

Introduction

Transformative Materiality and Renaissance Dynamics

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This book takes seriously a world in which the philosopher's stone could transmute base metals into gold. Where divine intervention transubstantiates bread into body and wine into blood each time the Eucharist is celebrated.¹ Where a portrait of Mary, the mother of Christ, changes from pigment to flesh, and a wooden panel in a church oozes healing balm.² Where an adult woman could spontaneously sprout male genitalia, and a child could mutate in the womb if his mother beheld disturbing images while pregnant.³ Where diamonds could also grow and sexually reproduce, at least—as John Mandeville claims—if one traveled far enough away from home.⁴ Where travel itself incited seismic changes across the globe as European bodies incorporated East Indian spices and New World chocolate and tobacco into their diets while concurrently introducing foreign diseases and triggering mass genocides of Indigenous populations. Where animal skins became writing surfaces, bird feathers became quills, and linens—transformed from (under)garments, to “stuff,” to paper—became the pages on which the First Folio, along with a host of other texts, was printed.⁵ Where Ovid's *Metamorphoses*—a narrative poem rife with transformations—was immensely popular.⁶ Where a French nobleman

or an Italian duke becomes a werewolf (as in Marie de France's *Bisclavret* and as does Webster's Ferdinand in *The Duchess of Malfi*); Shakespeare's Bottom is "translated" into an ass (in *A Midsummer Night's Dream*); and a statue is transfigured into a human being (as is Shakespeare's Hermione in *The Winter's Tale*). Where clothing belonging to members of the nobility, along with consecrated clerical garments—"the copes and albs and amices and stoles that were the glories of medieval textile crafts"—recast the bodies of stage actors into priests, dukes, queens, and kings (and create deep anxieties for anti-theatricalists in the process).⁷ Where "deodands," nonhuman objects, are defined by English common law as active agents causing injury or death to humans.⁸ Where "weapon-salve," used to cure human wounds, is an ointment applied directly to the sword, rather than to the laceration it caused.⁹ Where wearing a witch's dress could "infect" a new wearer, and where witches' spells could be trapped by earthenware jugs.¹⁰ Where lodestones draw iron to themselves and transfer their magnetic properties to the other ferric matter they touch.¹¹ Where a found jewel prompts its discoverer to write that she can "see the sparkes and shinnigs of Gods love dart out to me."¹² Where the *Burwell Lute Tutor* describes the synergy between a musician and her instrument: "You animate the lute as well as the lute does animate you."¹³ In short, transformation was a profound aspect of Renaissance material life, experienced in both quotidian and fantastic ways. Although not every material object was believed to transform into something else, many did—and transformed other objects and humans in the process. This volume explores such dynamic and material transformations.

Many recent studies of Renaissance material culture focus on objects from past times in ways analogous to those in which still photographs or modern museums present objects: as artifacts worthy of preservation, suspended in synchronic time, kept safely at a distance from the museumgoer in a glass case, and largely inaccessible except through the visual spectrum. Objections to this mode of inquiry, however, have been raised by several scholars. This volume answers the call to "begin taking sixteenth- and seventeenth-century materialist thought seriously," as Douglas Bruster frames it, "whether the source was Aristotle, alchemical treatises, proverbs, popular songs, or utilitarian handbooks."¹⁴ Taking early modern materialist thought seriously, the chapters in this volume encourage the reappraisal of flawed assumptions about early modern

matter and objects. While some critical studies of Renaissance material culture tend to overlay post-Kantian and Cartesian perspectives onto earlier times, they have done so without acknowledging that the doctrines of these later schools of thought would have been unintelligible in the time period to which they are applied.¹⁵ Instead, this collection approaches its objects of study in ways that resonate with late medieval and early modern theories of matter and objects while also drawing on a range of more recent critical methodologies, including cultural materialism, material culture, object or thing studies, and new materialist studies.

In addition to embracing material perspectives endemic to the Renaissance, this collection foregrounds the objects themselves, rather than partaking in the critical tendency to predominantly study how objects relate to human needs, desires, and proclivities through questions of politics, culture, and production.¹⁶ Adopting a “flat ontology” allows a corrective to this problem. Levi Bryant describes the two main tenets of flat ontology: “First, humans are not at the center of being, but are *among* beings. Second, objects are not a pole opposing a subject, but exist in their own right, regardless of whether any other object or human relates to them. Humans, far from constituting a category called ‘subject’ that is opposed to ‘object,’ are themselves one *type* of object among many.”¹⁷ Undoing the subject-object binary/hierarchy argues that nonhumans can and should be conceptualized in more substantive ways than simply screens onto which humans and cultures project their fantasies. Not only are humans one type of object among many, but they are also in the minority, making up a rather small percentage of the objects that currently inhabit the globe—and that inhabited the globe during the Renaissance.

The ensuing chapters regard objects as sensory-rich things to human perception, while recognizing—as many recent studies of object-oriented ontology do—that there is always something about objects that eludes humans’ perceptual grasp. While we acknowledge that we can’t escape from an anthropocentric perspective—either ours as writers and readers, or the perspectives of people living hundreds of years ago who recorded their experiences of and interactions with objects—we couple that perception with attention to what Arjun Appadurai describes as “life histories” belonging to objects themselves as they move “through different hands, contexts, and uses.”¹⁸ Throughout these pages, the relational movements of objects are traced as they circulate in networks; are copied, consumed,

remade, or repurposed; break; transform; drown; explode; and cause disruptions. Yet it is not simply the goal to track objects for the sake of crafting a diachronic study of what Jane Bennett intriguingly terms “vibrant matter”; instead, as is evident in the examples enumerated above and those featured in the following pages, a focus on the transformation of objects—as well as the transformations that occur throughout networks constituted by all kinds of circulating, vibrant matter—is crucial to our approach.

This introduction defines the qualities of matter most pertinent to this volume: matter is dynamic, protean, sensory-laden, transformative, and network-forming. Our collection endorses “the richness of things themselves” *and* the larger, multiple, and changing networks in which things circulate, as well as the networks that these transformative objects form.¹⁹ Dynamic matter possesses the potential to affect bodies and other matter coming into close, sensual contact with it, and dynamic matter also has the capacity to move through time and space, creating various networks of associations. The objects that have drawn our scholarly attention bear witness to intimate proximity with humans and other objects, while at the same time possessing “afterlives” spanning several centuries, enduring well beyond the scope of the human lifespan. By arguing that matter matters, and in studying the objects presented here, this collection contributes to what might be considered an alternative history (averse to a predominantly human-centered history, that is), one that seeks to recalibrate understanding of the Renaissance’s broader ambit by deepening our engagement with many objects that called the Renaissance home.

Welcome to our world.

VITAL, PROTEAN, AND TRANSFORMATIVE MATTER

There is no in-formation, only trans-formation.

—BRUNO LATOUR, *Reassembling the Social*

“You animate the lute as well as the lute does animate you,” proclaims the *Burwell Lute Tutor*, an instructional guide for playing the lute that belonged to, and was probably partly composed by, Mary Burwell.²⁰ A wealth of information concerning concepts of musicianship, the impetus prompting musical performance, human-object relationships, and

communal experience abound in this pithy statement. The force of the maxim resides in the repeated verb “animate.” Deriving from the classical Latin word *animare*, meaning “to give life to,” “animate” is related to both *anima*, meaning “air, breath, life, soul,” and *animus*, indicating “the rational soul; mind, will, spirit.” Especially since “anima” has been defined philosophically as “soul,” or animating life force, it has been characterized as antithetical to its related word “animus,” often interpreted as the rationality of the mind (that is, distinct from “irrational” anima). While much ink has been spilled about the divergence in meaning of these two terms, the *Burwell Lute Tutor* identifies both the instrument and the musician as possessing the capability to “animate”—encompassing all of the word’s senses, including “enliven,” “excite,” “inspire,” “vivify,” and “to give life or spirit to.”²¹ In this rendering, the human musician is not the only being said to possess a vital spirit that acts upon the instrument—the instrument, a material object, also acts upon the human, moving her through the influence of its own animate, lively, life-giving properties.

In addition to describing a musical instrument as having the capacity to animate others, the *Burwell Lute Tutor* imagines both the lute and the lutenist exerting reciprocal influence on each other and forming what we might term an assemblage. An ontological framework developed by Gilles Deleuze and Félix Guattari, assemblages may be defined as “ad hoc groupings of diverse elements, of vibrant materials of all sorts. Assemblages are living, throbbing confederations.”²² Other terms used to describe this concept include the “rhizome” developed by Deleuze and Guattari; the “network” advanced by Actor-Network Theory (ANT); and the “mesh” or “web” theorized in object-oriented ontology (OOO). Though differing slightly, all of these approaches presume that entities are not “undermined” (reduced to demonstrating the effects or manifestations of an underlying force) or “overmined” (understood according to the assumption that there is no reality outside the mind or language), and that humans are one of many objects enmeshed in the web of relations.²³ ANT describes a flat ontology in which actants (Bruno Latour’s term) can be human, object, or some combination; an actor *is* its relations.²⁴ OOO also follows a flat ontology in which “all objects must be given equal attention, whether they be human, non-human, natural, cultural, real or fictional.”²⁵ Even as both schools of thought posit a flat ontology, one important distinction between the two is that ANT focuses on

relationality and processes of change in a network, while OOO considers objects for and as things in themselves. Concerning relationships among elements in an assemblage according to ANT, Latour explains the importance of mediation between actants, arguing that “mediators transform” and are themselves “original event[s]” prompting seismic impacts reaching temporally beyond the moment of initial translation or transformation.²⁶ In contrast to foregrounding interactions between actants, OOO understands all objects as entities in themselves—with histories, qualities inaccessible to human perception, and even agency—that exist prior to, beyond, and outside their relationality.²⁷ In this collection of essays, we hold the distinctions between ANT and OOO in tension, thinking carefully not only about the matter—and objects—we study but also about their relations and effects, especially transformative ones. Like Latour, we engage in tracing associations; like Deleuze and Guattari, we consider modes of being as well as impacts of affinities or becomings; following OOO, we recognize the allure of objects and their transformative acts while acknowledging that something about these objects will always remain elusive even though we share sensuous contact with them.

New materialists recognize that entities are involved in a complex “multitude of interlocking systems” that thus necessitates a reconsideration of how agency is manifested in various forms.²⁸ The flowing, dynamic, liquid model of relations bears striking similarities to the early modern concept of geohumoralism, the idea that forces outside the body (weather, temperature) could impact internal bodily states (causing one to become sanguine, choleric, melancholy, or phlegmatic), and vice versa; embodied humoral states were believed also to effect the broader environment. A musically inflected version of geohumoralism is staged in *The Tempest*: when the audience first encounters Ferdinand—“Weeping again the King my father’s wreck,” as he says—he describes how music performed by an invisible Ariel “crept by me upon the waters, / Allaying both their fury and my passion / With its sweet air,” calming both his emotional state (“my passion”) and the previously tempestuous “waters.”²⁹ Mary Floyd-Wilson explains that “hidden in nature, people believed, were antipathies and sympathies that compelled both bonds and animosities among an unpredictable mix of plants, minerals, animals, and humans,” known as geohumoralism in the Renaissance but conceptualized more recently as an assemblage, network, and/or web.³⁰ In a similar way, the

unity represented by the lute imagery in the *Burwell Lute Tutor* occurs through the sympathies and vivification shared through the bidirectional act of animation. But it is not only that a woman and her lute are imagined as being linked through their reciprocal animation, the sympathetic vibrations of strings and wood, the music that is itself a product of both musical object and musical subject that blend together through the vibratory act of sound production: it is also and equally true that the instrument and human are described as impacting each other in their geohumoral assemblage. The lute gives life to the performer just as much as the performer gives life to the lute.

It may seem all too easy to dismiss this concept of assemblage, correlative animation, and joint musical influence as the idealized, florid imaginings of a bored lutenist using a strategically hyperbolic analogy to instruct a pupil.³¹ However, the theory that material objects were animated by vital components circulated beyond the pages of the *Burwell Lute Tutor*. In *Sylva Sylvarum*, for example, Francis Bacon similarly makes an argument that musical instruments have animate spirits: “When the *Sound* is created between the *Blast* of the *Mouth*, and the *Aire* of the *Pipe*, it hath neuerthelesse some *Communication* with the *Matter* of the *Sides* of the *Pipe*, and the *Spirits* in them contained.” Bacon conceptualizes a pipe’s “*Spirits*” as “contained” within “the *Matter* of the *Sides* of the *Pipe*” and the air’s “*Communication*” with both “*Spirits*” and “*Matter*” as producing sound. Rather than dead, inert, or passive in the way that Kant understood matter, the “*Matter*” Bacon describes is vital. He elaborates that “*Sound* participateth with the *Spirit* in the *Wood*, thorow which it passeth.”³² Again, the material object is vivified with a “*Spirit*” that plays a critical role in the production of sound. The author(s) of the *Burwell Lute Tutor* would agree: more than a memorable metaphor, the idea that an object prompts vitality in, connection with, and even movement of a human body in the same way that a human body prompts vitality in, connection with, and movement of an object bears serious consideration for what it suggests about perceived relationships among matter, vitality, and agency.

Bacon’s approach to matter—particularly with regard to the “*Spirit* in the *Wood*,” but also in the very title *Sylva Sylvarum* (meaning “wood forest”)—developed from Aristotle’s theory of matter, also centered on wood, many versions of which were propagated in late medieval and

Renaissance England. (This ligneous approach may also be true of the *Burwell Lute Tutor*, as the word “lute” is an English approximation of the Arabic word for the instrument, *al úd*, meaning “the wood.”)³³ *Hyle* and *eidos* are the words Aristotle used to refer to matter and form, respectively, and *hyle*—comprising the four elements—is brought into being when *eidos* attaches to it, rather than existing of its own volition. Aristotle defines matter as “the primary substratum of each thing, from which it comes to be without qualification, and which persists in the result.”³⁴ In this definition, ὕλη (*hyle*) is the word that Aristotle uses to refer to matter; he actually appropriates the Greek word for “wood”—particularly, the connoted meaning of wood as a material used to build structures—in order to suggest the mutable, constructive quality of matter. In this way, Aristotle etymologically designates matter as involved in the process of creation or composition rather than as a substance that merely occupies space. Relatedly, the word “matter” comes from the Latin *materia*, which—distinct from form—also means “tree wood” as raw building material.³⁵ By the Renaissance, neo-Aristotelian philosophy endorsed such hylomorphism as matter-form theory, and hylomorphism “remained the primary discursive framework for the production of knowledge concerning natural bodies” throughout the seventeenth century.³⁶

Aristotle’s deliberate choice of terminology that characterizes matter as mutable is echoed in modern schools of thought, although—perhaps ironically—OOO shies away from employing the term “matter.”³⁷ According to recent theoretical approaches, “objects” are understood to be stable units, not reducible upward or downward, while “things” are performative conglomerations.³⁸ While acknowledging the disjuncture between the way that material entities are primarily believed to function in ANT (as “things”) versus in OOO (as “objects”), we also posit that the matter we study in this volume slides between—or holds in tension—the categories of “things” and “objects” as ANT and OOO define them. We endorse a double-pronged approach to material entities in which we consider how matter can function in various kinds of networks (organized by and around other objects, but also cultural, global, economical, social, ambulatory, and pneumatic), while, at the same time, we are interested in these objects for their “thing-ness,” for their qualities that we are able to apprehend in sensory ways that are, nonetheless, confined to our limited human perception.³⁹ Regarding the limitations of English-language terminology, Paula Findlen observes, “We can only sympathize with the

editor of the *Oxford English Dictionary* who, after offering myriad useful statements about this slippery word, finally threw up his hands and declared that *thing* was, more often than not, ‘a vague definition for an object which it is difficult to denominate more exactly.’⁴⁰ From *hyle* to matter to object to thing, there is always *something* or some quality manifest in material that evades human grasp.

In using *hyle* to designate matter, Aristotle conceives of matter as intrinsically related to process or transformation, especially relationally: for example, food is ingested and transformed, even as some aspect of the food matter persists in the consumer. On this point, Marx largely agrees with Aristotle. According to Marx, matter “should be conceived of less as a physical actuality than as a sensuous, workable potentiality that implies pasts, presents, and futures,” much like Aristotelian prime matter.⁴¹ Many studies of materiality collapse any distinction between the material and physical, or they conceptualize matter as “only in the form of the object” and thus ignore “the dynamic dimension of praxis.”⁴² In *De anima*, Aristotle again describes form as actuality and matter as potentiality—this time, as the word *dynamēos*, from which this collection draws the word “dynamic.” The correlative Latin word is *potentia*, from which the English word “potential” derives; even modern quantum theory posits that matter is potentiality.⁴³ According to this Aristotelian understanding, a thing or object includes a capacity to become something other than it is in any given current state.⁴⁴ Jonathan Gil Harris amplifies this point in terms of temporality: “For Aristotle as much as for Marx, matter is both past material that has been reworked as well as present, reworkable potential that presumes a future. Materiality thus articulates temporal difference”—the very term *hyle* implies a future form manifesting in matter itself. As Harris argues, matter can be both polychronic—collating different moments, like Michel Serres’s metaphor of pleats in his handkerchief—and multitemporal—prompting a variety of “different understandings and experiences of temporality.”⁴⁵ For the purposes of this volume, itself influenced by these passages from Harris’s *Untimely Matter*, the dynamic quality of matter—its capacity to become form, to re-form, to trans-form—is central to our approach. Although the readings offered here accrue around particular objects, they investigate the *dynamēos* of matter by tracing its manifestations in particular forms: cosmetics become part of bodies to which they are applied; combs are inscribed with words and interact with human hair; Catholic vestments are unpicked

and remade into new liturgical textiles; bird feathers are incorporated into garments and artwork on both sides of the Atlantic; needlework patterns are copied, circulated, and re-copied in various media; Prince Rupert's drops created by glassworkers explode; musical shows travel and are re-performed; a whale becomes animated by the power of a magical bracelet; and books are drowned. In all of these instances, we recognize the potentiality matter itself possesses and that it also activates in other matter.

As suggested by the animation of the lute described in the *Burwell Lute Tutor*, matter's potentiality could be extrapolated to suggest that matter possesses vitality. Known as "hylozoism," a term in which *hyle* is combined with *zoe*, meaning "life," this philosophical view that all matter is, in some sense, alive dates back to classical antiquity.⁴⁶ Several Greek philosophers, including Thales, Anaximenes, and Heraclitus, argued that life exists in all material objects, and Thomas Hobbes and Baruch Spinoza advance forms of hylozoism in their works that postdate Bacon's. Spinoza argues, "It is never we who affirm or deny something of a thing; it is the thing itself that affirms or denies something of itself in us," which relocates the agency in such interactions from the human to the object.⁴⁷ So, too, does Margaret Cavendish in her theory of vital materialism; she argues specifically that degrees of motion animate and activate all forms of matter, and she concludes that objects have "lively" qualities because they possess motion. Hylozoic theories were widespread in the Renaissance; Leah Marcus observes that "early modern vitalism was pervasive and took many cultural forms," including "the 'entelechy' of Aristotle and vital spirits of Galen, the 'Archeus' or vital force of Paracelsus, the world soul of Hermetic philosophy."⁴⁸ Vital materiality is also familiar in recent materialist parlance; for example, in her work Bennett draws inspiration from Spinoza, as well as from Deleuze and Guattari, who also posit "material vitalism."⁴⁹ Diana Coole and Samantha Frost state that vitality is central to new materialism, observing that "materiality is always something more than 'mere' matter: an excess, force, vitality, relationality or difference that renders matter active, self-creative, productive, unpredictable."⁵⁰ And, despite the theoretical lineage outlined in this passage, it is crucial to acknowledge that vital materialism has long been advanced by Indigenous peoples living in what we now call the Occidental hemisphere, as Edward McLean Test reminds us in his contribution to this volume; not simply the product of a white (predominantly male) European intellectual

pedigree, vital materiality instead boasts a rich multitemporal and trans-cultural heritage of ideas, and this collection posits that various cultural contributions to materialist philosophies should be acknowledged in current scholarship, even as our objects of study claimed the English Renaissance as their home.

Though probably unaware that the material theories he writes about had been developed much earlier by Indigenous peoples across the Atlantic, Bacon repeatedly returns to the material qualities of force, vitality, and relationality throughout his writings. In his *Wisdom of the Ancients* (printed multiple times throughout and beyond the seventeenth century, both as a stand-alone text and appended to *The Essays or Counsels, Civil and Moral, of Sir Francis Bacon*), Bacon uses classical myths to explain various aspects of life. Chapter 13, “Protevs, or Matter,” is particularly relevant to the concept of dynamic, transformative matter. The shape-shifting Proteus is described by Bacon as changing “into all manner of forms and wonders of nature, sometimes into a fire, sometimes into water, sometimes into the shape of beastes and the like, till at length hee were restored to his owne forme againe.” Additionally, Proteus possesses another quality that “hath an excellent agreement with the nature of Matter”: his understanding of “things to come; but euen things past aswell as present,” which again emphasizes matter’s multitemporal properties.⁵¹ In his explanation of the significance of this “Fable” to “the properties of Matter,” Bacon writes that

the person of *Protevs*, the first Matter (which next to God is the auncientest thing) may bee represented: for Matter dwelles in the concauity of heauen as in a Caue. He is *Neptunes* bond-man, because the operations and dispensations of Matter are chiefly exercised in liquid bodies. His flocke or hearde seems to be nothing but the ordinarie *Species* of sensible creatures, plants, and mettals in which Matter seems to diffuse and as it were spend it selfe, so that after the forming and perfecting of these kindes, (hauing ended as it were her taske) shee seems to sleepe and take her rest, not attempting the composition of any more *Species*. . . . [Matter] doth change and turne her selfe into diuers strange forms and shapes of things, so that at length (by fetching a circuit, as it were) shee comes to a period, and (if the force continue) betakes herselfe to her former being.⁵²

Fluid and dynamic, Proteus best emblemizes Bacon’s conceptualization of matter. Of Bacon’s theory—what Gail Kern Paster calls his “desiring” and “animated universe”—James Bono observes that Bacon’s “natural forms” are able to “metamorphose into other shapes” in ways that are “inherently active, transformative, plastic.”⁵³ Bennett’s theory of matter also inhabits this Baconian universe; she writes that “‘materiality’ is a flow, an indivisible continuum of becomings whose protean elements are not only exquisitely imbricated *in* a flowing environment but also *are* that very flow.”⁵⁴ Again, what is theoretically “new” in new materialist theories, Actor-Network Theory, and object-oriented ontology has multiple resonances with “old,” even ancient, theories.

Matter is dynamic, protean, animate, vital, capable of transforming itself, and adept at inciting transformations in others. This volume focuses on three specific and interrelated postulates about matter: (1) matter—both human and nonhuman bodies—is vital, possessing anima or spirit; (2) matter is dynamic rather than an inert or ossified substance imagined as distinct from a human subject, and the related claim that matter is transformative, able to undergo transformations itself and able to inspire transformations in others; and (3) matter has the ability to form networks that can prompt such transformations, which is to say that human agency is not the only or necessarily primary impetus for transformations; rather, the vitality of matter geohumorally links human and non-human together through the same animation that forms networks and incites change.⁵⁵ Sensory experience is the prime conduit for exchanges and transformations.

SENSING OBJECTS, TOUCHING THE PAST:
MULTISENSORY DIMENSIONS OF MATTER

Whereas subjects easily behave like matters
of fact, material objects never do.
—BRUNO LATOUR, *Reassembling the Social*

A portion of a white marble pillar from the ruins of Troy found its way to London in about the year 1600 via a man named Thomas Dallam. Dallam himself was journeying to deliver an important object: an organ he

had constructed that Queen Elizabeth urgently wanted presented to Sultan Mehmed III in order to foster commercial and diplomatic alliances between England and the Ottoman Empire.⁵⁶ On his way to Turkey, Dallam and his traveling companions stopped for a sightseeing adventure at “Cape Janissary,” on the Asiatic side of the entrance to the Dardanelles, the principal site of the Trojan War. Dallam records in his journal, “Thare we saw more at Large the rewin of the wales & housis in Troye, and from thence I broughte a peece of a whyte marble piller, the which I broke with my owne hands havinge a good hamer, . . . & I broughte this peece of marble to London.”⁵⁷ On the previous day, Dallam “& som more of our company wente a shore, & sawe som monimentes in Troy, peecis of wales, sutchins & marble pillares,” so Dallam seems to have come prepared for this second excursion, bringing along his hammer—undoubtedly the same tool he used to fashion and repair organ pipes in Constantinople—to assist him in detaching a piece of the white marble pillar from Trojan remains and removing it with his “owne hands.”⁵⁸

Dallam’s souvenir, and the relationship with it recounted in his diary, reveals several important details about early modern interactions with objects. Chipping off a chunk of marble from ancient ruins is similar to the way that holy relics were broken apart and distributed: John Mandeville writes that he received a thorn from the Crown of Thorns during his travels, and John Calvin famously observed in his *Traité des reliques* of 1543 that there were enough pieces of the cross held in religious houses across the known world that “yf a man woulde gather together all that hath bene founde of thys crosse, there would be inough to fraighte a great ship,” as the 1561 English translation concludes.⁵⁹ Dallam’s pilfering of Trojan ruins was not peculiar to him alone but was fairly routine among English and other European travelers, reaching its zenith in the eighteenth and nineteenth centuries with figures like Hester Stanhope (who destroyed her find of a Holy Land statue) and Thomas Bruce (who brought the Elgin Marbles to England).⁶⁰ During the Renaissance, these types of objects were considered ideal for procurement and exhibition in a *Wunderkammer*, or cabinet of curiosities, “a display room, popular amongst Europeans of means in the late sixteenth and early seventeenth centuries, in which were crammed marvelous objects from around the globe,” including religious relics and artifacts from classical antiquity.⁶¹ These collections were being amassed at around the same time

Dallam was writing his account, although the practice of keeping sacred relics and treasuries of objects began centuries earlier.⁶² In owning such material treasures—for the sake of spirituality, novelty, or exoticism—one endowed oneself with prestige, through “ownership” of, proximity to, and relationship with these objects. Although evidence for the “afterlife” of Dallam’s piece of the Trojan ruins is elusive, this marble souvenir may have made its way into a cabinet of curiosities after arriving in London.

Some scholars have observed that the “new new materialism” approach is comparable to curating a *Wunderkammer* of objects. This mode is problematic because of its predominantly synchronic focus, which examines objects chiefly because of their strangeness instead of considering the multi-temporal possibilities inherent in an object’s “life history” beyond a singular temporal event. Yet a deeper investigation of the *Wunderkammer*—and particularly how humans engaged with its contents—might recuperate *Wunderkammern* and curiosity cabinets for the ways that they and early museums actually encouraged object-oriented ontologies, networks, and relationality rather than an ossified suspension of objects in space and time.

While the modern museum distances the museumgoer from objects through glass partitions (echoing a tendency toward marginalization in materialist scholarship), curiosity cabinets and early museums invited sensory and material contact with the objects in their collections.⁶³ Objects on display were meant to be held, touched, smelled, and investigated closely. Objects are sensory-rich things; in interactions with humans, objects impact bodies through humans’ sensory experiences—especially those proximal senses of sound, smell, taste, and touch that leave traces of objects on and within bodies. One of the first university museums in England was the Ashmolean Museum, the collections of which were built upon the curiosity cabinets belonging to the Elder and Younger John Tradescants acquired by Elias Ashmole.⁶⁴ Ashmolean visitors’ accounts dating from the seventeenth century explicitly describe taking “a Cane . . . in your hands” to gauge its weight, touching the fur of taxidermic animals to compare their textures, and even touching paintings and sculptures to convince oneself that the eye was seeing a work of art rather than living beings. This tactile intimacy imparted embodied knowledge about these items; in the Renaissance, tactility was actually privileged as the sense that afforded the most accurate information. Touching was considered crucial

to scientific study as well: Robert Hooke prescribed “manual handling” as “the most serious and diligent study of the most able and proficient in natural philosophy.”⁶⁵ Concerning a sensory-laden approach, relevant today as much as in 1600, Graham Harman states, “there is no reason to assume that the intellect can make reality directly present in a way that the senses cannot.”⁶⁶ Harman’s statement reworks—transforms—empiricist philosophy’s motto: *Nihil in intellectu quod non prius in sensu* (Nothing exists in the mind that has not been first in the senses).⁶⁷ As Constance Classen argues, “part of the attraction of museums and of the cabinets of curiosities which preceded them, in fact, seemed to be their ability to offer visitors an intimate physical encounter with rare and curious objects. In certain cases the curious character of a museum piece may have resided in a quality imperceptible to the eye.”⁶⁸ Though largely foreign to our modern museum experience (although some exhibits do encourage touching specific designated objects), nonvisual senses allow intimate interactions with materials that sight alone does not.

Although the sense of touch seems to have been primarily engaged in tours of curiosity cabinets and early museums, objects on display interacted with the olfactory, gustatory, and auditory senses as well. Live botanical specimens offered multiple olfactory sensations, but so too did objects from across the globe—and, thus, from different olfactory environments. In these exchanges, the scent of the object permeated the olfactor’s body, hair, and clothing at the same time that the olfactor left her/his/their scent—residue from perfumed gloves, tobacco-laced fingers—on the item, slightly altering its aroma for the next olfacting visitor.⁶⁹ One could—and records indicate that certain visitors elected to—eat some of the examples in the botanical gardens, plucking leaves and consuming them as Celia Fiennes did, reporting that she tasted a wormwood sage leaf from Oxford’s Physic Garden.⁷⁰ Certain substances from foreign lands were offered to museumgoers for tasting; others, like mummy or animal parts, could have been consumed for medicinal purposes, depleting the museums’ stores in the process.⁷¹ Musical instruments were not, as Shakespeare’s *Timon* describes them, “hung up in cases that keep[] their sounds to themselves” (1.2.94–95) or silent, static objects sitting untouched as they are in most museums today; rather, they were played upon by museumgoers and curators so that their interesting timbres could be heard and the vibrations of another culture or time period felt through the sound waves

collectively produced. Rather than suspending objects in synchronic time, *Wunderkammern* and early museums encouraged multisensory contact with their materials.

In these sensory interactions, not only is particular information accessed through different sensory data, but also the object leaves its traces (strands of fur, particles of minerals, pigments, dust) on the human handling the object just as much as the human leaves its traces (strands of hair, fingerprints, impressions, oil, dirt, skin particles, microbes) on the object. Both are transformed in the process of sensory exchange. Moreover, it is not simply the subject's desire that prompts these encounters; rather, the object creates the impetus for contact because it attracts humans through what Bennett terms its "vibrant" qualities. Ian Bogost registers a similar sentiment: "Wonder is a way objects orient."⁷² Obviously, and as made abundantly evident by Dallam's absconding with a piece of Trojan ruins in his luggage, human tactile interactions involve some destruction; by the eighteenth century, wear and tear on museum holdings became a concern, as did theft. Even so, the practice of handling Ashmolean objects continued well into the nineteenth century because "tactile access was considered of sufficient importance that it outweighed the risks to the integrity to the collection."⁷³ Though suffering damage and decay, collections have outlived their original curators by centuries, and many will likely endure far beyond our own lifetimes.⁷⁴

Furthermore, the process of sensory exchange is not one-sided, experienced only by a sovereign human subject. The senses provide a conduit for mediation between human and object, as well as for an object's encounters with other objects. As suggested above, each sensory interaction between a human body (itself an object) and another object involves exchange and incites transformation as the object connects to bodies and other objects in the network of the cabinet-room or museum. Classen points out that the material culture approach "can fruitfully be extended to include the *sensory* life of things, or the ways in which objects are experienced and imbued with meaning through diverse sensory practices."⁷⁵ The "sensory life of things" has certainly garnered recent critical attention: Harman concurs that humans and animals are not the only beings who employ or rely upon sensory modes of contact; rather, all objects encounter one another through sensual exchange. As Bogost characterizes it, "objects float in a sensual ether," interacting across their surfaces

through their “sensual qualities.”⁷⁶ In his *Five Senses*, Michel Serres advances a theory of “mingled bodies,” which emphasizes mixing and adulterating through sensation—sensation that is not relegated to human experience alone. And Emily E. F. Philbrick explains that sensuality itself is “transforming contact, whether or not it is readily registered and interpreted through normative modes of human sensory encounter.”⁷⁷ Although humans apprehend the world through multiple sensory experiences, and early moderns recognized the importance of the senses in interactive exchanges—arguably through a more developed relationship with a wider spectrum of sensory experience than modern people typically do—objects also have sensory dimensions and capacities, whether or not humans acknowledge them.

Even as humans and objects share sensory sensations, objects are still “withdrawn from total human access,” both palpable to human experience and also more than simply the sum of their qualities that humans can ascertain.⁷⁸ That objects remain at least partially inaccessible to human perception has prompted a great deal of critical reflection in OOO studies. For example, Bogost argues that “if we take seriously the idea that all objects recede interminably into themselves, then human perception becomes just one among many ways that objects might relate”; furthermore, “objects *exceed* what we know or ever can know about them.”⁷⁹ Harman provides a useful nautical image for this phenomenon: “Though the hull is submerged, it remains vital for the seaworthiness of the ship. By analogy, the real qualities of the sensual object can only be inferred indirectly rather than witnessed.”⁸⁰ Nevertheless, the human impulse is to interpret matter through sensory experience, limited as that may be: “We just can’t know what an object is until we’ve handled it, tasted it, shot it around a particle accelerator, written a poem about it. Neither can a photon know what an object is until it [has] adjusted it in some sense. Yet even then, we do not have the object: we have our knowledge of its feel, its voltage, its flavor.”⁸¹ Although we cannot transcend what Timothy Morton calls “The Rift” between the “*essence* and *appearance*” of objects, we can utilize what sensory information we do have at our disposal to contemplate objects’ sensual qualities, proclivities, and desires.⁸²

Once again, recent theoretical approaches postulating that objects possess a sensory dimension as well as an elusive inner “essence” are not entirely novel in their conclusions: according to Renaissance object

theories expanding on classical precedents, objects are as much active in sensory exchanges as are human bodies. And, once again, Aristotle provides a foundation upon which many later theories were built. Aristotle contends that the senses cannot lie and are thus reliable in a way that the mind, with its powers of creativity and invention, is not; he states that humans comprehend an object by receiving its form through sensory organs.⁸³ In the sixteenth century, the Italian philosopher and scientist Bernardino Telesio revised Aristotle's theory of the senses outlined in *De anima* and argued that accurate knowledge comes from sensory data and analogical thought.⁸⁴ Although he critiques Telesio's theories in his *De Principiis atque Originibus*, Francis Bacon—often revered as the founder of the scientific method—actually employed Telesio's theories. In *Novum Organum*, Bacon posits that his “new” method relies on sensory perception as the method of “discovering truth.” In addition to his sensory influence on the study of phenomena, particularly his argument that the senses provide a key starting point for investigation and corroborating data during experimentation, Bacon asserts that the spirits residing in all matter are sensate as well: “The spirits are seen as active agents of phenomena; they are endowed with ‘appetition’ and ‘perception.’”⁸⁵

Margaret Cavendish, another materialist philosopher whose theories anticipate major tenets of both ANT and OOO, arrives at the same conclusion that matter is “sensible.” In “Condemning Treatise of Atomes,” she argues that nature is composed of “the substance of infinite matter” and that the “forms” described by Aristotle and his followers are, in fact, matter-in-motion; she also argues for panpsychism (a cousin of hylozoism), the belief that life permeates all things in the natural world, even what humans might consider inanimate, non-sentient objects.⁸⁶ She concludes that all matter is sensate, arguing, “There can be no regular motion without knowledge, sense, and reason.”⁸⁷ And in *Philosophical Fancies* (1653) and *Philosophical and Physical Opinions* (1655), Cavendish describes how sensory experience is a phenomenon shared by human and object: rational spirits flow between the body of the perceiver and intermix with the rational spirits of the object. Furthermore, Cavendish theorizes that—similar to the assemblage, network, or mesh—“matter moves itself according to its own nature and initiates changes in its own motion via natural sympathy” with other objects.⁸⁸

Outside philosophical writings, did other pre- or early moderns imagine objects as having sensory experiences, agency, animus, even anthropomorphized feelings? The author(s) of *The Dream of the Rood* certainly did. Dating to at least the tenth century, when it was preserved in its fullest form in the Vercelli Book, *The Dream of the Rood* possesses a material history that is almost as fascinating as the poem itself. Lines from the poem were inscribed on two cruciforms: the Brussels Cross and the Ruthwell Cross. The Anglo-Saxon reliquary known as the Brussels Cross dates from the eleventh century and is engraved with a Roman-letter hieroglyph. Reputed to hold the largest fragments of the True Cross, the Brussels Cross has been housed at the Cathedral of St. Michael and St. Gudula since the mid-seventeenth century. Standing 18 feet high (the longest side of the Brussels Cross measures 18.3 inches), the Ruthwell Cross dates to the eighth century and is inscribed with runes. Although scholars debate whether the runes were carved during the eighth century, the etchings were transcribed around the year 1600 by Reginald Bainbrigg of Appleby before the cross was bludgeoned by Presbyterian Reformers in 1642 (the smashed pieces were later incorporated into a nineteenth-century restoration of the cross).⁸⁹ Like splinters from the True Cross, the poem's dispersed fragmentary lines migrated from their Anglo-Saxon originary points to locations outside England, as they were variously orally transmitted, copied, carved, engraved, compiled with other poems, transported, translated, transcribed, demolished, and reconstructed.

The Dream of the Rood as it appears in the Vercelli Book anthropomorphizes the wooden cross upon which Christ was crucified. Perhaps it should come as no surprise given Aristotle's terminology for matter, *hyle*—meaning wood used for building—that a piece of *wood* (albeit a rather extraordinary piece of wood) is represented as speaking, possessing a spirit, and sentient. In the dream-vision, the human speaker is visited by a glorious, jewel-encrusted tree, yet quickly notices that “beneath that gold it had begun / Bleeding on the right side.”⁹⁰ The speaker then relates, “I could hear it call out to me, / The best of all wood began speaking words” (26–27). For almost the remainder of the poem, the narrative voice is no longer a human interlocutor but is instead the wood itself; at the same time, the wood's own denomination in Anglo-Saxon shifts from “tree” to “rood” as the wood recalls its shame, pain, and grief at the

role it was made to play in the Crucifixion. The Rood is remarkably sensate, recounting, “I felt the surface / Of the earth trembling” (36–37); “I trembled when the man embraced me” (42); “They drove dark nails into me” (46); “I was moistened all over with blood / Shed from the man’s side after he had sent up his spirit” (48–49); “I saw the God of hosts / Direly stretched out” (51–52); “I was badly burdened with grief” and “pierced everywhere with arrows” (59, 62). But the Rood is not simply a passive participant. Instead, because of its redemptive role for humankind, the Rood becomes a healer: “On me the son of God / Suffered a time; therefore I now tower / In glory under heaven and I may heal / Any one of those in awe of me” (83–86). Furthermore, the Rood’s speech culminates by stating that the Rood itself provides access to eternal life: “On this earth each soul that longs / To exist with its savior forevermore / Must seek His kingdom through that cross” (119–21). The Rood’s impassioned, embodied response as a participant in the Crucifixion underscores the fact that a material object played a crucial role in the most important event in Christian history. This object is imagined as verbal, rational, and passionately moved.⁹¹ Both the Brussels Cross and the Ruthwell Cross bear lines from the poem in which the Rood expresses agency and speaks from the first-person perspective: translated into modern English, these lines include “Rood is my name,” inscribed on the Brussels Cross, and “I beheld all that,” on the Ruthwell Cross.

The Rood’s animation and perceptive abilities prompt an important question about anthropomorphism. Many modern theorists have cautioned against anthropocentric thinking, especially as this approach overlays human modes onto objects in a colonizing fashion that can erase the uniqueness of object-oriented experience by filling this void in human knowledge precisely *with* a form of human knowledge. However, the benefits of anthropomorphism may outweigh the costs, especially as “a touch of anthropomorphism,” Bennett argues, “can catalyze a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations. . . . Anthropomorphism can reveal isomorphisms.”⁹² In other words, the sensibility of anthropomorphism can lead to what Deleuze and Guattari describe as “becomings”—these are not wholesale transformations into radically different forms but are, instead, affinities with others that create transformations in perception, movements

in the same direction. As Bennett concludes, “Maybe it is worth running the risks associated with anthropomorphizing . . . because it, oddly enough, works against anthropocentrism.”⁹³ It does so precisely through human acts of becoming-other (i.e., becoming-marble, becoming-lute, becoming-Rood).

While theories of objects and sensory studies both describe the importance of close proximity, ironically, for many scholars whose work encompasses earlier time periods, our relationships with our research materials tend to be distanced and dissociated. We visit museums, collections, or structures (many that are reconstructions) to study the past. We read early texts (mostly) through modern editions or through online databases like *Early English Books Online* (EEBO), experiencing the printed media via a screen that allows us to manipulate the scale of the text rather than modifying our bodily orientations in relation to the object of our inquiries. We use screens and connectivities to view many objects that belong to what has come to be called premodern culture—though, again, we interact with these items almost exclusively through the visual medium. And, in the instances that we are able to be in the same physical space as a “premodern” object, it is almost always in a way that distances the observer from the object: artifacts remain partitioned behind glass, suspended in space and time so that they may be safely preserved.

Yet many readers of this book will have experienced touching the past at research libraries, which can be key sites for becomings, sensory exchanges, and transformations prompted by object-human assemblages. These institutions, far more than modern museums, provide scholars one of the closest iterations of the intimate multitemporal and multisensory experiences that characterized visits to curiosity cabinets and early museums. Although I might be charged with idealism or naïveté, romanticized notions, or worse—“fetishism”—for saying so, in these instances something transformative happens when a reader encounters objects from the past in such close proximity. No longer merely a visual interaction or one entirely mediated by technology, in this exchange the reader breathes in molecules from the book’s surfaces, some of which are hundreds of years old; she touches the pages to turn them and, in doing so, touches the past. Moreover, in touching the past, she leaves a trace of her dynamic, genetic matter on the pages, stamping her time in the archive, signing it along with perhaps a few, perhaps thousands of others through time and space

who have interacted with that textuality and materiality.⁹⁴ The temporality of the interaction between book and human becomes crumpled, both polychronic and multitemporal, and will continue to be so as long as scholars continue to research in libraries in this manner.⁹⁵ In the assemblage formed between book and human, each alters the other: the knowledge that the scholar gains informs and transforms her work as much as the book's particles—dust, scent molecules, ink—adhere to her body. The object in this case is not a simulacrum, a scan, a pale reflection—it is dynamic matter, transforming its readers through the material on its pages at the same time it is being transformed through interactions with cadres of readers that this object has attracted, many of whom the object has outlived.

Through the multisensory approach to their objects of study—and the multitemporal networks these objects create and through which they circulate—the essays in this collection engage with multiple sensory qualities of objects in ways that intentionally echo interactions that took place in curiosity cabinets and early museum culture. These vibrant objects leave sensory traces that the authors have followed, and these examples of dynamic matter are impacted as much as they impact humans and other matter. Rather than a modern museum or, as Bruster describes it, a “J. Crew catalogue” of “tchotchke criticism,” the following chapters argue for the multisensory, multitemporal exchange of objects between other matter and other objects in order to study how objects transform the networks by which they are produced, in which they exist, and that the objects themselves assemble.⁹⁶

DYNAMIC MATTER IN ACTION

The dynamic and transformative qualities of matter are explored in the following pages through a variety of material approaches and encompass intersemiotic literary, musical, performance, archival, and historical study. While each chapter is oriented around a particular object (or several objects) and its (or their) sensual qualities, the chapters also trace the dynamic properties of objects as they travel through different geographies, continents, human cultural/racial/religious/ethnic groups, and time periods—undergoing transformations and transforming others in the process. In fact, practically all of the objects discussed in this volume

traverse cultural and continental divides, and many of these objects have survived to the present day, outliving their Renaissance human counterparts. In taking seriously the idea that objects go on journeys, become repurposed, and have what Appadurai calls “careers” and “life histories,” these chapters demonstrate the theoretical vitality of examining specific objects as relational—as actors participating in various networks and creating new webs of association as they move through time and space.

The chapters that form the first section, “Objects Within / Without the Body,” bring readers into close contact with cosmetics, combs, and clerical vestments—objects whose dynamic properties include both the ability to alter others and to be altered themselves as they are incorporated onto the skin, detangle strands of hair, and signal clerical status. The chapters in this section focus specifically on women’s artistry in cosmetic application, arrangement of hair, and sewing of textiles. As these objects traveled among a variety of bodies, they not only imparted elements of their materiality to the wearer, but they also bore important material traces and memorial significations derived from intimate relationships to the human bodies with which they formed assemblages. Rather than privileging the human by considering these objects as merely accoutrements of or accessories to the human body, this section demonstrates not only how objects form part of a body’s assemblage—transforming and working upon human bodies with which they are in close proximity—but also how objects engage human bodies as one element among many in the networks these objects form and transform.

Josie Schoel’s chapter, “‘Farre Fetched and Deare Bought’: The Global Cosmetic Exchange Between Elizabeth I, Melike Safiye Sultan, and the *Kira* Esperanza Malchi,” considers the transcontinental circulation of letters and cosmetics between Elizabeth I and Melike Safiye, Valide Sultan of the Ottoman Empire. By examining the women’s correspondence, Schoel exposes the ways that whiteness is constructed racially and materially through the use of—and desire for—cosmetic intervention to change the appearance of the wearer, particularly through fabricating light skin. Like other luxury items (porcelain, carpets) that originated in the East, were commercially produced in the West, and then traded back to the East, the lightening cosmetics that Safiye requested from Elizabeth were actually composed of substances imported from Eastern spaces close to Safiye’s home. Consequently, the exchange of cosmetic materials between the

two women constitutes a cultural and corporeal hybridity—ironically—through the pursuit of whiter skin. Furthermore, Schoel interrogates the “object-subject border that’s so close to us it dissolves” as cosmetic material becomes “in-corporated” with human bodies.⁹⁷ Book history, cultural poetics, critical race theory, and materialist theory come together in this chapter, which concludes with a discussion of Elizabeth’s body represented as porous in these intimate letters—a revisionist account of a light-skinned queen who embraced the motto “*Semper Eadem*” and stylized herself as intransigent.

Erika Mary Boeckeler’s chapter, “Comb Poems,” similarly considers the materiality of objects contiguous with human bodies: hair combs inscribed with poetry. Moving from a giver to a loved one, such posy gifts offered a script that directed the recipient’s physical and emotional interactions with the comb. Entangled in webs of tresses and in networks of humans who created, gifted, used, wore, and read their inscriptions, combs demand human interaction with their intriguing material representations, requiring the wearer and/or reader to turn or flip it in order to read the entire inscription, inviting engagement with both comb and its conceit. Boeckeler teases out the tangled relationship between combs and figured poetry, like the comb-shaped poem appearing in William Browne’s *Britannia’s Pastorals* (1613), in order to reflect on readers’ haptic and material exchanges with combs and printed books. Contrary to the idea that an object’s identity consists of a static, seemingly objective set of properties, “Comb Poems” reveals how the combs “speak” to others who/that behold them. Boeckeler demonstrates how this easily anthropomorphized object—outfitted with teeth, sometimes worn near the ear, intimately inscribed—actually undermines anthropocentrism by becoming the driver in human-thing interactions.

This section concludes with Naomi Howell’s “Variable Vestments and Clothing Conversions: Piecing Out the Past in Tudor Exeter.” Howell, like Boeckeler, is interested in embodied materialities and meanings that inhere in worn objects. Presenting a historicist treatment of the uncanny afterlives of Catholic vestments in post-Reformation Exeter, Howell traces the textile transformations of clerical robes from sacred garments worn by priestly bodies, to a “costume” appareling the body of a vicar at his hanging, to funeral pall. As late medieval “mortuary spectacles” found theatrical representation and as cloths worn by priests turned into performative garb worn by working-class actors, these signifying objects inspired

audiences just as they had once led the faithful. Howell notes, however, that textiles served other communal functions, gathering not only spectators but also makers (embroiderers, sewers) into community. Offending images—like that of Christ—were carefully unpicked from Catholic vestments, though much of the embroidery remained in its original, pre-Reformation splendor. Careful snipping, stitching, and patching—carried out predominantly, if not exclusively, by women—produced a new object, yet traces of “popish” images still remained visually and haptically tangible on the cloth. The broken and unbroken threads of these textiles provide material evidence that Catholic elements were by no means obliterated in the wake of the Protestant Reformation.

Moving from proximal intimacies to wider spheres of circulation, the second section, “Networking Objects,” highlights the assemblages formed by feathers, needlework patterns, and glass curiosities known as Prince Rupert’s drops. While certainly not neglecting the materiality of individual objects, these chapters devote particular attention to the larger webs of replication, admiration, imitation, and fascination that these objects create. While all objects arguably have the capacity to form networks, those featured in this section exemplify how human bodies and other objects are drawn to particular objects; these networked connections are perceptible through various forms of material evidence—manuscript and print accounts, artwork, woodblock printing, and needlework—created by humans but which outlive their human manufacturers. The materiality of these objects, in fact, relates metaphorically to their sensorial attraction of others to them: the interlocking barbs and barbules of a feather, the crosshatched grid of needlework patterns, and the unique molecular chains that form the glass drops are all physical manifestations of the network, assemblage, or web. As these chapters demonstrate, the networks created and transformed by bird feathers, handcraft patterns, and glass curiosities reveal becomings, as these objects generate transformations in other matter that assembles around them.

In “Bird-People, Utopias, *Arte Plumaria*: The Influence of Native American Feathers on Renaissance Literature and Culture,” Edward McLean Test offers a fresh consideration of a semiotically overdetermined and yet inconsistently marked object: the feather. As Test points out, desirable and imported “New World” feathers had a variegated life in early modern Europe, where they adorned hats, dresses, military helmets, and tourney

and procession horses; were collected in curiosity cabinets; were employed in theatrical productions; decorated aristocratic walls; and festooned religious vestments. By focusing on the feathers' material agency, Indigenous origins, and religious associations, Test charts an alternative cultural history through trans-Atlantic feather networks. The New World feather provoked new associations and assemblages in European literature and art, especially as feathers were regarded as objects of religious significance for cultures on both sides of the Atlantic. While retaining their associations with divinity, albeit reconstituted in Europe, New World feathers were employed in Christian-themed feather paintings, in utopic texts penned by Thomas More, and in performances of Ben Jonson's masques. Trans-Atlantic networks fashioned by "New World" feathers transformed the literary, religious, and cultural environments of the "Old World."

Networks formed by movement, reinterpretation, and transformation are central to Anna Riehl Bertolet's "Needlework Patterns on the Move: Traveling Toward (Re)incarnation." Bertolet's chapter, like Test's, features avian objects that forge networks spanning multiple geographic locations; both also investigate the transformations that objects create and undergo through human creative acts. Bertolet traces the webs woven across Europe by the replication of needlework patterns on cloth and in print. A printed book of patterns functions like a broadly dispersed pattern—itself an abstract invention or record based on an existing material object—fostering the reproductive process in which instantiations of the design are created as new material objects. Bertolet examines patterns featuring birds; as symbols of mobility and eternity, birds—even those rendered in thread—are themselves emblematic of the life histories of things. In addition to showing how the bird-patterns migrated across continents and centuries, Bertolet also delineates the complex ontologies of creation among different forms of media. The first printed embroidery pattern books appeared in Germany in the 1520s, but, given the nebulous concept of copyright, versions soon spread to Italy, France, and England. By their nature, pattern books are tied to material, visual, and haptic culture: though their content is predominantly visual, the books invite physical manipulation through touch as the patterns are replicated in various forms and in various nodes across Europe.

As noted above, sensory information was essential to artistic appreciation, as well as to early scientific experimentation. It is to the latter that Abbie Weinberg turns in "Whose Least Part Crackt, the Whole Does Fly":

The Explosive Case of Prince Rupert’s Drops.” Echoing Latour in arguing for the importance of objects to the study of science, and taking as her case study Prince Rupert’s drops—tadpole-shaped glass curiosities formed by dropping molten glass into cool water—Weinberg charts the various elaborate networks of sustained human attention formed by the enigmatic drops.⁹⁸ Their appellation comes from Prince Rupert of Rhine because Rupert sent examples of these drops to his cousin Charles II, who then passed them along to the Royal Society. Margaret Cavendish mentions the drops in her writing—Constantijn Huygens reportedly sent some to her—as do Samuel Butler in *Hudibras* and Robert Hooke in *Micrographia*; Weinberg concludes that Hooke’s experiments with them may even have assisted him in developing Hooke’s Law. Moreover, the fact that only recently have the drops’ unusual physical properties been deciphered and explained—the head of the drop is so strong as to be nearly impervious to crushing, even with blows from a hammer; however, if the tail is “crackt” or snapped, the entire drop explodes—is a potent reminder that objects have qualities inaccessible to human perception, though we may gain greater understanding the more we interact with such objects.

“Staging Properties,” the final section of the collection, considers the role objects play in early modern performance. Inspired by the terminology inherent in the very name Actor-Network Theory, this section investigates objects as “actors” in at least two senses of that multivalent word: as theatrical stage performers and also, according to its specialized use in ANT, as human or nonhuman generators of action. This section argues that stage properties, known also as “props,” are as much actors as human performers are, and that specific objects—a multimodal traveling show box, a talking whale animated by a magical bracelet, and a book of magic spells—may actually eclipse human performers in the instances under consideration here. These chapters focus particularly on the dynamic and performative aspects of objects—their movements, their dramatic appearance as both material form and signifier in the context of their dramatic art, and their performative actions that are demonstrative of material agency. As with gifted human thespians, these captivating objects delight and surprise audiences with their expert performative abilities.

An ambulatory diorama and a musical tune are the star performers in Sarah F. Williams’s “Traveling Music and Theatrics: Jemmy LaRoche’s ‘Raree Show.’” Popular in England during the seventeenth through nineteenth centuries and presented at markets or fairs, “rare shows” were

multimedia performances: individuals beheld a miniature scene housed in a portable box while a showman provided musical accompaniment. Many early purveyors of these traveling shows were Savoyards—hence the “raree show” inflection, intended to approximate French pronunciation. Jemmy LaRoche, a professional singer-actor on London’s “legitimate” stage, became renowned for his song “Raree Show,” from Peter Motteux’s *Europe’s Revels for the Peace of Ryswick* (1698), with music by John Eccles. References to LaRoche’s song “traveled”—as did his portable stage—across genres, social classes, time, and performance venues, dissolving many of these same boundaries in the process. References to the tune “Raree Show” and its refrain appear around the turn of the eighteenth century in broadside ballads, mezzotint prints, and political tracts, creating a complex network of intertextual, social, and musical relationships. Tracing broader transcultural networks, as Schoel, Test, and Bertolet do in their chapters, Williams demonstrates how an international object foregrounds issues of cultural exchange, situating the raree show as a “disruptive object” in relation to subversive politics.

As suggested by the traveling raree show, plays and props are often mobile, mutable things—a topic that Maria Shmygol explores in her chapter, “Protean Objects in William Percy’s *The Aphrodysial or Sea-Feast*.”⁹⁹ Informed by an Ovidian understanding of textual transformation, Shmygol surveys extant manuscript copies of *The Aphrodysial* to explain how Percy’s play can itself be considered a transformed and transformative object; originally composed in 1602, the document contains authorial transcriptions from the 1640s that include deletions, insertions, and other peculiarities that present the text in an unfixed state. The dynamic material properties required by *The Aphrodysial*—including a hypostatized offstage whale and a magical bracelet—function in a similarly protean way, making themselves known from either their position offstage (through the whale’s audible roaring) or by being figured first in verbal terms and then through artificial imitations (like the magic bracelet, which is revealed only at the end of the play). Percy’s dynamic props invite reflection on the (im)materiality of objects in transition from offstage to onstage, and on the nature and function of staged properties more broadly. Matter’s protean powers are revealed in the interconnected networks of the imaginative world of the play and of the performative world of the stage, as both are transformed by these dramatic objects.

The collection concludes with Emily E. F. Philbrick's meditation on *The Tempest's* magical and quasi-anthropomorphized book in "I'll Drown My Book: Prospero's Grimoire, Adrift." Prospero's famous book—like the whale of Percy's *Aphrodysial*—may exist only as an offstage property, called into being through Prospero's and Caliban's vocalized references to it. Yet Philbrick's object-oriented approach asks what a play might be like when a magical object takes center stage in a production, decentering other human and nonhuman actors. A magical grimoire may possess its own agency—an ability to move, to act upon others. Prospero promises to drown his book; the word "drown" signals death, the loss of sentience and agency. But for a book, drowning may instead be submersion in an element of drift, entrance into a sea of transformation. Prospero's grimoire, too, can be interpreted in multiple ways: as an agentive, potentially dangerous, and/or magical object. Philbrick proposes a reading of the relationship among Prospero, book, and magic as a vibrant, dynamic assemblage that invites reflection upon the nature of material objects, especially those tied to the imaginative work of humans—both writing and magic-making. The drowned grimoire also reminds us that as objects journey beyond realms of human knowledge, they continue creative processes of transformation.

NOTES

Please note that the use of "consult" throughout this volume is a deliberate choice intended to foster inclusivity in a way that the conventional "see"—which cavalierly privileges the sense of sight and marginalizes those with different sensory abilities—does not. Please consult "Sensing Objects, Touching the Past: Multi-sensory Dimensions of Matter" in this introduction about the importance of various modes of sensory perception.

1. Though alchemy and transubstantiation seem to derive from disparate traditions, Katherine Eggert, *Disknowledge: Literature, Alchemy, and the End of Humanism in Renaissance England* (Philadelphia: University of Pennsylvania Press, 2015), 57–70, demonstrates how they were mutually informing concepts in

Renaissance thought. Transubstantiation was a frequent event: Thomas Cranmer recommended that Holy Communion be given every Sunday and holy day, and the 1559 Prayer Book required congregants to receive it at least three times a year. Albert Charles Hamilton, *The Spenser Encyclopedia* (Toronto: University of Toronto Press, 1990), 102.

2. John Mandeville, *The Travels of Sir John Mandeville*, trans. C. W. R. D. Moseley (London: Penguin, 1983), 99–100. Josie Schoel's chapter in this collection also discusses the boundaries between object and subject that are blurred when cosmetic substances, like balms, are applied to the skin.

3. Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud*

(Cambridge, MA: Harvard University Press, 1992), 123; Julie Crawford, *Marvelous Protestantism: Monstrous Births in Post-Reformation England* (Baltimore: Johns Hopkins University Press, 2005).

4. Mandeville, *Travels of Sir John Mandeville*, 118. Consult also Jessica Roberts Frazier, "Reorienting the Diamond" (PhD diss., George Washington University, 2014).

5. About the paper used for the First Folio, consult Carter Hailey, "The Best Crown Paper," in *Foliomanial Stories Behind Shakespeare's Most Important Book*, ed. Owen Williams (Washington, DC: Folger Shakespeare Library, 2015), 8–14; Shakespeare's Jack Cade laments "that of the skin of an innocent lamb should be made parchment." 2 *Henry VI in The Norton Shakespeare*, ed. Stephen Greenblatt et al. (New York: W. W. Norton, 2016), 4.2.73–74. Citations to Shakespeare's works are from this edition unless otherwise noted.

6. Delia Garratt and Tara Hamling, eds., *Shakespeare and the Stuff of Life: Treasures from the Shakespeare Birthplace Trust* (London: Bloomsbury, 2016), 32–33.

7. Quotation from Stephen Greenblatt, *Shakespearean Negotiations* (Berkeley: University of California Press, 1988), 112. Consult also Ann Rosalind Jones and Peter Stallybrass, *Renaissance Clothing and the Materials of Memory* (Cambridge: Cambridge University Press, 2000), 175–206; and Naomi Howell's chapter in this collection.

8. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2009), 9.

9. Consult Mary Floyd-Wilson, *Occult Knowledge, Science, and Gender on the Shakespearean Stage* (Cambridge: Cambridge University Press, 2013), 19–20, 153.

10. Floyd-Wilson, *Occult Knowledge*, 16; Garratt and Hamling, *Shakespeare and the Stuff of Life*, 72–73.

11. Sidney's Dorus admires the "seeming insensible loadstone [sic]" that draws another "hard-hearted thing unto it."

Philip Sidney, *The Countess of Pembroke's Arcadia*, ed. Victor Skretkowicz (Oxford: Clarendon Press, 1987), 165.

12. This example comes from Katherine Austen's "Upon My Jewel," a seventeenth-century prose work brilliantly discussed in Pamela S. Hammons, *Gender, Sexuality, and Material Objects in English Renaissance Verse* (Farnham, UK: Ashgate, 2010), 1–4, esp. 2. Hammons notes that for Austen, "the jewel's sparkle does not merely represent but *actually is* God's love for her: In its materiality, she encounters the divine" (2).

13. Cited in Thurston Dart, "Miss Mary Burwell's Instruction Book for the Lute," *Galpin Society Journal* 11 (1958): 3–62, esp. 23.

14. Quotation from Douglas Bruster, *Shakespeare and the Question of Culture: Early Modern Literature and the Cultural Turn* (New York: Palgrave Macmillan, 2003), 204. Refer also to Jonathan Gil Harris, "The New New Historicism's Wunderkammer of Objects," *European Journal of English Studies* 4.2 (2000): 111–23; Harris, "Shakespeare's Hair: Staging the Object of Material Culture," *Shakespeare Quarterly* 52.4 (Winter 2001): 479–91; Julian Yates, *Error, Misuse, Failure: Object Lessons from the English Renaissance* (Minneapolis: University of Minnesota Press, 2003); and Curtis Perry, ed., *Material Culture and Cultural Materialisms in the Middle Ages and Renaissance* (Turnhout, Belgium: Brepols, 2001), x.

15. In Graham Harman's words, "What is truly characteristic of Kant's position is that the human-world relation takes priority over all others." *The Quadruple Object* (Winchester, UK: Zero Books, 2011), 45.

16. Ian Bogost, *Alien Phenomenology, or What It's Like to Be a Thing* (Minneapolis: University of Minnesota Press, 2012), 3. Michel Serres, *Statues: The Second Book of Foundations*, trans. Randolph Burks (London: Bloomsbury, 2015), 118, takes this assertion one step further: "The subject is born of the object."

17. Levi R. Bryant, *The Democracy of Objects* (Ann Arbor, MI: Open Humanities Press, 2011), 248.
18. Arjun Appadurai, "Introduction: Commodities and the Politics of Value," in *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press, 1986), 3–63, esp. 11, 34.
19. Quotation from Graham Harman, *Prince of Networks: Bruno Latour and Metaphysics* (Melbourne: re.press, 2009), 119.
20. Cited in Dart, "Mary Burwell's Instruction Book for the Lute,"
23. Refer to Sarah F. Williams's chapter in this collection for a discussion of the materiality of sounds performed alongside "animated" and ambulatory rare shows.
21. "Animate," v. I; I.2; II; II.6; II.7; II.9, OED Online. "Animate" is associated with both breath and spirit, a connection that comes from the Latin *spiritus* and the Greek *pneuma* (spirit, air, breath, wind). Gail Kern Paster, *Humoring the Body: Emotions and the Shakespearean Stage* (Chicago: University of Chicago Press, 2004), 9.
22. Bennett, *Vibrant Matter*, 23–24. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 128.
23. As Harman, *Quadruple Object*, 112, explains, "To reduce the hammer to its outward relations would undermine it, reducing it to a Husserlian phenomenon or Latourian actor that exists only in relation with other things. Conversely, to call the hammer nothing but a nickname for its sum total of pieces would *undermine* it, reducing it to nothing more than an epiphenomenon of its material ancestry."
24. Bruno Latour, *The Politics of Nature: How to Bring the Sciences into Democracy*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1999), 75. Consult also Harman, *Prince of Networks*, 17.
25. Graham Harman, *Object-Oriented Ontology: A New Theory of Everything* (London: Pelican Books, 2018), 9.
26. Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993), 3, 78; and Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005), 39.
27. Graham Harman, *Immaterialism: Objects and Social Theory* (Cambridge, UK: Polity Press, 2016), 42–43.
28. Diana Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham, NC: Duke University Press, 2010), 9.
29. William Shakespeare, *The Tempest*, ed. Virginia Mason Vaughan and Alden T. Vaughan, Arden Shakespeare, 3rd ser. (London: Bloomsbury, 2011), 1.2.391, 392–94. Consult also Emily E. F. Philbrick's chapter in this collection.
30. Floyd-Wilson, *Occult Knowledge*, 1. Refer also to the introduction to *Environment and Embodiment in Early Modern England*, ed. Mary Floyd-Wilson and Garrett A. Sullivan Jr. (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2007), 1–13; and Everett Mendelsohn, *Heat and Life: The Development of the Theory of Animal Heat* (Cambridge, MA: Harvard University Press, 1964).
31. According to OOO, however, metaphor itself is a relational act; consult Harman, *Object-Oriented Ontology*, 86–89, and Bogost, *Alien Phenomenology*, 80.
32. Francis Bacon, *Sylva Sylvarum* (London, 1627), 50, 44.
33. Consult Helen S. Lang, *Aristotle's Physics and Its Medieval Varieties* (Albany: State University of New York Press, 1992); Charles Schmitt, *The Aristotelian Tradition and Renaissance Universities* (London: Variorum Reprints, 1984); and Schmitt, *John Case and Aristotelianism in Renaissance England* (Kingston, ON: McGill-Queen's University Press, 1983). About the lute, consult Douglas Alton Smith, *A History of the Lute from Antiquity to the Renaissance* (Lexington,

VA: Lute Society of America, 2002), 9; and Matthew Spring, *The Lute in Britain: A History of the Instrument and Its Music* (Oxford: Oxford University Press, 2004), 1–2.

34. Aristotle, *Physics* 1.9.192a32. Consult also Eggert, *Disknowledge*, 59.

35. Michel Serres, *Statues*, 51, states that “Latin calls matter ‘tree wood’ because it produces offshoots like a womb.” Consult also Thomas Ainsworth, “Form vs. Matter,” in *The Stanford Encyclopedia of Philosophy* (Spring 2016), <https://plato.stanford.edu/archives/spr2016/entries/form-matter/>.

36. Henry S. Turner, “Nashe’s Red Herring: Epistemologies of the Commodity in *Lenten Stuffle* (1599),” *ELH* 68 (2001): 529–61, esp. 539–40. Consult also Antonio Perez-Ramos, *Francis Bacon’s Idea of Science and the Maker’s Knowledge Tradition* (Oxford: Clarendon Press, 1988); and Lisa Jardine, *Francis Bacon: Discovery and the Art of Discourse* (Cambridge: Cambridge University Press, 1974).

37. Harman, *Immaterialism*, argues that “interest in objects is often confused with interest in ‘materialism,’” an approach that simultaneously undermines and overmines objects (*Quadruple Object*, 13–14). The essays in this collection are guilty of this charge in certain ways: we use particular dynamic, transforming, transformative objects to make larger arguments about the dynamic properties of matter. Consult also Timothy Morton, *Hyperobjects: Philosophy and Ecology After the End of the World* (Minneapolis: University of Minnesota Press, 2013), 150. For a recuperation of the term “matter,” consult Serres, *Statues*, 51.

38. Consult Harman, *Prince of Networks*, 137–38, for a discussion of this terminology and Heidegger’s theory of things and objects. Bill Brown also draws careful distinctions between “objects” and “things,” although these classifications function inversely to the way these terms are discussed above. Brown, “Thing Theory,” *Critical Inquiry* 28.1 (Autumn 2001): 1–22, esp. 4.

39. Latour makes a similar argument about this elusiveness in “Can We Get Our Materialism Back, Please?,” *Isis* 98.1 (March 2007): 138–42.

40. Paula Findlen, ed., *Early Modern Things: Objects and Their Histories, 1500–1800* (London: Routledge, 2013), 11.

41. Morton, *Hyperobjects*, 113, also notes the similarities between Aristotle and Marx on this point. In *Realist Magic: Objects, Ontology, Causality* (Ann Arbor, MI: Open Humanities Press, 2013), 81, Morton observes that “matter, then, is always relational—it’s matter-for.” Consult also Turner, “Nashe’s Red Herring,” 547.

42. Jonathan Gil Harris, *Untimely Matter in the Time of Shakespeare* (Philadelphia: University of Pennsylvania Press, 2009), 7, citing Marx, “Theses on Feuerbach,” in *Writings of the Young Karl Marx on Philosophy and Society*, trans. Loyd D. Easton and Kurt H. Guddat (New York: Doubleday, 1967), 400–402, 400. Consult Harris and Natasha Korda, *Staged Properties in Early Modern English Drama* (Cambridge: Cambridge University Press, 2002), 17.

43. “Each object should be regarded as something containing only incompletely defined potentialities that are developed when an object interacts with an appropriate system.” David Bohm, *Quantum Theory* (New York: Dover, 1989), 139.

44. Harman, *Prince of Networks*, 128, states, “For Aristotle, a thing is always more than what it is right now.” Consult also Bryant, *Democracy of Objects*, 123, who notes that objects may “unleash[] potentials” through relationality.

45. Harris, *Untimely Matter*, 7–8, 4.

46. Hylozoism is similar to but distinct from animism; the latter is an anthropological term often applied to the belief systems of populations that attribute a spiritual essence to objects, places, and creatures; thus, it is sometimes categorized as a religion, while hylozoism is considered a philosophy—an uncomfortable, marginalizing distinction.

47. Baruch Spinoza, *Short Treatise II*, 16, 5, cited in Gilles Deleuze, *Spinoza*:

Practical Philosophy (San Francisco: City Lights, 1988), 81. Consult also Bennett, *Vibrant Matter*, 2; and Bryant, *Democracy of Objects*, 117. John Burnet, *Early Greek Philosophy* (London: Adam and Charles Black, 1908), viii. Bacon diverged from Aristotle in positing that matter could be animate, likely following theories of Bernardino Telesio, Strato of Lampascus, Paracelsus, Cardanus, and Giordano Bruno.

48. Leah S. Marcus, “King Lear and the Death of the World,” in *The Oxford Handbook of Shakespearean Tragedy*, ed. Michael Neill and David Schalkwyk (Oxford: Oxford University Press, 2016), 421–36, esp. 424. Consult also Kevin Curran, “What Was Personhood?,” in *Renaissance Personhood: Materiality, Taxonomy, Process*, ed. Curran (Edinburgh: Edinburgh University Press, 2020), 1–17.

49. Bennett’s concept of “Thing-Power” refers to “the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle.” Bennett, *Vibrant Matter*, 6; Deleuze and Guattari, *A Thousand Plateaus*, 251–423.

50. Coole and Frost, *New Materialisms*, 9.

51. Bacon, *The Wisedome of the Ancients* (London, 1619), 67, 70, 66. Consult also Jenny C. Mann and Debapriya Sarkar, “Introduction: ‘Capturing Proteus,’” *Philological Quarterly* 98.1–2 (2019): 1–21, esp. 6–11, for a reconceptualization of form as more fluid and ontological, particularly in its applicability to both language arts and natural philosophy, through the figure of Bacon’s Proteus; and Maria Shmygol’s chapter in this collection.

52. Bacon, *Wisidome*, 67–69. Consult Stephen Gaukroger, *Francis Bacon and the Transformation of Early-Modern Philosophy* (Cambridge: Cambridge University Press, 2001), 137.

53. Paster, *Humoring the Body*, 33; James J. Bono, *The Word of God and the Languages of Man: Interpreting Nature in Early Modern Science and Medicine, Ficino to Descartes* (Madison: University of Wisconsin Press, 1995), 1:184.

54. Bennett, *Vibrant Matter*, 92.

55. For a discussion of the nebulous nature of human agency, consult Bennett, *Vibrant Matter*, 34.

56. Consult Jennifer Linhart Wood, *Sounding Otherness in Early Modern Drama and Travel: Uncanny Vibrations in the English Archive* (Switzerland: Palgrave Macmillan, 2019), 167–203, for a discussion of the transformations endured and caused by Dallam’s organ. Consult also Gerald MacLean, *The Rise of Oriental Travel: English Visitors to the Ottoman Empire, 1580–1720* (New York: Palgrave Macmillan, 2004); and Lawrence Danson, “The Sultan’s Organ: Presents and Self-Presentation in Thomas Dallam’s Diary,” *Renaissance Studies* 23.5 (2009): 639–58.

57. Dallam, *A brefe Relation of my Travell from the Royall Cittie of London towards The Straites of Mariemediterranum and what hapened by the waye*, BL Add MS 17480, sig. 43r.

58. Dallam, *A brefe Relation*, sig. 41r.

59. *The Travels of Sir John Mandeville*, 48. *A Very profitable treatise, made by M. Ihon Caluayne*, trans. Steven Wythers (London, 1561), sig. C2r–C2v. Consult also Caroline Walker Bynum’s scholarship, especially *Dissimilar Similitudes: Devotional Objects in Late Medieval Europe* (New York: Zone Books, 2020); relics were imbued with “the presence of the holy itself” (29).

60. Taking pieces of historically significant objects continued for centuries, for example, with items from the Shakespeare houses, and continues today with chunks of the Berlin Wall or wreckage from the Twin Towers commodified for sale; consult Cathryn Enis and Tara Hamling, “Shakespeare’s Lost Domesticity: Material Responses to Absence in Stratford-upon-Avon,” *Shakespeare Quarterly* 70.1 (Spring 2019): 52–83; and Constance Classen, “Museum Manners: The Sensory Life of the Early Museum,” *Journal of Social History* 40.4 (Summer 2007): 895–914, esp. 902.

61. Harris, “Wunderkammer of Objects,” 115.

62. Consult Patrick Mauriès, *Cabinets of Curiosities* (London: Thames & Hudson, 2002), 50.
63. Fiona Candlin, *Art, Museums and Touch* (Manchester, UK: Manchester University Press, 2010). Consult also Oliver Impey and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth and Seventeenth Century Europe* (Oxford: Oxford University Press, 1985); R. F. Ovenell, *The Ashmolean Museum* (Oxford: Oxford University Press, 1986); Mauriès, *Cabinets of Curiosities*, 134; Michelle Henning, *Museums, Media, and Cultural Theory* (London: McGraw-Hill, 2005); Ken Arnold, *Cabinets for the Curious: Looking Back at Early English Museums* (Aldershot, UK: Ashgate, 2005); and Marjorie Swann, *Curiosities and Texts: The Culture of Collecting in Early Modern England* (Philadelphia: University of Pennsylvania Press, 2001).
64. Arthur MacGregor, *The Ashmolean Museum: A Brief History of the Museum and Its Collections* (London: Ashmolean Museum & Jonathan Horne Publications, 2001). Consult also Mea Allan, *The Tradescants: Their Plants, Gardens and Museum, 1570–1662* (London: Michael Joseph, 1964); MacGregor, ed., *Tradescant's Rarities* (Oxford: Oxford University Press, 1983); and Mauriès, *Cabinets of Curiosities*, 141–43.
65. Records from the Royal Society dating to the seventeenth century describe members eating and drinking some of the materials they used to conduct their experiments. Consult Abbie Weinberg's chapter in this collection, as well as Classen, "Museum Manners," 906.
66. Harman, *Quadruple Object*, 28.
67. Cited in Serres, *The Five Senses: A Philosophy of Mingled Bodies*, trans. Margaret Sankey and Peter Cowley (London: Continuum, 2008), 5.
68. Classen, "Museum Manners," 896–97. Consult also Steven Mullaney, *The Place of the Stage: License, Play, and Power in Renaissance England* (Chicago: University of Chicago Press, 1988).
69. Regarding the transmission of scents, consult Holly Dugan, *The Ephemeral History of Perfume: Scent and Sense in Early Modern England* (Baltimore: Johns Hopkins University Press, 2011).
70. Classen, "Museum Manners," 897–98.
71. Classen, "Museum Manners," 905. As Tanya Pollard notes in "Spelling the Body," in *Environment and Embodiment in Early Modern England*, ed. Mary Floyd-Wilson and Garrett A. Sullivan Jr. (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2007), 171–86, esp. 173, certain spells required ingestion or writing on the body to be effective.
72. Bogost, *Alien Phenomenology*, 124.
73. Classen, "Museum Manners," 899–900. Consult also David Summers, *The Judgment of Sense: Renaissance Naturalism and the Rise of Aesthetics* (Cambridge: Cambridge University Press, 1987), 326.
74. These materials share the quality of "very large finitude" with what Morton, *Hyperobjects*, 60, terms "hyperobjects": "a Styrofoam cup will outlive me by over four hundred years."
75. Classen, "Museum Manners," 896.
76. Graham Harman, *Prince of Networks*, 201. Bogost, *Alien Phenomenology*, 66, and Morton, *Realist Magic*, 20, also note the "sensual ether." Consult also Harman, *Object-Oriented Ontology*, 9: "Real objects exist whether or not they currently affect anything else, while *sensual objects* exist only in relation to some real object"; as Harman later discusses, there is always a "rift" between a "real object" and its "sensual qualities" (149).
77. Emily E. F. Philbrick (Russell), "Spectral Enmeshments: Speculative Phantasms in Three English Chronicles of the 12th and 13th Centuries" (PhD diss., George Washington University, 2018), 108.
78. Harman, *Quadruple Object*, 73; and Morton, *Realist Magic*, 68. Harman, *Object-Oriented Ontology*, 7, also states that "withdrawal or withholding of things from direct access is the central principle

of OOO.” On the limits of human sensory perception, refer to Morton, *Hyperobjects*, 172; and Bogost, *Alien Phenomenology*, 67.

79. Bogost, *Alien Phenomenology*, 9, 30.

80. Harman, *Quadruple Object*, 29–30.

81. Morton, *Realist Magic*, 215; and Bryant, *Democracy of Objects*, 18, 83.

82. Morton, *Realist Magic*, 56.

83. Aristotle, *On the Soul*, 424a19.

84. Bernardino Telesio, *De Rerum Natura Iuxta Propria Principa Libri IX* (Naples, 1586).

85. Francis Bacon, *Novum Organum*, in *The Works*, ed. James Spedding (London: Longman and Co., 1901), 50; and Bacon, *Historia Vitae et Mortis*, in *The Works* 1:320–21. A similar conclusion about sensing objects was reached through a different intellectual lineage that began with Leucippus’s and Democritus’s theories of atomism in the fifth century BCE, was channeled through Epicurus, and was codified by Lucretius in his *De rerum natura* (*On the Nature of Things*). Like Bacon, Lucretius concludes that sensory data is the clearest pathway to knowledge. Ben Jonson owned a copy of *De rerum natura*, and the first English translation seems to have been executed by Lucy Hutchinson and completed in the 1640s or 1650s. Consult Stephen Greenblatt, *The Swerve: How the World Became Modern* (New York: W. W. Norton, 2011); and Gerard Passannante, *The Lucretian Renaissance: Philology and the Afterlife of Tradition* (Chicago: University of Chicago Press, 2011).

86. Cavendish, in *Philosophical and Physical Opinions* (London, 1655).

87. Cavendish, *Observations upon Experimental Philosophy* (London, 1666), 129; and Internet Encyclopedia of Philosophy, “Margaret Cavendish (1623–1673),” by Eugene Marshall, <https://www.iep.utm.edu/cavend-m/#SH2a>.

88. Marshall, “Margaret Cavendish.” Consult also David Cuning, “Cavendish on the Intelligibility of the Prospect of Thinking Matter,” *History of Philosophy Quarterly*, 23.2 (2006): 117–36; and

chapter 46 of Cavendish’s *Philosophical Fancies* (1653), in which she argues that all matter is able to sense—an unacknowledged precursor to Harman’s “sensual object” and his “quadruple object” model.

89. Consult Michael Alexander, *The Earliest English Poems* (London: Penguin, 1992), 121–27; Michael Swanton, ed., *The Dream of the Rood* (Manchester, UK: University of Manchester Press, 1970), esp. 1–38; Seeta Chaganti, “Vestigial Signs: Inscription, Performance, and *The Dream of the Rood*,” *PMLA* 125 (2010): 48–72; and Erika Mary Boeckler’s chapter in this volume, for a discussion of the Rood crosses and other objects inscribed with writing.

90. Citations are from *Eight Old English Poems*, ed. John C. Pope, 3rd ed., revised by R. D. Fulk (New York: W. W. Norton, 2000), lines 19–20. Remaining lines will be cited intralinearly.

91. For other examples of sensing and/or anthropomorphized matter, particularly early modern literary automata, consult Wendy Beth Hyman, ed., *The Automaton in English Renaissance Literature* (Farnham, UK: Ashgate, 2011).

92. Bennett, *Vibrant Matter*, 99.

93. Deleuze and Guattari, *A Thousand Plateaus*, esp. 233–309; and Bennett, *Vibrant Matter*, 120.

94. This biocodicology passage is informed by Michael Witmore’s presentation “What Else Is in Our Books?” (Shakespeare Association of America, New Orleans, LA, March 25, 2016).

95. Morton, in *Realist Magic*, 48, observes that “objects don’t sit in a spatio-temporal box. It’s the other way around: space and time emanate from objects.” Consult also Anna Riehl Bertolet’s chapter in this collection for a discussion of how the timescale of needlework patterns also becomes “crumpled” as these designs are “(re)incarnated” in various handmade media across centuries, drastically outliving their producers.

96. Bruster, *Shakespeare and the Question of Culture*, 203.

97. Serres, *Statues*, 94.

98. Consult Denise Albanese, *New Science, New World* (Durham, NC: Duke University Press, 1996), 64, for a discussion of the relationship of science to “the object-world” in the Renaissance.

99. Consult Andrew Sofer, *The Stage Life of Props* (Ann Arbor: University of Michigan Press, 2003).