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# The Midwife's Bag:
# Tracing the Objects of Professional Identity in Post-Unification Italy

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SUMMARY: As an immediate target of post-Unification legislation, Italian midwives were subject to national efforts to standardize educational and professional practices. As a material emblem of these initiatives, the midwife's bag signified both a recognizable marker of midwives' new professional status and a mechanism for the increased surveillance directed toward them. Drawing on the material feminism of scholars like Donna Haraway and Karen Barad, the author considers three objects contained within the midwife's bag—syringes, stethoscopes, and birth registers—and the associated technologies of asepsis, auscultation, and statistical enumeration. In physical birthing rooms and on the pages of midwifery's new professional journals, the embodied practices associated with, rationale for, and impacts of novel obstetrical objects were negotiated. These technologies were part of the ongoing production of particular kinds of birthing and fetal bodies, ones that were both known and increasingly defined by technologically derived data and measurement.

KEYWORDS: midwifery, Italy, nineteenth century, medical technologies, auscultation

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In the second half of the eighteenth century, as depicted in Giovanni Grevembroch's exhaustive compendium of Venetian ranks and occupations, the object that most symbolized the midwife was her sturdy, wooden birthing chair.[1] Carried along in Grevembroch's engraving by a trailing servant, the chair stood for authority, female assistance (a woman typically stood behind the chair, supporting and massaging the woman in labor), and tradition; indeed, references to birthing chairs and stools in Italy date from at least the first century CE.[2] With the rise of scientific midwifery in the eighteenth century, however, the birthing chair came under critique by male practitioners who increasingly promoted the lithotomy (supine) position during birth. By the second half of the nineteenth century, the representative object of the midwife had shifted. The midwife was now most likely to be symbolized not by the outdated but familiar birthing chair but by the professional bag she was required to carry with her to deliveries and that contained the tools that embodied her formal training and expertise. This sturdy leather bag was an immediately recognizable symbol of the licensed and educated midwife; inside was a largely standardized set of equipment—syringes, canula, disinfectant, scissors, thermometer, stethoscope, birth register—some of which, like the stethoscope and thermometer, were unknown to obstetric practice just a century before.

Over the course of a century, midwifery had undergone a massive transformation in terms of status and professionalization. The midwife of post-Unification Italy was a representative of a

[1] Grevembroch, a Venetian artist, was commissioned by the nobleman Pietro Gradenigo (1695–1776) to record Venetian clothing, artworks, occupations, collections, and daily life in a series of watercolors. Giovanni Grevembroch, *Gli abiti de veneziani di quasi ogni età con diligenza raccolti e dipinti nel secolo XVIII* (Venezia, 1754).

[2] Amanda Carson Banks, *Birth Chairs, Midwives, and Medicine* (Jackson: University of Mississippi Press, 1999), 3.

modernizing public health apparatus, expected to deliver the new scientific knowledge of asepsis, auscultation, and statistical enumeration into the homes of Italian citizens. Indeed, public health was increasingly recognized by Italy's liberal reformers as an essential means of achieving progress, economic prosperity, political cohesion, and popular education in the newly unified country.[3] The professionalization of midwifery was thus part of a larger biopolitical calculus aimed at preserving the lives of mothers of the nation and unborn future citizens.[4] As was the case in other European countries, the professionalization of midwifery raised questions about the boundaries of midwives' practice; how to provide care and public health in impoverished, backward regions; how to control interprofessional rivalries and the abusive practice of unlicensed practitioners; and how to scientifically manage the health of populations.[5] As scholars have shown, professionalization often entailed a circumscription of the midwife's role at the same time it afforded her an elevated social status.[6] In many ways, the professionalization of midwifery encapsulated debates about modernity taking place in Europe at the time. Both unlicensed midwives and women in impoverished, remote areas were painted as superstitious and backward; licensed midwives, on the other hand, stood for the advancement of

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[3] Claudio Pogliano, "Healing and Ruling: Medical Reformers after the Unification of Italy," *Paedagogica Historica* 38, no. 2/3 (2002): 485–502.

[4] On Foucault's concept of biopolitics and its association with the development of public health in the eighteenth century, see Michel Foucault, *The Birth of Biopolitics: Lectures at the College de France 1978–1979* (Basingstoke: Palgrave Macmillan, 2008) and "The Birth of Social Medicine," in *Power: The Essential Works of Foucault, 1954–1984*, vol. 3, ed. J. D. Faubion (New York: New Press, 2000), 134–56; Andrea Rusnock, "Biopolitics and the Invention of Population," in *Reproduction: Antiquity to the Present Day*, ed. Nick Hopwood, Rebecca Flemming, and Lauren Kassell (Cambridge: Cambridge University Press, 2018), 333–46.

[5] Hilary Marland and Anne Marie Rafferty, "Introduction," in *Midwives, Society, and Childbirth: Debates and Controversies in the Modern Period* (London: Routledge, 2002), 1–11.

[6] Ibid., 7–11.

society through the application of scientific principles, such as antisepsis.[7] In Italy, the professionalization of midwifery was marked, furthermore, by the Catholic Church's repeated pronouncements at the end of the nineteenth century in defense of fetal life. The Church's position shaped medical debates about the permissibility of a variety of obstetric interventions, such as embryotomy, induced premature labor, therapeutic abortion, and the cesarean section.[8] While midwives in Italy were prohibited from undertaking surgical procedures, in practice the range of interventions they might undertake during a delivery was considerable, from manually breaking the amniotic sac to using dilators to initiate contractions, even prematurely. In other words, midwives, too, were arbiters of a delicate moral and professional ethics in which maternal and fetal lives were often in competition.

Although historians have long debated the significance of the forceps in paving the way for the ascension of a male-dominated obstetrics, less attention has been afforded to the material objects that defined the midwife's path toward professionalization.[9] Furthermore, many

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[7] Sara Bernasconi, "The Material Side of Modernity: The Midwife's Bag in Bosnia and Herzegovina around the Turn of the Century," in *From the Midwife's Bag to the Patient's File: Public Health in Eastern and Southeastern Europe*, ed. Heike Karge, Friederike Kind-Kovács, and Sara Bernasconi (Budapest: CEU Press, 2017), 97–116.

[8] Emmanuel Betta, *Animare la Vita. Disciplina della nascita tra medicina e morale nell'Ottocento* (Bologna: Il Mulino, 2007), chap. 5.

[9] For debates over the importance of the forceps in establishing the authority of male midwives, see Mary E. Fissell, "Man-Midwifery Revisited," in Hopwood, Flemming, and Kassell, *Reproduction* (n. 4), 319–32. Fissell challenges an older narrative espoused in particular by Radcliffe that the forceps were critical in establishing male authority in the birthing room. Walter Radcliffe, *The Secret Instrument (The Birth of the Midwifery Forceps)* (London: Heinemann Medical Books, 1947). Many scholars have further helped to complicate and nuance the picture; see also Lisa Forman Cody, *Birthing the Nation: Sex, Science, and the Conception of Eighteenth-Century Britons* (Oxford: Oxford University Press, 2005); Adrian Wilson, *The Making of Man-Midwifery: Childbirth in England 1660–1770* (Cambridge, Mass.: Harvard University Press, 1995); Lianne McTavish, *Childbirth and the Display of Authority in Early Modern France* (Aldershot, U.K.: Ashgate, 2005).

questions remain about how particular objects, such as syringes, thermometers, and stethoscopes, were actually used by midwives in practice. These objects not only altered the professional practices associated with midwifery but carried with them entirely new vocabularies and epistemologies. The stethoscope, for instance, aided in the creation of the fetal patient as an entity distinct from and capable of being surveilled apart from its mother.[10] In this essay, I think through the ways a focus on objects and their materiality can help us understand what the professionalization of midwifery meant in practice and, particularly, for the relationship between midwives and their patients. Alessandra Gissi has written elegantly about how the presence of the midwife's bag in post-Unification Italy was a physical representation of state intervention in Italian citizens' intimate affairs.[11] According to Gissi, the midwife's bag was at once a clear reflection of state control over the practice of midwifery, which carried with it strict circumscriptions on the midwife's responsibilities, *and* a proudly cared for indicator of midwives' new professional status and recognition as protectors of the nation's health. In fact, the midwife's bag and its contents often functioned as rhetorical sites for debates over authority, knowledge, and gender. And even before Unification, midwives' tools could and often did hold

[10] On the role of diagnostic and other medical technologies in "creating" a fetal subject, see Lisa M. Mitchell, *Baby's First Picture: Ultrasound and the Politics of Fetal Subjects* (Toronto: University of Toronto Press, 2001), esp. 27–33; William R. Arney, *Power and the Profession of Obstetrics* (Chicago: University of Chicago Press, 1982), esp. chapter 4, "Monitoring and Surveillance," 99–154; Naomi Pfeffer, *The Stork and the Syringe: A Political History of Reproductive Medicine* (Cambridge: Polity, 1993); Malcolm Nicolson and John E. E. Fleming, *Imaging and Imagining the Fetus: The Development of Obstetric Ultrasound* (Baltimore: Johns Hopkins University Press, 2013).

[11] Alessandra Gissi, "'La più celebre antica borsa': ovvero il capitale della levatrice (XIX–XX secolo)," *Genesis* 1 (2006): 79–96.

multiple meanings and functions. In Catholic Italy, syringes might be used therapeutically or to perform an emergency baptism in utero.[12]

The following extends the analysis of Gissi and others who have focused on the relationship between midwives and the liberal state in Italy, and on the interprofessional rivalries between licensed and "traditional" midwives,[13] by concentrating specifically on the ways the objects of the post-Unification midwife's bag shifted the relationship between midwives and their patients. In doing so, I shed light on the ways that formally trained midwives used professional objects in practice and how that use shaped their interactions with patients and their families. Although discord between midwives and their patients had certainly not been rare before professionalization—disputes occurred with some frequency over such things as timely payment and whether to conceal an illegitimate pregnancy—before the late eighteenth century, midwives and their patients generally enjoyed a shared vocabulary and understanding of the bodily processes occurring during birth. Remedies and their ingredients were familiar, as were the midwives themselves, who largely worked in the communities into which they had been

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[12] George A. Klaeren, "Sacred Embryology: Intrauterine Baptisms and the Negotiation of Theology and Health Sciences across the Eighteenth-Century Spanish Empire," in *Health and Healing in the Early Modern Iberian World: A Gendered Perspective*, ed. Sarah E. Owens and Margaret E. Boyle (Toronto: University of Toronto Press, 2021), 219–40; Jennifer Kosmin*, Authority, Gender, and Midwifery in Early Modern Italy: Contested Deliveries* (London: Routledge, 2020), chap. 2.

[13] Rossana Basso, *Levatrici: L'assistenza ostetrica nell'Italia liberale* (Rome: Viella, 2015); Clotilde Cicatiello, *Rivalità sulla scena del parto: medici e levatrici a Napoli tra Ottocento e Novecento* (Milan: Mimesis, 2018); Elisa Mazzella, *Comari patentate: la scuola per levatrici nella Novara dell'Ottocento* (Milan: Unicopli, 2012); Daniela Franchetti, *La scuola ostetrica pavese tra Otto e Novecento* (Milan: Cisalpino, 2012); Olimpia Sanlorenzo, *L'insegnamento di ostetricia nell'Università di Bologna* (Bologna: Alma Mater Studiorum Saecularia Nona, 1988); Gabriella Mondardini Morelli, *Narrazioni sulla scena del parto. Saperi medici e saperi locali nelle testimonianze di levatrici "continentali" in Sardegna (1887–1898)* (Sassari: EDES, 1999).

born. Formal training in the second half of the eighteenth century began to upset this balance and was accelerated in the nineteenth by new understandings of disease, focusing on germs and toxins, on a professionalized and scientific vocabulary adopted by trained midwives (who spoke easily of conditions like eclampsia, placenta previa, and albuminuria), and on new diagnostic techniques that rendered a woman's own accounting of her symptoms less significant. These changes sometimes produced tension and even outright conflict in the birthing room. The first part of this essay discusses an initial stage of midwifery professionalization in Italy during the eighteenth century before shifting to focus on the experience of midwives and their patients in the late nineteenth century.

Drawing on the material feminism of scholars like Donna Haraway and Karen Barad, I consider the technologies of asepsis, auscultation, and statistical enumeration and the objects—syringes, stethoscopes, birth registers—associated with those knowledges as apparatuses of bodily production.[14] As Barad argues, apparatuses are not simply "external forces that operate on bodies from the outside; rather, apparatuses are material-discursive practices that are inextricable from the bodies that are produced and through which power works its productive effects."[15] In physical birthing rooms and on the pages of midwifery's new professional journals, the embodied practices associated with, rationale for, and impacts of novel obstetrical objects were negotiated and discussed. In some cases, objects raised gendered debates about the appropriate

[14] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," in *The Feminist Standpoint Theory Reader: Intellectual and Political Controversies*, ed. Sandra Harding (New York: Routledge, 2004), 81–102.
[15] Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, N.C.: Duke University Press, 2007), 230.

limits of midwives' practice and expertise. In others, objects were the basis upon which midwives staked their scientific and professional authority vis-à-vis the mothers and families whom they assisted. At the same time, these technologies were always implicated in—and part of—the ongoing production of particular kinds of birthing and fetal bodies, ones that were both known and increasingly defined by technologically derived data and measurement.

## Professionalization in the Eighteenth Century

In Italy, as elsewhere in Europe, the first formal training programs offered to midwives were established during the eighteenth century in response to deep concerns about infant mortality and the prospect of depopulation. Following the direction of Johann Peter Frank (1745–1821), the architect of some of Europe's first large-scale state public health apparatuses, Italian reformers identified the midwife as a critical figure through which to interface with local communities. Rural communities, critics argued, were steeped in traditional birth and healing practices rife with superstition and heterodoxy; ignorant midwives were both a source of such nonsense and a root cause of dire maternal and infant mortality rates. A systematic training program for midwives could thus combat multiple evils by reforming rural superstitions and saving maternal and infant lives. What reformers did not count on was the massive resistance many communities would leverage against the perceived intrusion of foreign and masculinized birth practices. Again and again, formally licensed midwives trained in new urban midwifery schools returned to

communities that were far from welcoming, choosing instead to rally around long-practicing, unlicensed midwives.[16]

A particular point of difference crystallized around the objects, sometimes real, sometimes imagined, that the newly licensed midwives used in their practice. Madalena Oliva, for instance, was one of the first generation of midwives from Lombardy trained in the midwifery school opened in Milan in 1767. When she returned to her small village outside of the city, Oliva faced unrelenting competition from the unlicensed Catterina Mazzolletti, who had continued to practice in Oliva's absence. The rivalry centered specifically on accusations that Oliva used metal instruments in her practice. Mazzolletti spread rumors among her clients that at the Ospedale Maggiore in Milan, Oliva and other trainees had been instructed to treat patients with surgical instruments. Though false, this accusation apparently turned not only the community's women against Oliva, but even its parish priest, who petitioned the authorities in Milan to exempt Mazzolletti from the state's new licensing requirements.[17] Just the mention of surgical instruments registered fear and distrust in the eyes of female clients, who justifiably associated such objects with the surgeon's last-ditch efforts to save a mother's life, often by extracting a deceased or obstructed fetus with hooks or a crotchet.

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[16] On the development of formal educational programs for midwives in eighteenth-century Italy, see Kosmin, *Authority, Gender, and Midwifery* (n. 12), esp. chap. 4; Claudia Pancino, *Il Bambino e l'acqua sporca: stria dell' assistenza al parto dale mammane alle ostetriche (secoli XVI–XIX)* (Milan: Franco Angeli, 1984); Nadia Maria Filippini, "Levatrici e ostetricanti a Venezia tra sette e ottocento," *Quaderni Storici* 20, no. 58 (1985): 149–80; Claudio Schiavoni, "L'attività delle levatrici o 'mammane' a Roma tra XVI e XVIII secolo: storia sociale di una professione," *Sociologia* 2 (2001): 41–61.

[17] Archivio di Stato di Pavia, Universita', Medicina, 608, Supplica of Madalena Oliva, Giacomo Canaleri, n.d.

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The story of Madalena Oliva and many other newly licensed midwives like her demonstrates that mothers saw professionally trained midwives as outsiders, bearing novel attitudes toward the management of birth that challenged traditional values and sources of authority. While midwives had long gained authority by word of mouth, by their own personal experience of childbirth, and by a familiarity with their home communities, professional training risked disrupting such carefully cultivated relationships. Be it fears that educated midwives would employ surgical instruments, or disgust that they had attended dissections,[18] or simply wariness that such midwives were often much younger and less familiar with their communities than traditional midwives, prospective clients overwhelmingly shunned the services of newly graduated midwives during the last quarter of the eighteenth century. The bodily knowledge formally trained midwives gained through books and anatomical study represented an erosion of the authority of women's own embodied experiences of pregnancy and childbirth.[19]

Despite the rumors surrounding Madalena Oliva, newly trained midwives were not furnished with surgical instruments—in fact, authorities tirelessly repeated prohibitions against midwives using just such instruments (which some almost certainly did in cases of emergency).[20]

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[18] Archivio di Stato di Milano (hereafter ASM), Sanità, Parte Antica, c. 269, Letter from the community of Abbiate Guazzone, August 15, 1768.

[19] On the role of medicalization in replacing women's own experiences of their bodies as authoritative sources of knowledge, see Barbara Duden, *The Woman Beneath the Skin: A Doctor's Patients in Eighteenth-Century Germany* (Cambridge, Mass.: Harvard University Press, 1991), esp. chap. 1, and *Disembodying Women: Perspectives on Pregnancy and the Unborn*, trans. Lee Hoinacki (Cambridge, Mass.: Harvard University Press, 1993); Robyn Rowland, *Living Laboratories: Women and Reproductive Technology* (Bloomington: Indiana University Press, 1992); Iris Marion Young, "Pregnant Embodiment: Subjectivity and Alienation," in *On Female Body Experience: "Throwing Like a Girl" and Other Essays* (Oxford and New York: Oxford University Press, 2005), 46–61.

[20] Early male-authored midwifery texts recognized that midwives might use hooks to extract a dead fetus. Eucharius Rosslin's 1526 *The Byrth of Mankynde, otherwyse named the womans booke* described in

They were, however, exposed to anatomical dissection and equipped with a standard set of medical instruments that they had been trained to use. In 1790 at the midwifery school in Milan, for instance, newly licensed midwives were provided with a midwifery text, professional guidelines, a dozen pessaries, and several syringes and cannulas. While the pessaries were intended to be used in cases of uterine prolapse, the cannulas were to administer enemas, something the instructors thought often necessary but for which women would likely be too ashamed to ask a male surgeon.[21] Syringes might be used to administer an emergency baptism in utero, highlighting the medico-religious context in which eighteenth-century midwives worked.

While the fact of midwives' attendance at anatomical dissection was often met with disgust by potential clients,[22] the tools midwives were equipped with are more difficult to trace in terms of how exactly they shaped or altered midwives' practice and relationships with their patients. These objects, which reflected the expectation that midwives be literate and bound by state-specified professional obligations, were combined, sometimes uneasily, with the traditional accoutrement of the midwife: oil or butter for the midwife's hands, thread to tie off the umbilical cord, ointments, herbal remedies, linens and bandages, scissors, and likely other, more invasive, tools like hooks or crotchets. Although midwives were officially proscribed from using metal

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detail how a midwife could accomplish this by inserting hooks into the eye of the fetus and slowing extracting the body. See Merry E. Wiesner, "Early Modern Midwifery: A Case Study," in *Midwifery and the Medicalization of Childbirth: Comparative Perspectives*, ed. Edwin van Teijlingen, George Lowis, Peter McCaffery, and Maureen Porter (New York: Nova, 2004), 63–74, 68. In Italy, regional authorities issued increasingly restrictive proscriptions on midwives' use of surgical instruments, including hooks.

[21] ASM, Sanità, Parte Antica, c. 269.

[22] On the role of anatomy in the professionalization of midwifery in Italy, see Jennifer Kosmin, "Midwifery Anatomized: Vesalius, Dissection, and Reproductive Authority in Early Modern Italy," *J. Mediev. Early Mod. Stud.* 48, no. 1 (2018): 79–104, 97–99.

instruments of any kind, something considered an encroachment on the surgeon's practice, there is evidence that many did. Not only was it sometimes difficult to find surgeons or physicians in Italy with any obstetrical training during the eighteenth century, but in remote areas the assistance of a male practitioner of any kind might be hours away. The impracticality of the situation led some midwives, like the Venetian midwife Benedetta Trevisan, to formally petition the local health authorities for permission to use surgical instruments when time and necessity demanded them.[23]

## Midwifery and Religion between the Eighteenth and Nineteenth Centuries

The case of the midwife Marianna Boi graphically illustrates how midwives' tools might exist uneasily at the boundaries of medicine, surgery, and religion. Authorized to perform emergency baptisms in cases of necessity since at least the thirteenth century, midwives were some of the few early modern women granted the authority by the Catholic Church to perform a sacrament. During the eighteenth century, intense debates among theologians over the fate of unbaptized infants who died in the womb became entangled with emerging scientific theories about fetal development, resulting in a frenetic campaign on the part of some members of the Catholic Church to baptize at all costs.[24] Proponents of the so-called "theological embryology" like the

[23] Filippini, "Levatrici e ostetricanti" (n. 16).

[24] Pancino, "La Comare Levatrice: crisi di un mestiere nel XVIII secolo," *Società e Storia* 3 (1981): 593–638, 619–20. Theological embryology was based around an understanding of when the soul entered the embryo and was an early example of the use of scientific theory to support religious belief. In the early modern period, such thinking was employed in the service of legal and ecclesiastical rulings on abortion, the baptism of unborn embryos, the baptism of "monsters," etc. See Joseph Needham, *A History of Embryology* (Cambridge: Cambridge University Press, 1959); David Albert Jones, *Soul of the Embryo: Christianity and the Human Embryo* (London: Continuum, 2004); Shirley A. Roe, *Matter, Life, and*

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Sicilian friar and inquisitor Francesco Emmanuele Cangiamila implored priests, doctors, and midwives to ensure the salvation of the fetus's soul in every possible situation.[25] As the validity of intra-uterine baptism was questioned, there were those like Cangiamila who advocated strenuously for performing postmortem cesarean sections if the mother had died without delivering, even in early pregnancy.[26] Such theologians made clear that the cesarean operation could and should be undertaken by midwives or even other laypersons when necessary, even though many surgeons and public health officials balked at the idea.[27]

It was in this heated context that, in the fall of 1793, the midwife Marianna Boi assisted at the delivery of Antonia Volpi. In what was a tragic case, Volpi died after a prolonged illness, leaving the twins she was carrying at risk of perishing along with their mother. When it seemed clear that Volpi was deceased, Boi performed a postmortem cesarean section in order to extract and baptize the two fetuses. Boi's actions were praised by the local priest in attendance but came

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*Generation: Eighteenth-Century Embryology and the Haller-Wolff Debate* (Cambridge: Cambridge University Press, 2003).

[25] F. E. Cangiamila, *Embriologia Sacra, ovvero dell'Uffizio de' Sacerdoti, Medici, e Superiori, circa l'Eterna Salute de' Bambini racchiusi nell'Utero* (Milan: Giuseppe Cairoli, 1751).

[26] On debates surrounding the practice of cesarean section in the eighteenth century and the broader ideological and religious shifts that began to favor saving the soul of the infant over the life of the mother in this period, see Nadia Maria Filippini, *La Nascita Straordinaria: Tra Madre e Figlio la Rivoluzione del Taglio Cesareo* (Milan: Franco Angeli, 1995); Carmen Trimarchi, "Politica, cultura, religione e corpo delle donne: la pratica del parto cesareo (sec. XVII–XVIII)," in *Donne, politica e istituzioni: percorsi, esperienze e idee*, ed. M. Antonella Cocchiara (Rome: Arcane, 2009), 164–74; Elena Brambilla, "La medicina del Settecento: dal monopolio dogmatico alla professione scientifica," in *Storia d'Italia. Annali 7. Malattia e medicina*, ed. Franco Della Peruta (Torino: Einaudi, 1984), 5–147; José G. Rigau-Pérez, "Surgery at the Service of Theology: Postmortem Cesarean Sections in Puerto Rico and the Royal Cedula of 1804," *Hisp. Amer. Hist. Rev.* 75, no. 3 (1995): 377–404; Adam Warren, "An Operation for Evangelization: Friar Francisco González Laguna, the Cesarean Section, and Fetal Baptism in Late Colonial Peru," *Bull. Hist. Med.* 83, no. 4 (2009): 647–75.

[27] Pancino, "La Comare Levatrice" (n. 24), 619.

under immediate censure by the director of public health in Milan and other medical authorities called in to review the case. Significantly, the various authorities disagreed on whether the operation, which Boi had effected using a borrowed knife, had been performed correctly and with the proper tools. The priest recalled Boi's efforts as "skillful": the midwife made a straight cut, the length of a palm on the right side of the abdomen, cutting only the skin. She then "deepened the cut in the abdomen at the upper edge in order to insert a guiding finger and, slowly, widened the cut so that two fingers together could divide away all the parts overlying the uterus, without damaging it or the . . . intestines, which only with great care was she able to hold out of the way." Next, Boi felt carefully until she could stabilize the womb and, slowly and gingerly, made a cut about the length of a finger, which she widened to permit the extraction of the fetuses, still in the amniotic sac; finally, she broke the membranes. The midwife brought out first one live and moving (*vegeto*) infant, and then a second, handing each in turn to the priest who immediately baptized them. Although neither mother nor children survived, the priest could nevertheless rejoice that the infants' eternal souls had been saved by Boi's, in his mind, heroic actions.

By contrast, the medical authorities who reviewed the case were deeply condemnatory of Boi's actions precisely because her use of surgical instruments represented to them an unforgivable transgression of the midwife's professional bounds.[28] They charged that the procedure had been performed poorly and without proper tools, and that Boi had been quick to declare the mother dead rather than just unconscious.[29] None of the medical authorities focused

[28] ASM, Sanità, c. 272, "Trucazzano," Report of Antonio Scarpa, May 6, 1794.
[29] Ibid.

on what was likely the ultimate goal of Boi's act—the ability to baptize the two unborn infants still enclosed within their mother's womb. Their focus was instead on Boi's actions with regard to the professional ambit of midwifery, a boundary that, at least in the medical men's eyes, Boi had crossed by undertaking a strictly surgical procedure and doing so without explicitly "surgical" instruments.[30]

Boi's case highlights the way religious and medical concerns were interwoven in the practice of midwifery, especially in Catholic countries, throughout the eighteenth century. Although the Catholic Church's investment in obstetric practice and the defense of fetal life did not diminish during the nineteenth century, midwives in post-Unification Italy did begin to redefine themselves and their religious functions. As Rossana Basso has demonstrated, part of the process of professional identity building for midwives in post-Unification Italy was to construct an image of themselves that contrasted the figure of the "traditional" midwife and instead highlighted their professional training, intelligence, hygiene practices, sophistication, and modernity.[31] That often meant distancing themselves from midwives' traditional links to religious ritual. In 1895, for instance, the midwife Aspasia Duffatelli wrote passionately that the common practice of midwives publicly carrying the newborns they had recently delivered to the baptismal font merited "rather than the title of professional midwife [*ostetrica*], that of nanny."

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[30] The medical practitioners were likely also wary of what they viewed as the Church's encroachment on their own territory. At a time when surgery was gaining in status, Catholic writers' claims that any parish priest or midwife could perform a complicated surgical procedure challenged surgeons' own claims to authority. On the changing status of surgery in the eighteenth century, see Toby Gelfand, *Professionalizing Modern Medicine: Paris Surgeons and Medical Science and Institutions in the 18th Century* (Westport, Conn.: Greenwood, 1980); Susan C. Lawrence, *Charitable Knowledge: Hospital Pupils and Practitioners in Eighteenth-Century London* (Cambridge: Cambridge University Press, 1996).

[31] Basso, *Levatrici* (n. 13), 258.

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According to Duffatelli, the ceremonial role was at odds with midwives' professional responsibilities and was thus simply a distraction and inconvenience: "What was our obstetric or pediatric *work* in… the ceremony of baptism?"[32] Similarly, the midwife Maria Vannucci wrote with some derision about the expectation of her clients in Potenza that midwives carry with them religious talismans and statutes of saints associated with childbirth.[33] And the Milanese midwife Amalia Ficcarrelli, recounting a difficult case in which she had practiced intrauterine baptism, noted that she had done so primarily because her patient belonged to a "religious family."[34] Thus, while midwives in the late nineteenth century continued to perform emergency baptisms when needed or desired by their patients' families, they also increasingly sought purpose in the secular and scientific values being promoted by the new Italian nation.

## The Post-Unification Midwife's Bag

In the wake of Italian Unification in the second half of the nineteenth century, the objects that represented the midwife's expert knowledge were to be contained within a special midwife's bag, or *borsa ostetrica*.[35] In fact, the symbolic significance of the midwife's bag as a metonym for her advanced training was emphasized in the first nationwide regulations (Regolamento) for the practice of midwifery throughout the Italian kingdom issued in 1890. The very first sentence stated that "every midwife must be provided with a bag containing the means [*mezzi*] necessary

[32] Aspasia Duffatelli, "Lettera alle levatrici," *Rassegna d'Ostetricia e Ginecolo-gia* IV/7 (1895): 442–46, quoted in Basso, *Levatrici* (n. 13), 258–61.
[33] "Leggi—Usi e Costumi potentini," *Giornale per le levatrici* 10, no. 12 (1896): 92–93.
[34] "Casistica: Idraminos-Idrocefalia-Aborto," *Giornale per le levatrici* 9, no. 14 (1895): 118.
[35] Gissi, "'La più celebre antica borsa'" (n. 11), 79–80.

for the assistance at natural births and to stop hemorrhages in urgent cases. The bag must also contain a copy of the instructions that accompany these current Regulations." The contents of the bag included familiar items such as scissors and bandages, but also a range of items that underscored major therapeutic and theoretical advances in medicine during the nineteenth century. These included a stethoscope, a thermometer, a register to record all births, and a series of items aimed at promoting antisepsis—a freshly laundered apron (a midwife was to begin cleaning her apron even before leaving the house of a recently assisted mother), boric acid, phenolized (carbolic acid) cotton, and soap.[36] The objects in the midwife's bag were in a sense prescriptive, reflective of official expectations for midwives' behavior; however, as Sara Bernasconi has written in relation to midwifery in Habsburg-controlled Bosnia-Herzegovina at the end of the nineteenth century, once in a midwife's hand "official" objects became "independent" and able to take on new meanings and uses—what she calls the "material side of modernity."[37]

Advertisements for midwifery bags featured prominently in new professional journals, such as the *Giornale per le Levatrice*, which provided midwives a discursive space to assert their new professional status.[38] Claudia Sottocasa and Sons, a shop specializing in orthopedic goods, offered a variety of leather models, all with a standard set of equipment. Another model touted

[36] "Il Regolamento e le Istruzioni per le levatrici," *Lo Sperimentale: Giornale Italiano di Scienze Mediche* 65 (1890): 416–20.
[37] Bernasconi, "Material Side of Modernity" (n. 7).
[38] Although such journals included many articles by midwives, they were also formally overseen and edited by male physicians and obstetricians. Basso, *Levatrici* (n. 13), 107. See also Alessandra Gissi, "La levatrice moderna. Professione e identità nelle riviste di settore," in *Per le strade del mondo. Laiche e religiose fra Otto e Novecento*, ed. S. Bartoloni (Bologna: Il mulino, 2007), 287–312.

its engraved black silk exterior and included rubber-stopped tubes, rubber vaginal douches, enema syringes, cannulas for irrigation and disinfection, disinfectant solution, soap, a nail file, a measuring cup, a glass container for urine, a thermometer, a stethoscope, scissors, and even a rubber breast pump. In fact, journals like the *Giornale per le Levatrice*, *La Rassegna di Ostetricia e Ginecologia*, and *La Levatrice Moderna* were full of advertisements for a range of patent medicines and medical devices. Midwives could choose from a wide selection of tonics, pills, creams, syrups, and cordials aimed to do everything from relieve a pregnant patient's backpain to soothe an infant's skin. They could order devices such as syringes, trusses, rubber sheets, and ice packs to resupply or accompany those already found in their midwives' bags. If midwives' skill was often said to lie in their practiced hands, then, increasingly during the nineteenth century, those hands might be accompanied by a range of commercial objects.

As markers of midwives' formal training, *borse ostetriche* were also sometimes the target of polemics by local women who distrusted the new scientific midwife. In Potenza, for instance, the licensed midwife Maria Vannucci described how local women derided the professional midwife's bag, emphasizing its lack of traditional religious objects and derisively calling it a *panaro*, or bread basket. Recalling the invective leveled at Madalena Oliva in the eighteenth century, the local midwives in Potenza in the nineteenth century charged that borse ostetriche were full of surgical instruments.[39] The discord between Vannucci and the women of Potenza was heightened because Vannucci was an outsider. *Levatrici condotte*—midwives salaried by local municipalities—were sometimes recruited from far outside the communities they came to work in. Such recruitment was often aimed at filling gaps in poorer, remote areas of the Italian

[39] "Leggi—Usi e Costumi potentini" (n. 33).

Mezzogiorno where no licensed midwives were available. Local women and existing midwives, however, could easily see such levatrici condotte as an encroachment on—and a rapprochement of—their own traditions and practices.[40] Indeed, in professional journals midwives like Vannucci wrote about villages in the Mezzogiorno with an anthropological lens, treating the people and customs in such places as utterly backward, superstitious, and devoid of civilization.[41] In this context, the professional midwife's bag represented the entirety of the transformation associated with the professionalization of midwifery and the medicalization of childbirth by the end of the nineteenth century—a new set of practices, practitioners, vocabularies, remedies—changes that were not always welcome.

Tools that would have been unknown to midwives in the eighteenth century—stethoscopes and thermometers, for instance—were also now essential to determinations about the boundaries of midwives' professional expertise. Thus, the new midwifery regulations issued in 1890 define one parameter of when a midwife should call in a doctor to be the point when a patient's temperature registers above thirty-eight degrees for longer than fifteen minutes. Similarly, a doctor should be called if the fetus's heartbeat becomes erratic.[42] Unlike earlier stipulations for when to call in the assistance of a physician or obstetrician, which tended to refer to more general situations—a fetus whose delivery is obstructed, a hemorrhage that can't be stopped—and relied, ultimately, on a midwife's judgment, newer regulations set precise, instrument-derived determinations for calling in assistance.

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[40] Gabriella Mondardini Morelli has recorded similar conflicts between unlicensed midwives and *levatrici condotti* in Sardinia during the late nineteenth century. Morelli, *Narrazioni sulla scena del parto* (n. 13).
[41] See, for instance, "Leggi—Usi e Costumi potentini" (n. 33).
[42] "Il Regolamento e le Istruzioni per le levatrici" (n. 36).

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## Public Hygiene in Liberal Italy

Post-Unification efforts to professionalize and standardize midwifery practice were central to the project of nation making in newly unified Italy. As a medical specialty that interacted directly in the intimate affairs of everyday Italians, midwifery in many ways exemplified the ideals of the new discipline of public hygiene. Existing at the intersection of medicine, chemistry, environment, politics, and statistics, public hygiene represented to reformers both a literal goal and a kind of overarching philosophy for the transformation of a backward country into a modern, secular, educated nation. According to Claudio Pogliano, reformers at the time imagined "the rules of public hygiene invading the common mentality and the public administration, being transferred to laws, institutions, and habits."[43] As the Turin physician Giacinto Pacchiotti proclaimed 1875, "Nowadays the physician is an official of public health, a statesman, an element of cohesion, progress, [and] popular education."[44] In other words, medical knowledge and public hygiene not only would strengthen the nation's farms, factories, and military but could provide a model more broadly for a modern nation that followed the guidance of an educated, scientific elite.[45]

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[43] Pogliano, "Healing and Ruling" (n. 3), 487.

[44] Giacinto Pacchiotti, *II programma dell'avvenire della medidna in Italia* (1875), 53–54, quoted in Pogliano, "Healing and Ruling" (n. 3), 487.

[45] On the development of public health in liberal Italy, see Claudio Pogliano, "L'utopia igienista (1870–1920)," in Della Peruta, *Storia d'Italia* (n. 26), 589–631; Claudia Pancino, "Igiene e sanità nella Milano di fine Ottocento," in *Sanità e società. Veneto, Lombardia, Piemonte, Liguria. Secoli XVII–XX*, ed. Franco della Peruta (Udine: Casamassima Editore, 1989), 165–94; Carla Giovaninni, *Risanare Le Citta: L'Utopia Igienista di Fine Ottocento* (Milan: Franco Angelli, 1996); Valeria Di Carlo and Gianfranco Donelli, *I laboratori della sanità pubblica: L'amministrazione sanitaria italiana tra il 1887 e il 1912* (Rome: Laterza, 2002); Roberto Cea, *Il governo della salute nell'Italia liberale: Stato, igiene e politiche sanitarie* (Milan: Franco Angelli, 2019).

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Such a program of public hygiene also meant a state apparatus much more intrusive in Italians' everyday lives.[46] As Claudia Pancino describes in reference to the new responsibilities of the state-supported provincial physician of the late nineteenth century, but which equally applied to the licensed midwife, "[The physician] must keep his eye on the interior of houses and therefore on the materials with which they were constructed, to the temperature, the humidity and to the ventilation to the outside, to the means of heating, to lighting, to the latrines, the washing, the cleaning tools and sewer."[47] In short, the practice of public hygiene required medical practitioners to combine healing with an intensive surveillance of the living conditions and habits of those they served. Midwives, with their obvious proximity, not only to Italians' reproductive lives but also to their homes, their intimate affairs, their child-rearing practices, represented key figures by which the state might enter citizens' homes.[48] This intervention was exemplified by new scientific practices like asepsis, new diagnostic techniques like auscultation, and new methods of surveillance, statistical enumeration, and recordkeeping.

Perhaps the most space both in the pages of professional journals and in the midwife's bag itself was dedicated to the practices of asepsis and antisepsis. Midwives were instructed first and foremost to take exacting care to disinfect all instruments, linens, and their own hands and to reduce contact as much as possible between any other part of their bodies or clothing and the laboring woman.[49] While midwives had long been accustomed to lather their hands in oil or

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[46] Pancino, "Igiene e sanità nella Milano di fine Ottocento" (n. 45), 169.
[47] Ibid., 169.
[48] Francesco Taroni, *Health and Healthcare Policy in Italy since 1861: A Comparative Approach* (Cham, Switzerland: Palgrave Macmillan, 2021), 13–16; Gissi, "'La più celebre antica borsa'" (n. 11), 81.
[49] "Regolamento speciale ed istruzioni per l'esercizio ostetrico delle Levatrici nei comuni del Regno," *Giurisprudenza Italiana* 42 (1890): 37–39.

butter to perform manual procedures, they were now explicitly instructed not to do so and were instead expected to practice the precise rituals of asepsis and antisepsis—before performing any manual examination, midwives were to "diligently disinfect their hands with a brush and sublimated soap . . . and the outer genitals [of the patient] with the same method."[50] After a delivery, all objects had to be either boiled or disinfected before they were returned to the midwife's bag. Furthermore, any midwife who had cared for a woman stricken with puerperal fever was required to abstain from her practice for at least five days; before resuming practice, she had to be inspected by a sanitary commissioner and provided with a written authorization to resume work.[51] As Gissi notes, the extensive, precise, and embodied practices associated with antisepsis both created the professional identity of the trained midwife and defined the boundaries around which touching the body was acceptable or not.[52] Midwives were thus not only bearers of a novel understanding of disease and infection but also part of an antiseptic apparatus that had the authority to produce bodies—including their own—that were labeled sterile or contaminated.

The extent to which this new antiseptic apparatus might distance midwives from the women they cared for is expressed eloquently by the midwife T. R. Describing her enactment of an antiseptic routine in practice, she recalled,

> My bag, the irrigator, the stethoscope, the laundered linens, the examination performed with hands bathed in an antiseptic solution instead of oil, the phenolic cotton, the iodoform with which to dribble on the inevitable vaginal abrasions and lacerations, all of these practices that produced in the family of the pregnant woman such an impression

[50] "Memoriale per le Levatrici del Circondario esterno del Comune di Milano," *Dati statistici: a corredo del resoconto dell'amministrazione comunal*e (1889), lv.
[51] "Il Regolamento e le Istruzioni per le levatrici" (n. 36).
[52] Gissi, "'La più celebre antica borsa'" (n. 11), 85.

> that all of their friends and acquaintances were informed of the manner, for them strange, in which I had attended the patient.[53]

Not only that, T. R. continued, but one of the "old" (unlicensed) midwives, either out of ignorance or malice, had convinced the young mother's parents that such procedures were undertaken only when a patient was syphilitic and thus that their daughter must be so. Even when T. R. assured them this was not the case, the family protested when their daughter began breastfeeding her new baby. For them, the midwife's complicated enactment of antisepsis had in fact convinced them of the contamination of their daughter's body. Significantly, the midwife Maria Vannucci recorded that the women in Potenza referred to the thorough disinfection of hands and instruments before a visit as signs of the practitioners' *own* dirtiness: "If you are so disgusting [*schifosa*], why do you practice as a midwife?!"[54] Such reactions to the practices of asepsis and antisepsis undertaken by T. R. and Maria Vannucci highlighted anxieties about changing expectations around the management of intimate events like childbirth.[55] They demonstrated, furthermore, the continued tenuousness of midwives' professional status in this period, as the authority derived from a diploma and license might be challenged in practice.[56]

While T. R. was frustrated and concerned for her own livelihood, other midwives emphasized the dangers of inattention toward the practices of antisepsis common among unlicensed midwives. Writing in one of several new professional journals for midwives that had

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[53] "Interessi professionali," *Giornale per le levatrici* 4, no. 22 (1890): 171–72, quoted in Basso, *Levatrici* (n. 13), 92–93.
[54] "Leggi—Usi e Costumi potentini" (n. 33).
[55] Basso, *Levatrici* (n. 13), 93–94.
[56] As Gissi notes, there was additional confusion and tension because unlicensed midwives were often permitted to continue practicing in communities without any professional midwives or with only an insufficient number to serve the populace. Gissi, "'La più celebre antica borsa'" (n. 11), 83–84.

emerged in the late nineteenth century, Fioretta Balbina of Gattinara (near Vercelli) described the tragic deaths of four new mothers shortly after their deliveries as a result of infection. The deaths, according to Balbina, were the result of an "old" midwife's failure to clean a vaginal canula (used to irrigate the birth canal after delivery) between deliveries.[57] At once, Balbina's story revealed that unlicensed midwives had adopted some of the newer techniques licensed midwives learned in formal training—such as irrigating the vaginal canal after birth to prevent puerperal infection—but that they might alter or streamline those practices—in this case by failing to properly clean and boil the canula—to fit their own experience and needs.

Of course, as a journal published by the Guardia Ostetrica di Milano (a voluntary organization of obstetrician-physicians), the *Giornale per le levatrici* also had a vested interest in combatting what was considered to be a pressing issue at the time—unlicensed midwives.[58] In fact, invective against unlicensed midwives was ubiquitous in the *Giornale* and other journals, from both licensed midwives and male physicians. One opinion piece, for instance, called unlicensed midwives a "scourge" whose "emollients and palliatives" served only to provoke infection in patients.[59] The midwife Adele Tricotti from Intra (Piedmont) wrote that she prudently refrained from the "terrible [*brutta*] practice of the old, unlicensed midwives who, with fumigations of all sorts and with inappropriate interventions claim the virtue of accelerating birth, when in fact they do nothing but prolong and complicate it."[60] Vannucci wrote of the

[57] Letter of Fioretta Balbina, *Giornale per le levatrici* 7, no. 17 (1893): 132.
[58] Annalucia Forti Messina, *Malachia De Cristoforis: un medico democratico nell'Italia liberale* (Milan: Franco Angeli, 2003), 113–17.
[59] "Interessi Professional: Le vecchie esercenti," *Giornale delle Levatrici* 7, no. 14 (1893): 108–9.
[60] "UNA LETTERA della Signora Levatrice Adele Tricotti ved. Guglielmi di Intra E RELATIVA RISPOSTA," *Giornale per le levatrici* 7, no. 2 (1893): 11.

"stinking oils" used by the *empiriche* (unlicensed midwives) in Potenza, along with their complete indifference to the problem of cross infection. For her, illiteracy, a lack of a specialized vocabulary ("some of these don't know what 'anterior,' 'posterior,' 'superior,' 'inferior,' etc. mean"), and an inability to recognize specific complications rendered such empirics a threat to all women who might become pregnant.[61]

At times, concerns over infection stemmed less from the practices of midwives themselves than from the poor living conditions of the women they assisted. Noting the common practice in impoverished households of placing the most soiled cloths under a woman giving birth to absorb blood and fluids, the midwife Annetta Croci queried the editors of the *Giornale per le levatrici* about how to prevent the spread of germs in such environments. The key was a thorough external examination, particularly with the aid of a stethoscope, and external measurements of the pelvis taken either by sight or with a pelvimeter. The data gathered by these tools would allow the midwife to avoid a risky (because of the likely transmission of infectious agents) internal examination while achieving an accurate sense of the state of the mother and fetus.[62] Tools like the pelvimeter and stethoscope, combined with a new sensibility about infection and risk, were thus reshaping encounters between midwives and patients. The humble homes of midwives' poorest clients were positioned as sources of danger and obstacles to be confronted and managed by a new scientific accoutrement.[63]

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[61] "Per l'antisepsi," *Giornale per le levatrici* 10, no. 20 (1896): 158–59.
[62] "Rubrica delle domande e risposte: All sig. levatrice Annetta Croci," *Giornale delle Levatrici* 8, no. 24 (1894): 195.
[63] Gissi, "'La più celebre antica borsa'" (n. 11), 86.

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## Auscultation

While the stethoscope and attendant practice of auscultation were first developed in France by Rene Laennec in 1816, the practice became widespread in Italy only in the 1830s after the publication in 1834 of a dedicated treatise on the subject. Thehe Swiss surgeon Francois Mayor (who reportedly placed his ear directly to the maternal abdomen) and the Frenchman Lejumeau Kergaradec (a student of Laennec) had quickly realized the potential obstetrical applications of auscultation. In Italy, Ulisse Breventani's text on auscultation included a section on obstetrics that was soon adopted at the obstetrical school in Pavia, where it was first taught to midwives. The stethoscope was used not just to detect, as we might imagine today, a fetal heartbeat but to judge the size and placement of the fetus in utero. Moreover, obstetric practitioners recommended both external and intrauterine uses of the stethoscope depending on the circumstances. According to Breventani, the two kinds of sounds one could detect when placing the stethoscope against the mother's pregnant belly (mediate auscultation) were the placental soufflé (*soffio placentario*)—a kind of soft, blowing, or whistling sound—and the fetal heartbeat.[64] Several decades later, the medical historian Alfonso Corrradi would write that Breventani had used the stethoscope to accurately diagnose pregnancy a in over a hundred pregnant women, erring in only two cases where the woman was either not pregnant or had miscarried.[65] In addition to representing a sound mode of diagnosing pregnancy, practitioners

[64] Ulisse Breventani, *Manuale di ascoltazione* (Florence: Ricrodi e Compagni, 1840), 209.
[65] Alfonso Corradi, *Dell'ostetricia in Italia dalla metà dello scorso secolo fino al presente* (Bologna: Gamberini e Parmeggiani, 1877), 854.

like E. Amadei of the Guardia Ostetricia di Milano noted that auscultation provided a means of determining a multiple pregnancy with certainty.[66]

What Breventani and other early adopters of the stethoscope for obstetrics were also doing was articulating a novel sensory technique and vocabulary. While touch and sight have been emphasized in the development of obstetrics, hearing has received much less attention. Yet Corradi, writing in the second half of the eighteenth century, keenly recognized the power of this new "semiotic tool" (*sussidio della semejotica*) to render legible the physical state of the fetus in utero and to assist in diagnostic decisions from relatively early in a woman's pregnancy. In fact, the new, nationwide regulations established for midwifery in 1890 stipulated that, in all nonurgent cases, a midwife was required to perform an external exam incorporating auscultation to assess the health and position of the fetus.[67] In part, auscultation advanced the obstetrician's program of extending childbirth and its potential pathologies well prior to the actual period of labor and delivery. It also provided a new language to describe the well-being of the fetus apart from that of the mother and marked an early step in the development of the fetus as a unique patient, in need of monitoring and even potential medical intervention. As Deborah Wilson Lowry describes, fetal monitoring, of which auscultation was an early form, represents a surveillant assemblage that secures "information about [human bodies] that exist beyond our usual range of perception" through a reliance on machine technologies and the abstraction of the body (in this case, the abstraction of the fetus from the mother and then the abstraction of the

[66] E. Amadei, "Il Battito cardiaco fetale nella semejotica ostetrica," *Arte Ostetricia giornale per I Medici e per le Levatrici* 13, no. 1 (1899): 182–86.
[67] "Regolamento speciale ed istruzioni" (n. 49), 38.

fetus into measurable data like heartbeats).[68] At the same time, of course, auscultation represented more than an epistemic shift. In practice, the techniques of auscultation shifted the intimate dynamic between midwife and mother as they rendered a woman's own sensations and interpretations of her body secondary to the data a midwife could derive externally.

An anonymous midwife writing to the *Giornale per le levatrici* in 1893 recounted a case of a pregnant woman beset with convulsions due to eclampsia in a way that highlighted both the incorporation of auscultation in midwifery practice and the distance between the professional midwife and her client in terms of a specialized knowledge and vocabulary derived from instrument-based practices like auscultation. Noting that she was initially called by the woman's husband—distraught and in tears—the midwife challenged his understanding of the events leading up to his wife's dire condition at multiple points. First, when the husband described his wife as experiencing indigestion early that evening, the midwife wrote that such a diagnosis could not be trusted because indigestion is simply the terminology peasants (*contadini*) use for all variety of problems. Similarly, the husband's categorization of his wife's convulsions as a seizure was quickly dismissed by the midwife, who noted that, with her training, it was clear the woman was suffering from the effects of a severe eclampsia.[69] The midwife's reliance on the technique of auscultation becomes particularly clear, however, when her examination of the patient failed to discern a fetal heartbeat. Although the mother herself protested that she had been

[68] Deborah Wilson Lowry, "Understanding Reproductive Technologies as Surveillant Assemblage: Revisions of Power and Technoscience," *Sociol. Perspect.* 3 (2004): 357–70, 363.
[69] "Parto con convulsioni eclamptiche," *Giornale per le levatrici* 7, no. 6 (1893): 42–43.

feeling the fetus move that evening, the midwife trusted the technical diagnosis reached by auscultation that the fetus had died in utero, an outcome ultimately confirmed.[70]

Similarly, the midwife D. Lanzani of Meda (Lombardy) presented a case in which her technical knowledge and training were juxtaposed with the potentially harmful ignorance of her peasant clients. Applying both palpitation and auscultation, Lanzani determined that her patient, a thirty-nine-year-old woman, C. F., was pregnant with twins. According to Lanzani, "the auscultation gave me the certainty of the diagnosis as, with the stethoscope, I heard in the left anterior quadrant of the abdomen a fetal heartbeat at 130 beats per minute, and in the upper right quadrant another heartbeat that gave 120 beats per minutes."[71] After a relatively short period, the woman gave birth to a baby girl, who Lanzani noted, at 30 centimeters and 3 kilograms 420 grams, was quite large for a female twin. More significantly, Lanzani recalled that the female kin accompanying C. F. had strongly urged her to put the laboring woman in a hot bath to accelerate the labor, a request she rejected. The peasant women had misinterpreted the relatively weak contractions C. F. had been experiencing, lacking the training and certain knowledge Lanzani had that C. F. was pregnant with twins. The contractions were not, in this case, signs of a protracted labor (as the women thought) but rather the differences between a multiple-birth labor (in which Lanzani had been instructed contractions might be weaker) and a single-birth labor.[72]

In both Lanzani's case and that of the anonymous midwife above, data derived from auscultation were taken as authoritative over those of the traditional wisdom and/or bodily

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[70] Ibid.
[71] "Parto bigemino con emorragia post-partum," *Giornale per le levatrici* 9, no. 4 (1895): 29.
[72] Ibid., 29.

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experience of the midwives' clients. In fact, trained midwives increasingly called into question women's accounting of their own bodies, as they "often are inattentive and don't remember; or remember but don't know how to describe things, exaggerating some facts, hiding others," and sometime deliberately deceiving.[73] Auscultation specifically also came to usurp, at least officially, a wide range of signs both midwives and male practitioners had traditionally used to indicate the death of fetus in utero, such as putrid smell, a flaccid abdomen, internal examination, and, of course, a woman's lack of sensation of fetal movement.[74] Moreover, such data became essential to determining the professional boundaries of the midwife. A discussion in the *Giornale per le levatrici* over the criteria a midwife should use call in a physician included, for instance, an irregular fetal heartbeat—a diagnostic criterion made possible by the inclusion of the stethoscope among the midwife's required accoutrement, but also the embodied technical knowhow of auscultation.

Attention to the fetal heartbeat as a key indicator of the well-being of the fetus during pregnancy and labor would ultimately give rise to a new conceptual category—fetal distress—that would shape norms and regulations regarding obstetric intervention and care. Together, the embodied practice of auscultation and the stethoscope itself functioned as an "apparatus of bodily production" that produced the fetal body as an entity that could be measured (by heartbeats) and surveilled.[75] As Lisa M. Mitchell and Eugenia Georges argue in relation to the

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[73] Emilia Vettori Hava, "La diagnosi in Ostetricia in rapporio ai diversi metodi di indagini," *Giornale per le levatrici* 10, no. 11 (1896): 83.
[74] For instance, Luigi Pastorello, *Trattato d'Ostetricia*, vol. 2 (Pavia: Bizzoni, 1854), 56–62.
[75] Donna Haraway, "Situated Knowledges" (n. 14), 81–102. See also Josef Barla, *The Techno-Apparatus of Bodily Production—A New Materialist Theory of Technology and the Body* (New York: Columbia University Press, 2019).

fetal ultrasound (which, like the stethoscope, functions to capture the fetal heartbeat and determine the size, position, and number of fetuses in the womb), the instrumentally derived fetus is a kind of "cyborg fetus" produced through the "coupling of human and machine" and relies upon a process of translation of data into meaning.[76] Far from self-evident, the information derived from auscultation had to be interpreted by an experienced and trained ear and then translated into practicable knowledge such as a fetus's position in utero or heart rate, and thus there was always the chance of mishearing and misinterpretation. Ultimately, the stethoscope and auscultation contributed to greater surveillance of the maternal–fetal body complex and the emergence of risk (discussed below) as a critical conceptual category in obstetrics.

## Statistics and the Calculation of Risk

An additional component of the changed landscape of midwifery in post-Unification Italy was a new emphasis on statistical enumeration. While the earliest state-led efforts to professionally train midwives in the nineteenth century had also been deeply concerned about proper recordkeeping, the intervening years had seen the emergence of a full-fledged disciplinary field of statistics. Some of the most comprehensive and wide-reaching efforts of the new statisticians of the nineteenth century were to make determinations about the overall health and well-being of "populations" and to explain, for instance, changes in life expectancy or disease incidence from

[76] Lisa M. Mitchell and Eugenia Georges, "Cross-Cultural Cyborgs: Greek and Canadian Women's Discourses on Fetal Ultrasound," in *Bodies of Technology: Women's Involvement with Reproductive Medicine*, ed. Ann Rudinow Saetnan, Nelly Oudshoorn, and Marta Kirejczyk (Columbus: Ohio State University Press, 2000), 384–409.

one population to another.[77] Increasingly precise quantification of infant mortality rates in the nineteenth century generated vehement social discussion of practices like wet nursing and provided the scientific justification for increasing state intervention into the intimate lives of women and families.[78] Applied more directly to obstetrics, practitioners sought to quantify a variety of elements, one of the most pressing being the nature of and conditions most favorable to the spread of puerperal fever. In addition, a sense of the "average" began to permeate the professional literature of obstetrics, providing practitioners a sense of what was "normal" in terms of labor duration, size of the newborn at birth, window of most likely postpartum complications, and so forth. Indeed, according to the French statistician Alphonse Quetelet, "no doctor could diagnose a patient's illness without referring to 'a fictive being that one regards as being the normal state and who is nothing but the [average man].'"[79]

Midwives were facilitators of the new statistical reasoning in obstetrics, charged with collecting the raw data necessary for such calculations during the normal course of their practice. One of the requirements of the 1890 regulations was that midwives carry with them in their bags a register in which to record a variety of details about the cases at which they assisted; the data would then be delivered to the appropriate health official in a timely manner in order to "make

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[77] On the development of vital statistics in the nineteenth century, see Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830–1885* (Durham, N.C.: Duke University Press, 2006); Andrea Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France* (Cambridge: Cambridge University Press, 2002); Joshua Cole, *The Power of Large Numbers: Population, Politics, and Gender in Nineteenth-Century France* (Ithaca, N.Y.: Cornell University Press, 2000).

[78] On the relationship between the quantification of the infant mortality rate and the emergence of the welfare state, see Cole, *Power of Large Numbers* (n. 77), chap. 6; David Armstrong, "The Invention of Infant Mortality," *Sociol. Health Illness* 8 (1986): 211–32.

[79] Cole, *Power of Large Numbers* (n. 77), 83.

known the natural and social influences that cause pathological accidents during pregnancy and birth, to be able to study the means to prevent them."[80] The *Giornale per le levatrici* also devoted significant space to reporting such statistics, indicating the importance of statistical reasoning for midwives as well as physicians. In addition to a more accurate rendering of births and complications, midwives' registers would serve as a comprehensive state surveillance system, aimed at "preventing the abusive exercise of midwifery and, for those licensed properly, carefully verifying their obligation to record all births" and to conduct themselves as per the norms of the profession.[81] That scrutiny extended to women and families as well, as information about illegitimacy, living conditions, and suspicious abortions was to be noted. At the same time, risk calculations based on these data shaped the extents and limits of midwives' accepted practice during labor.

As Jo Murphy-Lawless has discussed, the function of statistics applied to childbirth was, by the second half of the nineteenth century, to produce "an obstetric regime based on a risk system" and the abstraction of individual women. As a result, obstetrics began

> to pose the challenge of avoiding death, not by assisting nature, which is the relationship most frequently suggested by eighteenth- and early nineteenth-century men midwives . . . but by predicting or scoring the risks faced by the body, the average, normalised body of obstetric statistics, and then matching that risk-scoring with an appropriate programme of obstetric intervention to avoid those risks.[82]

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[80] "Polizia Sanitaria," *Archivio internazionale delle specialità medico-chirurgiche* (Napoli: Meridionale, 1895), 73.
[81] Ibid., 73.
[82] Jo Murphy-Lawless, *Reading Birth and Death: A History of Obstetric Thinking* (Cork: Cork University Press, 1998), 171.

Debates over the causes and means of ameliorating the devastating effects of puerperal fever at the Rotunda maternity hospital in Dublin in the 1860s and 1870s perfectly illustrate the way a "regime of risk" could be used to justify interventionist obstetrics. George Johnston, director of the Rotunda in those years, compiled an extensive table comparing cases in which forceps had been applied before full dilation to argue that early intervention might be an effective means of preventing cases of puerperal fever. The logic was that protracted labors (the meaning of which was itself being debated in these years), in which there was "prolonged pressure of the foetal head on the maternal 'soft parts,'" increased the chances of contracting infection. As Murphy-Lawless contends, however, Johnston's statistical work belies the subjectivity of all classificatory schemes (e.g., could a maternal death be classified as the *direct* result of labor, and, if not, should that death contribute to the rate of maternal mortality rate in a given population?) as well as the selective nature of risk assessment (Johnston largely ignored the frequency of vaginal lacerations caused by forceps use, which of course would have significantly raised the patient's chances of contracting an infection).[83]

One of the most debated questions regarding risk in pregnancy during the nineteenth century related to cases in which the risk to the mother's life and the risk to the fetus's life came into conflict. The theological embryology of the late eighteenth century discussed above had, for a time, upset a medical deontology that privileged the life of the mother over the ambiguous being in the womb. As Nadia Maria Filippini has detailed, a new sensibility surrounding the fetus led to a promotion of the cesarean section, primarily postmortem, though not always, during the eighteenth century. The mother's body could be sacrificed to save the soul of the

[83] Ibid., 164–65.

unborn.[84] During the nineteenth century, heated debates took place among doctors and jurists, including in Catholic countries, about the permissibility of therapeutic abortion and induced labor in cases where the continuation of pregnancy jeopardized the mother's life.[85] In the same period, as Daniel Schafer has shown, increasingly precise statistics about the application of cesarean sections resulted in the procedure falling out of favor in some circles due to almost universally poor outcomes.[86] The preference, especially outside of Italy, by many nineteenth-century obstetricians was for new methods of therapeutic abortion and induced premature labor rather than the cesarean section. In Italy, however,, the Catholic Church's official proclamation in the second half of the nineteenth century that any action taken that might result in the death of the fetus in utero was akin to homicide ensured that decision making in cases where the lives of the mother and/or fetus were compromised carried deep moral weight.

For midwives, a clear example of risk calculation during pregnancy occurred in cases of preeclampsia and eclampsia. Given that the causes of the condition were poorly understood at the time and that the only cure was delivery, instances of eclampsia could render midwives principal decision makers with immediate implications for the lives of both mother and fetus. Although eclampsia was a serious condition that midwives were expected to promptly notify a

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[84] Filippini, *La Nascita Straordinaria* (n. 26).

[85] Nadia Maria Filippini, *Generare, partorire, nascere: Una storia dall'antichità alla provetta* (Rome: Viella, 2017), chap. 10.

[86] Daniel Schafer, "Medical Practice and the Law in the Conflict between Traditional Belief and Empirical Evidence: Post-Mortem Caesarean Section in the Nineteenth Century," *Med. Hist.* 43, no. 4 (1999): 485–501. On debates over therapeutic abortion, induced premature labor, and the cesarean section during the nineteenth century, see Betta, *Animare la Vita* (n. 8); Jolien Gijbels, "Medical Compromise and Its Limits: Religious Concerns and the Postmortem Caesarean Section in Nineteenth-Century Belgium," *Bull. Hist. Med.* 93, no. 3 (2019): 305–34.

doctor of, in practice midwives were often responsible for (at least) an initial set of decisions that would affect the outcome of the pregnancy. That was the case when Adele Bruscerini, midwife in Macerata, was called to assist a twenty-two-year-old primigravida in her seventh month of pregnancy. As Bruscerini recalled, the signs of preeclampsia, such as swelling in the hands and legs, had been ignored by the patient because her relatives told her that first pregnancies were always difficult and that her symptoms were nothing to be concerned about. Bruscerini herself was able to confirm the woman's preeclampsia using an albuminometer, a relatively new diagnostic technique to determine the presence of albumin in the urine, a condition that statistics had correlated with the condition of preeclampsia during the nineteenth century.[87] Bruscerini's accounting is a mix of the emotive—detailing the horrific convulsions suffered by the woman as her state became eclamptic and she lapsed into unconsciousness—and the methodical, with careful recordings of the fetus's heart rate, the mother's temperature, and the amount of albumin in the urine. As the condition of both mother and fetus was dire, Bruscerini, joined at this point by a doctor, recommended an immediate effort to induce premature labor by manually dilating the uterus with a syringe or bougie. As Bruscerini summarized, the assessment of risk was determined based on the mother's imminent death unless she was delivered and the fetus's erratic heartbeat. Induced premature labor existed in a gray area vis-à-vis the fetus. Most obstetricians understood the fetus, at seven months, to be potentially viable; however, the fact

[87] Alarico Ghezzi, "Eclampsia in sopraparto–forcipe–esito buono per la madre e per il feto," *Giornale per le levatrici* 10, no. 23 (1896): 181–82. Bruscerini refers to Esbach's albuminometer that uses a reagent of citric and picric acid to determine the presence and amount of albumin, which becomes elevated during preeclampsia, in the urine. The procedure was developed in 1874 by the French physician Georges Hubert Esbach. Mandy J. Bell, "A Historical Overview of Preeclampsia-Eclampsia," *J. Obstet. Gyn. Neonatal Nursing* 39, no. 5 (2010): 510–18.

that the fetus was already experiencing distress rendered the imminent delivery extremely risky. Indeed, in the event, the fetus was delivered stillborn although the mother ultimately recovered.[88]

What is most notable about Bruscerini's account, however, is not only the willingness to risk the life of the fetus to protect that of the mother, but also the midwife's efforts to render the decision making involved in cases of preeclampsia and eclampsia programmatic based on several levels of related criteria, including various diagnostic metrics upon which the health of mother and fetus could be judged ("mother: pulse, temperature, general state, interval between attacks, coma, threat of asphyxiation; fetus: living, in distress, dead"). According to Bruscerini, "as precise, minute, detailed, and otherwise as clear and sharp as [the diagnosis can be], there will emerge" the right course of action.[89] Significant here is the conviction that a precise diagnostic regime will furnish the correct intervention, turning the morally fraught question of privileging the life of the mother over that of the fetus or vice versa into a strictly mathematical one.

## Conclusion: Objects, Gender, Authority

The professionalization of midwifery in Italy challenged communities' long-standing definitions of who was a good birth attendant. Frequently, mothers saw professionally trained midwives as outsiders, bearing novel attitudes toward the management of birth that devalued women's own embodied experiences of labor. While in the eighteenth century rumors about attendance at dissections or the use of surgical tools sometimes turned community members against recent

[88] "CONTRIBUTO ALLA CURA DELL' ECLAMPSIA col parto prematuro artificiale," *Giornale per le levatrici* 10, no. 11 (1896): 83–85.
[89] "CONTRIBUTO ALLA CURA DELL' ECLAMPSIA col parto prematuro artificiale (cont.)," *Giornale per le levatrici* 10, no. 12 (1896): 91.

graduates of the first Italian midwifery schools, by the nineteenth century many professional midwives had wholeheartedly embraced the most modern and scientific components of their trade. Such midwives recognized the technological and intellectual distance that their training and tools, such as thermometers and stethoscopes, etched between themselves and their clients. Midwives increasingly trusted the technologically derived data from such tools even if they contradicted their clients' own experiences of their bodies. The bag of the post-Unification midwife was an iconic symbol of this new professionalized status of midwifery by the late nineteenth century, but it was also a reminder of the shift in locus of the midwife's authority from the community to the state. Inspected regularly, the midwife's bag underscored the authoritative control of the state's public health apparatus.[90] The details of births were no longer the intimate stories recounted by families, neighbors, and kin, but the raw materials for the statistical analysis that would advance obstetrics in the nineteenth and twentieth centuries, data that were recorded and relayed by midwives. Above all, the midwife's bag embodied the values the state wanted to impress upon its newly unified citizenry—modernity, order, cleanliness, and the vast benefits of applied scientific knowledge.

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[90] Basso, *Levatrici* (n. 13), 264–69.

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