Replicating Venus: Art, Anatomy, Wax Models, and Automata

Corinna Wagner

The modern history of machines that mimic humans — automata, artist's dummies, mannequins, mechanical dolls, *poupées*, robots, androids, bionic men and women — is long and varied. Since the birth of the Enlightenment, these adaptable machines have been a testing ground for that perennial question: what does it mean to be human? Eighteenth-century varieties reflected the rise of materialism and conceptions of the body as machine; nineteenth-century automata provided writers and artists with a way of negotiating conflicts between individual desires and social constraints; other automata embodied an industrializing machine age and its new technologies; *fin-de-siècle* androids manifested a modern privileging of logic and system over individual volition or free will; still others were formed out of eugenicist dreams of human perfection. Of course, there are many other possibilities here, for automata have had as many uses as they have had forms. For all their variety though, they invariably appear at the intersection of science and the arts: from René Descartes's seventeenth-century musings on clockwork humans and 'beast-machines' to the eighteenth-century materialist Julien Offray de La Mettrie's deliberations on Vaucanson's famous artificial duck; from the master of macabre Edgar Allan Poe's writing about Kempelen's celebrated chess-playing 'Turk' to the American inventor Thomas Edison's nursery rhyme uttering dolls; and from the *Maschinenmensch* of Fritz Lang's *Metropolis* to the suburban gynoid of *The Stepford Wives*. These automata have also inspired influential theoretical work, from Freud's essay on 'The Uncanny' (1919) to Donna Haraway's *Simians, Cyborgs, and Women* (1991), as well as a considerable body of literary and cultural history.[1]

[1] For analysis of the automaton and all its forms in modern history, see, especially, Jane Monroe, *Silent Partners: Artist and Mannequin* (New Haven: Yale University Press, 2014), and also, Gaby Wood, *Living Dolls: A Magical History of the Quest for Modern Life* (London: Faber and Faber, 2002). For a longer history, see Minsoo Kang, *Sublime Dreams of Living Machines: The Automaton in the European Imagination* (Cambridge, MA: Harvard University Press, 2011). On the French context specifically, see Christian Bailly, *Automata: The Golden Age, 1848–1914* (Ramsbury: Hale, 2003). For a more theoretical approach, see Hillel Schwarz, *The Culture of the Copy: Striking Likenesses, Unreasonable Copies* (Cambridge, MA: MIT Press, 2013). On the specific examples mentioned, see Jessica Riskin, 'The Defecating Duck, or, the Ambiguous Origins of Artificial Life', *Critical Inquiry*, 29 (2003), 599–633; Daniel

I am interested, though, in one particular strain of nineteenth-century female automata, which I identify as a formulation of an anatomizing age — an age that had mapped and represented the body's interior in great visual detail. This type of automaton, two examples of which I will address here, reflects knowledge about the female body that was disseminated in a variety of materials, including medical atlases, obstetrical treatises, and via three-dimensional anatomical models. Although the automata in James Hogg's publication *The Three Perils of Woman* (1823) and Villiers de l'Isle-Adam's novel *Tomorrow's Eve* (1886) are markedly different (Hogg's Gatty Bell is an automaton-like human, while Villiers's android Hadaly is a human-like machine), they could both be described as bodies without organs. They are empty bodies that are all exterior. We should see them, I propose, as products of a culture of dissection that emerged in the early modern period but which, by the nineteenth century, had influenced all forms of expression.

Jonathan Sawday has traced how, as dissection-based anatomy came to dominate medical enquiry in the Renaissance, 'the interior of the modern body ma[de] its appearance.'[2] In subsequent centuries, the body was modelled in wood, wax, leather, and terracotta, its parts were preserved as specimens, and its interior was mapped out in great anatomical atlases. As such, the internal body — described by Michel Foucault as the 'dark, concave inner side' of the body — was brought into a wider ocular economy, giving rise to what scholars have termed an 'aesthetics of anatomical realism' or an 'aesthetics of transparency'.[3] The rise of anatomy in medicine brought about a reimagining of the relationship between the body's exterior and its interior, along with a wider reconfiguring of surface and depth. The aesthetics of transparency prioritized true-to-life or naturalistic styles in poetry, plays, and painting as a means of excavating 'truth'.

Cottom, 'The Work of Art in the Age of Mechanical Digestion', *Representations*, 66 (1999), 52–74; on 'The Turk', Kempelen's chess-player, and its American exhibitor Johannes Maelzel, see James W. Cook, Jr., 'From the Age of Reason to the Age of Barnum: The Great Automaton Chess-Player and the Emergence of Victorian Cultural Illusionism', *Winterthur Portfolio*, 30 (1995), 231–57; Mark Sussman, 'Performing the Intelligent Machine: Deception and Enchantment in the Life of the Automaton Chess Player', *Drama Review*, 43.3 (1999), 81–96; on *Metropolis* and *The Stepford Wives*, see Julie Wosk, *My Fair Ladies: Female Robots, Androids, and Other Artificial Eves* (New Brunswick: Rutgers University Press, 2015), pp. 55–89.

[2] Jonathan Sawday, *The Body Emblazoned: Dissection and the Human Body in Renaissance Culture* (London: Routledge, 1997), p. 6.

[3] Michel Foucault, *The Birth of the Clinic*, trans. by A. M. Sheridan (New York: Routledge, 2003), p. 237. The emphasis on anatomical realism distinguishes Western aesthetics from that of other cultures, which have not had the same history of dissection and surgery. See Larissa N. Heinrich, *The Afterlife of Images: Translating the Pathological Body between China and the West* (Durham, NC: Duke University Press, 2008); Shang Wei, 'Truth Becomes Fiction When Fiction Is True: *The Story of the Stone* and the Visual Culture of the Manchu Court', *Journal of Chinese Literature and Culture*, 2 (2015), 207–48 (p. 213).

The anatomical view raised some apprehensions about the moral and cultural effects of such an enterprise. In the early modern world, the figure of Medusa was used to express a 'fear of interiority' and 'more often than not, a specifically male fear of the female interior' (Sawday, p. 3). In the nineteenth century, Venus replaced Medusa as *the* classical touchstone for expressing similar but historically specific fears about the female interior. I focus here on three types of Venuses, each of which expressed competing anxieties and aims. The classical Venuses, most notably the Venus de Milo and the Venus de' Medici, gave form to dreams for a modern automaton whose closed, empty body resembled her ancient predecessor. In turn, both the ancient and modern automatous Venuses were described as the inverse counterparts to another, third Venus: the medicalized Venuses, or wax anatomical models, whose dissected bodies revealed their internal organs and, in particular, their reproductive systems. Written and visual representations of these three categories of Venus — classical, anatomical, and automatous — reveal significant things about the relationship between art and anatomy, and about medicine, gender, and the body. As we will see here, they were used to challenge visual and literary realism and the aesthetics of transparency, as well as to express disgust towards the female body and to voice medically informed, injurious attitudes about gendered biological difference.

The art of anatomical illustration

Even a cursory survey of three centuries of anatomical illustration, from the 1543 publication of Andreas Vesalius's *De humani corporis fabrica* onwards, reveals a growing emphasis on objectivity and realism, but also a fairly consistent concern with aesthetics. It is a well-known story that the history of anatomical illustration inclines towards greater realism and objectivity, and a stripping away of artistic niceties, such as imaginative flair and narrative style.[4] Yet, in the age of Enlightenment, aesthetic concerns remained important. Eighteenth-century illustrated atlases often presented the dissected body as part of biblical or mythological narrative. In his magisterial *Tabulae sceleti et musculorum corporis humani* (1747), the Dutch anatomist Bernhard Siegfried Albinus and his artists aimed to show the '*sceletum virile perfectum*' and '*sceletum foemininum perfectum*'.[5] They depicted skeletons and *écorchés* (flayed bodies) as classical titans, and as the text that accompanies the illustrations makes clear, Albinus viewed the ideal as an undistorted exemplar that did not conflict with a scientific emphasis on the real (*Fig. 1*).

[4] See, for example, Lorraine Daston and Peter Galison's classic study, *Objectivity* (New York: Zone Books, 2007).

[5] Bernhard Siegfried Albinus, *De ossibus corporis humani ad auditores suos* (Leyden: Mulhovius, 1726), p. 3. For more on this, see Reinhard Hildebrand, 'Attic Perfection in Anatomy: Bernhard Siegfried Albinus (1697–1770) and Samuel Thomas Soemmerring (1755–1830)', *Annals of Anatomy — Anatomischer Anzeiger*, 187 (2005), 555–73.

Fig. 1: Bernhard Siegfried Albinus, Table 1, in *Tabulae sceleti et musculorum corporis humani*, 1747. Wellcome Library, London.

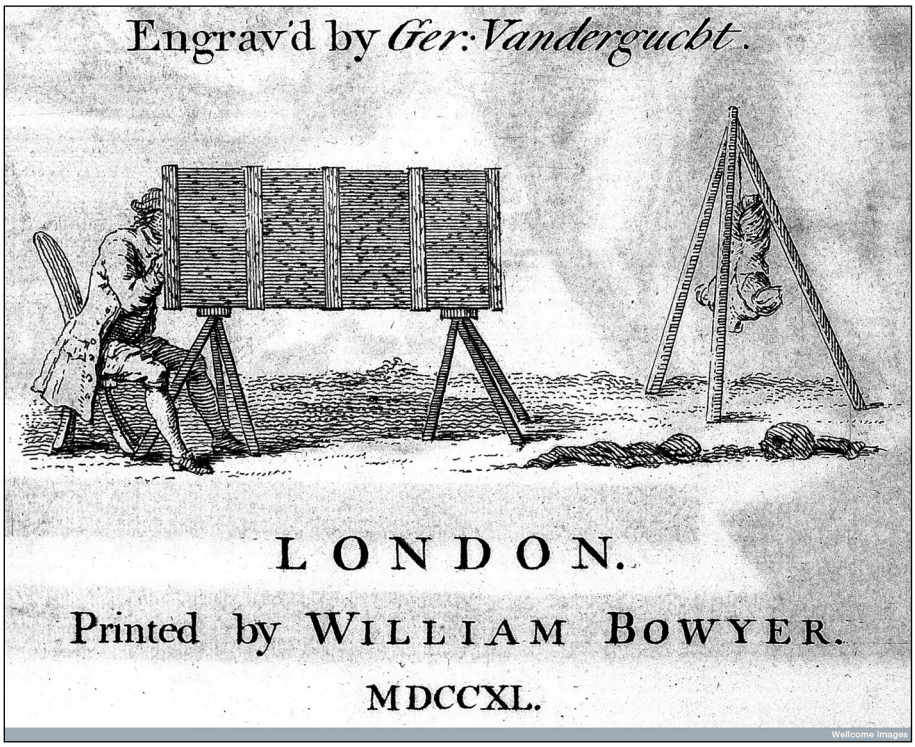

Fig. 2: William Cheselden, detail from frontispiece, *Osteographia; or, The Anatomy of the Bones* (London: the author, 1740). Wellcome Library, London.

Anatomical realism and classical perfection are reconciled, too, in English surgeon William Cheselden's *Osteographia* (1733). Cheselden adopted what art historian Martin Kemp has termed a 'proto-photographic method' of recording the dissected specimen.[6] The title page of *Osteographia* (*Fig. 2*) shows an individual — likely either Cheselden or one of his artists, Gerard Vandergucht or Jacob Schijnvoet — using a camera obscura. This clearly lays emphasis on accuracy and objectivity, and it celebrates visual technologies that can further these aims, yet aesthetic considerations are also important. Human and animal skeletons appear in vignettes, posed according to well-known literary illustrations and classical sculptures, their forms set within landscapes reminiscent of those found in medieval and early Renaissance manuscripts. Cheselden's ideal male skeleton is modelled on the Apollo Belvedere and his female cast in the 'same proportions

[6] Martin Kemp, 'Style and Non-Style in Anatomical Illustration: From Renaissance Humanism to Henry Gray', *Journal of Anatomy*, 216 (2010), 192–208 (p. 202).

with the venus of Medicis'.[7] A comparison between the ancient sculpture and Cheselden's version reveals new scientific priorities, for the skeleton's arm is moved out of the classical '*pudica*' position — coyly posed over the genitals — in order to facilitate a clearer view of the female pelvic bones (*Figs. 3, 4*).[8]

In this same period, wood, ivory, leather, and wax three-dimensional anatomical figures were made, collected, displayed, and used for medical instruction across Europe. In the last half of the eighteenth century, artist-anatomists produced the famous full-length wax anatomical models of the female body. The most famous of these celebrated 'Venuses' were exhibited at the Anatomy Museum at Bologna (now known as the Palazzo Poggi Museum) and at the Royal Museum of Physics and Natural History at Florence, commonly referred to as 'La Specola' (*Figs. 5, 6*). In the 1780s, at the instigation of the Austrian emperor, a set of models was sent from the workshop in Florence across the Alps to the surgical academy at Vienna, the Josephinium. Art historians have detailed the medical and political context of the models, considered the materiality of ceroplasty (modelling in wax), and have interrogated some of the sexual, religious, and moral meanings of these figures.[9] As such, I will limit myself mostly to evaluating audience

---

[7] William Cheselden, 'To the Reader', in *Osteographia; or, The Anatomy of the Bones* (London: the author, 1733), table 34; see also Daston and Galison, pp. 77–79.

[8] Cheselden, table 34. Nico Bertoloni Meli notes that the proportions of classical, ideal skeletons were associated only with healthy bodies in 'Visual Representations of Disease: The *Philosophical Transactions* and William Cheselden's *Osteographia*', *Huntington Library Quarterly*, 78 (2015), 157–86.

[9] On the political context, see Anna Maerker, *Model Experts: Wax Anatomies and Enlightenment in Florence and Vienna, 1775–1815* (Manchester: Manchester University Press, 2001), and Anna Maerker 'The Anatomical Models of La Specola: Production, Uses, and Reception', *Nuncius*, 21 (2006), 295–321. On the models and sexual ethics, see Ludmilla Jordanova, *Sexual Visions: Images of Gender in Science and Medicine between the Eighteenth and Twentieth Centuries* (Madison: University of Wisconsin Press, 1989), and Lyle Massey, 'On Waxes and Wombs: Eighteenth-Century Representations of the Gravid Uterus', in *Ephemeral Bodies: Wax Sculpture and the Human Figure*, ed. by Roberta Panzanelli (Los Angeles: Getty Research Institute, 2008), pp. 83–107. On categorizing these works, see Roberta Ballestriero, 'Anatomical Models and Wax Venuses: Art Masterpieces or Scientific Craft Works?', *Journal of Anatomy*, 216 (2010), 223–34. On popular reception and the cultural context of these works, see Maritha Rene Burmeister, 'Popular Anatomical Museums in Nineteenth-Century England' (unpublished doctoral dissertation, Rutgers University, 2000), Joanna Ebenstein, *The Anatomical Venus: Wax, God, Death & the Ecstatic* (London: Thames & Hudson, 2016), and Francesco Paolo De Ceglia, 'The Rotten Head, the Disemboweled Woman, the Skinned Man: Body Images from Eighteenth-Century Florentine Wax Modelling', *Journal of Science Communication*, 4.3 (2005), 1–7. On some of the changes in representation of the Venuses that I trace here, see Elizabeth Stephens, 'Venus in the Archive: Anatomical Waxworks of the Pregnant Body', *Australian Feminist Studies*, 25 (2010), 133–45, and Joan B. Landes, 'Wax Fibers, Wax Bodies, and Moving Figures: Artifice and Nature

Fig. 3: Richard Dalton, after Simon François Ravenet, *Venus*, 1746. Wellcome Library, London.

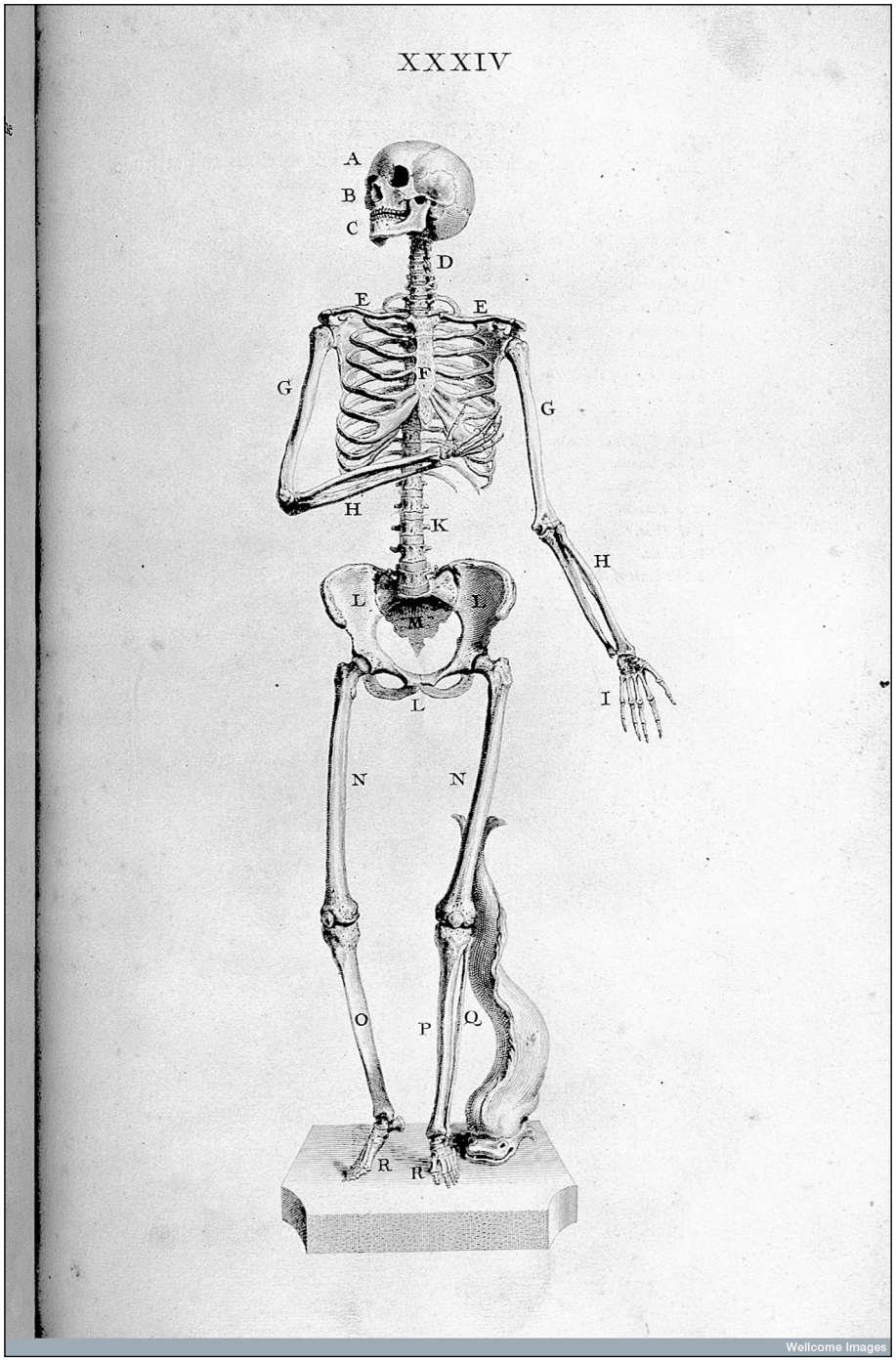

Fig. 4: William Cheselden, 'The skeleton of a woman in the same proportions with the Venus of Medicis', *Osteographia; or, The Anatomy of the Bones* (London: the author, 1733), plate 34. Wellcome Library, London.

Fig. 5: Clemente Susini and workshop, Anatomical Venus, *c*. 1770–90, La Specola, Florence. Author's own photograph.

Fig. 6: Clemente Susini and workshop, Venerina, *c*. 1780–82, created for the Museo di Palazzo Poggi, Bologna. Author's own photograph.

---

in Eighteenth-Century Anatomy', in *Ephemeral Bodies*, ed. by Panzanelli, pp. 41–65. On the Bolognese wax models, see Rebecca Messbarger, *The Lady Anatomist: The Life and Work of Anna Morandi Manzolini* (Chicago: University of Chicago Press, 2010).

responses to the most well known of the female Florentine Venuses, largely crafted by Clemente Susini (1754–1814).

Known individually by such names as the Medici Venus, the Slashed Beauties, the Dissected Graces (Florence), and 'Venerina' or Little Venus (Bologna), these figures are a particularly fascinating embodiment of anatomical realism *and* a classical visual idiom that emphasized perfection and beauty. Although to modern viewers the wax Venuses may seem to impart mixed messages — Roberta Panzanelli describes them as 'halfway between artwork and artifact, between scientific tool and horrid simulacrum' — the simulation of dissection is minimized by classical allusion.[10] The anatomical Venuses may have referred 'directly to medical science', as Maritha Burmeister observes, but they did so 'in a manner devoid of corporeal reality'.[11] The Venerina, for instance, is a medicalized variant of the Venus *pudica*; as with Cheselden's skeleton, the arm and hand do not cover, but rather invite the observer to look; her layers can be removed so the observer can delve beneath skin, muscle, bone, and intestines, and finally to see the womb.[12]

The centrepiece of the La Specola collection, the recumbent and decomposable Anatomical Venus, is the more direct descendant of the classical Venuses. From her perfect exterior, with her pearls and real hair, she can be dismantled, layer by layer, taking the observer down through the various strata of the body: through the musculature to the mammary glands; under the ribcage to the lungs and the heart; under the intestines to the uterus and other organs of the lower abdomen. Finally, the heart, stomach, and uterus could be opened, the latter organ revealing a tiny curled foetus. Rebecca Messbarger argues that this Anatomical Venus, with her 'systematic complexity', was a 'marriage of classical aesthetics and empirical anatomy', that made her 'not only pleasing but practically instructive to the viewing public and served thereby to satisfy the ultimate Enlightenment objective of the public good'. As such, Messbarger argues,

[10] Roberta Panzanelli, 'Introduction: The Body in Wax, the Body of Wax', in *Ephemeral Bodies*, ed. by Panzanelli, pp. 1–13 (p. 5).

[11] Burmeister, p. 51. They deny the horror of their creation in another respect: one anatomical model was a composite product of something like two hundred corpses or body parts; see Monika von Düring, Georges Didi-Huberman, and Marta Poggesi, *Encyclopaedia Anatomica: A Complete Collection of Anatomical Waxes* (Cologne: Taschen, 1999), p. 13.

[12] As we know, nature has been historically gendered female, and through dissection, anatomists sought the '*naturae arcana*, the secrets of a Nature who was allegorically and grammatically gendered feminine': Patricia Simons, 'Anatomical Secrets: Pudenda and the Pudica Gesture', in *Das Geheimnis am Beginn der europäischen Moderne*, ed. by Gisela Engel and others (Frankfurt a.M.: Klostermann, 2002), pp. 302–27 (p. 315). See also, Jordanova, *Sexual Visions*.

Fig. 7: Clemente Susini and workshop, after William Smellie, Fragmented Venus, *c*. 1770–90, La Specola, Florence. Author's own photograph.

the Anatomical Venus was 'a modern challenge' to the sculpted and painted classical Venuses.[13]

Susini, along with the anatomist Giuseppe Ferrini and artist-anatomist Felice Fontana, also produced fragmented Venuses, or wax torsos without limbs or heads (see *Fig. 7*). These particular models are directly descended from the realistic, proto-photographic engravings of eighteenth-century obstetrical treatises. In fact, some of them replicate in three-dimensional form the most famous images of the gravid uterus produced by the early obstetricians William Smellie and William Hunter. Although art historian Lyle Massey acknowledges the influence of ancient aesthetics in these fragmented models, she also sees them as seeming 'to stand outside the classicizing tradition represented by Venus' (p. 88). By replicating Hunter's and Smellie's graphic, realist images, these fragmented Venuses (if we can call them that) 'attempt to harness an authority that was beginning to be granted to some images over others' (Massey, p. 101). Such images, the products of what Martin Kemp terms the 'flesh and blood school' of anatomical illustration, are part of a shift towards ever greater literalness and objectivity in anatomy (*Figs. 7, 8*).[14]

[13] Rebecca Messbarger, 'The Re-Birth of Venus in Florence's Royal Museum of Physics and Natural History', *Journal of the History of Collections*, 25 (2013), 195–215 (p. 210).
[14] Martin Kemp, 'True to Their Natures: Sir Joshua Reynolds and Dr William Hunter at the Royal Academy of Arts', *Notes and Records of the Royal Society of London*, 46 (1992), 77–88 (p. 85).

Fig. 8: Engraving after W. Smellie after J. van Rymsdyck, A cross-section of a pregnant uterus containing twins, 1754. Wellcome Library, London.

Historian of science Francesco Paolo De Ceglia argues that Enlightenment viewers were intrigued by the Italian waxes but that the 'fascination' with them 'came to a sudden halt' at the end of the eighteenth century (p. 3). He refers specifically to Gaetano Zumbo's seventeenth-century Baroque wax tableaux of plague, syphilis, decomposition, and corruption, but implies that negative public attitudes towards Zumbo's graphic bodily images would apply to the eighteenth-century Florentine waxes as well. De Ceglia perhaps overstates the decisiveness of this shift, but there certainly are detectable changes. In the eighteenth century, the Italian waxes were among the 'Venus destinations' for art-seeking visitors to a city that had been nicknamed 'Venus-Florenza', due to its wealth of fine art. The Anatomical Venus joined a Grand Tour itinerary which included, as Rebecca Messbarger points out, Botticelli's *Birth of Venus* (1482–85), Titian's *Venus of Urbino* (1538), and the Venus de' Medici sculpture (*Lady Anatomist*, pp. 50–51). But, as scholars have charted, from the beginning of the nineteenth century, access to the Italian anatomical collections became increasingly regulated and mediated.[15] And, in Britain, the ceroplast Joseph Towne's hyperrealistic, pathological wax models were produced at Guy's Hospital in London, where they were restricted to medical uses.[16] Other waxes were part of fairground culture and were viewed in popular exhibition spaces; as a result, nineteenth-century art critics, as well as non-specialists, began to view the anatomical Venuses as verging too closely to the world of morbid entertainment and vulgar spectacle.

In particular, there were observable changes in reactions to representations of the interior body. In 1789 the French surgeon René Desgenettes was awed by the 'scrupulous exactness' and the 'elegance, precision and truth' of the Florentine models (Maerker, *Model Experts*, p. 128). In reference to her 1792 visit, the painter Élisabeth Vigée-Lebrun described how this view of 'the structure of the human body' invariably convinced one 'of some divine power'.[17] In 1785 the sight of 'the most secret pieces of so complicated a machine' led the French travel writer Charles Dupaty to conclude that 'philosophy' needed to examine 'still deeper the physical parts' where the 'moral' life was 'hidden'. He determined that 'the

[15] Anna Maerker also identifies a number of reasons why the fortunes of the Florentine anatomical Venuses changed, such as politics, professional disputes, and tensions between education and entertainment. See also, Stephens, 'Venus in the Archive'. For related but wider changes afoot, see Richard D. Altick, *The Shows of London* (Cambridge, MA: Harvard University Press, 1978).

[16] Kristin Hussey discusses Joseph Towne's wax models in her article for this issue of *19*.

[17] *The Memoirs of Élisabeth Vigée-LeBrun*, trans. by Sian Evans (Bloomington: Indiana University Press, 1989), p. 123.

outward man is but the type of the *inward* body'.[18] In contrast, nineteenth-century observers seemed less likely to ascend to the heights of metaphysical contemplation at the sight of the anatomical waxes. On a tour seventy-three years after Dupaty's, the American novelist Nathaniel Hawthorne viewed Zumbo's waxes as 'ugly' and Susini's Venuses as revolting.[19] His time at La Specola is only relieved by the fact that he had earlier seen the classical Medici Venus in the Uffizi Gallery, and he could hold that vision in his mind. 'It is good', he writes, 'to have the *wholeness* and summed up beauty of woman in the memory, *when looking at the details of her system*' (II, 24, emphases added). Hawthorne's distaste for the open body, which degraded the mind, is matched by an equally powerful appreciation of the closed body, which elevated it. Yes, he admits, the Venus de' Medici had been broken and repaired in legs, arms, neck, and waist — 'grievous wounds and losses of substance' — but still she remained quite 'perfect and indestructible' and able to make him 'more ready to believe in the high destinies of the human race' (II, 9, 22). Hawthorne's feelings were shared by other late nineteenth-century visitors who believed, as the director of the Louvre Émile Molinier did, that 'a veil' should be permanently thrown 'over these unwholesome artefacts', the Italian anatomical Venuses.[20]

Georges Didi-Huberman reminds us that in spite of the odourless quality of wax, 'there probably exists no other substance that can imitate with such polyvalence both the *external flesh*, the skin, and all the *internal flesh*, the muscles and viscera.'[21] The texture, temperature, and consistency of wax challenges the idea that the viscera are, as we imagine them, so radically different from 'the more civilized surfaces of our bodies' (Didi-Huberman, 'Wax Flesh', p. 66). The viscous sweatiness and malleability of wax, so unlike the cool, hard, mellowed whiteness of marble, collapses the boundary between inner and outer body, reminding the observer of what lies beneath civilized surfaces. Wax anatomies may have appealed to those who were accustomed to the extravagant morbidity of late seventeenth-century Baroque or late eighteenth-century flesh-and-blood realism, but nineteenth-century viewers were part of a more restrained ocular economy. For them, realism might have reigned supreme, but wax suggested a fantasy of flesh that was beyond the pale. To see inside the body was to invoke a nightmare of blood and phlegm and decay; seeing inside the woman's body

[18] Charles-Marguerite-Jean-Baptiste Dupaty, *Sentimental Letters on Italy*, trans. by J. Povoleri, 2 vols (London: Crowder, 1789), I, 127–28, emphases added.
[19] Nathaniel Hawthorne, *Passages from the French and Italian Note-Books of Nathaniel Hawthorne*, 2 vols (London: Strahan, 1871), II, 24.
[20] De Ceglia has this as Edouard, but I believe he means Émile Molinier, *Histoire générale des arts appliqués à l'industrie* (Paris: Lévy, 1896), p. 234. For more on changing trends in anatomical display, see Stephens, pp. 138–39.
[21] Georges Didi-Huberman, 'Wax Flesh, Vicious Circles', in von Düring, Didi-Huberman, and Poggesi, pp. 64–74 (pp. 65–66), emphases in original.

Fig. 9: Thomas Banks, *Anatomical Crucifixion* (James Legg), 1801, plaster cast. Joanna Ebenstein <http://morbidanatomy.blogspot.co.uk>.

conjured up, among other things, the messiness of birth and the abjectness of sexual organs that, according to contemporary medicine, were at once frigid reproductive vessels, the origin of nervous weakness, and the seat of disruptive and irrational desires.[22]

At the same time, significant shifts were underway in the world of high art. By the end of the eighteenth century, art school curricula emphasized anatomical study through dissection and the careful examination of living and dead bodies, as well as plaster and wax models. Many artists had come to view anatomical realism as *the* measure of artistic value. There is perhaps no clearer example of the degree to which anatomical accuracy had become a criterion of artistic excellence in the eighteenth century than the making of the *Anatomical Crucifixion* (*Fig. 9*). The details of how the London surgeon Joseph Constantine Carpue and three Royal Academy artists — the sculptor Thomas Banks, and painters Benjamin West and Richard Cosway — acquired a body to make the *Anatomical Crucifixion* have been discussed elsewhere, but they are worth revisiting. Briefly, the particulars

[22] Clearly, the contextual and critical literature on this subject is vast, but a text such as William Acton's *Functions and Disorders of the Reproductive Organs* (London: Churchill, 1857), which expresses all of these beliefs, is a prime example.

are as follows. On 2 October 1801 at Chelsea Hospital, a pensioner named Captain James Legg challenged another pensioner named Lamb to a duel. When Lamb refused, throwing his pistol to the floor, the infuriated Legg shot him in the chest and killed him. Legg was arrested, tried, found guilty of murder, and sentenced to death. Once dead, his body was immediately given over to Carpue. He and the three artists then nailed the still-warm Legg to a cross and, when the body settled, they made a cast. Thereafter, they removed Legg's corpse to Carpue's anatomical theatre, where they flayed it and made a second cast. This *écorché* provided anatomical guidance for art students at the Royal Academy from 1802 to 1822.[23]

Some details of the artists' motivation remain unclear, but we do know that they created this *écorché* in order to 'test' the anatomical accuracy of historical depictions of the crucified Christ, which to their eyes 'did not appear natural'.[24] The artists may also have had Peter Paul Rubens and *The Three Crosses* (1620) — a painting Cosway owned — particularly in mind as a test case.[25] There is also evidence that West wanted to assess his own design, based upon a Michelangelo drawing, for a stained-glass Crucifixion scene that had been commissioned by George III for the Great West Window of St George's Chapel, Windsor.[26] Whatever the particular impetus, Carpue describes how the three artists had an anecdotal precedent for this trial: according to legend, Michelangelo had 'stabbed a man tied to a cross' and then made 'a drawing of the effect'. Whether founded in truth or not, this anecdote illustrates the prioritization of verisimilitude. As Carpue argued in an anatomical treatise that same year, if painters followed the example of Michelangelo and thus studied anatomy more closely, 'we should not see those ridiculous Mistakes which daily occur.'[27]

Similarly, the anatomist and artist Sir Charles Bell argued that anatomical training was a remedy for artistic mediocrity. In *The Anatomy and Philosophy of Expression as Connected with the Fine Arts* (1806), he insisted that a modern artist who lacked such an education merely attempts 'to

---

[23] It made a return in 1917 but was then damaged by a World War I Zeppelin bomb.
[24] From an unpublished handwritten manuscript, quoted in 'Obituary: Joseph Constantine Carpue, FRS', *Lancet*, 47.1171 (February 1846), p. 167.
[25] For details about the events behind this cast, see Meredith Gamer, 'Criminal and Martyr: The Case of James Legg's *Anatomical Crucifixion*', in *Sensational Religion: Sensory Cultures in Material Practice*, ed. by Sally M. Promey (New Haven: Yale University Press, 2014), pp. 495–513; Corinna Wagner, 'Visual Translations: Medicine, Art, China and the West', *Fudan Journal of the Humanities and Social Sciences*, 8 (2015), 193–234.
[26] M. Felix Freshwater, 'Joseph Carpue's File Drawer Experiment: A Murder Mystery from 1801', *Journal of Plastic, Reconstructive and Aesthetic Surgery*, 6 (2015), 74–85.
[27] Joseph Constantine Carpue, *A Description of the Muscles of the Human Body, as They Appear on Dissection* (London: Lewis, 1801), p. iii.

transcribe, as it were, a language which he does not understand'.[28] Bell had the highest praise for Michelangelo, whose notebooks revealed how he drew the bones, muscles, and tendons with 'the utmost accuracy of anatomy' before painting in flesh (p. 205). Bell would seem, then, to be an advocate of anatomical realism in art, yet he qualified his advocacy. He insisted, for instance, that Michelangelo's finished pieces were 'without affected display of anatomical knowledge' (p. 206); similarly, the sculptors of Venus, Apollo, and the Belvedere torso sculpted the most beautiful *external* forms because they observed near-nude living bodies at work in the warm Mediterranean climate — not because they dissected (pp. 10–11).

In his *Elements of Art* (1809), a six-canto poem with accompanying voluminous notes, the Irish portrait painter and academician Martin Archer Shee targeted artists who were familiar with the interior body, but neglected the external forms. 'So occupied' were they 'in taking the machine to pieces, and examining its minuter parts' that they could not represent the whole.[29] He described in poetic form how modern artists had made 'enemies', not 'allies', of the arts and sciences (p. 45):

> Anatomy extends her aid to Art;
> [...]
> Yet some, by scientific pride misled,
> Appear, in spectres to have raised the dead;
> While such half-skeletons our eyes abuse,
> That Nature starts, and Taste astonish'd views.
> [...]
> Behold! to prove their anatomic art,
> Each figure flay'd — dissected every part!
> Naked, or draped, alike their skill make known,
> Through this, the muscle swells, through that — the bone!
> (pp. 69, 73–74)

As the last line indicates, Shee deplored the practice of depicting interior muscle and bone through the skin or clothing. This could only elicit apathy, disgust, and pain. Viewers did not need to be *wounded* in order to feel, he insisted; in fact, this would prevent them from feeling: 'To paint a beautiful female with a sword plunged into her breast, and sticking in the ensanguined wound, affords an object as little pathetic, as it is picturesque' (p. 123). The artist must 'not mistake the inhuman and the horrible, for the affecting and the sublime' (p. 123). To reveal the interior body, in whatever way, stimulated disgust and, ultimately, indifference.

---

[28] Sir Charles Bell, *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*, 5th edn (London: Bohn, 1865), p. 223.
[29] Martin Archer Shee, *Elements of Art, a Poem; in Six Cantos* (London: Miller, 1809), p. 72.

Shee's argument is grounded in eighteenth-century ideas about the links between realism and affect. The idea that a viewer who was overstimulated by graphic scenes reacted passively and unsympathetically recalls the eighteenth-century physician John Brown's popular account of excitability and debility. Brunonian theory informed aesthetic theories about the sublime, the picturesque, and naturalism, all of which were concerned with eliciting desirable emotions and sympathies.[30] This is why, on a visit to the Florentine studio of the expat American sculptor Hiram Powers, Hawthorne defended the classical Venus against the sculptor's claim that the Greek artists had not understood the anatomy of the face. Powers pointed out the anatomically incorrect eyes, the misshapen forehead and mouth, and the out-of-kilter ears that were, as he said, 'placed a good deal too low on the head, thereby giving an artificial and monstrous height to the portion of the head above it' (Hawthorne, II, 25–26). For Hawthorne, the Venus cannot be dissected in such a way, for the accuracy of each part had little to do with its — her — ability to produce an overall effect, namely, the power to incite higher thoughts and finer emotions. Powers (with Carpue and Banks) and Hawthorne (with Shee and Bell) represent competing views in an emerging debate about the moral and cultural effects of anatomical realism.

In his two 1852 publications, *Manual of Artistic Anatomy* and *Great Artists and Great Anatomists*, Dr Robert Knox (of Burke and Hare infamy) argued against the vogue for anatomical realism. Like Shee, he believed that seeing the internal body deadened emotion:

> On canvas we have death-like dissected figures; in marble, cold, frigid, lifeless *statues*. Look at the sculptures in the Great Exhibition, and ask yourself, how it is that so few of those marbles, single or in groups, rouse your sympathies and receive your admiration. I shall tell you. It is the almost total absence of that *life-like surface* which alone distinguishes the living from the dead; the Venus de Medici from ——.[31]

That blank at the end of the passage could refer to any artwork produced by any modern member of what Knox referred to as 'the Anatomical school of art', including Benjamin West (whose human figures had 'a charnel-house look'), Benjamin Haydon (an admirer of Albinus), Joshua Reynolds (who advocated anatomical training for academicians), and even

[30] John Brown, *Elements of Medicine*, 2 vols (London: Johnson, 1795); see Corinna Wagner, *Pathological Bodies: Medicine and Political Culture* (Berkeley: University of California Press, 2013), pp. 105–06.
[31] Robert Knox, *Great Artists and Great Anatomists: A Biographical and Philosophical Study* (London: Van Voorst, 1852), p. 142, emphasis in original.

Charles Bell (who had, according to Knox, misunderstood Leonardo and Michelangelo).[32]

Knox deplored art schools that produced painters who concentrated so much on replicating anatomy that they were more familiar with the shrivelled and deteriorated muscles of corpses than with living flesh. Now, Knox exclaimed, when artists look at 'the living', they only 'see the dead, that is, the *interior*' (*Manual*, p. 9, emphasis added). From this follows a barrage of similar statements: looking 'at the interior' will cause one to forget 'that there ever was an exterior'; 'nature intended' that the interior — which 'she has so carefully concealed' — must 'never be presented to human sight' (p. 10); 'the exterior belongs to art, the interior to science and to philosophy' (p. 77); a 'knowledge of the interior' is important only for 'correctly reading' the exterior (p. 93); 'nothing can be so unlike the beautiful exterior [...] as the internal anatomy' (p. 100). I risk overstating the case here in order to emphasize the language of this mid-century reaction against anatomical accuracy.

So much did Knox deplore any signs of the interior body, that he thought elderly women an inappropriate subject for art, not because they were old per se, but because older skin thinned, muscles shrivelled, fat depleted, and 'the arms and the limbs generally become frightful anatomical displays' (*Manual*, p. 125). 'The sympathies of the thoracic, abdominal, and pelvic organs' write themselves horrifyingly 'upon the face and head', while the jugular vein, collarbones, sterno-mastoid and trapezius muscles showed through the neck so that it 'resembles a dissection' (pp. 96, 103). Not so with the perfect neck of the classical Greek sculpture of Niobe, which revealed 'how little of the interior, that is, the anatomy' was 'intended to be displayed by Nature' (p. 100). Knox adored the classical Venuses, for no art lover ever thought of 'the frightful chain of osseous nodosities' — the knotty bones of the human spine — when gazing at the back of the ancient sculpture (p. 22). 'In the Venus there is not a spot to be found indicating the presence of any internal organ or cavity', he writes, though she is 'quite undraped'; her finely formed torso 'mask[s] the generative system' (p. 115). And here we have it: the classical Venus is an exemplar for a revived representational style, which would draw the drapery back over the dark concave of the interior body, and, in particular, over her most frightful aspect, the reproductive organs. This is something of a reversal in the culture of dissection: for eighteenth-century anatomists, the pregnant female cadaver had been the most prized body for dissection; for the anatomical illustrators, the female reproductive system had been the greatest source of fascination; for the ceroplasts, the centrepiece of any collection was the anatomized pregnant Venus with her tiny foetus on show. Things

[32] Knox, *Great Artists*, p. 135; Robert Knox, *A Manual of Artistic Anatomy, for the Use of Sculptors, Painters and Amateurs* (London: Renshaw, 1852), p. 19.

had changed. And as we will see in the last section, this classical Venus had become the prototype for an automatous woman who would be perfect for the modern age.

Replicating Venus, or automata without organs

Love is the first of James Hogg's *Three Perils of Woman* (1823), and the narrative concerns the courtship and marriage of a Scottish sheep farmer's daughter named Gatty Bell and her Highlander beau, M'Ion. Shortly after their marriage, Gatty predicts the exact date and time of her impending death. When her health declines and the prediction seems about to come true, M'Ion circumvents her death by slipping her a sleeping potion, with the idea that she will sleep through the appointed hour. In spite of, or as a result, Gatty sinks into such a deep coma that she is pronounced dead and her body is prepared for burial. But husband and father reanimate her in a scene that recalls the physician Luigi Galvani's electrical reanimation experiments on dead flesh or his nephew Giovanni Aldini's attempts to 'galvanize' hanged criminals.[33] Here, for example, is Hogg's description of Gatty's reanimation:

> The body sprung up with a power resembling that produced by electricity [...]. With a jerk so violent that it struck the old man on the cheek, almost stupefying him; and there sat the corpse, dressed as it was in its dead-clothes, a most appalling sight as man ever beheld. The whole frame appeared to be convulsed, and as it were struggling to get free of its bandages. It continued, moreover, a sort of hobbling motion, as if it moved on springs.[34]

The description of the galvanized Gatty recalls eighteenth-century automata such as Kempelen's famous chess-playing machine. Like 'The Turk', her body conceals an empty space, ready to be occupied by a man who will control every move of the game.

---

[33] Comparisons could be drawn between this and the scenes of mesmerism and automatism in George Du Maurier's 1894 serialized novel *Trilby*. On this, see Fiona Coll, '"Just a singing-machine": The Making of an Automaton in George du Maurier's *Trilby*', *University of Toronto Quarterly*, 79 (2010), 742–63. For more on galvanism in Hogg, see Katherine Inglis, 'Maternity, Madness and Mechanization: The Ghastly Automaton in James Hogg's *The Three Perils of Woman*', in *Minds, Bodies, Machines, 1770–1930*, ed. by Deirdre Coleman and Hilary Fraser (Basingstoke: Palgrave Macmillan, 2011), pp. 61–82.

[34] James Hogg, *The Three Perils of Woman*, ed. by Antony Hasler and Douglas S. Mack (Edinburgh: Edinburgh University Press, 2002), p. 200.

Described as 'a ghastly automaton', Gatty is secretly moved to an asylum where she remains for three years, until she wakes from her coma (p. 201). Readers find out that exactly nine months into her 'confinement' — the timing is significant — she gives birth, unconsciously. Careful readers will notice that the onset of Gatty's automatism coincides with the moment of her conception, and that her offspring is delivered, unseen, from her unconscious body. As such, Katherine Inglis identifies not only galvanism, but new obstetrical practices as an important medical context to Hogg's narrative. Referring in particular to William Smellie's influential work — his writing on the mechanism of labour, his invention of forceps, and his creation of obstetrical manikins for training in delivery — Inglis reads the automatous Gatty in ways that make sense of Hogg's perplexing mechanization of the parturient body and his characterization of Gatty as 'a perfect incubator' (p. 70). In this regard, Gatty resembles one of Smellie's obstetrical 'Machines made in Imitation of real Women'.[35] Smellie's 'phantoms', as they were sometimes called, have not survived, but Giovanni Antonio Galli's (1708–1782) birthing machine, which currently resides alongside the wax anatomical models at the Palazzo Poggi Museum in Bologna, give us a sense of their appearance and function (*Fig. 10*). It is telling that one of Smellie's detractors, the midwife Elizabeth Nihell, refers to his phantom as an 'automaton or machine' in *A Treatise on the Art of Midwifery*.[36] Nihell objects to Smellie's 'mock-woman' because it closely resembles a real body, but a body without sensation and feeling, which prevents men-midwives from acquiring sensitivity of touch (p. 52).

I suggest that Gatty's comatose and unknowing body also conjures the anatomical Venuses and anticipates Pierre Spitzner's Sleeping Venus, which was displayed in the mid-nineteenth century at his Grand musée anatomique et ethnologique in Paris (*Fig. 11*). With an internal mechanism that replicated breath, but with an expression that attested neither to pain nor perception, this is a breeding machine without agency. But there is something else: although there is a rather gaping cavity, which we can see into, it is a hollow, bloodless, organless void, the appearance of which suggests a quick and seamless reclosure. The sense is that the skin could be resealed, to be as pristine as her white nightgown, or like Gatty's 'sleek, plump, and smooth' body, which bears no decipherable signs of pregnancy and delivery — at least none that she can interpret when she wakes from her coma (Hogg, p. 213). Elizabeth Stephens's analysis of the Sleeping Venus could apply as well to Hogg's representation of Gatty:

> With the discreet covering of her genitals, Spitzner's Venus also represents a new view of maternity in which female pleasure

[35] William Smellie, *A Course of Lectures upon Midwifery,* [...] *Perform'd on Different Machines made in Imitation of Real Women and Children* (London: [n. pub.], 1745).
[36] Elizabeth Nihell, *A Treatise on the Art of Midwifery* (London: Morley, 1760), p. 50.

Fig. 10: Giovanni Antonio Galli, Birthing Machine, mid-eighteenth-century, Museo di Palazzo Poggi, Bologna. Author's own photograph.

Fig. 11: Pierre Spitzner, Sleeping Venus, *c.* 1860, University of Montpellier, France. Photograph courtesy of Irene Brown.

> has been erased from the scene of reproduction, and the vagina replaced by surgical instruments. No longer a highly eroticised figure, like Susini's, Spitzner's Venus is closer to the new figure of the 'passionless moral mother'.[37]

For both the 'real' automaton and automatous 'real' mother, conception is virtually immaculate; delivery is free from what Hogg describes as the 'throes of nature to which conscious beings are subjected'; the body is unmarked by recognizable signs of pregnancy and birth (pp. 204, 213).

That the female reproductive body is viewed as abject is mirrored in an otherwise odd speech made by Gatty's sheep-farming father Daniel. When he mistakenly believes her illegitimately pregnant, he declares that he has taken 'an ill will at thae she things' and is 'tired o' thae breeding creatures'; as such, he determines to 'thin' his flock of sheep to keep males only (pp. 117–18). Here and elsewhere in the novel, there is a tendency to both misread Gatty's body and to understand it as internally disordered and unstable. Her body harbours conditions that 'no one knows the nature of' and more than once she despairs of an unknown and unseen 'disease preying on [her] vitals' (p. 18). In one incident, even before her marriage, she suddenly becomes so insensate, with no pulse, that even a surgeon believes her dead (pp. 51–52). Then, following her post-marriage 'death' and reanimation, her father declares that 'it's no her' but 'an uncouth form'; as an asylum patient,

---

[37] Stephens, p. 140. She refers here to John Tosh's work on gender and Victorian domesticity, in John Tosh, *A Man's Place: Masculinity and the Middle-Class Home in Victorian England* (New Haven: Yale University Press, 1999). This understanding of women as biologically passionless became medicalized in the 1840s and 50s, as Tosh observes (p. 44), but it drew on a much older and wider perception.

she becomes 'a thing that had been — that still continued to be, and yet was not!' (pp. 200–01, 205). So ambiguous is 'her condition — her very being' that no one dares 'to so much as turn a scrutinizing glance, or hazard an investigation' into the depths of the horror that is her body's murky interior (p. 205). The 'thorough renovation' her body undergoes in the asylum, from flesh and blood to inanimate sculpture — 'cold as marble' — and back again is more profound than it first appears (p. 211). Though she returns to the land of the living as a physically revived, conscious woman, it is as if she remains partially in a coma. The obedient, loving, maternal, wifely Gatty is an autonomous, passionless, bloodless, and, in many ways, bodiless — or perhaps, organless — version of herself.

The idea of flesh transformed into a sculptural, empty machine is taken much further in Villiers de l'Isle-Adam's *Tomorrow's Eve* (1886), a novel about the creation of a perfect female 'android' (a term Villiers popularized). In it, the two male protagonists, a fictionalized version of the American inventor Thomas Edison and his British aristocratic friend Lord Ewald, make a pact to replicate the external body of Ewald's beautiful but (allegedly) intellectually and emotionally vacant mistress, Alicia Clary, but to eliminate her internal self, in both the intangible and tangible senses.[38] Through the wonders of medicine, science, visual technology, and cosmetics, Alicia — I am using her first name purposely — has her external body perfectly replicated in the form of the android Hadaly. In Hadaly, Alicia's offensive personality and her equally offensive internal organs are replaced with, respectively, an inoffensive compliant character, and an inoffensive non-biological internal structure.

This novel would more aptly be titled *Tomorrow's Venus*, for classical sculpture is a touchstone throughout. So closely does Alicia physically resemble 'a flesh-and-blood statue of *Venus Victorious*', that 'one can practically see the imprint of the stone in her flesh' (pp. 58, 181). The problem, as Lord Ewald explains, is that 'from the outside, and from the brow to the feet', she is 'a sort of Venus Anadyomene', while her interior self is 'absolutely FOREIGN to the body' (p. 36). In fact, Ewald's epiphanic

[38] Villiers de l'Isle Adam, *Tomorrow's Eve*, trans. by Robert Martin Adams (Champaign: University of Illinois Press, 2001). Behind the imaginative construction of this particular strain of automata is a case of life and art intersecting. Gaby Wood and others have detailed how the inventor Thomas Edison desired to improve the body of his soon-to-be wife Mina, by blending her appearance with that of two other women, to produce 'a new combination a la Galton': see Thomas A. Edison Diary, 12 July 1885, in *The Thomas Edison Papers* <http://edison.rutgers.edu/NamesSearch/SingleDoc.php3?DocId=MA001> [accessed 14 March 2017]; see also, Wood, *Living Dolls*. For a reading of the artificial female and sexual desire in the novel that places it in a wider context, see Patricia Pulham, 'The Eroticism of Artificial Flesh in Villiers de L'Isle Adam's *L'Eve Future*', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 7 (2008) <http://doi.org/10.16995/ntn.486>.

moment — the moment he realizes both that he cannot live without her external form nor with her revolting interior — occurs on a visit to see the famous Venus at the Louvre in Paris. Recognizing the uncanny likeness between the marble and herself, Alicia judges herself superior because, as she says, 'I have arms, and besides I'm more distinguished looking' (pp. 45–46). Ewald is aghast. The idea of sex with her, he says, 'would *revolt* me'; he would rather see her dead, 'if death didn't result in the effacing of all human features' (p. 46, emphasis in original).

Alicia may be Venus-like on the outside, but her inner self is 'a strange monstrosity', described as

> nothing but a *sickness*, that must be the result of some envious strain injected long ago in her bizarre family. She was born that way, as some children are born speckled or with web feet; in a word, she is an anomaly as odd as a giant! Her resemblance to the *Venus Victorious* is nothing for her but a kind of elephantiasis of which she will die. A pathological deformity, with which her wretched little nature is afflicted. (p. 181, emphasis in original)

As the references to pathology and genetics indicate, Ewald and Edison each turn anatomist-psychologist-pathologist. They catalogue Alicia's inane patter as evidence of hypochondria and 'mindless hysteria'; she is, Ewald insists, 'the twin sister' to the inanely chattering maniacs confined to asylums like Salpêtrière (p. 40). In this, their cataloguing of visible or spectacular symptoms as evidence of an internal lesion or origin of pathology, they adopt the methods of Salpêtrière's most famous clinician, Jean-Martin Charcot. And, like Charcot's hysterical female 'muses' or *poupées hypnotisées*, the actress Alicia performs for the men, subconsciously and consciously adjusting her speech and routines, as the occasion (they create) demands.[39]

Edison's own epiphanic anecdote reveals his pathologizing impulse. As he recounts for Ewald, he once observed how a dancer, Evelyn Habal, seduced a successful businessman from his wife, thereby setting in motion a train of disasters (divorce, familial estrangement, bankruptcy, suicide). Edison's vitriol for Habal is boundless: within men there may 'slumber ugly desires, rising from the fumes of flesh and blood', but these 'germs' remain slumbering, 'in limbo', unless they are unleashed through contact with this category of woman (p. 112). There is a 'slow hysteria which distills from'

[39] On the visual culture surrounding late nineteenth-century hysteria, see Georges Didi-Huberman, *Invention of Hysteria: Charcot and the Photographic Iconography of the Salpêtrière* (Cambridge, MA: MIT Press, 2004), and Asti Hustvedt, *Medical Muses: Hysteria in Nineteenth-Century Paris* (New York: Norton, 2011).

these women, Edison explains, so that 'they can hardly avoid performing, *even in spite of themselves*', a role that will cause 'cerebral anemia' in their male victims (p. 112, emphasis in original). If there is a comparison to be drawn between Evelyn and Alicia, it is that 'their bodies shelter nothing in the way of spirit', but rather harbour a 'contagious' pathology, a 'potent poison' that corrodes the family and society; as such, it is 'the right of the man', Edison pronounces, 'to inflict a summary execution on her' (pp. 112, 113).

The exteriors of these women's bodies obscure the ugly reality of their biology, their desires, their motivations, a fact that Edison demonstrates to Ewald with the aid of visual technology. With a nod to Charcot and to the pioneering photographer Eadweard Muybridge, and in anticipation of the cinematographic techniques of the Lumière brothers, Edison conjures the image of the deceased Evelyn, manipulates and projects it. The two men watch, as the seductively dancing virtual Evelyn transforms into the image of the 'real' Evelyn: shorn of make-up, clothing, and enhancements. She is a toothless, lipless, bald, wrinkled, consumptive with 'dwarfish limbs'; she is, Edison declares, a mockery of Venus, of 'the statues of Athens', a creature 'far removed […] from Daphnis and Chloe' (pp. 118, 120). Visual technologies are men's tools, which enable them to identify the pathologies that only leave external 'traces' of '*the secret of their malignant charm*'; most often, their '*morbid and fatal influence*' does not show itself to the naked eye (pp. 114–15, emphases in original). Still photography and 'successive photography' provide 'a transparent vision, miraculously caught'; thus, new technologies speak to old anxieties (p. 117).

Jennifer Forrest identifies, in Villiers's novel and other Pygmalion-inspired *fin-de-siècle* narratives, an 'immense disparity existing between a firmly established aesthetic codification of the female-body-as-object-of-art and the real female body' — or we might say, between the classical Venuses and the Evelyn Habals.[40] As a way of narrowing this gap, social aims (controlling women's sexual desires through domestication) merged with medical treatments (say, for hysteria) and with new technologies (such as photography) (Forrest, p. 21). Indeed, this is precisely Edison's three-pronged attack. His methods for creating the organless android Hadaly, who represents the classical Venus, are technological (photography and phonography), artistic and decorative (sculpture, dressmaking, and very high-end wigmaking), and medical (dissection and surgery). During surgery, Edison looks down on his android, which lies 'like a corpse on the dissecting table in an amphitheater', and quips, 'think of the picture of Andreas Vesalius, […] we're imitating the general idea of it at

[40] Jennifer Forrest, 'The Lord of Hadaly's Rings: Regulating the Female Body in Villiers de l'Isle-Adam's "L'Eve future"', *South Central Review*, 13.4 (1996), 18–37 (p. 21).

this moment.'[41] The dissection and resurrection or, as Edison describes it, transubstantiation, creates a woman without a human soul and, even more wonderfully, without flesh, blood, fat, stomach, lungs, heart, brains, or reproductive organs. 'Even in her first beginnings,' Edison explains, the android 'offers none of the disagreeable impressions that one gets from watching the *vital processes* of our own organism' (p. 130, emphasis in original). Hadaly's machine body, like that of her classical template, but unlike that of the birthing mother or the newborn, is 'always under control' (p. 144). In Hadaly, biological material is replicated in glass, metal, and rose-scented fluids, except for the undesirable reproductive organs, which are left out completely.

The idea that a too intimate familiarity with women breeds contempt — and the dream that a sculpture or an automaton would solve this problem — informs a long literary tradition, from the Pygmalion myth through E. T. A. Hoffmann's 'The Sandman' to *The Stepford Wives*. But as I hope to have shown here, in the nineteenth century, some automata, cast as classical Venuses, reflected the sense that a too intimate familiarity with women's *internal bodies* bred a visceral contempt. This automatous Venus is a form of protest against another long, but more recent, tradition: that of the science of anatomy and the culture of dissection to which it gave rise. This medical tradition had produced the spectacular, specular anatomical Venuses, and had greatly influenced representation of the human figure in art. The automatous Gatty and the android Hadaly reflect a turning away from this aesthetics of anatomical realism. Dissatisfaction with Enlightenment dreams of bodily transparency was thus reformulated into another dream: for a female body without organs.

[41] Villiers, p. 125. On a reading of the novel as anticipating how the anatomical gaze will be absorbed into the cinematic gaze, see Allison de Fren, 'The Anatomical Gaze in *Tomorrow's Eve*', *Science Fiction Studies*, 36 (2009), 235–65.