Conclusion

The stories in this book are by turns moving, humorous, shocking, and bizarre. Above all, they have shown that experiences of bodily alteration were almost infinitely varied. Bodily difference could signify in vastly different ways, from the destitute cripple to the desirable castrato. The nobleman amputee with a sophisticated articulate prosthetic lived his body in a way profoundly different from the discharged soldier with an unhealed stump. The female mastectomy survivor found that her bodily difference went unmentioned, whereas the woman with facial difference might be used to being commented on and stared at. The questions of categorisation raised in the Introduction to this book therefore remain live concerns. This is not only because we lack terms appropriate to the early modern period, but because even in that period, the lines between bodily wholeness and partition, impairment and disability, and health and illness were constantly shifting.

It is also clear, however, that the body remains a fruitful object of study despite (perhaps because of) its slipperiness. The repetition of similar questions about identity and subjectivity across various kinds of narrative about various kinds of bodily change shows that there was a conceptual thread which linked 'altered people' together. By making visible the continuities and fissures between flesh and identity, surgically changed bodies crystallised a metaphysical question surrounding all bodies: *how* did one 'have a body'? Embodiment was, on the one hand, an inseparable facet of being, yet, on the other hand, the body often seemed a quasi-alien thing, available for manipulation and liable to exert demands upon the person 'inside'. The flesh was both thinking, feeling subject, and lumpen object. Early modern people were alive to these contradictions, and not only in philosophical terms. Concern with the relationship between mind and body permeated the moral panic over castrati and the satirical jibes levelled at those who underwent cosmetic surgery. It helped to determine what people prioritised when they commissioned artificial limbs, and

where and how they buried their loved ones. Thinking about embodiment was therefore not a discrete subject for the learned, but a problematic woven through culture, from medicine, to trade, the arts, formal worship, and informal devotion.

These discussions did not take place exclusively in the terms we now tend to imagine them, with substance dualists on one side and others advocating for embodied cognition through the humours. In reality, even the most formal philosophy struggled to assert that the body was entirely irrelevant to one's way of being in the world. Equally, when they spoke of the body as deeply and complexly related to the mind or soul, or of the soul as being embodied, early modern people did not necessarily think in humoral terms. Rather, they spoke directly of the social and cultural functionality of the body, treating the body itself as a relational object-subject without recourse to a narrative of animating passions. Even developments or processes which appear to us to promote a mechanistic idea of the body – the advent of articulated prostheses, for instance – could be read as exemplifying the interconnectedness of somatic and emotional experience. In this landscape, the possibilities for bodily alteration were both broad and deep. Increasingly, it seemed that there was almost no part of the body which might not be changed in some way.

While this story is characterised by variance and individuality, we can nonetheless trace some broad influences at work. The shift from Galenic to iatrochemical medical models over the early modern period has been much discussed. The stories in this book confirm that this shift was incomplete and far from linear; humoral ideas were incorporated into new medical philosophies rather than supplanted by them.[1] Nonetheless, the notion of bodily processes as governed by discrete chemical entities – informed in turn by belief in atomism – was a necessary precondition to the theories of sympathy which allowed writers to imagine a piece of transplanted flesh communicating across distances with its original owner.[2] Anxieties about transplanting flesh from one person to another had been around for a long time by the seventeenth century, but scientific credibility, or at least the appearance thereof, gave those fears extra bite. More generally, Paracelsian and Helmontian medical models were associated with a democratic

[1] See, for instance, Silva de Renzi, 'Old and New Models of the Body', in *The Healing Arts: Health, Disease and Society in Europe, 1500–1800*, ed. Peter Elmer (Manchester: Manchester University Press, 2004), pp. 166–9; Mary Lindemann, *Medicine and Society in Early Modern Europe*, 2nd edition (Cambridge: Cambridge University Press, 2010), especially p. 8.

[2] See Ann E. Moyer, 'Sympathy in the Renaissance', in *Sympathy: a History*, ed. Eric Schliesser (Oxford: Oxford University Press, 2015), pp. 71–102.

medical marketplace, in which cures no longer needed to be tailored to the individual. This shift away from individualised medicine accompanied a rise in tonics and cure-alls which did not require prescription. It also fostered the idea that the human body was eminently comprehensible, and therefore fixable, thus paving the way for the narratives of restoration we have seen in facial and limb prostheses.

Such changes were enmeshed with shifts in economic behaviour. The popularity of castrati, the rise of 'cosmetic' surgery, and the development of articulated prostheses all depended for their existence on a burgeoning consumer culture.[3] This does not necessarily imply that eighteenth-century consumers cared more or less about physical appearances than their Elizabethan forebears, but they had more avenues at their disposal to alter their bodies and faces. We might also view self-improvement technologies as an arms race: the more it was possible to smooth over one's physical differences, the greater the social requirement to do so. In 1729, Joshua Gee inveighed against 'Creatures that go about the Streets to shew their maim'd Limbs, nauseous Sores, stump Hands or Feet, or any other Deformity'.[4] His suggestion that all such people could be housed in one large hospital was typical of the eighteenth- and nineteenth-century tendency to categorise and institutionalise people with disabilities. However, his concern that the sight of such beggars might cause infants to be 'deformed' in the womb relied on beliefs about maternal imagination which were almost two hundred years old.[5] Perceived ties between physical attributes and moral worth were thus renegotiated rather than loosened over this period. The indexing of social privilege to an innately 'noble' body may have declined in the latter half of the seventeenth century. However, new forms of reading the body, such as physiognomy, readily emerged to supplant that model, confirming that people still wanted and needed a way of connecting physical and moral virtues and deficiencies. Rather than sickening and dying, questions about bodily integrity and

[3] On the economic evidence about this period, see Darron Dean et al., *Production and Consumption in English Households, 1600–1750* (Florence: Routledge, 2004). On consumerism and luxury, see Helen Berry, 'Polite Consumption: Shopping in Eighteenth-Century England', *Transactions of the Royal Historical Society* 12 (2002): 375–94; Maxine Berg, *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2007); Maxine Berg and Elizabeth Eger, 'The Rise and Fall of the Luxury Debates', in *Luxury in the Eighteenth Century: Debates, Desires and Delectable Goods* (Basingstoke: Palgrave Macmillan, 2016), pp. 7–28; for an overview of historiography of this period, see Sara Pennell, 'Consumption and Consumerism in Early Modern England', *Historical Journal* 42:2 (1999): 549–64.

[4] Joshua Gee, *The Trade and Navigation of Great-Britain Considered* (London: printed by Sam Buckley, 1729), p. 42.

[5] Ibid.

moral worth mutated and adapted, in concert with new forms of expression. This book has briefly considered how the burgeoning form of print advertising encouraged readers to view bodies – both their own and those of other people – as commodities. However, the link between advertising, perceptions of the body, and the emergence of the novel is an intriguing area for further study.

Considering questions of bodily identity as unevenly influenced by socio-economic and intellectual factors is both more painstaking and more productive than ascribing change to the Enlightenment, as if this were a blunt force sweeping the nation. Kinds of bodily alteration are micro-histories in which we can see how early modern people accrued new languages with which to describe their hopes and fears. At the same time, they may supply a broader perspective with which to consider modern innovations in the remaking of the body. In the course of writing this book, it has become apparent that experiences of and questions about embodiment raised in the seventeenth and eighteenth centuries remain powerfully relevant. In its extraordinary capacity to restore the body, modern medicine appears in places to be reaching towards what Drew Leder terms 'the Cartesian dream of remaking the body at will'.[6] Certainly the ableist ideal hinted at in early modern discourses about artificial arms and legs is prominent in modern narratives of prosthesis. Prosthetic limbs and other devices are more sophisticated than ever before. Largely funded by military agencies (notably the United States' Defense Advanced Research Projects Agency [DARPA]), technologists have created artificial limbs capable of connectivity with the body's nervous system, such that they can be said to be brain-controlled. Often, these limbs are capable of feats of strength or speed unavailable to 'natural' bodies. Publicity material for a prosthetic arm unveiled in 2016, for instance, proudly notes that the arm can lift a 45lb dumbbell and never gets tired.[7] Like the mechanical prostheses of the early modern period, these technologies aim to erase disability by erasing the economic and social disadvantages associated with impairment. Where early modern surgeons imagined prosthesis users walking and riding confidently, modern technologists have created a

[6] Drew Leder, 'Whose Body? What Body? The Metaphysics of Organ Transplantation', in *Persons and their Bodies: Rights, Responsibilities, Relationships*, Philosophy and Medicine (Dordrecht: Springer, 1999), p. 239, https://doi.org/10.1007/0-306-46866-2_10.

[7] Darren Weaver, Corey Protin, and Paul Szoldra, 'The Military Just Built the Most Advanced Prosthetic Arm We've Ever Seen', *Business Insider*, accessed 28 May 2018, http://uk.businessinsider.com/advanced-darpa-prosthetic-arm-2016-5; DARPA, 'Revolutionizing Prosthetics', accessed 28 May 2018, www.darpa.mil/program/revolutionizing-prosthetics.

vision of re-ablement in which the prosthesis user is less restored than augmented. This 'supercrip', it is imagined, may possess an assembly of parts which is superior to the natural body, such that some transhumanist thinkers imagine a future in which people elect to 'upgrade' themselves with prosthetics.[8]

Moreover, the surgical alteration of the body may be moving into new territories. Among other projects disclosed by DARPA is the development of 'Iron Man' style exoskeletons, aimed as much at protecting and augmenting able-bodied soldiers as at allowing those with spinal injuries to walk again.[9] The most radical transhumanists seek to alter the body from the inside out using so-called insideables, neural and physiological implants designed to enhance human performance and confer new abilities.[10] These range from cochlear and retinal implants designed to restore lost senses, to so-called memory implants, silicon chips capable of mimicking the signal processing which occurs naturally in the brain.[11] Of particular interest to both military-focussed and academic transhumanists is the possibility of 'tech-lepathy'. An implanted device would convert the nerve impulses on their way to the vocal cords into sounds, which might then be radio-transmitted and reverse-translated into neural signals for another implant-wearer, thus erasing the need for vocal communication altogether.[12] In pursuit of morphological freedom, transhumanists thus happily seek to jettison the human body as it currently exists. In Max More's words, 'Transhumanists regard human

[8] Dave Lee, 'When Your Body Becomes Eligible for an Upgrade', *BBC News*, 15 July 2017, www.bbc.co.uk/news/technology-40616561.

[9] Roberto Manzocco, *Transhumanism: Engineering the Human Condition: History, Philosophy and Current Status* (Leiden: Springer, 2019), p. 173.

[10] I am indebted here to Professor Tracy Harwood and Dr Camille Baker, who kindly spoke about art, bodily technologies, and transhumanism at a public engagement event connected to this book project in April 2018. Their discussion of future directions in bodily alteration informed the book in unexpected ways.

[11] Jon Cohen, 'Brain Implants Could Restore the Ability to Form Memories', *MIT Technology Review*, accessed 29 May 2018, www.technologyreview.com/s/513681/memory-implants/.

[12] Manzocco, *Transhumanism: Engineering the Human Condition*, pp. 179–80. On these topics, and other forms of transhumanism, see Mark O'Connell, *To Be a Machine: Adventures among Cyborgs, Utopians, Hackers, and the Futurists Solving the Modest Problem of Death* (London: Granta Books, 2017); Tim Adams, 'When Man Meets Metal: Rise of the Transhumans', *The Observer*, 29 October 2017, www.theguardian.com/technology/2017/oct/29/transhuman-bodyhacking-transspecies-cyborg; Steven John Kraftchick, 'Bodies, Selves, and Human Identity: a Conversation between Transhumanism and the Apostle Paul', *Theology Today* 72:1 (2015): 47–69, https://doi.org/10.1177/0040573614563530; Max More and Natasha Vita-More, eds, *Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future* (Somerset: Wiley, 2013).

nature not as an end in itself, not as perfect, and not as having any claim on our allegiance.'[13]

In these circumstances, it may appear that the 'Cartesian dream' is complete – that the body itself has come to be regarded as a prosthesis which is firmly, but not inalienably, attached to the 'real self' of *res cogita*. Transhumanists are often at pains to point out that they are not dualists, since they believe that cognition requires a physical instantiation. They do, however, believe that the nature of the substrate for thought is relatively unimportant, and may become non-biological.[14] Yet cases such as that of Clint Hallam, the hand transplant recipient who rejected his new hand on psychological grounds, demonstrate that outside the rarefied world of transhumanist innovation, bodies still matter. The body may no longer uniformly be considered as eternally linked to an immortal soul, but it retains a link to one's personhood which is hard to ignore. Discussing the ethics of transplantation, Leder contends that 'the self is an integrated whole whose subjectivity is embodied, and whose body is "mentalized" through and through'.[15] Body-altering sex reassignment, along with some kinds of cosmetic surgery, demonstrates that people may view a sense of estrangement from their bodies not as an inevitable effect of dualist embodiment but rather as a problem which is in need of redress. In these cases, medical intervention implies that the 'normal' mode of embodiment is one in which subjectivity is experienced through and in the body.[16] Moreover, a greater attention to the subjectivity of the body might potentially offer a counter to the tendency of modern physic to treat the body rather than the person. It has been suggested that in order to improve health outcomes, a greater emphasis on preventive care is needed, which might be fostered in part by emphasising one's *being* rather than *having* a body.[17]

One way in which these discourses have been brought together is in the idea of '4E' cognition.[18] Investigations into this area are the province of

[13] Max More, "The Philosophy of Transhumanism," in *Transhumanist Reader*, ed. Vita-More and More, p. 4.

[14] Ibid., p. 7. [15] Leder, 'Whose Body?', p. 254.

[16] As part of public engagement work connected to this project, in 2017 I held an event discussing voice and gender identity. Among the attendees were transgender men and women seeking advice on how to train their voice to reflect this gender identity. For these people, changing the body was a case not of exceeding natural limits, but of 'passing' in day-to-day life – reflecting the way in which discourses of bodily alteration extend beyond those of disability studies and transhumanism.

[17] Drew Leder, 'Medicine and Paradigms of Embodiment', *Journal of Medicine and Philosophy: a Forum for Bioethics and Philosophy of Medicine* 9:1 (1984): 29–44, https://doi.org/10.1093/jmp/9.1.29.

[18] For a full explanation of the differences between the four 'Es' of extended, embodied, embedded, and enacted cognition, see Mark Rowlands, *The New Science of the Mind: From Extended Mind to Embodied Phenomenology* (Cambridge: MIT Press, 2010).

neuroscientists, philosophers, phenomenologists, and psychologists. The 'Es' most relevant to altered bodies are *embodied* and *extended* cognition, as summarised by Mark Rowlands:

> The idea that mental processes are *embodied*, is very roughly, the idea that they are partly constituted by, partly made up of, wider (i.e. extraneural) bodily structures and processes ... The idea that mental processes are *extended* is the idea that they are not located exclusively inside an organism's head but extend out, in various ways, into the organism's environment.[19]

Work on embodied cognition has lately sought to prove that which early modern people instinctively assumed – that thinking takes place through the flesh as well as in the brain. In his *How the Body Shapes the Mind*, Shaun Gallagher summarises numerous examples in which the attitudes and motions of the body are shown to affect perception and thought. For example:

> Body posture can affect attention and certain kinds of judgement. If subjects turn head and eyes to one side just prior to making a judgement, the direction of turning influences cognitive performance. When subjects listen to a sentence with head and eyes turned right, their performance in cued recall is better than when they listened with head and trunk turned toward the left.[20]

Unsurprisingly, the hands have a particularly potent role in cognitive processes. In brain-damaged subjects, the hands may be capable of manipulating an object in the appropriate way even when the person is unable to identify that object, implying a degree of what Gallagher terms 'manual thinking'.[21] It has also been observed that 'Objects located near one's hands receive enhanced visual attention ... the hands facilitate the evaluation of objects for potential manipulation.'[22] If one can think through movement, then gesture takes on a new significance as not only expressive of thought, but integral to the formation of ideas. Andy Clark describes how gesture has been shown to help in tasks such as remembering a list or solving maths problems. Gesturing, he argues,

> is not simply a motor act expressive of some fully neurally realized process of thought. Instead, the physical act of gesturing is part and parcel of a coupled neural-bodily unfolding that is itself usefully seen as an

[19] Ibid., p. 3
[20] Shaun Gallagher, *How the Body Shapes the Mind* (Oxford: Oxford University Press, 2005), p. 9.
[21] Shaun Gallagher, 'The Enactive Hand' in *The Hand, an Organ of the Mind: What the Manual Tells the Mental*, ed. Zdravko Radman (Cambridge: MIT Press, 2013), p. 213.
[22] Ibid., p. 214.

> organismically extended process of thought. In gesture, we plausibly confront a cognitive process whose implementation involved machinery that loops out beyond the purely neural realm.[23]

Clark's contention may seem radical, but as he recognises, it reiterates the contention of phenomenologists that all language is body language. As Elena Cuffari asserts, 'Speech is already gesture: the use of words is an instance of body movement and expression. Gesture is the happening, or enactment, of thought.'[24]

Such work expresses in a renewed form that which is imaginatively conveyed in *Titus Andronicus* or the Miracle of the Black Leg: losing a body part is a psychic as well as physical change. It also overlaps with extended cognition by positioning the use of prostheses in a new light, as a kind of environmental scaffolding which facilitates thought.[25] I have argued that Lavinia's use of prostheses allows her to express an 'inward' self which is ignored by those around her. Extended cognition might go further, arguing that the prostheses allow her to think as well as act differently. Moreover, the extended mind hypothesis touches most closely on early modern themes when it goes beyond the individual, positing intersubjectivity as a constitutive part of the cognitive process.[26] Joel Krueger takes the bold step of arguing for interpersonal interactions as cognitive in nature, such that encounters between people may constitute thinking-in-action:

> I argue that social cognition is a kind of extended cognition. Specifically, I argue that social cognition is fundamentally an interactive form of space management – the negotiation and management of 'we-space' – and that some of the expressive actions involved in the negotiation and management of we-space (gesture, touch, facial and whole-body expressions, etc.) drive basic processes of interpersonal understanding ... Some social-cognitive processes are therefore partially driven by and composed of non-neural scaffolding; and social cognition is in this way not reducible to individual, intracranial mechanisms but instead emerges from within the dynamics of the interactive process itself. Put otherwise, social *interaction* is a form of social *cognition*.[27]

[23] Andy Clark, 'Gesture as Thought?', in *The Hand, an Organ of the Mind*, ed. Radman, p. 257.
[24] Elena Cuffari, 'Gestural Sense-Making: Hand Gestures as Intersubjective Linguistic Enactments', *Phenomenology and the Cognitive Sciences* 11:4 (2012): 615, https://doi.org/10.1007/s11097–011-9244-9.
[25] Joel Krueger, 'Extended Cognition and the Space of Social Interaction', *Consciousness and Cognition* 20:3 (2011): 643–57, https://doi.org/10.1016/j.concog.2010.09.022.
[26] Richard Menary, 'The Enculturated Hand', in *The Hand, an Organ of the Mind*, ed. Radman, pp. 349–67.
[27] Krueger, 'Extended Cognition and the Space of Social Interaction', 643.

While Krueger's formulation of 'body-centric action space' is abstract, it receives some support from research into mirror neurons, through which social interactions may be concretely played out in the brain:

> The recent discovery of 'mirror neurons' in the premotor cortex, neurons that are activated by the subject's own motor behavior *or* by the subject's visual observation of someone else's motor behavior, shows a direct and active link between the motor and sensory systems and has important implications for explaining how we understand other people.[28]

The potential links between research of this kind and early modern considerations of embodiment are striking. Jonathan Sawday has noted that mirror neurons may provide a modern correlate for the early modern understanding of pain as 'historically and socially contingent'.[29] The neuroscientific idea of pain sensations as stimulated by the sight of another's distress concretises the 'imaginative participation' which made gazing on images of Christ or watching *King Lear* almost unbearably painful.[30] More generally, new research into the role of the body and intersubjectivity in phenomenological experience is often redolent of early modern writing on the passions as jointly somatic and cerebral. This book has shown that flesh and thought were often deeply imbricated with one another, to the extent that even after death, personal identity might be argued to inhere in the body. Numerous scholars have recently explored the implications of embodied and extended cognition for the study of early modern culture in general and Shakespeare in particular, as part of a growing field of cognitive humanities.[31] In this process, we should be careful not to equate modern and early modern ideas too closely. It is important to remember that early modern belief in an immortal soul

[28] Gallagher, *How the Body Shapes the Mind*, p. 9.

[29] Jonathan Sawday, '"I Feel Your Pain": Some Reflections on the (Literary) Perception of Pain', in *The Hurt(Ful) Body: Performing and Beholding Pain, 1600–1800*, ed. Tomas Macsotay, Cornelis Van der Haven, and Karl Vanhaesebrouck (Manchester: Manchester University Press, 2017), p. 110.

[30] Ibid.

[31] There is much emerging work on this topic, and a brief summary can be found in the "Introduction", in Raphael Lyne and Timothy Chesters, eds., *Movement in Renaissance Literature: Exploring Kinesic Intelligence* (Basingstoke: Palgrave, 2017), pp. 1–12. Other works of note include Mary Thomas Crane, *Shakespeare's Brain: Reading with Cognitive Theory* (Princeton: Princeton University Press, 2010); Laurie Johnson, John Sutton, and Evelyn Tribble, *Embodied Cognition and Shakespeare's Theatre: the Early Modern Body-Mind* (Abingdon: Routledge, 2014); Evelyn Tribble, *Cognition in the Globe: Attention and Memory in Shakespeare's Theatre* (New York: Palgrave Macmillan, 2011); Steve Mentz, 'Half-Fish, Half-Flesh: Dolphins, the Ocean, and Early Modern Humans', in *The Indistinct Human in Renaissance Literature*, ed. Jean E. Feerick and Vin Nardizzi (New York: Palgrave Macmillan, 2012), pp. 27–46; John Sutton, 'Spongy Brains and Material Memories', in *Environment and Embodiment in Early Modern England*, ed. Mary Floyd-Wilson and Garrett A. Sullivan, Jr. (Basingstoke: Palgrave Macmillan, 2007), pp. 14–34.

provided an animating principle for all action, such that the matter of the brain itself could be viewed as *res extensa*. Nonetheless, discourses from this period provide a valuable context for transhumanist and neuroscientific debates which are often presented as ahistorical, and which raise troubling ethical questions. When it came to altered bodies, early modern people showed nuance and humility in their beliefs. They had rich epistemological languages in which to imagine their own embodiment, and they used those languages fluidly. Though their spiritual convictions were deeply held, they were capable of embracing heteroglossic, even contradictory modes of thought about the body. In order to examine bodily alterations both modern and historic, we need to be like the early moderns: flexible, curious, ready to change our minds.