UNFOLDING THE LANCET:

THE MATERIAL CULTURE OF SMALLPOX INOCULATION AND VACCINATION IN THE LONG EIGHTEENTH CENTURY

by

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ABSTRACT

This thesis positions the lancet – a small tool largely associated with bloodletting and other topical incisions – within the material culture of inoculation and early vaccination in the long eighteenth century of the Atlantic World. In doing so, the lancet activates the networks of exchange, consumption, and materiality that define the assumption of inoculation, and subsequently vaccination, within Euro-colonial health systems. Furthermore, the lancet is used a point of access in medical archives through which patient narratives of bodily autonomy and choice can be extracted. First, an overview of the history of the lancet is provided to understand its role as an adaptive and dynamic object in the eighteenth century, thus explaining its ultimate implementation in early inoculation procedures. Then, the lancet is framed as an imperial object implicit in professionalization of medicine by locating it within medical texts produced throughout the colonial Atlantic World. Finally, the focus turns to a variety of individual encounters with lancets to explore the intimate experience of inoculation that varied widely depending on race, gender, and class. The thesis concludes with an examination of the role of lancets in anti-vaccination prints in the early nineteenth century, thus demonstrating the object's prominence within the visual and imagined spheres of inoculation practices. Ultimately, this analysis of the lancet highlights a previously understudied component in the histories of smallpox, inoculation, and vaccination, while also expanding upon the networks that defined the material culture of the long eighteenth century.

Chapter 1

INTRODUCTION

I first held a lancet (Figure 1) at Colonial Williamsburg, thanks to some last-minute scheduling with Erik Goldstein during the 2023 Antiques Forum. This lancet belonged to Dr. John Minson Galt, a surgeon who practiced in Williamsburg, Virginia, in the second half of the eighteenth century. Despite being approximately 250 years old, the lancets were still incredibly sharp; the tortoiseshell wings had succeeded in protecting the precious blade. The blade itself was startlingly thin – when I held it up from the side, the steel almost disappeared into a sliver of metal. Galt's lancets, like its eighteenth-century counterparts, are small and lightweight yet carry heavy cultural meaning. It was strange holding an object that could have encountered such dangerous bodily fluids. Blood, pus, smallpox, viruses — all would have met with the lancet during the variety of procedures that called for the skin to be sliced. Although the blade in my hand was clean, I knew what substances would have spurted onto the steel at the moment of incision. When I later found the anti-vaccination prints that depicted the lancet in various forms of contact with human and animal bodies, I better understood why this aspect of inoculation became such a lightning rod for polemic visual rhetoric. It was, after all, the lancet that stewarded all these materials into and around people in vulnerable moments.

Chloe Wigston Smith writes that, "the gigantic catches the eye, but the small draws us in."[1] To use Smith's framework, smallpox is the gigantic – not just in the incalculable number of people who lost their lives to the disease, but also in its presence throughout history and among historiographies. It's an abstract entity, too, especially to someone like me who did not need to receive a smallpox vaccine as a child. Amidst the history of smallpox, though, the lancet appears in flashes. The lancet is "the small," and it should not be forgotten.

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An exchange of blood and pus between two bodies. That is all the inoculation procedure boils down to, in essence: an exchange of blood and pus between two bodies, bodies that sometimes lived in different regions or even on different continents. There would first be the cut on the arm, painful and stinging because the wound had to be deep enough to receive the foreign bodily matter. Some inoculators preferred to make two cuts, maybe three. As any cut would, these incisions all resulted in open wounds on the person's body that inevitably bled.

Then the actual inoculation. Pus, placed on the tip of a small lancet, carried up to the arm and then inserted into the fresh cuts. This lancet likely would have been the same one that sliced open the skin only moments before.[2] And from whom did the pus

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[1] Chloe Wigston Smith, "Bodkin Aesthetics: Small Things in the Eighteenth Century," *Eighteenth-Century Fiction* 31, no. 2 (2019): 272.

[2] Thomas Dimsdale, *The Present Method of Inoculating for the small-pox: to which are added, some experiments, instituted with a view to discover the effects of a similar treatment in the natural small-pox* (London: printed for W. Owen, 1772): 23-25.

come? Who was the donor of the thick, liquid matter that imbued the receiver with an infection that would – if they survived it – grant them lifelong immunity from smallpox? Sometimes festering pustules were provided by family members or neighbors. In other cases, the matter was sourced from the pustules of people likely unknown to those getting inoculated. With the development of the cowpox vaccination, the material could even be sourced from an animal located across the Atlantic Ocean.[3] Wherever the pus came from, it tended to start an infection around the area of insertion. Painful, angry pustules, immediately recognizable as harbingers of smallpox, began to radiate from the original cut. Heat and exhaustion followed soon after.[4] More often than not, the person recovered. Sometimes they did not. However, if the person survived their inoculation encounter with pus, blood, and lancet, they could not be infected with smallpox again. They would be safe, at least from this disease.

Inoculation, as described above, combatted smallpox through an intentional controlled infection of the disease. The procedure took advantage of the single weakness of smallpox: those who did not die from their encounter with the disease would never become infected again. Inoculations occurred in Euro-colonial spheres of the Atlantic world from the second decade of the eighteenth century onwards to

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Accessed through HathiTrust. Some variations included the use of lint or other small pieces of textiles soaked in the smallpox fluid, however, all techniques involved an incision in the skin used to introduce the matter into the body.

[3] For example, Benjamin Waterhouse of Boston, Massachusetts, received quills full of cowpox fluid in a silver snuffbox from Edward Jenner in England. Snuffbox, c. 1802, silver, Harvard County Library, Boston, Gift of Mrs. William Roscoe Thayer to the Harvard Medical School, 1933, https://collections.countway.harvard.edu/onview/items/show/6640.

[4] Dimsdale, 27.

combat smallpox; an unknowable number of people had their skin pierced by lancets and infected with smallpox with the hope that the subsequent infection would grant them immunity from the deadly disease. Yet not all encounters with the procedure and associated objects happened equally or under consenting circumstances. In a series of letters sent from Jamaica to London in the summer of 1770, enslaver and medical practitioner John Quier relayed to his acquaintance Dr. D. Monro that, "the small-pox had just then made their appearance in [his] neighborhood."[5] This sentence was a heavy one – one that carried the weight of the word "small-pox" between two correspondents who knew the potential of the disease to wreak havoc on their communities. The pair had previously corresponded about inoculation, the medical procedure used to preemptively infect an individual with smallpox in a controlled setting with the hopes that this person would gain immunity. Quier observed that, "there have been few accounts received in Europe of the practice of inoculation in this part of the world," which was a situation he sought to fix.[6] In the several letters that followed, Quier meticulously documented his observations from personally inoculating and experimenting on several hundred enslaved persons of all ages and genders on his plantation. Monro inquired about the methods Quier used to carry out the procedure, and Quier delivered on this request. In his detailed description of the

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[5] John Quier, "Letter 1: An Account of the Success of Inoculation for the Small-pox at Jamaica," in *Letters and essays on the small pox and inoculation, the measles, the dry belly ache, the yellow, and remitting, and intermitting fevers of the West Indies : to which are added, thoughts on the hydrocephalus internus, and observations on hydatides in the heads of cattle*, by Different Practitioners (London: Printed for J. Murray, No. 32, Fleet-Street. and C. Elliot, Edinburgh, 1778), 2.

[6] Quier, 2.

physical inoculation process, Quier noted that he always, "endeavored to make the slightest scratch possible through the cuticle [and] always took care to impregnate the incision well, by wiping the point of the lancet on it, and even by adding more matter to it, if that appeared necessary."[7] In this brief medical description, the lancet assumes a critical role in the inoculation procedure as the material mediator between Quier and those whom he perceived to be his patients.

Quier's precise and apathetic, yet prideful account brushes over the pain the interaction with a lancet caused those upon whom he operated. Having one's skin cut open by a sharp lancet undoubtedly hurt. Quier's method was especially brutal because he inserted the lancet into the fresh wound multiple times to deliver a small amount of pus (which Quier called matter) into the person's body. Yet that was not the only bodily fluid. There was blood from the incision, pus taken from another sick individual, and sweat from the hot weather that Quier also dedicated significant time to in his writing. The pain would not end after the lancet was withdrawn from the body, as those encountering the lancet likely then developed smallpox. According to Quier, nearly all of those whom he inoculated resumed forced labor eight to ten days after this eruption on the skin.[8] This statement, of course, does not consider that enslaved people were not given the right to recover on their own time, nor does it allow for the varied experiences of inoculation as each person's body responded differently to the invading matter.

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[7] Quier, 27.

[8] Ibid, 40.

Furthermore, not every individual survived their time with Quier, the smallpox pus, and his lancets. Quier only briefly wrote of those who died from inoculation at his hands, quickly dismissing their deaths as related to age or perceived bodily weakness. Instead, he paid significant attention to lancets in a third letter sent in 1774, in which he gleefully recounted his experiments with various inoculation techniques on forty-nine enslaved persons after gaining access to an enslaved Black person sick with smallpox.[9] This person, whose illness sparked the situation and whose body became the source material for 146 subsequent inoculations, never received a gender, a name, or a fate in Quier's letters. The lancets, however, got an additional page and a half of analysis regarding their cleanliness, and the steps in which they would engage with pus and the person's body.[10]

Almost three decades later in 1802, a colored print commissioned by the Anti-Vaccine Society in England began to circulate across Europe and the British Atlantic

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[9] John Quier, "Letter III" in *Letters and essays on the small pox and inoculation, the measles, the dry belly ache, the yellow, and remitting, and intermitting fevers of the West Indies : to which are added, thoughts on the hydrocephalus internus, and observations on hydatides in the heads of cattle*, by Different Practitioners (London: Printed for J. Murray, No. 32, Fleet-Street. and C. Elliot, Edinburgh, 1778), 63-4.

[10] Enslaved people's pain and other feelings were consistently disregarded and weaponized by medical practitioners; Quier is just one example of how such practitioners objectified those to whom they were supposed to provide care. Medical tools are likewise indicted in the history of medical racism. For more on the long-lasting impact of medical racism and the racialization of medical procedures and associated objects, see: Lundy Braun, *Breathing Race into the Machine: The Surprising of the Spirometer from Plantation to Genetics* (Minneapolis: University of Minnesota Press, 2014) and Deirdre Cooper Owens, *Medical Bondage: Race, Gender, and The Origins of American Gynecology* (Atlanta: University of Georgia Press, 2017).

World (Figure 2).[11] A few years prior, English practitioner Edward Jenner introduced cowpox inoculation into the medical and public discourse.[12] This procedure functioned identically to inoculation except that the infecting agent was now cowpox, which still caused a small infection and imbued immunity but was much safer to experience than smallpox. The anti-inoculation movement seized on this new component of the already controversial procedure, specifically the use of a disease associated with an animal.

The now-infamous print by artist James Gillray depicts a chaotic scene of medical mishaps resulting from the new cowpox vaccine, presented in this visual satire as turning terrified patients into cow-like hybrids. A caricature of Edward Jenner carries out the procedure on a reluctant working-class woman in the middle of the scene, disregarding those around her who actively sprout horns and udders. Jenner and his well-dressed assistants wreak havoc on the people they are supposed to treat. A sort of assembly line unfolds as one assistant feeds incoming patients an unidentified, suspicious red liquid before passing them to Jenner who grafts into their arms another unsettling substance, this time clearly labeled "Vaccine pock hot from ye Cow." Those who have made their way through this track of horrors exhibit various stages of a sort of bovine transformation as the fantastical cowpox infection spreads. It's a busy composition, meant to incite fear about the new procedure that purported to bestow immunity against smallpox more safely and effectively. Yet in the middle of this

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[11] James Gillray, *The Cow-Pox, or, The Wonderful Effects of the New Inoculation!*, 1802, Engraving, Harvard University Countway Library.

[12] Andrea Rusnock, "Catching Cowpox: The Early Spread of Smallpox Vaccination, 1798–1810," *Bulletin of the History of Medicine* 83, no. 1 (2009): 18-9.

chaos, clenched between Jenner's hands and piercing the skin of the woman regretting her choice to get vaccinated that day, is a lancet.

As the practice of inoculation spread throughout the Atlantic World in the long eighteenth century via letters, minds, bodies, and prints, many of those who underwent the procedure had their skin pierced by a lancet – either willingly or by force – to induce the controlled smallpox infection. Despite the significant attention given to the histories of smallpox inoculation and vaccination, there has been little focus on the material culture associated with both procedures.[13] In particular, the lancet has been largely overlooked as the focus of historical exploration, even though these objects were essential in the transportation of bodily matter between people and across oceans.[14] In this thesis, I recenter the lancet as a vital component of smallpox inoculation and early vaccination that activates the networks of materials, knowledge, and bodies that made both procedures possible. I position the lancet as an adaptable object integral to the European appropriation of subaltern inoculation techniques, which then informed the development of vaccination.[15]

Lancets existed approximately three centuries prior to the eighteenth century, and they persisted well into the twentieth century even after purpose-built vaccinators

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[13] An exception is Kathleen M. Brown, *Foul Bodies: Cleanliness in Early America* (New Haven: Yale University Press, 2009).

[14] Martha Few and Andrea Rusnock mention lancets in their research on late eighteenth century inoculation practices but do not explore the objects as their primary means of discussion.

[15] For the role of subaltern technology in the entangled Atlantic World, see: Marcy Norton, "Subaltern technologies and early modernity in the Atlantic World," *Colonial Latin American Review* 26, no. 1 (2017): 18-38.

were introduced. My research focuses on the century between 1710 and 1810 in which the lancet assumed new meanings within the context of combatting smallpox. The cultural conception of this small tool – already so ubiquitous among medical, public, and domestic spheres – changed as it came to be used for inoculation and vaccination, rather than for bloodletting, scarification, and other topical procedures. Doctors, artists, satirists, and the public began to invoke the lancet as a symbol for inoculation or vaccination in public-facing communications, prints, and medical treatises to signal that they were discussing either inoculation or vaccination. References to lancets began to take up pages in texts distributed among medical practitioners across continents, such as in the correspondence between John Quier and Dr. D. Munro.

The lancet also assumed status as an object of empire, as polemicists and colonial doctors alike discussed the lancet as a distinctly foreign thing that could literally be thrust into Black and Indigenous populations. Finally, as the practice of vaccination began to spread in the first decade of the nineteenth century, lancets quickly entered the visual and literary languages of this new procedure. The Anti-Vaccine Society print discussed above was not alone in its incorporation of the lancet within scenes of medical impropriety and violation. Groups dedicated to vaccine advocacy also took up the lancet in print, portraying it as a tool wielded by benevolent, modern doctors. The lancet was never a neutral object, but instead one deeply enmeshed within extractive spheres from pus exchange among families to trade routes of empires. By viewing the lancet in medical texts as an object of immense power, we can better understand how whose health mattered, whose did not, and whose bodies were objectified in the context of inoculation. Lancets regularly gained access into the human body – invaders that were sometimes welcomed and sometimes resisted. To

that point, encounters with the lancet were never equitable or uniform across this period and geography of focus. Different people received different treatments, different access to recovery, and, as in the Quier case, less attention than lancets in medical communications.

To access lancets for this research, I rely on a combination of extant objects and a plethora of supplemental primary sources. Identifying eighteenth century lancets known to have been used for inoculation is difficult, in no small part because of the inherent multiplicity of the tools. The same lancets used to transport smallpox pus into one person's arm one day would be used for bloodletting the next.[16] Consequently, the only lancets that I have been able to locate with a confirmed smallpox provenance rest in the collections of the Science Museum in London (Figure 3).[17] These lancets belonged to Edward Jenner, the same doctor lampooned in aforementioned Gillray print, and were subsequently saved for their association with Jenner's development of the cowpox vaccine. Therefore, I also rely on lancets contemporary to these immortalized in the Science Museum, including ones located at the Winterthur Museum, Colonial Williamsburg, and the National Museum of American History. Likewise, I use medical texts produced throughout the long eighteenth century that give detailed instructions for inoculation and the later cowpox vaccination. Lancets are abundant in these archival resources, which stretch from colonial Guatemala to the West Indies, to the American colonies, to Britain. Through these texts and the lancets in museums, I can position the lancet within the greater constellation of material

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[16] I explore the health implications of such situations in the third chapter.

[17] Lancet owned by Edward Jenner, 1720-1800, Tortoiseshell and steel, Savigny & Company, London. *A600037 Loan, Wellcome Trust, Science Museum*.

culture in the eighteenth-century Atlantic World, despite the relatively small pool of extant objects.[18] Such lancets exist within networks of extraction, exchange, and appropriated knowledge systems that defined the material culture of medicine and health in the eighteenth century, even at such a small scale.[19]

The histories of smallpox, inoculation, and early vaccination during this period are well represented in literature.[20] Similarly, I use many sources by well-known figures associated with these histories that have already received layers of analysis. My research builds on these fields by employing an object-centered approach that uses the lancet to access hidden narratives within such familiar sources. I craft these narratives using the methodology established by Roy Porter in his essay, "The Patient's View: Doing Medical History from Below" and others that urge the rereading of health as deeply personal, variable, and culturally-specific experiences

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[18] The following sources were helpful while navigating a lack of extant objects: Martin Brückner and Sandy Isenstadt, eds., *Elusive Archives: Material Culture Studies in Formation* (Newark: University of Delaware Press, 2021); and Sara Pennell, "Mundane materiality, or, should small things be forgotten?: Material culture, micro histories and the problem of scale" in *History and Material Culture: A Student's Guide to Approaching Alternative Sources*, edited by Karen Harvey (Georgetown: Taylor & Francis Group, 2017): 221-239.

[19] Pratik Chakrabarti, *Materials and Medicine: Trade, Conquest and Therapeutics in the Eighteenth Century* (Manchester: Manchester University Press, 2010).

[20] See: Elizabeth Fenn, *Pox Americana: The Great Smallpox Epidemic of 1775-82* (New York: Hill & Wang, 2001); David E. Shuttleton, *Smallpox and the Literary Imagination 1660-1820* (Cambridge: Cambridge University Press, 2007); Allan Everett Marble, *Surgeons, Smallpox, and the Poor: A History of Medicine and Social Conditions in Nova Scotia, 1749-1799* (Montreal, McGill-Queen's University Press, 1993); "Special Issue: Reassessing Smallpox Vaccination, 1789-1900," edited by Sanjoy Bhattacharya and Niels Brimnes, *Bulletin of the History of Medicine* 83, no. 1 (2009).

that often exist outside the bounds of medical institutions.[21] Additionally, the works of Saidiya Hartman and Marisa Fuentes have been invaluable in navigating the violence built into many colonial and imperial medical archives.[22] Even when carried out under totally consensual situations, the act of inoculation itself is a violent and painful process; such experiences are only exacerbated when those upon whom the procedure is inflicted are silenced in the medical archive. I use the lancet within archives to examine the experiences of those "othered" by the procedure whose lives become briefly apparent in the archive when the lancet slices their skin.

In the first chapter of this thesis, I position lancets within the material landscape of the eighteenth century to understand exactly how and why these tools became the object of choice with the integration of inoculation into Euro-colonial communities. Specifically, I examine how European medical practitioners invoked lancets in textual and material translations when adapting the technology of inoculation into their spheres of medical knowledge. The second chapter frames the lancets at the macro level as objects that were intentionally circulated within imperial networks to force widespread inoculation and vaccination. Finally, the last chapter uses lancets to access individual narratives of health and emphasize the deeply intimate yet distinctly boundaryless experience of inoculation and vaccination. I also

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[21] Roy Porter, "The Patient's View: Doing Medical History from Below," *Theory and Society* 14, no. 2 (1985): 175-198; Charles Rosenberg and Janet Golden, eds., *Framing Disease: Studies in Cultural History* (New Brunswick: Rutgers University Press, 1992).

[22] Saidiya Hartman, "Venus in Two Acts," *Small Axe* 26, Number 26 12, no. 2 (2008): 1-14; Marisa J. Fuentes, *Dispossessed Lives: Enslaved Women, Violence, and the Archive* (Philadelphia: University of Pennsylvania Press, 2016).

demonstrate how medical practitioners used the lancet to assert authority over communities amidst the rise of professionalization of the field. Ultimately, this thesis frames lancets as a critical object in the assemblage of inoculation, vaccination, and the material landscape of the long eighteenth century Atlantic World.

Chapter 2

SMALL AND MESSY THINGS: LANCETS IN THE MATERIAL LANDSCAPE OF THE 18TH CENTURY

A 1740 trade card for London-based cutler Paul Savigny (Figure 4) depicts the wide variety of tools that customers could purchase at his shop in St. Martin's Church Yard. The lower section of the trade card is packed with a dense list of all the objects offered by Savigny, from forks to surgical instruments, all promised at "reasonable rates." Above the block of text is a medallion flanked by scrolls and other rococo elements that would have been familiar to mid-eighteenth-century viewers. The medallion encloses a display of the same wares listed below; scissors, knives, lancets, and surgical tools encircle a crown. The two lancets symmetrically flank either side of a razor in the top row of the miniature display. The lancets and their counterparts are open in anticipation of use, and to further increase their visual presence as commodities. When closed, the lancets would not be distinguishable among the other tools and would subsequently fail to appeal to clients. Therefore, Savigny and the artist(s) who designed the trade card toggled around with the practical function of his products to make a better advertisement.

Once off the page and into the hands of consumers, the lancets would never be stored open as they are in this trade card. Surgeons and other medical professionals in the eighteenth century had to be mobile and easily portable. As such, their instruments were kept in cases, sleeves, and pockets to travel on or near the body of their owner. Likewise, those who purchased any of these tools for domestic use would not keep the objects always unsheathed. An open lancet not only jeopardized the integrity of the

thin, sharp blade, but also put the user at risk when they reached into their case to procure the small tool. Fingers would be pricked, blades would be chipped, and blood and money would go to waste. There was no benefit in keeping a Savigny lancet forever open in the position suggested by the trade card. Savigny's trade card is therefore a fantasy; a small piece of print technology that peddled wares in a setting far removed from their actual function.[23]

Beyond the printed page, lancets proved to be deeply messy objects that permeated spheres of materiality, privacy, and space in the eighteenth century. Alexi Baker introduced this concept of "messiness" to eighteenth century scientific instruments to juxtapose the tidy presentation of such objects both in contemporary advertisements and present-day museums with the reality of the "near-constant physical flux" that came with carting these instruments across oceans and rugged terrains.[24] While lancets are decidedly not scientific instruments used for measuring the environment, they are likewise tools that constantly circulated among human bodies, animal bodies, and nonhuman agents. Despite the sterile and decorative paper environment in which Savigny and countless other instrument makers portrayed their goods, lancets were actually the default tool for any sort of topical incision, whether it

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[23] Claire L. Jones, "Instruments of Medical Information: The Rise of the Medical Trade Catalog in Britain, 1750-1914," *Technology and Culture* 54, no. 3 (2013): 567.

[24] Alexi Baker, "'Precision,' 'Perfection,' and the Reality of British Scientific Instruments on the Move During the 18th Century," *Material Culture Review* 74-75 (2012): 14-29.

be on horse hooves, human boils, or experimental plant grafting.[25] The lancet's ultimate engagement with smallpox pustules represents an extremity on the spectrum of what the tools came in contact with; these objects were designed to become entangled with the material world, as dangerous or benign as this could be.

This chapter embraces the messiness of lancets as a means of positioning these tools within the material landscape of the eighteenth-century Atlantic World. Through an analysis of form and material composition, I frame lancets as highly adaptive objects that supported the change and hybridization of medical procedures. This theme of hybridity is critical to the second chapter of this thesis, in which I discuss lancets as material pawns in the integration of inoculation and vaccine technology into Euro-American practices. Finally, I put lancets and smallpox in conversation with each other as material things to convey the intersection in which the two became intertwined. Ultimately, understanding lancets as active objects furthers their complexity within the lived experiences of inoculation throughout the Atlantic World.

2.1 Unfolding the Lancet

> The lancet being bent to somewhat more than right angles, the operator now takes it between the finger and the thumb of his right hand…In taking hold of the lancet, we have directed the scales to form rather an acute angle with the blade of the instrument.

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[25] John Bartlet, *The gentleman farrier's repository of elegant and approved remedies for the diseases of horses …* (Philadelphia: Printed and sold by Joseph Crukshank in Market Street, 1775): 69. Accessed through HathiTrust. 25

- Benjamin Bell in *A System of Surgery* 1787[26]

There is a hidden drama within Benjamin Bell's clinical description of how to wield a lancet for bloodletting. Beneath the dry text, a flurry of movement unfolds between the operator, lancet, and the person whose skin would ultimately be cut open by the blade. This unnamed subject is a secondary character in Bell's methodical routine, having been superseded by the operator (previously identified as an emerging medical practitioner) and the lancet. Bell's instructions reveal that the lancet does not come ready for its role in the procedure; rather, it must be "directed" to assume the correct position. And while the lancet is portrayed as a tool to be manipulated by the operator, the small instrument nonetheless requires significant attention in order to be used. This interplay between object and operator becomes even more complex by the materials that composed eighteenth century lancets. The materiality of lancets is not addressed in Bell's instructions. Lancets, after all, were well-known professional and domestic medical objects that would have been familiar to his readers. To identify the tortoiseshell and steel that composed these essential medical instruments, we must turn to extant lancets contemporary with those that Bell and his readers would have been familiar. These are the materials that became covered in blood at the climax of Bell's medical scene.

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[26] Benjamin Bell, *A System of Surgery* (Edinburgh: Printed for Charles Elliot, Edinburgh, 1787): 105-7. Accessed digitally through HathiTrust.

Lancets needed to be moved to become ready for use, as seen in Bell's detailed instructions. The lancets that Bell and his readers used consisted of three components: one thin steel or iron blade, and two shell wings all hinged together at one end with a small rivet.[27] When the lancet was not in use, the wings would be closed to sandwich the blade, thus protecting both the sharp tip and the user when reaching into their pocket, medical chest, or bag to procure the lancet when needed. Prior to the lancet ever contacting its subject matter, the user had to unfold these tortoiseshell wings to engage them as handles and extend the length of the tool – this was the critical movement that Bell dedicated multiple pages to in his instructions. The wings could be set at a variety of angles in response to the situation and the materials with which the lancet would come in contact. Bell recommends acute angles, similar to the position seen in the Savigny trade card in which either wing is slightly unfolded on either side of the blade. In contrast, James Gillray's anti vaccination engraving shows Jenner to have fully unfolded his lancet to grip both the wings in a right angle. These two sources only hint at a larger consequence of the form of the lancet: it was an intensely adaptive object that allowed for user manipulation and movement. User discretion made the lancet available to a multitude of bodies, mediums, and interactions. Much of the lancet's prominence as a tool in the eighteenth century came from this non-specialized form.

It is important to note here that this user-friendly form of the eighteenth-century lancet was established approximately three centuries prior for bloodletting

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[27] Bell refers to the wings as "scales" in his text. I have also seen "leaves" used in contemporary and modern descriptions of lancets. For the sake of continuity, I will use wings when discussing the outer two shell components of the lancet.

purposes.[28] Bloodletting has an extensive material presence not limited in time or use to Anglo-European communities; however, in this specific region and area, bloodletting remained immensely popular as a humoral treatment meant to rebalance the body. By the fifteenth century, lancets very similar to the eighteenth-century ones in question were commonly used for bloodletting purposes. In their analysis of such bloodletting instruments, Smithsonian curators Davis and Appel categorized lancets within the first of two bodies of such tools: general and local bloodletting.[29] Their clarification is helpful in contextualizing the purpose of lancets (alongside other instruments) to open a vein and cause the release of blood, in contrast to "local" tools like leeches or cupping that force blood out of the body. Whereas these local objects stayed on the surface of the body, lancets were meant to enter the skin. This is the context in which Bell wrote his instructions, for example, three centuries after the earliest iterations of the tool as a bloodletting object.

A late seventeenth century Italian print provides additional insight into this understanding of the lancet as a penetrative bodily object (Figure 5). Produced by barber Cintio d'Amato, this 1761 woodcut depicts a skinless male figure with a spidery network of veins running throughout his frozen figure.[30] This instructive print labels various veins to denote the body parts fed by each bloody passage, such as the

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[28] Audrey Davis and Toby Appel, "Bloodletting Instruments in the National Museum of History and Technology," *Smithsonian Studies in History and Technology*, 41 (1979): 10.

[29] Ibid, 1.

[30] Cintio d'Amato, *Vein man* (Napoli: Appresso Geronimo Fasulo, 1671): A. As a seventeenth century barber, d'Amato would have been incredibly familiar with lancets as bloodletting and incising tools.

ears and fingers. D'Amato also features a lancet in this print to further express its purpose as a bloodletting guide; the skinless man is shown holding an open lancet in his left hand. Directly below the handheld lancet is an enlarged diagram of a vein with incisions, again connecting the lancet to the act of cutting open the skin. Combined with this internal view of the human body, the lancet is presented as an object that accessed parts of the body – skin, blood, and beyond – otherwise unseen. In d'Amato's print, it is both the viewer and the skinless subject who gain entrance into the body through the lancet.

Bell similarly depicts lancets as instruments of bloodletting over a century later, this time in the aforementioned text. Likewise, Benjamin Rush, a prolific surgeon and politician in revolutionary America, infamously urged medical practitioners to "venerate the lancet" and turn to bloodletting as a sort of cure-all in 1797.[31] Even after inoculation arose in the early 1700's, the cultural meaning of lancets varied from bloodletting to symbols of surgery to equine care. These multitudinous interpretations extend well through the twentieth century, as well. For example, a 1937 publication about Harvard College graduates from 1701-1712 referred to one alum as having, "no inclination toward pulpit, bar, or lancet."[32] The twentieth century archivist, Clifford K. Shipton, invoked the lancet as a literary and visual symbol of the eighteenth-century medical practice. Clearly, lancets still held

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[31] Paul E. Kopperman, "'Venerate the Lancet': Benjamin Rush's Yellow Fever Therapy in Context," *Bulletin of the History of Medicine* 78, no. 3 (2004): 573.

[32] Clifford K. Shipton, *Biographical Sketches of Those Who Attended Harvard College In the Classes 1701-1712 With Bibliographical And Other Notes* (London: Oxford University Press, 1937): 96. Accessed digitally through HathiTrust.

cultural weight as medical objects. All of this is to say that lancets existed for centuries prior and over two centuries past the scope of combatting smallpox. Lancets were not conceived of with smallpox in mind, nor were they ever restricted in their use to carry out inoculations and vaccinations. Just as the adaptability of lancets welcomed users to reject rigidity and conformity in their handling of the tool, the lifecycle of lancets was likewise one of ongoing change. The regional and temporal focus used in this thesis is critical in understanding the lancet as a place-based object used in response to a specific instance of bodily engagement: combating smallpox. It is within this short yet extremely critical period of the lancet's history that the object gained a new meaning. The lancet in the context of smallpox represents a chapter in the biography of the tool, a chapter in which the lancet entered new realms entangled in imperialism, colonialism, and the growth of the medical professional. Therefore, the messiness of lancets comes not just from the bodily fluids, but also from the demonstrated multiplicity of the tools; lancets cannot be defined or limited to one procedure, body part, or treatment.

2.2 Tortoiseshell, Steel, and Hybridity

Returning the Savigny's trade card, the text beneath the display of open tools offers a tantalizing glimpse of the materials that made up objects of the eighteenth-century Atlantic World. For "reasonable rates," consumers of Savigny's goods could get their hands on "shagreen and fish skin cases."[33] While not mentioned in this trade

[33] Trade card of Paul Savigny, 1740, engraving on paper. *D,2.145 Donated by Lady Dorothea Banks, The British Museum*.

card, Savigny's lancets had tortoiseshell wings that displayed the coveted dappled keratin pattern. Savigny was not alone in his material choices for lancets either; many London-based makers employed tortoiseshell to make up the protective wings. By the eighteenth century, purchasing a lancet meant purchasing the materials of multiple continents, animals, and oceans. It also meant purchasing the labor, blood, and sweat of those who were forced to harvest the various materials. Even in production, lancets were imbued with bodily matter. Having established the form and brief history of the lancet, the focus now turns to reinterpreting the messy materiality of these tools within the eighteenth century.

Perceived as a distinctly "New World" material to Euro-American consumers, tortoiseshell rapidly gained popularity among those who sought a tangible connection to geographies previously untouched by the greedy fingers of colonialism; tortoiseshell became one of characteristic materials that defined the seventeenth through mid-nineteenth centuries.[34] Makers integrated tortoiseshell into glasses, combs, cases, furniture, and jewelry among many other things that filled shelves and covered bodies. Like lancets, tortoiseshell was prized for its ability to be easily manipulated and reshaped; tortoiseshell responds incredibly well to heat and becomes pliable after being exposed to boiling water or steam.[35] At this most immediate level, the tortoiseshell wings on lancets served the very practical purpose of protection because tortoiseshell is incredibly strong and would not crack easily when in transit,

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[34] Donald F. Johnson, "From the Collection: Combing the Roots of Colonialism: Jamaican Tortoiseshell Combs and Social Status, 1655-1692," *Winterthur Portfolio* 43, no. 4 (2009): 313-334.

[35] Ibid, 330.

nor rust. Additionally, the wings increased the desirability of lancets to consumers. Surgical wares were embedded in the language of decorative aesthetic evidenced by the trade cards and materials like tortoiseshell, steel, and shagreen, Nonetheless, tortoiseshell was an extractive and blood-soaked material.

Harvested sea turtles represented "a special hybrid commodity" because the slaughtered animals contained both edible and nonperishable materials.[36] The meat of the turtle stayed within the circles of harvesters to eat, while the shell would make its way into the "formal international trade."[37] Those harvesting turtles in the Caribbean included Indigenous turtlers, Maroons, pirates, white colonists, enslaved people, and indentured workers.[38] As a result, the bodies of sea turtles were divided among mouths, ships, and foreign ports to be consumed in one way or another. While some ended in the stomachs of their hunters, other turtle bodies turned up on lancets after traveling thousands of miles intermingling with salt water and air. What had once been a one-hundred-pound, graceful sea animal was reduced to two slim wings, oftentimes never reaching beyond three inches in length and less than half an inch in width. This

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[36] Johnhenry Gonzalez, *Maroon Nation: A History of Revolutionary Haiti* (New Haven: Yale University Press, 2019): 241-2.

[37] Ibid, 240

[38] For Maroons, turtling in the Caribbean offered an entry point into an established and profitable export market, while also generating nutritious food for the community. On the Cayman Islands, in contrast, enslavers imposed the brutal mahogany trade on the region to halt the relatively liberated lives of the turtlers living there. Various human actors in and around the Caribbean used sea turtles to negotiate power, feed their families, or justify enslavement. Sharika D. Crawford, *The Last Turtlemen of the Caribbean* (Chapel Hill: University of North Carolina Press, 2020): 35-7.

final form of the turtle concluded its transformation from animal to prey, to food, to product, and all the way to lancet.

The two tortoiseshell wings from the now-reduced sea animal sheathed a thin steel blade, less than three centimeters long. Whereas the wings protected, the blades sliced. As such, the quality of the steel blade was integral to the function of lancets as tools. Instrument makers like Savigny in no small part spurred the development of the British steel industry in the eighteenth century in their ongoing efforts to refine their instruments.[39] The notion of precise, intricate, and delicate steel products appealed to ongoing conventions of knowledge production in Britain, and many steel makers cleverly styled themselves as intellectual innovators with connections to storied societies.[40] The line of Savigny makers notably established themselves as preeminent stewards of steel production; Savigny trade cards capitalized on the family knowledge allegedly passed down between generations to position themselves as not just makers, but as inventors. Enlightenment-era ideals permeated into the steel industry, which likewise fed into larger aesthetic ideals of prized objects. Combined with tortoiseshell, the steel blades on lancets were easily recognized as objects indicative of the rapidly growing British spheres of industry and materials. Eighteenth century lancets assumed a hybrid material status through the combination of tortoiseshell wings and steel blades that aligned with the already adaptive function of the tools.

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[39] Chris Evans and Alun Withey, "An Enlightenment in Steel? Innovation in the Steel Trades of Eighteenth-Century Britain," *Technology and Culture* 53, no. 3 (2012): 549.

[40] Ibid, 151.

2.3 The Materiality of Smallpox

Like lancets, smallpox infiltrated the bodies of those in the eighteenth-century Atlantic World. Smallpox was never sedentary or inactive, but rather a vivacious matter that shaped the landscape of both the bodies it infected and the communities through which it spread.[41] I position the disease as a material to fully express the stakes and scale of smallpox in the eighteenth century. This position allows us to both embrace the material world of smallpox within the time frame of focus, and to complicate the lancet as an object that intentionally engaged with harmful things. In the context of inoculation and vaccination, the lancet was a contradictory object because it became the vehicle used to insert a harmful substance into the body that had been avoided at all costs. This paradox highlights the stakes of smallpox to those in the Atlantic World; how terrifying did smallpox have to be so that people were willing to infect themselves with the disease in the name of prevention?

Primarily, smallpox occupied a distinctly material presence on and in the bodies that it infected; the iconic pustules that dotted the skin of the sick simultaneously wreaked havoc on their interiors. While those afflicted with the disease navigated the painful internal symptoms, their skin likewise became host to hundreds of angry pustules that ultimately festered and then dried up and flaked off in scabs.[42] Likewise, smallpox had an intense social presence because due to the disease's easy

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[41] Jane Bennett, *Vibrant matter: a political ecology of things* (Durham and London: Duke University Press, 2010): xiii.

[42] Sara Stidstone Gronim, "Imagining Inoculation: Smallpox, the Body, and the Social Relations of Healing in the Eighteenth Century," *Bulletin of the History of Medicine* 80, no. 2 (2006): 248.

visual diagnosis that did not require medical training to conduct. [43]There was no hiding the disease form one's neighbors. Smallpox therefore implicated the health of both the social and personal components of the body.[44] In a mid-eighteenth-century letter to a friend regarding the religious interpretations of inoculation, colonist Daniel Cox expressed that, "the natural Small-pox is received into every habit of the body."[45] Cox wrote this sentence to express the difference between the "natural" occurrence of smallpox infection versus the perceived unnatural method of isolated inoculation. More importantly, his sentence reveals the contemporary perception of the all-consuming actions of smallpox within the body. The disease permeated into "every habit" of those infected – no physical part of an individual was safe. Furthermore, the conception of the body in the eighteenth-century Euro-American world was one of porosity.[46] The body was a vulnerable entity from which things could either enter or be released – intentionally or not. Smallpox pustules invaded skin barriers, mouths,

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[43] Christopher Lawrence, "'Definite and Material': Coronary Thrombosis and Cardiologists in the 1920s," in *Framing Disease: Studies in Cultural History* (New Brunswick: Rutgers University Press, 1992): 53.

[44] For more on the changing conceptions of the body, see: Barbara Maria Stafford, *Body Criticism: Imaging the Unseen in Enlightenment Art and Medicine* (Cambridge: MIT Press, 1993) and Roy Porter, *Flesh in the Age of Reason* (London: Allen Lane/Penguin Books, 2004).

[45] Daniel Cox, *A letter to a friend on the subject of inoculation. In which the reasons for the practice are considered and enforced, and its consistency with our duty to God, and to society, asserted and defended* (London: Printed by Charles Say, for W. Meadows, in Cornhill; G. Hawkins, Middle Temple Gate, Fleet-Street; and R. and J. Dodsley, Pall-Mall, 1756), 12. Accessed at the Massachusetts Historical Society.

[46] Stidstone Gronim, 254-5.

groins, and interiors. Smallpox violated the sanctity of the body through the spread of the vicious pustules.

These pustules likewise altered the material identity of the body. Scarring was an incredibly common side effect of smallpox infection that left survivors with an inescapable physical reminder of their encounter with the disease. Thus, the impact of smallpox lasted long past the period of illness and infection. Among white British communities, smallpox scars threatened the sanctity of unblemished, virginal skin to the point that numerous female authors of the eighteenth century wrote profuse literature examining this "twice-flawed" status of being a woman with visible smallpox scars.[47] The effect of smallpox scars on these characters reflected real world consequences with which the authors would have been familiar; scarring was grounds for divorce, a threat to one's potential value as a wife, and a life-altering event. Throughout all such cases, both real life and fictional, the public perceived a body with smallpox scars to be intrinsically different from its state of being prior to infection.[48] Moreover, people were aware long before the introduction of inoculation that survivors of smallpox could not be reinfected again – this, too, was an observable

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[47] The social impact of scaring especially impacted middle-to-upper class white women whose changed bodies became lightning rods for eighteenth century fears about disability, femininity, and race. Felicity A. Nussbaum, *The Limits of the Human: Fictions of Anomaly, Race, and Gender in the Long Eighteenth Century* (Cambridge: Cambridge University Press, 2003): 110, 121.

[48] Kathryn Olivarius coined the term "immunocaptial" to analyze how eighteenth and nineteenth century Americans viewed immunity to disease — yellow fever, in this case — as a permanent change to one's social, cultural, and economic worth. I argue that the same term could be applied to certain groups of people who were recognized to have immunity from smallpox. Kathryn Olivarius, "Immunity, Capital, and Power in Antebellum New Orleans," *American Historical Review* 124, no. 2 (2019): 425-455.

phenomenon about the long-term impact of smallpox on someone's body. While this was a more beneficial, or at least less negative, consequence of smallpox infection, the awareness of immunity still translated into a perceived bodily alteration of those who made it through the course of the disease alive. Regardless, the visual and public nature of smallpox infection and survival (if scarring occurred) had a distinct physical presence within the eighteenth century understanding of the disease.

The material understanding of smallpox on the body also compounded its danger to the communities around those sick with the heavily infectious disease. People in the eighteenth century understood the smallpox virus could survive outside of the body for several weeks.[49] The bodily cast offs from a smallpox-ridden person were still active and infective things in the minds of eighteenth-century Euro-Americans. Therefore, the presence of smallpox pustules existed beyond the infected individual and their contagious time frame, further demonstrating the tangible threat that the disease carried and the capacity of the disease as an independent agent. The sloughing skin, foul air, and dried scabs were potent things that had to be dealt with as contagious entities. In the case of smallpox, materiality extended not only to the bodies of those it infected but to the diseased creations of these bodies, as well. These bodily things became objects imbued with meaning – in this case repulsion and fear of further infection.

Similarly, people in the Atlantic World navigated treatments and precautions through their material environment. Linen clothing, described by many medical professionals to be essential in caring for smallpox patients, had to be either destroyed

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[49] Elizabeth Fenn, *Pox Americana: The Great Smallpox Epidemic of 1775-82* (New York: Hill and Wang, 2001): 15.

or extensively aired out to avoid the sick inhaling the poisonous particles trapped within the woven fibers.[50] Smallpox converted these desired textiles into "foul, stiff, and stinking" agents of disease that posed threats to both the ill and those providing care. While indicative of overarching miasmatic beliefs, this desire to eliminate the textiles tarnished by smallpox also reflects the deeply tangible and transformative impact that smallpox seemed to have on the things that surrounded the sick. Likewise, during an outbreak of smallpox in 1764 to 1765 in Boston, government officials mandated that objects within homes of infected people be thoroughly cleaned to prevent the sickness spreading.[51] This opportunity of cleansing was not extended to the clothing worn during an individual's illness; these had to be eradicated. Smallpox altered the perception of objects with which it came in contact, like the bodies that it touched.

Smallpox also implicated the landscape. Again in Massachusetts, the colonial governments took advantage of the outcropping on islands off the east coast of the land and designated several as quarantine areas. Rainsford Island, for example, hosted the Hospital House to keep people sick with smallpox away from the mainland Province. Violations of these constructed borders were taken incredibly seriously. In the mid 1750s, a carpenter named Richard Ellis escaped from Rainsford Island on a stolen canoe, prompting local officials to send a desperate plea to the governor for his

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[50] William Northcote, *The marine practice of physic and surgery: including that in the hot countries, particulary useful to all who visit the east and west Indies, or the coast of Africa, to which is added Pharmacopoeia marina…* (London : printed by W. and J. Richardson, for T. Becket and P.A. de Hondt ..., 1770): 285. Accessed through HathiTrust.

[51] Brown, 129.

help in finding the man who threatened "fatal consequence" to the inhabitants of Boston.[52] Despite the admission that Ellis had already recovered from smallpox, the selectmen nonetheless believed that his breach of environmental boundaries posed a threat to the larger settler community. In this context of smallpox, an island became an isolation zone, a coastline became a protective wall, and a canoe became an attack vessel and accessory to a crime.

A few decades later, the town of Marblehead, Massachusetts constructed a controversial inoculation hospital on a nearby island that came to be known among citizens as "Castle Pox" and was ultimately destroyed by the public in protest.[53] When four men escaped the island and sailed to Marblehead to evade the hospital's impending demise, a collection of citizens tarred and feathered the group upon discovery.[54] The four men had been caught stealing clothing, since at least two of them had left the hospital so quickly that they did not take personal garments. Their perceived crimes of flight and theft intertwined ongoing fears regarding the spread of smallpox through objects. What if a festering scab had fallen off the men and onto the clothes of an unsuspecting citizen of Marblehead, thus exposing them and the rest of the community to the deadly disease? The material implications of these men's actions compounded the transgressions of escape and theft. Smallpox and its associated forms

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[52] "The Memorial of the Scribery Selectmen of the Town of Boston." Accessed through the Massachusetts Archives Division.

[53] Andrew M. Wehrman, "The Siege of 'Castle Pox': A Medical Revolution in Marblehead, Massachusetts, 1764-1777," *The New England Quarterly* 82, no. 3 (2009): 397.

[54] Ibid, 411.

– pus, skin, fetid bodies, and putrid air – were commonplace on the eighteenth-century landscape.

2.4 Worlds colliding: Lancets, Smallpox, and Inoculation

As eighteenth-century things go, lancets and smallpox are quite similar. Both were highly portable – smallpox terrifyingly so, and lancets as small tools easily slipped into pockets, chests, and hands. Both easily gained access to the body, more than many other entities in the late Atlantic World. Smallpox seeped into crevices and cavities and filled the permeable skin membranes of its victims with pus and pustules. Lancets, likewise, sliced open the skin to reveal and release fluids in the name of alleviating bodily distress. Both were also recognizable features of the material world of the eighteenth century. As objects not limited to strictly medical or strictly non-medical use, lancets were ubiquitous objects in the lives of Europeans and colonists. Furthermore, lancets of this century were made of familiar materials: steel and tortoiseshell. Neither elements would have been foreign to those who purchased lancets from makers like Savigny, or to those whose skin was pierced by the instrument. Smallpox was also well-known. This was a disease that made annual rounds in populations throughout the Atlantic as new people without acquired immunity emerged as potential victims. Entire families could easily be killed by the poxes that overtook their skin and infiltrated their bodies. Smallpox appeared as an inescapable component of life in the eighteenth-century Atlantic World.

Some communities beyond that sphere approached smallpox differently. The knowledge that those who survived the disease could not be reinfected served as a way to take advantage of this singular weakness of smallpox. The practice

of variolation – or inoculation as the procedure would come to be known in the Atlantic World – was well-established in the Ottoman Empire and China by the eighteenth century.[55] The process varied depending on cultural understandings of the body and materials commonplace to the time and region. Regardless of these differences, though, the procedure consisted of intentionally infecting an individual with some form of smallpox to incite a minor infection and therefore obtain immunity. The bodily-cast offs of smallpox held significant material importance to this procedure, although this time as a positive object for medical use. In seventeenth-century China, for example, people inhaled crushed smallpox scabs to induce the infection. These techniques were not carefully guarded by the elite, either. Oral communications, print material, and other methods of knowledge transmission spread the technology of such procedures throughout communities, trade routes, and other empires. By the time Europeans observed the practice in the Ottoman Empire, it was a common occurrence that existed beyond the spheres of institutional medicine. Individuals chose when and how to carry out the procedure with whatever objects they had at their access. While pus from a smallpox pustule was required, the rest of the ingredients were flexible. A small, sharp tool was needed to make the incision in which the pus would be inserted. These tools could be knives, needles, thorns, or even fingernails.[56] Individual implementation of inoculation created a vernacular collection of adapted objects.

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[55] Arthur Boylston, "The origins of inoculation," *Journal of the Royal Society of Medicine* 105, no. 7 (2012): 311.

[56] Charles Maitland, *Mr. Maitland's Account of Inoculating the Small Pox* (London: Printed for the author by J. Downing, 1722): 6. Accessed at the Wellcome Collection.

It is within this context that lancets and smallpox collided. The lancet had already been established as an adaptive object; in this way, it easily lent itself to a medical procedure new to European and colonial communities. This time, the lancet would not be used to extract blood or drain boils. Instead, it would become the vehicle to insert smallpox pus into the body. Both bloodletting and inoculation began with a topical incision before differing in the subsequent steps. The lancet was perfectly suited to carry out such surface-level cuts. Furthermore, the lancet was a safe object to European audiences within the unfamiliar territory of inoculation that seemed to paradoxically invite smallpox into the body, rather than avoid it. Just like those in the Ottoman Empire who used their fingernails or sewing needles to inoculate others, European medical observers seemingly turned to the objects they had at hand – in this case, lancets.

At the time of this research, the earliest presence of this material translation has been found in a 1714 presentation given to the Royal Society of London by Dr. John Woodward based on the 1713 account of Dr. Emanuel Timonius regarding the practice of inoculation in Constantinople. When describing the Ottoman inoculation procedure, Dr. Woodward states that a needle, preferably a three-edged Surgeon's needle, be used. He then offers an alternative, noting, "it may likewise be perform'd with a Lancet."[57] It is a brief moment in what would have been a thrilling presentation regaling hints of conquering smallpox from places recognizable to those in the Royal

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[57] Emanuel Timonius and John Woodward, "V. An account, or history, of the procuring the smallpox by incision, or inoculation; as it has for some time been practised at Constantinople," *Philosophical Transactions of the Royal Society of London* 29, no. 339 (1714): 73. Accessed digitally through the Royal Society.

Society, yet still far enough away to be implicated in fetishization of perceived exoticness. The lancet is nonetheless there, present in one of the earliest dialogues among European medical professionals about inoculation technology. This connection would grow throughout the eighteenth century as the lancet came to hold new cultural meaning as a tool intrinsically connected to smallpox.

Chapter 3

'THAT THEY BE ARMED WITH INCISION LANCETS': FRAMING INOCULATION IN THE COLONIAL WORLD

> A Project for Reducing the Eastern Indians by Inoculation. That there be…sufficient number of Innoculators…That they be armed with Incision-Lancets, Pandora's-Box, Nut-Shell and Fillet…That their ammunition be of the best Proof, that in of Negro Yaws, and confluent Small Pox…
>
> - William Douglass in *The New England Courant*, August 7 to August 14, 1721[58]

In April 1721, the HMS *Seahorse* docked in the harbor of colonial Boston.[59] Although at least two of the sailors aboard were sick with smallpox, the local government implemented a quarantine for the ship only after several more seamen likely infected with the disease had disembarked and entered the community. Smallpox had arrived. The subsequent 1721 smallpox epidemic of Boston has been widely studied because it marked the first time a colonial American community

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[58] William Douglass, "A Project for Reducing the Eastern Indians by Inoculation," *The New England Courant* (Boston, Massachusetts) Aug. 7 to Aug. 14, 1721. Reproduced by Photostat in the Massachusetts Historical Society, 1924-1925. Accessed digitally through HathiTrust.

[59] Amalie M. Kass, "Boston's Historic Smallpox Epidemic," *Massachusetts Historical Review* 14 (2012): 5.

implemented inoculation to combat the disease.[60] Not only had colonial doctors recently learned of Timonius's account of the practice in Constantinople, but enslaved people trafficked to the New England coast also brought with them knowledge and testimonies of inoculation. Even though smallpox epidemics were not new to Boston, inoculation was. Moreover, those who possessed information and embodied experiences about the procedure were not exclusively white men associated with the medical field.

Some physicians accepted the procedures, while others like William Douglass quoted above remained vitriolically opposed to inoculation in large part because of the origins of the practice.[61] Douglass and other racist, anti-inoculation counterparts turned to print to defend their views and discredit pro-inoculation practitioners and community members. Douglass and his cohort found a home in James Franklin's wildly influential *The New England Courant*, a satirical publication that quickly gained traction as a piece of incendiary media through which the inoculation debate literally unfolded on the freshly printed pages.[62] The small group assumed a multitude of personas in each addition, and responded to each other through these seemingly-anonymous identities that gave the impression that their community was much larger

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[60] See Elizabeth Fenn, *Pox Americana: The Great Smallpox Epidemic of 1775-82* (New York: Hill & Wang, 2001); Katherine Foss, "Inoculating the Speckled Monster," in *Constructing the Outbreak* (Amherst: University of Massachusetts Press, 2020); and Margot Minardi, "The Boston Inoculation Controversy of 1721-1722: An Incident in the History of Race" *The William and Mary Quarterly* 61, no. 1 (2004): 47-76.

[61] Minardi, 49.

[62] Kass, 22.

than it was in reality. Throughout 1721, *The New England Courant* became an echo chamber in which anti-inoculation men published incessant attacks on the procedure, those who supported it, and those who first practiced it.

Therefore, Douglass's recommendation to "reduce" the Indigenous populations in northern colonial America was part of his established rhetoric that racialized inoculation as a means of discrediting the procedure.[63] Douglass despised that white colonists were integrating knowledge extracted from Afro-Caribbean and west Asian communities; the cited text is only one of Douglass's many attempts to tie inoculation to race and in an attempt to incite bodily fears among his readers.[64] My rereading of Douglass's vicious weaponization of inoculation against Indigenous and Black communities focuses on the bodies, fluids, and objects – including the lancet – that were already coming to define the material identity of inoculation. Less than a decade after the Royal Society of London heard Dr. Emanuel Timonius's description of inoculation, Douglass comfortably positioned the lancet as the tool – or in his case, the weapon – from which inoculation was wielded. Critically, Douglass's choice of accompanying ammunition is also revealing; in addition to the literal objectification of bodily fluids, the source of these fluids mattered. The bodies mattered.

As the knowledge of inoculation spread throughout the Atlantic World in the early eighteenth century, so too did the objects enmeshed within the material translation of this procedure. Lancets began to appear in texts about inoculation and smallpox by the 1720s, indicating the growing association of the tool with these

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[63] Kass, 23.

[64] Minardi, 61. Douglass also weaponized the gender of the Ottoman woman whom Timonius observed in his publication.

topics. Douglass's invocation of the lancet is one of the earliest examples in colonial American texts in which the object is specifically interpreted within the context of smallpox and inoculation. Clearly, Douglass believed that his readers would recognize the lancet as a familiar object appropriated by the pro-inoculators he so opposed. He used a menagerie of objects associated with the procedure to bolster his dreamscape of biological genocide; the combination of lancets and nut-shells with the allegorical object of Pandora's box grounded his argument within a familiar material realm while also reaching into the world of mythology to position smallpox as one of the evils of the world, threatening to be released through inoculation.[65] In Douglass's rhetoric, the lancet and its companions anchored his proposal.

Douglass also threatened his readers with the source material for inoculation that would cover the lancet and nutshell. The pus that would ultimately be inserted to ignite the controlled infection had to come from someone sick with smallpox. Therefore, the procedure did not occur solely between a practitioner and a patient, but rather three or more individuals. And just as the lancet never retained neutrality, so too did those whose bodies were objectified through the extractive and invasive process of inoculation. Douglass called for his inoculators to be armed with matter from Black people infected with yaws in addition to the smallpox pus. Afro-Caribbean communities in the Atlantic World understood yaws as a nonsexual disease distinct

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[65] Some early medical treatises instructed inoculators to press half nut shells over the place of incision. Like the lancet, the nut-shell would have been a familiar object to readers of Douglass's piece who were also consuming such literature about inoculation procedures. Edward Huth, "Quantitative evidence for judgments on the efficacy of inoculation for the prevention of smallpox: England and New England in the 1700s," *Journal of the Royal Society of Medicine* 99 (2006): 262.

from others that also manifested in pocks on the skin.[66] However, white colonial and European medical spheres occupied by the likes of Douglass believed yaws to be a disease similar, if not related to, syphilis and therefore intrinsically tied to sex, the tropics, and Black people.[67] As such, when Douglass suggested yaws as a matter that could be mixed in with smallpox pus, he was invoking a highly stigmatized disease within his white readership base. According to Douglass, inoculation was not only dangerous in its ability to introduce smallpox into previously uninfected populations, it was also a procedure that exposed white colonists to the dangerous fluids of Black people. In Douglass's eyes, the combination of yaws and smallpox carried on the tips of lancets made the ideal weapon against Indigenous people. However, this combination was also a reminder to his white audience about the perceived danger of such exchanges that could happen in their own bodies.

This section positions lancets within imperial implementations of inoculation and early vaccination as both procedures spread throughout the Atlantic World, primarily through print. As demonstrated at the end of the last chapter, European medical practitioners invoked the lancet almost immediately in their translation of the Ottoman practice of inoculation for European audiences. Therefore, the lancet can be understood as the material manifestation of inoculation during the appropriation of the procedure by Euro-colonial practitioners. Moreover, lancets in the context of inoculation existed in confluence with the pus and fluid that would have been smeared

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[66] Katherine Paugh, "Yaws, Syphilis, Sexuality, and the Circulation of Medical Knowledge in the British Caribbean and the Atlantic World," *Bulletin of the History of Medicine* 88, no. 2 (2014): 226-7.

[67] Ibid, 231.

onto the blade, as well as those whose bodies provided such. As such, I also consider how inoculation and early vaccination in the imperial context objectified people's bodies and their subsequent extracted fluids. This objectification is critical in understanding the scale of these exchanged objects within the Atlantic World. Inoculation and early vaccination consequently generated a large collection of networks and associated objects that linked fragmented bodies throughout colonial routes of unequal exchange.[68] Accessing the lancet in primary sources makes such encounters visible in the archive to better examine the nuances of inoculation and vaccination in the colonial context.[69]

Furthermore, this section is situated within the material networks and imperial encounters examined by Pratik Chakrabarti in his book, *Materials and Medicine: Trade, Conquest and Therapeutics in the Eighteenth Century.* As Chakrabarti establishes, eighteenth century Euro-colonial spheres appropriated Indigenous knowledge systems, *materia medica*, and environments to support their own medical culture while simultaneously oppressing the same Indigenous communities from whom they sourced such information.[70] Inoculation is one such example of a

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[68] See: Barbara Dunden, *The Woman Beneath the Skin: A Doctor's Patients in Eighteenth-Century Germany* (Cambridge: Harvard University Press, 1991) and Lisa Cartwright, *Screening the Body: Tracing Medicine's Visual Culture* (Minneapolis: University of Minnesota Press, 1995). Both position the body as both an object extracted for medical knowledge, and a place of intimate embodied knowledge by the individual.

[69] See: Charles Rosenberg and Janet Golden (eds.), *Framing Disease: Studies in Cultural History* (New Brunswick: Rutgers University Press, 1992).

[70] Pratik, Chakrabarti, *Materials and Medicine: Trade, conquest and therapeutics in the eighteenth century* (Manchester: University of Manchester Press, 2010).

technology subsumed into Euro-colonial medical practices that likewise had a distinct impact on the material culture of the eighteenth-century Atlantic World. Inoculation was also unequally experienced by the communities whose knowledge became the foundation for the practice. Throughout this section, I use primary sources that reveal how the bodies of some are offered up as evidence in support or opposition of inoculation, and cases in which components of the body gain material status due to their perceived value in the context of combatting smallpox.

3.1 Lancets and the Sources of Inoculation

As seen in Douglass's incendiary writing, the source material of inoculation was a widely contested subject within colonial and European. Source in this context existed at different scales from the physical pus used for inoculation to the communities from which the knowledge of inoculation was extracted. Regarding the latter, two individuals Lady Mary Wortley Montagu and Cotton Mather, are widely credited as the people who made inoculation available to European and colonial spheres of exchange. Montagu famously recorded her experience of witnessing Turkish women inoculating their children with needles, and she subsequently offered up her son to have the same procedure performed by Charles Maitland in front of medical observers in England.[71] Cotton Mather likewise documented his pro-

[71] Lydia Murdoch, "Carrying the Pox: The Use of Children and Ideals of Childhood in Early British and Imperial Campaigns Against Smallpox," *Journal of Social History* 48, no. 3 (2015): 514-5.

inoculation agenda in colonial Boston; he and Douglass swam in opposing circles of the larger inoculation controversy as a smallpox pandemic raged on.[72]

Critically, though, both individuals – whose names are now synonymous with the history of inoculation – sourced their knowledge of the procedure from others to whom they gained access through imperial contact. Montagu had the privilege to witness and subsequently write about the medical practices of Turkish women through her position as the wife of the British Ambassador to the Ottoman Empire. Likewise, Mather offered the testimony and body of Onesimus, a man whom he enslaved, as the proof of inoculation's success; Mather's evidence consisted of a documented conversation between himself and Onesimus, as well as his confirmation of a scar on Onesimus's arm.[73] Whereas Douglass wrote about Black people allegedly tainting inoculation pus, Mather used Black people to espouse his pro-inoculation stance. Throughout all these conversations, the scarred bodies of enslaved people in colonial America were entered into the medical record through print and oral communications.

Marisa Fuentes has examined the prevalence of scars in ads seeking the return of self-liberated enslaved people, writing "the very description of this wounded 'flesh' represents one of the points at which black bodies became racialized objects."[74] Although Onesimus's scars are not cited by Mather in the context of a runaway slave ad, Fuentes's argument is nonetheless integral to contextualizing Onesimus's archival

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[72] Louise A. Breen, "Cotton Mather, the 'Angelical Ministry,' and Inoculation," *Journal of the History of Medicine and Allied Sciences* 46, no. 3 (1991): 334.

[73] Minardi, 56.

[74] Fuentes, 14.

emergence in relation to smallpox and inoculation. Mather and his white readers would have been familiar with the use of scars on enslaved people's bodies as evidence of legitimacy – either for identity or inoculation in this case. Therefore, Mather engaged with a larger legacy violence when he used Onesimus's own body as proof his testimony; as an enslaved man, Onesimus's words alone were not enough proof. What would Onesimus have felt during Mather's investigation of his body? Onesimus's inoculation scar likely held intensely mixed meanings. Mather learned from other enslaved people who were born in Africa that communities inoculated themselves whenever smallpox broke out.[75] Maybe Onesimus was inoculated in his home, practicing a briefly painful but ultimately beneficial procedure that would have been familiar to him. Among the enslaved and free Black communities of Boston, Onesimus might have identified people from areas close to him by their similar marks. His scar could have been a small reminder of his existence and life prior to being abducted from his home. However, Onesimus could have also been inoculated following his kidnapping, in which case the scar signified "the point at which [he] became differentiated from human subjects and made into commodified objects."[76] While Onesimus's feelings are not captured in the archive written by his enslaver, his

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[75] George Lyman Kittredge, *Some Lost Works of Cotton Mather*, Printed from the Proceedings of the Massachusetts Historical Societty, Volume XLV (Cambridge: John Wilson and Son, 1912): 438. Accessed through HaithiTrust. Mather identified the enslaved people he spoke to as having come from Barbary, a location imbued with white projections of racist anxieties. For more on the legacy of Barbary in early American identity, see Jacob Crane, "Barbary(an) Invasions: The North African Figure in Republican Print," *Early American Literature* 50, no. 2 (2015): 331-358.

[76] Fuentes, 16.

scar offers at least a chance to investigate the life of a man who became so instrumental in the history of inoculation.

Mather objectified and appropriated Onesimus and his body as a site of knowledge; it is important to stress that Mather did not accept Onesimus's testimony about inoculation due to an anti-racism stance that he held. Foremost, the enslaver quickly cross-referenced the practice through European accounts that were simultaneously investigating the technology as a perceived Oriental phenomenon. Moreover, Mather believed that the Black people to whom he spoke were such valued sources of information because they were used to "die[ing] like Rotten Sheep" when smallpox entered their communities.[77] According to Mather, it was not Onesimus's succinct explanation of how inoculation functioned that made him a trustworthy source. Rather, it was Onesimus's African heritage that gave him the ability to know this one method of prevention that allegedly wreaked havoc on his people. Other pro-inoculation writers in Boston adopted this same, twisted logic to justify their acceptance of Afro-Caribbean knowledge systems while simultaneously spouting violently racist beliefs and enslaving the same people from whom they extracted this information.[78] Ultimately, neither Montagu nor Mather discovered inoculation. Instead, they appropriated the knowledge of others through the bodies and objects that suited their respective European and colonial audiences.[79]

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[77] Cotton Mather, *An account of the method and success of inoculating the small-pox, in Boston in New-England / In a letter from a gentleman there, to his friend in London* (London: Printed for J. Peele, 1722): 3. Accessed through HathiTrust.

[78] Minardi, 65.

[79] Here, I refer to Marcy Norton's succinct description of the "entangled early modern world in which Europeans and settler-colonists were dependent on subaltern actors not

It is under this context that the lancet became implicated in the imperial context of inoculation and combatting smallpox. Dr. Emanuel Timonius's testimony and Douglass's lancet-sword hybrids are just two of the many cases in which the lancet served a role in making inoculation a Euro-colonial practice. Throughout the eighteenth century, authors continued to use the lancet in this object-based translation and appropriation of inoculation. In 1774, Dr. William Buchan reiterated Timonious's and Montagu's observations that Turkish women used needles to cut open the skin of their children before inserting pus into the wound.[80] In contrast, Buchan positioned the so-called "European inoculation" to begin with, "a small incision through the cuticle of the arm or the leg with a lancet."[81] Buchan reported that both techniques bore the same results with equal success. In the eyes of Buchan, only the lancet made the inoculation process quintessentially European. While his work was several steps removed from the discourse decades prior of Mather, Montagu, and Douglass, Buchan's text represents the continued entanglement of the lancet in eighteenth century narratives about race, bodies, and inoculation. Ultimately, many early debates in Euro-colonial communities about inoculation hinged on the othered identity of those who contained the knowledge and actively practiced the technique. Consequently, the lancet is positioned in eighteenth century texts to mark the

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only as laborers but also as knowledge producers." While Norton focused mainly on colonial Latin America, her analysis is nonetheless critical in the evaluation of inoculation as a subaltern technology. Norton, 20.

[80] William Buchan, *Domestic medicine; or, The family physician : being an attempt to render the medical art more generally useful…* (Philadelphia : Printed by Joseph Crukshank, for R. Aitken, 1774): 173. Accessed through HathiTrust.

[81] Ibid.

procedure as distinct from that practiced by locations outside of Europe and the colonies.

3.2 An Imperial Object in Translation

In 1780, a smallpox epidemic hit colonial Guatemala.[82] This was about twenty years after the last epidemic, and a new generation of people born since this previous encounter with the deadly disease were more vulnerable than ever. Smallpox needs a dynamic population to feed on; it subsides when its source of bodies to work through is either depleted or made up of previously exposed people. As such, the people in and around colonial Guatemala provided the ideal population for the disease to strike. Despite the relative newness of inoculation within the Spanish Empire, a colonial physician named José Flores managed to successfully inoculate a large majority of the Guatemalan population, including nearby rural Mayan communities. As traced by Martha Few in her research, Flores was so effective that he was ultimately recruited for a leading role in Spain's 1803 campaign to vaccinate the entire empire.[83] But before all this, amidst his first inoculation endeavor in 1780, Flores published his preferred method in which he urged fellow colonial inoculators to not use lancets.

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[82] Martha Few, "Circulating smallpox knowledge: Guatemalan doctors, Maya Indians and designing Spain's smallpox vaccination expedition, 1780-1803," *The British Journal for the History of Science* 43, no. 4 (2010): 521. I am using Few's translations of Spanish-language sources.

[83] Ibid, 519

Specifically, Flores warned that lancets should not be used when inoculating Mayan people in and around the colonial Spanish Empire.[84] This caution was part of Flores's larger message to avoid violence and force when carrying out inoculation on those whom he referred to as "Indians." The lancet was so offensive because - according to Flores - Indigenous people were terrified of the tool. As an alternative, Flores suggested that inoculators use Mayan objects and medical epistemology to carry out the procedure. Rather than slicing open the skin with a lancet, Flores recommended that a mixture made of a local beetle be used to inflame the skin to the point of blistering. Then the incision could be made, and the pus could be inserted via a textile soaked in the fluid.[85] This mixing of medical knowledge systems created a new material culture of inoculation unique to colonial Guatemala. As Chakrabarti demonstrated, Indigenous materials and medical knowledge were oftentimes simultaneously appropriated and marginalized by Euro-colonial medical practitioners; while Flores did incorporate Indigenous uses of the beetle into his approach to inoculation, this alteration to the procedure was not taken up by those outside this specific circle of colonial practitioners. Yet within this specific case, both the colonial Guatemalan government and Flores himself believed that their new materially-hybrid technique was just as successful as the "French" approach that used the lancet, again showing how the lancet held clear associations with the European version of inoculation.

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[84] Ibid, 525.

[85] Ibid, 526.

Flores also projected his infantilized view of the Mayan community onto the lancet. Invisible in Flores's testimony is the fact that bloodletting and other scarification practices are integral to Mayan visual culture, medical practices, and ancestral connections.[86] As such, the Mayan people that Flores inoculated would have been intimately familiar with the processes of drawing blood, and they likewise would have had many other objects in addition to the beetle poultice that could be used for the procedure including obsidian blades, stingray spines, and thorns.[87] Therefore, the lancet was probably what incited such intense fear to those with whom Flores interacted. They were much more likely terrified of the material placed on the lancet – the smallpox pus. Smallpox arrived in what would become colonial Guatemala on the bodies of Spanish colonial invaders and wreaked havoc on Mayan populations.[88] By the time that Flores entered rural Mayan communities with a lancet in one hand and smallpox pus in the other, there was an established 250-year-history of that very same liquid matter devastating Indigenous individuals and networks. Of course Mayan people would not have wanted their skin sliced open – with a lancet or otherwise – and have this deadly pus put into their bodies. Flores, however, positioned the lancet as the offending object rather than centuries of disease, colonial abuse, and community

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[86] David Stuart, "Blood Symbolism in Maya Iconography," in *Maya Iconography*, edited by Elizabeth P. Benson and Gillett G. Griffin (Princeton: Princeton University Press, 1988): 221.

[87] W. James Stemp et. al. "Experiments in ancient Maya bloodletting: quantification of surface wear on obsidian blades," *Archaeological and Anthropological Sciences* 7 (2015): 423.

[88] Martha Few, *Women Who Live Evil Lives: Gender, Religion, and the Politics of Power in Colonial Guatemala* (Austin: University of Texas Press, 2002): 13.

decimation. The lancet was only one component of a much larger issue, despite the words of this colonial doctor.

Flores's inoculation procedure demonstrates how the lancet became entangled in the material culture of imperial medicine. In this case, the object came to hold Flores's biased interpretation of Mayan emotions and medical practices. The Flores example is also a startling reminder of the fragile role of the lancet in the context of imperial medical power and inoculation; its role within inoculation was one that could be easily replaced by needles, beetle poultice, and other objects with either sharp points or inflammatory properties. Its meaning and importance therefore came from those who interacted with the object. People who felt most comfortable around the lancet were individuals with connections and trust of Euro-colonial medical institutions. Recalling Dr. Emanuel Timonius's use of the lancet as an alternative to the needle-based inoculation he witnessed in Turkey, he clearly knew that the lancet would be perceived as a welcome object among his peers in the Royal Society. Not only that, but he also knew that the lancet would be understood as an object that could be adapted to this new procedure. As previously discussed, the lancet functioned as a mobile object constantly in flux that could be manipulated by whomever held it to match whatever the situation required. Moreover, it was a common object owned by surgeons, physicians, and nonmedical people alike. Perhaps Timonius proffered the lancet in his attempt to find a cultural counterpart that could replace the needles he saw in Turkey while also placating his institutional – rather than vernacular – audience of potential further inoculators. While speculatory, it is still telling that the lancet entered the rhetoric of smallpox at a moment of both cultural and linguistic translation and exchange of knowledge. Not only was the lancet not a universal object, but it was

unequivocally an object entrenched in imperial spheres and Euro-colonial material culture.

Flores's account also further emphasizes the prevalence of lancets among medical practitioners in Atlantic World colonies. Like John Quier in 1770s Jamaica, Flores evidently possessed lancets within his collection of medical tools.[89] And like Quier again, Flores approached inoculation with lancet in hand, at least at first. Lost within Flores's instructions are the initial encounters between him and the Mayan communities that he sought to inoculate; however, he had to do something to make them terrified of the tool. Clearly, Flores had to have accepted the lancet as his initial tool of choice for inoculation after reading other accounts of the procedure prior to formulating his anti-lancet stance. His publication served as an intervention into the medical literature about inoculation, indicating that the lancet was the default object for the procedure.

3.3 Lancets, Vaccination, and Bodily Fragmentation

Twenty-three years after Flores' impassioned publication, another medical practitioner had to confront lancets to assist in the spread of this newest technology. In 1796, Edward Jenner established that inoculating people with cowpox not only delivered immunity from smallpox but did so without risking the full smallpox infection.[90] Jenner's research built on existing inoculation technology; what differed

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[89] Quier, 2.

[90] Stefan Riedel, "Edward Jenner and the history of smallpox and vaccination," *BUMC Proceedings* 18 (2005): 24.

was that his technique used material from a different disease to similarly imbue immunity against smallpox. Jenner's early publications about the procedure highlight the role of the lancet in his work, in large part because the new vaccination with cowpox functioned relatively similarly to inoculation with smallpox pus in the first few decades of practice.[91] Incisions were still made on the extremities, most often arms, and lancets were still used to insert the contagious fluid into these open wounds. Jenner's instructions from 1801 urged future practitioners to, "let the edges of the pustule be gently punctured with a lancet in several points," while reminding them that, "the lancet used for inoculation should always be perfectly clean."[92] The lancet remained prominent throughout another material translation, this time from inoculation to vaccination at the turn of the nineteenth century.

In 1803, the Spanish Empire charged surgeon Francisco Xavier Balmis with overseeing the dissemination of vaccine knowledge and materials in the Spanish Empire.[93] Balmis faced different challenges than Flores did, as the cowpox vaccine complicated the role of bodily fluids in the spread of the procedure. Whereas inoculation required pus from a person sick with smallpox, vaccination needed the fluid from a disease that was not commonly found in people nor animals beyond specific rural areas. Moreover, the pus from cowpox pustules did not travel well.[94]

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[91] Rusnock, 22.

[92] Edward Jenner, *Instructions for Vaccine Inoculation* (London: D. N. Shury, 1801?). Accessed through the Wellcome Collection.

[93] Rusnock, 32.

[94] Ibid, 18.

Rather than experiment with transportation methods specialized to the extracted pus, Balmis decided to forgo separating the fluid from the human source. Instead, he embarked on his transoceanic exchange with instructional pamphlets and "twenty-two nonimmune orphaned boys, ages three to nine years old, would be vaccinated during the crossing by serial arm-to-arm inoculation."[95] Upon arrival in various colonial ports, the cowpox pus could be taken from fresh these children's pustules and inserted into the bodies of those awaiting the procedure. Whereas other practitioners in the Atlantic World experimented with thread, glass plates, and specialty lancets to preserve the pus during shipment, Balmis used the bodies of children as the objects that stored cowpox during overseas travel. The pamphlets accompanying these child carriers recommended that practitioners use "*la punta de la lanceta*" to make small incisions on the arms of those they were vaccinating.[96] The children and pamphlets reached Cuba, Mexico, Guatemala, Panama, Argentina, Chile, Peru, Philippines, and China.[97] Lancets were essential objects within the spread of the newest smallpox prevention technology among Euro-colonial trade routes.

The Balmis expedition also positioned these children's bodies – or more specifically, their infectious pus – as integral objects within this transmission of technology and knowledge. Some, such as the original twenty-two, were orphans.

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[95] Catherine Mark and José G. Rigau-Pérez, "The World's First Immunization Campaign: The Spanish Smallpox Vaccine Expedition, 1803-1813," *Bulletin of the History of Medicine* 83, no. 1 (2009): 69.

[96] Translation: the tip of a lancet. J. L. Moreau de la Sarthe, *Tratado histórico y práctico de la vacuna…* Trans. Francisco Xavier Balmis, (Madrid en la Imprenta Real, 1803): 152. Accessed through the Wellcome Collection.

[97] Rusnock, 32.

Others, such as a later twenty-six boys taken onboard in Mexico to go to the Philippines, had parents who were paid by Balmis for their children to serve as living carriers.[98] In both instances, it was those with limited rights and bodily autonomy who were used as source material for the cowpox vaccination campaign. Over eighty years prior, Douglass had suggested the same approach be used when sourcing the "ammunition" that would be hurled at northern Indigenous communities in the colonies; he wanted yaws specifically taken from Black people most likely enslaved by his white readers. Likewise, French surgeon Claude Aymand wrote of inoculating a servant boy with, "matter taken on a Blackamore," in his 1725 list documenting eleven such procedures.[99] Of the eleven cases, this is the only record in which Aymand specified from whom he sourced the pus. Additionally, the child was the only servant included in the mass inoculation. It seems that this boy, who was the lowest in status within the group, was the only person inoculated with matter taken from a Black person. Both this person and the servant boy are the only ones unnamed in Aymand's detailed account. Aymand treated their bodies differently in his documentation of the successes of inoculation. Such unequal exchanges of pus and immunity played out along well-established routes of imperialism at both the individual and oceanic scale.

Inoculation and early vaccination within Euro-colonial spheres functioned on the pretense that the bodies of those deemed lesser, whether by class and race, could be used as source material if the need arose. These people's fluids – now precious

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[98] Mark, 21.

[99] Claude Amyand, "'List of people inoculated by Claude Amyand in 1724," February 6, 1725. CLP/23i/5. Accessed through The Royal Society Archives, London. Accessed before becoming classified.

cargo – were shipped throughout the Atlantic to be inserted into the bodies of others by medical practitioners in the name of combatting smallpox. Both the bodies and the fluids became objects in these contexts; objects exchanged for money as in the case of the boys from Mexico, or objects extracted from one source and put in the other, like with the unnamed Black person and servant boy.[100] Such unequal exchanges of fluids and power created inextricable networks of pus between people of different genders, races, classes, and ages. These bodily fragments – oftentimes no more than a few drops of pus possibly mixed with blood – circulated the Atlantic World through inoculation and early vaccination.[101] Whether by boat, dried out on the tip of a lancet, or incubating inside of an unconsenting child, there was a distinct recognition within medical spheres that these fluids had a material quality worth of note, if not interrogation, depending on whose bodies were positioned in what role of the exchange. Consequently, these exchanged lancets, fluids, and bodies became a part of the material culture that defined the "marginalization and violence in the hybrid, networked and 'connected world' of the Atlantic in the long eighteenth century" in the context of inoculation and early vaccination.[102]

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[100] This is one such instance in which Olivarius's framework of "immunocapital" could be applied to smallpox immunity.

[101] This idea of a fragmented body in the medical context is supported by Cartwright's *Screening the Body*. Cartwright demonstrates how early motion picture technology fractured late-nineteenth and early-twentieth-century bodies through samples, photographs, and X-Rays that separated the individual from the medical/scientific specimen. I believe this can be applied to the treatment of pus as a distinct object fractured from the donor at the time of insertion during inoculation.

[102] Chakrabarti, 11.

Chapter 4

'BLEEDING HER WITH THE SAME LANCET': BODILY INTIMACY AND CHOICE IN INOCULATION

> Mr. Dutton, Surgeon, at Lindfield in Sussex, informed me, that he, unwarily, gave a certain Woman the Small-Pox, in Bleeding her with the same Lancet, which he had used nine Days before in opening some Pustules, in Order to take Matter for Inoculation, and neglecting to wipe his Lancet afterwards…
>
> -Thomas Frewen in *The Practice and Theory of Inoculation with an Account of its Success in a Letter to a Friend*, published in 1749[103]

How, why, and where this unnamed woman was bled is unknown. She enters the archives not in the context of her motivation to seek bloodletting, but rather as an example cited by Frewen to support his observation that matter taken from smallpox pustules remained virulent long past the date of extraction. [104]Her story is not even recorded by the doctor who accidentally inoculated her; instead, she is a case study

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[103] Thomas Frewen, *The practice and theory of inoculation: with an account of its success in a letter to a friend* (London: Printed for S. Austen, 1749), 25. Accessed through HathiTrust.

[104] Throughout this section, I use the methodology established by *Marisa Fuentes in Dispossessed Lives: Enslaved Women, Violence, and the Archives* to read along the bias grain of this archival source.

transmitted between the offending Dr. Dutton and Frewen. While she receives less than a paragraph in Frewen's text, she nonetheless experienced what would have been a terrifying bodily violation at the hands of Dutton and his unclean lancet. Bloodletting was a common practice in the eighteenth century, and this woman would have wanted to get blood out of her body for a variety of reasons. As Barbara Dunden has demonstrated, eighteenth century women navigated their health through a variety of sources that sometimes just briefly included medical practitioners.[105] Therefore, this woman likely sensed that her body was out of balance and sought Dr. Dutton only after consulting with her relatives, friends, and surrounding community. She could have felt feverish or had profuse nosebleeds, or perhaps she was returning for another round of bleeding after a first attempt did not cure what she sought to fix.[106]

When treatment took place – likely in her own home – and Dr. Dutton lifted the unknowingly-tainted lancet to her skin, he might have positioned a pewter or ceramic porringer under her body to catch the expelled blood.[107] Yet, as this fluid was leaving her body and collecting in these vessels, another material transported on the blade of the lancet entered her system. Based on Frewen's report, this woman left Dutton without symptoms of smallpox but called for him "two or three Days after" the

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[105] Barbara Dunden, *The Woman Beneath the Skin* (Cambridge: Harvard University Press, 1998).

[106] In his essay on fevers, London-based surgeon John Huxam recommended bleeding people up to four times if the first round(s) did not alleviate their bodily distress. John Huxam, *An essay of fevers, and their various kinds :as depending on different constitutions of the blood : with dissertations on slow nervous fevers : on putrid, pestilential, spotted fevers : on the small-pox; and on pleurisies and peripneumonies* (London : Printed for S. Austen, 1750): 6. Accessed digitally through HathiTrust.

[107] Davis and Appel, 8-9.

bloodletting procedure.[108] As was likely the situation when she first sought treatment, the woman knew that something was wrong with her body prior to Dutton's return.[109] He was likely there to serve as confirmation for what she already sensed and observed as the iconic smallpox pustules began to blister her skin. When Dutton did reach her home, he recognized the signs of a smallpox infection in and around the "incision" on her skin that he had created for the bleeding.[110] He then retraced his timeline of recent procedures and concluded that he had forgotten to wipe the blade of his lancet when he inoculated another person over a week prior. According to Dutton, the woman barely suffered consequences from his actions; she "had the Small-Pox favourably," and her incision ultimately healed. However favorable her smallpox seemed to Dutton, though, the woman nonetheless experienced the symptoms of inoculation. As an English woman in the mid-eighteenth century, she would have been all too familiar with smallpox and its high fatality. She would have been anxious and in pain as the situation unfolded. Ultimately, she endured an unintended procedure that she did not consent to nor plan for. She survived this encounter with her body permanently altered by Dutton, the lancet, and the residual pus that sat on the seemingly unsuspecting blade.

This woman's experience speaks to the deep intimacy and intricacies of smallpox inoculation in the long eighteenth century, including the ways in which

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[108] Frewen, 25.

[109] For more on the implementation of a patient's narrative from clinical texts, see Roy Porter's essay "The Patient's View: Doing Medical History from below."

[110] Ibid, 26.

bodily fluids of likely strangers become entwined with the bodies of others. Whereas medical practitioners and other observers of inoculation and early vaccination oftentimes documented their procedures with apathy, each procedure contained other people offering up their bodies in an intensely vulnerable position as they prepared to have a deadly matter intentionally inserted under their skin. Also implicit in the woman's story is the power imbalance between herself, her body, the lancet, and Dr. Dutton, whom she clearly trusted to treat her with clean equipment. Likewise, her situation shows how lancets continued to be implicated as non-neutral objects within the context of inoculation and vaccination. By locating the lancet in medical treatises by the likes of Frewen, Dutton by proxy, and John Quier, the patients become more tangible.

After positioning the lancet as an imperial object circulated throughout the Atlantic World, this chapter narrows in scale to focus on individuals and their short but impactful encounters with the lancet. The presence of the lancet – and sometimes the noted absence of one – during inoculation and early vaccinations reveals the discrepancies, dangers, and complications of obtaining the procedure throughout the late Atlantic world. In some cases, the danger came from the lancet itself, as seen in the unnamed woman's inoculation. The procedures and accompanying lancets also invaded otherwise closed-off spaces. Anxiety over such invasions motivated much of the initial opposition to inoculation and early vaccination, which I will explore through several anti-inoculation and vaccination prints generated in the first decade of the eighteenth century. It will also become clear through these prints that gender played a significant role in the rhetoric of the anti-inoculation movement in England and continental Europe. Ultimately, this chapter will make use of case studies to highlight

the intimate complexity of the lancet, inoculation, and vaccination beyond the pages of medical treatises and practitioners.

4.1 Accessing the Lancet and Personal Choice

As seen in the examples of inoculation and vaccination discussed in prior chapters, medical practitioners were frequently the ones performing such procedures and therefore the ones wielding the lancets. However, to state that every inoculation and early vaccination took place by the hand of a medical practitioner would be false; the actions of Dutton, Quier, Flores, Aymand, and others represent only a portion of inoculators who had the means, motivations, and resources to transcribe their lived experiences into text. An unknown number of people in the late Atlantic World decided to undergo inoculation in conditions that did not necessitate, allow for, or support documentation. Furthermore, many could not access the services of such professionals who would subsequently record their experiences. In 1759, for example, Benjamin Franklin expressed his concerns about the cost of inoculation, writing, "the expence of having the operation perform'd by a Surgeon…has been pretty high in some parts of America."[111] While there are examples of mass inoculation in the North American colonies and parts of western Europe during the eighteenth century, the process of being inoculated varied widely by personal finances, circumstances, and

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[111] Benjamin Franklin, *Some account of the success of inoculation for the small-pox in England and America ; Together with Plain instructions by which any person may be enabled to perform the operation and conduct the patient through the distemper ; Plain instructions for inoculation in the small-pox* (London: Printed by W. Strahan, 1759): 6. Accessed at the Massachusetts Historical Society.

resources. Franklin's worries about the associated costs also reveal how the American public perceived medical practitioners, in this case surgeons and physicians, as gatekeepers of inoculation.[112]

Franklin was not the only one to observe the growing association of inoculation with medical professionalization. Three years prior, British doctor Daniel Cox wrote about the medical and religious validity of inoculation, noting, "when conducted by a proper guide, [inoculation] promises as much as seems within the power of human art."[113] Cox then positioned this "proper guide" of European medical training in contrast with women in Constantinople who inoculated large portions of the public. The identities of those perceived to be qualified to perform inoculation became implicated in the absorption of inoculation into Euro-colonial culture, just as the lancet did. The women of Constantinople who Dr. Emanuel Timonius, Dr. John Woodward, and Lady Mary Wortley Montagu had observed only a few decades prior were being deliberately manipulated to support the belief that inoculation only worked in the Euro-colonial context when done by a medical professional. Yet as highlighted by Franklin, access to such professionals was significantly limited by circumstances. Therefore, people outside the spheres of such professionalization had to adapt, and the lancet was not always available.

One person who had to navigate this situation was Thomas Dring, a captain in the American Revolution. When Dring found himself on the *Jersey* prison ship during the War, he entered a world of festering bodies packed closely together in unbearably

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[112] Franklin, 5.

[113] Cox, 13-4. Accessed at the Massachusetts Historical Society.

hot quarters. In his published recollections, Dring wrote of, "a nauseous and putrid atmosphere filling my lungs…and a stifled and suffocating heat, which almost deprived me of sense, and even life."[114] While trying to find space close to a window in the belly of the ship, Dring navigated through crowds of sick and dying men all sweltering in the deadly furnace of imprisonment. Suffice to say, this was not a location with medical practitioners on standby. It only took a matter of time for Dring to find a group of men all suffering from smallpox, which was rampant during the American Revolution.[115] This would not have been an unexpected encounter for Dring; Continental troops felt the impact of smallpox so strongly that George Washington ordered the gradual inoculation of the army in early 1777.[116] Therefore, by the time Dring became a prisoner in 1782, he would have been incredibly familiar not only with the impact of smallpox on the human body, but also the ability of inoculation to potentially stave off the disease. Consequently, when he realized that he was going to be trapped in close quarters with people infected with smallpox, he quickly "concluded to act as his [own] physician" and inoculate himself.[117]

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[114] Albert G. Greene, *Recollections of the Jersey prison-ship; taken, and prepared for publication, from the original manuscript of the late Captain Thomas Dring ... one of the prisoners* (Providence: H. H. Brown, 1829): 30. Accessed through HathiTrust.

[115] Smallpox irrevocably impacted the American Revolution, most notably during the Battle of Quebec. During the entirety of the epidemic, over 100,000 people living in colonial America died from the disease. Fenn, 4.

[116] Ann M. Becker, "Smallpox in Washington's Army: Strategic Implications of the Disease during the American Revolutionary War," *Journal in Military History* 68, no. 2 (2004): 422.

[117] Greene, 20.

Having assumed the dual role of inoculator and inoculee, Dring needed to find the objects necessary for the procedure. Dring received permission from one of the sick men to source the valuable pus from his body. Unlike the experience of the unnamed woman inoculated by Dutton, and the unnamed man who Quier used for his inoculation experiments, Dring and his donor had the opportunity to discuss their bodily transactions. Without a medical practitioner operating as an intermediary between the givers and receivers of the smallpox pus, the procedure became more communal. Moreover, without access to a surgeon's set of tools, "the only instrument with which [Dring] could procure for the purpose of inoculation, was the common pin."[118] The pin (Figure 6) – which Dring was sure to describe as "common" – served as a vernacular alternative to the medical tools unattainable in the context of this inoculation. Despite the ultimate efficacy of the pin when used for inoculation, Dring nonetheless distinguished it from medical instruments like lancets. In his eyes, the pin was "common" because it was not purpose-built for medical use even though it carried out the inoculation procedure with the same success as the lancet. Furthermore, Dring's use of the pin can be framed alongside the aforementioned beetle juice poultice used by Indigenous Mayan communities for inoculation. In both instances, individuals superseded the power of the lancet and related medical hierarchies through adaptive techniques that successfully supported inoculation. These experiences speak to the growing professionalization of the medical industry in the late eighteenth century, which subsequently extended to associated objects. When those living in the

[118] Ibid, 20.

margins of colonial medical spheres circumvented medical authority regarding inoculation, the lancet became noticeably absent.

Dring also adapted the location of his inoculation site to his situation, choosing to scratch open and insert the matter into a part of his hand. Although Dring does not explain why he altered the location to his hand rather than his arm or leg, it is possible that this repositioning might have been more conducive to self-inoculation. In the low or nonexistent light of the prison ship, Dring might have realized that he could have a better chance at precision by lifting his hand to his eyes, rather than craning his neck to see the side of his arm. Likewise, he could have only had enough textiles to wrap around his hand, rather than a larger part of his body.

Dring's account provides critical documentation of the relatively common occurrence of self-inoculation in the eighteenth century. In the context of the Revolutionary War, "self-induced inoculation wrested control of the health and well being of the soldiers from their commanders."[119] Dring was one of many soldiers who decided to self-inoculate for bodily preservation while his leaders debated the merits of the procedure from afar. Beyond the focus of war, Dring is indicative of an unknown number of people in the eighteenth century who sought alternative routes for inoculation that subverted the power bestowed upon medical practitioners and their instruments, specifically the lancet. Dring's experience gives insight into the ways in which people procured alternative objects for inoculation when the lancet was not available. While pins were not the only possible substitutions that an eighteenth-century person could access with limited resources, Dring demonstrates one option of

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[119] Bennett, 414.

how individuals tailored their inoculation experience to their immediate surroundings. The lancet was not the only object that could slice open the skin; rather, it was simply the object most associated with those who wrote about their inoculation practices. The objects that people had access to created an almost infinite amount of possibilities for personalized inoculation experiences outside of medical institutions.

Both Dring and the unnamed woman at the beginning of this chapter navigated their health in and around the omnipresence of smallpox in the eighteenth century Atlantic. Yet, their experiences differed significantly in terms of consent and likewise speak to the nuances of individual inoculation stories. Dring had the opportunity to self-inoculate beyond the surveillance of medical practitioners and their lancets. In doing so, he acted in opposition to the growing emphasis on the legitimacy of inoculators. As a prisoner of war trapped in the sweltering belly of a ship, Dring had to make a series of quick and impactful decisions about his health to ensure that he would survive his experience. Furthermore, despite his lack of medical training, Dring clearly knew enough about the procedure to successfully conduct it by himself. It is likely that others practiced inoculation outside medical spheres, therefore creating situations in which Dring could have observed the procedure. Many of Dring's fellow prisoners subsequently decided to do the same, thus demonstrating how quickly the knowledge of inoculation could spread literally rather than figuratively among a group of nonmedical people.[120] This instance of self-inoculations in the prison shop is evidence of a larger network of people who practiced inoculation beyond medical confines, and beyond the lancet. Dring's experience creates space for the unknown

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[120] Greene, 20.

numbers of people who sought alternative routes for inoculation on their own accord and were untouched by the lancet as a result. In contrast, the unnamed woman had her body violated by Dr. Dutton, the lancet, and the lingering smallpox matter. Her encounter is more indicative of those who had their inoculation forced onto and into their personhood. When a medical practitioner oversaw this imposition, the lancet was often implicated, as well.

4.2 The Lancet in Anti-Inoculation Visual Culture

By the end of the eighteenth century, this association between medical practitioners, lancets, and inoculation emerged as a component of visual and literary culture in Europe and the United States. As demonstrated, the lancet appeared in a variety of texts, encounters, and locations in conjunction with the spread of inoculation among Euro-colonial medical spheres. Those who were inoculated without a lancet like Dring experienced an alternative to the increasing professionalization of inoculation and the associated tool used to conduct the procedure. Consequently, the lancet became codified into the understood material culture of inoculation and subsequent early vaccination less than a century after Timmonius first invoked it in his medical treatise. Yet not all depictions of the lancet within the context of inoculation were positive, as inoculation was still controversial. The unnamed woman's experience speaks to larger fears that many people in the eighteenth century continued to have – that inoculation invaded their bodies and carried in harmful substances on the tips of lancets.[121] While it is unknown if her terrifying encounter with the lancet

[121] Stidstone Gronim, 256.

and inoculation was circulated among anti-inoculation circles, she is nonetheless a reminder to the instability of inoculation as a practice.

Such fears around bodily invasions only increased with the introduction of Edward Jenner's cowpox inoculation procedure, described in Chapter 2. Although Jenner's new vaccination functioned in practice essentially the same as inoculation did, he advocated for inserting something even more foreign into the body than the pus from a smallpox pustule: the fluid from cowpox. Andrea Rusnock has shown in her research that smallpox, while terrifying, was at least a recognizable disease for people throughout the Atlantic World and beyond; cowpox, in contrast, was only known among rural communities in isolated areas of England.[122] Furthermore, Edward Jenner leaned into the pastoral origins of cowpox during his campaigns for widespread adoption of the procedure.[123] Consequently, the cow was emphasized, rather than downplayed, in discussions around this development of inoculation knowledge. This resulted in an outpouring of cow-related material culture, from clocks to ceramic tea sets (Figure 7). Likewise, anti-inoculation groups quickly adapted the cow into their rhetoric, both literary and visual. In the latter, the lancet also became a central figure.

This final section explores the use of lancets in three anti-inoculation satirical prints from Britain and France. Although the selection is only from two European countries, both nations regularly circulated prints amongst themselves, other countries,

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[122] Rusnock, 20.

[123] David E. Shuttleton, *Smallpox and the Literary Imagination 1660-1820* (Cambridge: Cambridge University Press, 2007): 187.

and the colonies.[124] Therefore, these three prints can be read within larger fear among Europeans and colonists about the cowpox vaccine, and therefore the lancet. Inclusion of the lancet in these prints is partially attributed to Jenner's use of the tool. Jenner emphasized the role of the lancet in his new cowpox inoculation practice from his earliest publications; I have already argued that this was because he built his procedure from existing inoculation practices, which by then were largely undertaken with lancets by medical practitioners. Furthermore, Jenner engaged with the ongoing erasure of inoculation's origins as a distinctly non-European practice in his effort to distinguish cowpox inoculation as a British invention. As such, white women feature disproportionately in these prints, both as victims of such threated corruption and as perpetrators of inoculation and its alleged animalist consequences. Ultimately, these prints were designed with the public, not just medical practitioners, in mind. Satirical prints were "purchased by some but consumed by many more due to their display in print-shop windows."[125] Therefore, the use of lancets as visual indicators to the theme, tone, and messaging in these prints demonstrates the broader public's association of the object with inoculation and consequently vaccination. Evidently, lancets had solidified as key components in the public and medical visual language of inoculation by the early nineteenth century.

The first print of focus is James Gillray's famous *The Cow Pock – or the Wonderful Effects of the New Inoculation!* (Figure 2), previously described in the

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[124] Timothy Clayton, *The English Print 1668-1802* (New Haven: Yale University Press, 1997): xiii, 220, 272.

[125] Katie Snow, "Violent discharges: the French breast in British revolutionary era caricature," *Women's History Review* 30, no. 7 (2021): 1086.

introduction. This print depicts a chaotic scene in which Edward Jenner inoculates an unenthusiastic woman as her rural counterparts burst into horrifying cow hybrids caused by the cow-pock. Jenner is portrayed at the moment of inoculation, inserting a large lancet into the woman's arm. A second print from 1802, titled *La Dindonnade ou la Rivale de la Vaccine* (Figure 8), also criticizes the source material of Jenner's vaccine material by presenting a dandified doctor extracting fluid from a turkey's cloaca using a lancet.[126] The choice of turkey is a clever play-on-words, as *dindonnade* means both "hoax" and "turkey" in French. Finally, an 1800 French print titled *Admirable effet de la Vaccine* (Figure 10) depicts a vaccinated furniture maker sprouting horns following the cowpox vaccination. The accompanying poem reveals that this man and his wife (the woman in the pink dress) were tricked by the doctor (the man behind the woman in the black hat) into believing that vaccination was safe. Despite the man's clearly adverse reactions to the procedure, the doctor is seen pulling a lancet from the wife's hands, indicating that his desire to continue dangerous vaccinations has not been quelled.

While these prints largely played on the public fears of bovine invasion, the lancet is nonetheless featured as the tool on which doctors transported offensive animal fluids. Consequently, all three scenes depict heightened moments of bodily impropriety in which the lancet is the offending object. The Gillray scene is perhaps most explicit in this since the lancet is seen to be causing the woman pain and alarm, made evident with the bright red lines emerging from the lancet onto her skin. The pitchfork to the left of this unfortunate female patient further supports both the

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[126] Translation: The Turkey or the Rival of the Vaccine.

violence of the action, and the messaging of interspecies mixing because of inoculation. Gillray also manipulated the scale of the lancet in his scene by greatly enlarging the tool and placing it at the center of his composition, thus trapping viewers in the moment of this woman's violation. The woman, Jenner, his cronies, and the viewer all know what horrible fate will befall her at the hands of Jenner and his lancet, yet the viewer is unable to intercede and rescue her.

Although this polemic scene is fantastical, the lancet is used as a very real and recognizable object that grounds the print in an accessible reality to viewers that likewise played on public fears of violated British women. Gillray regularly depicted grotesque female bodies to suggest impropriety at the hands of an external factor.[127] His famous anti-French Revolution print, *The Apotheosis of Hoche*, portrayed a Fury with bloody breast milk to warn viewers of the "violent potential of the radicalised, spoiled female body."[128] In this instance, revolutionary ideals are the infectious agent, and Gillray similarly uses a woman as the receptor for such intrusive intellectual threats. In the *Cow Pock* print, Gillray repeats this victimhood with the people of rural Britain. The woman, while central in the scene, is not the only one undergoing perverse transformations. A man to her right is seen birthing a cow from his buttocks while another cow bursts from his arm. The cowpox not only violates the sanctity of women's public bodies, but also bring about unnatural births in men. Therefore, the *Cow Pock* print can be considered as part Gillray's larger conservative rhetoric that positioned British men and women as vulnerable vessels, this time susceptible to

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[127] Snow, 1111.

[128] Ibid, 1112

Edward Jenner rather than revolutionary ideas. According to Gillray, bodily danger came in many forms.

La Dindonnade also positions women as the victims of the lancet and suspicious animal matter. Whereas Gillray captures his female muse now of inoculation, French artist Depeuille choses to satirize the preparation of the procedure while three female participants looked on. In *La Dindonnade*, the physician, who is dressed as a dandy, is seen kneeling behind a turkey held firmly by a second man of lesser status. The physician is in the process of extracting the vaccine material from the bird's cloaca using a lancet, while three well-dressed white women look on from the left. The lancet is the object making point of contact with the foul animal source, and viewers would have been aware that the next step would be to insert the lancet and its accompanying fluids into the arms of the two women and child. By the time of *La Dindonnade*'s publication – as with the other prints discussed in this section – inoculation had been practiced in Britain and France for almost eight decades; cartoonists like Depeuille composed their pieces with the knowledge that their audiences would be generally aware of the procedure for inoculation. Consequently, viewers would have understood that the fluid from the turkey would soon be inserted into the white, blemished bodies of the women on the left.

In the context of the early Napoleonic Empire, such an offense would have been exacerbated when enacted against a mother and her children.[129] The lancet and its tainted fluids threatened the vulnerable family unit that Napoleon claimed to be preserving in post-revolutionary France. Furthermore, each impending victim is shown

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[129] Siobhán McIlvanney, *Figurations of the Feminine in the Early French Women's Press, 1758–1848* (Liverpool: Liverpool University Press, 2019): 35.

to have unblemished skin, seen most evidently in the extended arm of the seated woman. Her outstretched hand gestures towards the physician and alerts the viewer to the deception, yet this part of her body also takes up a large section in the center of the print. Only four years earlier, Edward Jenner published the landmark *An inquiry into the causes and effects of the variolæ vaccinæ* that included several prints of cowpox pustules festering on dismembered white, female limbs.[130]

Jenner used cowpox from the hands of rural British milkmaids, as it was known among these women and throughout their communities that those who had cowpox seemed to fare better when smallpox epidemics hit.[131] Consequently, one of the prints (Figure 9) in Jenner's publication about inoculation depicts the hands of a milkmaid named Sarah Nelmes, including one in which cowpox pustules are depicted on her pale, limp hand. Jenner used pustules from Nelmes to inoculate a local boy named James Phipps during his development of the new procedure. Jenner's pastoralist campaigning that promoted the cowpox vaccine was inseparable in both practice and visual culture from the women from whom he first gleaned vernacular medical knowledge. Depeuille likewise engaged with this this association between cowpox and British milkmaids – and thus tenuous femininity and female sexuality – in *La Dindonnade* and other prints since at least the year prior.[132] Therefore, the

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[130] Edward Jenner, *An inquiry into the causes and effects of the variolæ vaccinæ, a disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the cow pox* (London: Printed for the author, by Sampson Low ... and sold by Law ... and Murray and Highley, 1798): 33. Accessed at the Wellcome Collection.

[131] Jenner, *An inquiry*, 6.

[132] Depeuille, *L'origine de la vaccine*, 1800, Etching with watercolor, 16.1 x 24 cm, Wellcome Collection. For more on the sexualization of the milkmaid, see Robin

woman's outstretched hand in *La Dindonnade* points the viewer to the deception while also highlighting the impending corruption of her body once the lancet breached her skin.

A final French anti-vaccination print from 1800 also portrayed a moment of deception in addition to bodily invasion. Martinet's *Admirable Effet de la Vaccine* features a hapless furniture maker who has sprouted cow horns following a series of daily vaccinations by his wife and a "jeune et joli" doctor, who is clearly having an affair with the woman.[133] As with the other prints, *Admirable Effet* engages with the cow/human rhetoric that emerged with the advent of Jenner's cowpox vaccine. In this instance sexual indecency is displayed in conversation with cowpox, thus engaging with another type of bodily violation and mistrust. Critically, Martinet positions of the lancet in the hands of the offending wife and her physician lover. As a result, it is the lancet that implicates the wife alongside the doctor in causing the furniture maker such mutilation.

The bodily impropriety in this scene is threefold, with the first being the furniture maker's unfortunate horns from the cowpox vaccination. The second is the evidently sexual relationship of the wife and the young physician, made all the worse by their assault on the furniture maker's body. In this case, the lancet can be read as the phallic symbol, indicating the cuckoldry that has befallen the furniture maker. Finally, the woman's body shields the etui and lancet from her husband as the physician subtly prepares for yet another vaccination. The betrayal of the furniture

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Ganey "Milkmaids, Ploughmen, and Sex in Eighteenth-Century Britain," *Journal of the History of Sexuality* 16, no. 1 (2007): 40-67.

[133] Translation: young and pretty.

maker by his wife, the physician, the lancet was evidently not ending any time soon. Inoculation in *Admirable Effet* sits at the other end of the sexual spectrum of *La Dindonnade*; in the former, inoculation is synonymous with a wife's infidelity, rather than a threat to her purity. Both scenes still make significant use of the lancet.

These three prints are some of many from the early nineteenth century that incorporate the lancet into the rhetoric of anti-vaccination campaigns. In tangent with fears over multispecies mixing, lancets were implicated in such satires to invoke anxieties over the sanctity of the body, which was rife among late-eighteenth-century people even beyond inoculation.[134] As seen by the experience of the unnamed woman at the beginning of this chapter, the lancet could and did cause harm to some who encountered the tool and the medical practitioners who wielded it. Furthermore, these prints all emphasized the lancet in or around its moment of impact with the human body. Clearly, the intimate moments of inoculation continued to sit uneasily inside the collective understanding of the procedure well through the development and implementation of the cowpox vaccine. Such prints also speak to the growing medicalization of inoculation and consequently the lancet that only increased into the nineteenth century. While Thomas Dring self-inoculated on a prison ship during war time, the introduction of the cowpox vaccine three decades later continued the increasing separation between inoculators and inoculees. Nonetheless, all those inoculated in the long eighteenth century experienced a procedure that permanently

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[134] For another example of bodily anxieties, see Paul W. Craddock, "Your money where your mouth is: the role of consumerism in eighteenth-century transplant surgery," *History of Retailing and Consumption* 4, no. 2 (2018): 156-170.

altered their body. Some consented, others didn't, and an unknown amount literally took matters into their own hands.

Chapter 5:

CONCLUSION

Lancets were not exclusively reserved for anti-vaccination visual rhetoric, however. An etching (Figure 11) published in 1808 by Isaac Cruikshank instead incorporated lancets as tools of both good and evil that, when handled properly, could rid the world of smallpox. The etching, titled *Vaccination against smallpox, or Mercenary of Merciless Spreaders of Death and Devastation Driven out of Society!*, is a busy piece.[135] Set amidst a field of dead and dying smallpox victims, the scene depicts Edward Jenner and two counterparts fending off three older men who carry oversized lancets dripping with blood and matter. This bloody trio curses the vaccinators as they flee, while Jenner urges them to "not delight to plunge whole families into the deepest distress." A woman on the far right of the scene, hidden mostly behind Jenner's group, remarks that "the disorder of the cow is preferable to that of the ass." To truly emphasize the benevolence of Jenner and his cowpox vaccine, a cherub is poised to place a laurel wreath on the doctor's head, declaring that he is "the preserver of the human race." *Vaccination against smallpox* is a decidedly pro-vaccination, pro-Edward Jenner political cartoon.

Jenner also wields a lancet, although clean, labeled as the "milk of human kindness." The bloody lancets of his opponents are identified as "the curse of human

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[135] Isaac Cruikshank, *Vaccination against smallpox, or Mercenary of Merciless Spreaders of Death and Devastation Driven out of Society!,* Etching with watercolor, 12 x 16.5 cm, Wellcome Collection.

kind." Therefore, Cruikshank presents lancets as tools that reflect the motivations of their user. At the hands of the anti-vaccinators, lancets are tarnished and tainted objects that bestow death on those unfortunate enough to encounter the sharp blade. In this context, lancets are weaponized – a motif seen in several of the anti-vaccination prints previously referenced. It is possible that Cruikshank reappropriated this weaponization of the lancet from the anti-vaccination prints made by his colleagues. Cruikshank and James Gillray regularly satirized the same topics from the 1790s through at least the first decade of the nineteenth century, and Cruikshank is known to have developed pieces in direct response to what Gillray published, although not always in rebuttal.[136] The two cartoonists clearly differed in their opinions about the value of vaccination, however, and Cruikshank seems to have intentionally used his print to reassociate the lancet with the perceived positive efforts of Jenner. Cruikshank also touched on the changing nature of European medical practice at the beginning of the nineteenth century. Jenner and his colleagues are noticeably younger, fashionably dressed, and modern in comparison to the elderly and outdated wig-clad anti-vaccinators fleeing the scene. When read from left to right, *Vaccination against smallpox* can be bisected into the eighteenth and nineteenth centuries, respectively. To Cruikshank and other pro-vaccinators, Jenner signified a new era of medicine in which smallpox could be combatted and possibly even defeated. The lancet survived this transition in both Jenner's writings about the cowpox vaccine and Cruikshank's etching.

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[136] Amanda Lahikainen, "British Asignats": Debt, Caricature and Romantic Subjectivity in 1797," *Studies in Romanticism* 53, no. 4 (2014): 509.

From the first decade of the eighteenth century through the first decade of the nineteenth century, the Euro-colonial conception of the lancet changed dramatically in relation to the assumption of inoculation and consequently vaccination within these spheres. This thesis has traced this evolution of the lancet, from its early invocation to replace the technologies of Ottoman women, to its appearance in anti and pro vaccination satires almost a century later. Nearly all the cited primary sources engaged with or mentioned the lancet, but as an object it very rarely took center stage. From the fifteenth century onwards, lancets were ubiquitous objects within the material lives of Europeans. These were tools that were slipped into pockets, jostled inside medicine cabinets, and covered with a variety of bodily fluids from both people and animals. By the time Emmanuel Timonius offered up the lancet as an alternative tool to the needles that Ottoman women used during their inoculation procedures, the lancet was understood to be an essential object of European medical practitioners ideal for adaptation.[137]

Yet, the lancet was also a complex object. In the eighteenth century, these tools contained the materials of distant environments, forced labor, and slaughtered animals. For all the practical uses of lancets, the objects still existed within spheres of Euro-colonial aesthetics and material culture. Lancets were messy things – medical tools that would be covered in blood and pus as people sought to relieve such fluids from their bodies. Lancets breached the bodily exteriors of people and, in the case of inoculation, likewise added something to the body. Inoculations did not happen equally. Those who wielded the lancet held immense power over others. Furthermore,

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[137] Appel, 11.

the smallpox pus needed to carry out a successful inoculation had to come from sick individuals. Inoculation was a negotiation of power, bodily extracts, and exchange. Lancets emerged in imperial texts as medical practitioners recorded their experimentations with inoculation and early vaccination. These writings not only spoke to the widespread geographic footprint of the lancet in the eighteenth century, but also the ways in which inoculation objectified those who provided pus and sometimes those who received it. Unnamed individuals -- often children, enslaved people, and women -- likewise emerge alongside the lancet in the archives.

In these cases, the lancet is a route to access those whose bodies became medical fodder in the context of inoculation and vaccination. At different scales, the human toll of such purported medical advances begins to crystalline. For the boys shipped across the Atlantic Ocean to serve as human incubators, or the Mayans who had inoculation forced into their medical knowledge systems, the lancet accompanied them in a terrifying context as smallpox entered their bodies through painful incisions. The unnamed woman featured in chapter 3 likewise had her body violated by the lancet and its accompanying fluids at the hands of a careless doctor. Throughout all these archival fragments, the lancet is an entry point to the deeply intimate and personal experiences of inoculation that easily become overshadowed in medical treatises written by medical practitioners and those on both sides of the inoculation and vaccination debate.

In the beginning of the nineteenth century, a cluster of anti-vaccination prints emerged in response to the development of the cowpox vaccine. The lancet remained a clear component of inoculation visual language, and the tool featured prominently in French and British political cartoons that presented vaccination as a procedure that

corrupted the body. Cruikshank's print, however, is a reminder of the fluidity of the lancet. It was, after all, a tool that continued to be used for bloodletting and other topical incisions. The controversy about the lancet rested almost exclusively in the context of combatting smallpox, and more importantly, exactly who wielded the tool. The lancet was metamorphic – it could be a weapon or a benevolent piece of medical technology; it all depended on circumstance.

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Appendix A

FIGURES

Figure 1: Lancet & Case, London, England; 18th century. Tortoiseshell and steel. *The Colonial Williamsburg Foundation. Gift of Anne Galt Kirby Black and Eugene C. Black.* (Image Courtesy of: Colonial Williamsburg Foundation).

Figure 2: James Gillray, *The cow-pock - or - the wonderful effects of the new inoculation!,* London, England; 1803. Etching and Watercolor. *11755i Wellcome Collection.* (Image Courtesy of: The Wellcome Collection).

Figure 3: Lancet owned by Edward Jenner. Savigny & Company, London, England; 1720-1800. Steel and Tortoiseshell. A600037 Loan, Wellcome Trust, Science Museum Group Collection. (Image Courtesy of: The Science Museum)

Figure 4: Draft Trade Care of Paul Savigny, London, England; c. 1740. Etching on Paper. D,2.145 *The British Museum*. (Image Courtesy of: The British Museum).

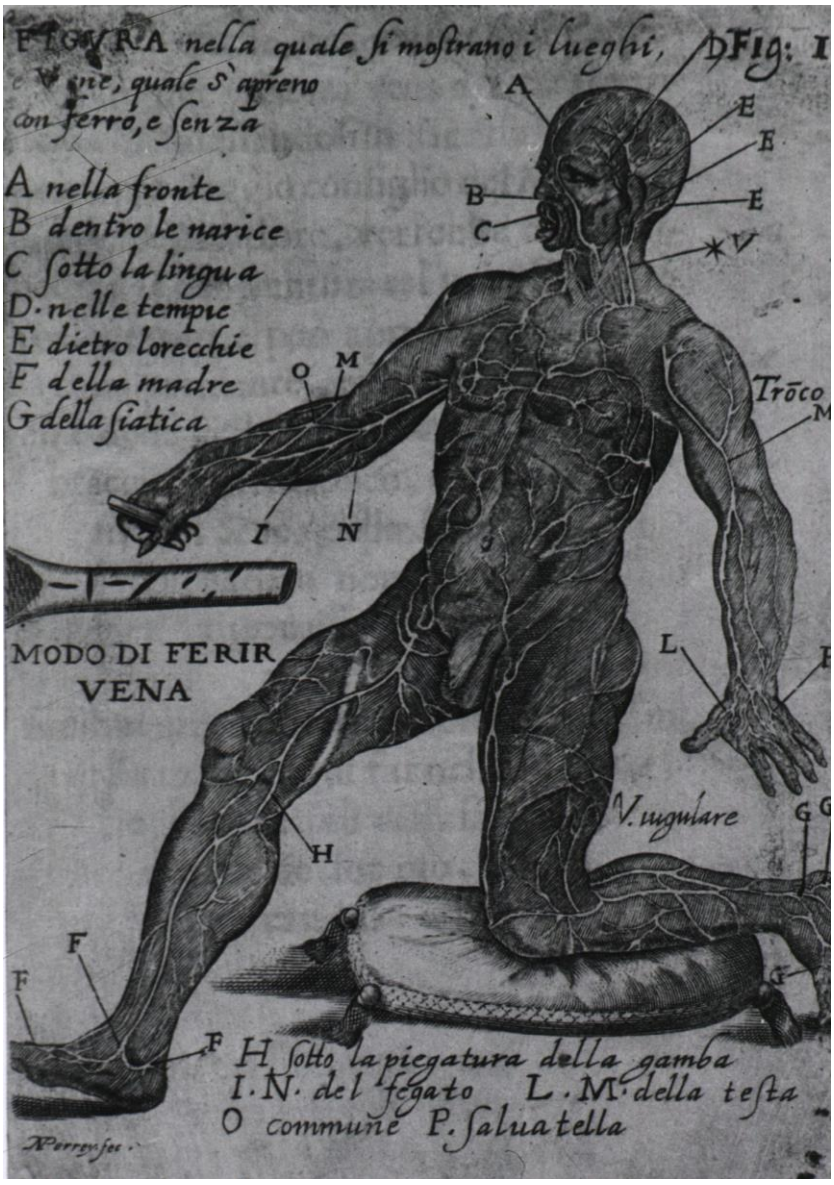

Figure 5: Cintio d'Amato, [Vein Man], Napoli, Italy; 1671. Woodcut. *101448287 National Library of Medicine Digital Collections*. (Image Courtesy of: The National Library of Medicine).

Figure 6: Needle, England; 1700s. *T.241-1917 Victoria and Albert Museum*. (Image Courtesy of: The Victoria & Albert Museum).

Figure 7: Tea Service with cow imagery, c. 1800. Porcelain. *DigID0002455 Harvard Medical Library.* (Image Courtesy of: Harvard Countway Library).

Figure 8: *La Dindonnade ou la Rivale de la Vaccine*, Attributed to Depuille, Paris, France; 1801. Etching and watercolor. *16161i Wellcome Collection.* (Image Courtesy of: The Wellcome Collection).

Figure 9: William Skelton, *Hand of Sarah Nelmes*, England; 1798. Etching with watercolor. *DigID0002465 Harvard Medical Library.* (Image Courtesy of: Harvard Countway Library).

Figure 10: Aaron Martinet, *Admirable effet de la vaccin*e, Paris, France; 1800. Etching with watercolor. *16164i Wellcome Collection.* (Image Courtesy of: The Wellcome Collection).

Figure 11: Isaac Cruikshank, *Vaccination against smallpox, or mercenary & merciless spreaders of death & devastation driven out of society!* London, England; 1808. Etching with watercolor. *11758i Wellcome Collection.* (Image Courtesy of: The Wellcome Collection).

Appendix B

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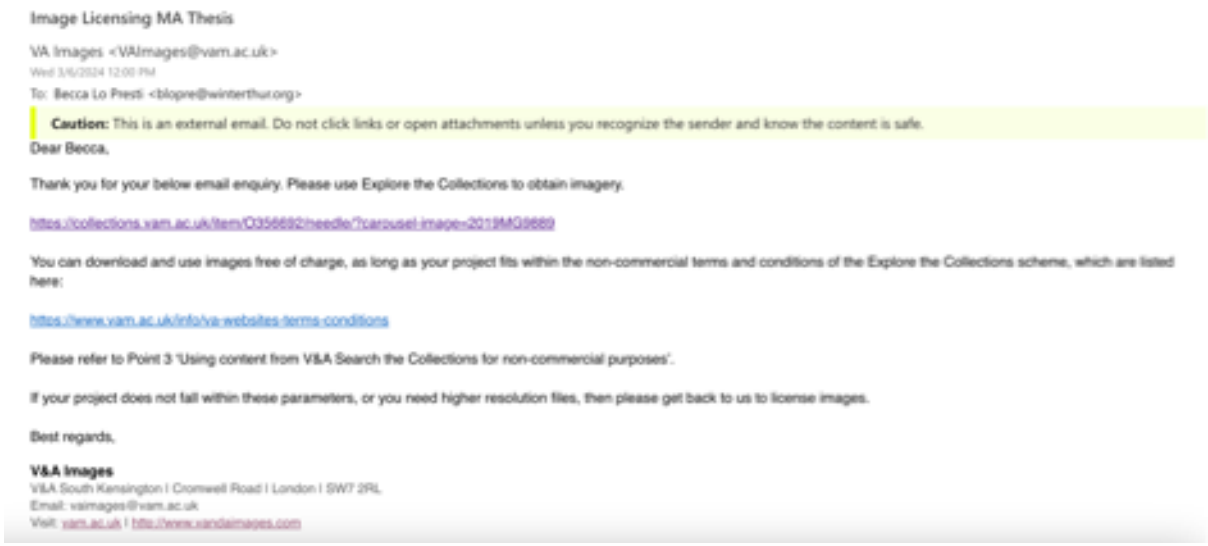

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