There is an artistry in the proportion of the images in conjunction with the scientific accuracy of anatomy.

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