The Poetics of Matter and Form: Mid-Seventeenth-Century Women's Poetry and Natural Philosophy

Charlotte Newcombe

PhD

University of York

English and Related Literature

February 2025

Abstract

This thesis traces the reciprocal relationship between natural philosophy and poetry in mid-seventeenth-century women's poetry. I argue that Anne Bradstreet (1612–1672), Lucy Hutchinson (1620–1681), Margaret Cavendish (1623–1673) and Hester Pulter (1605–1678) build their poetics from the ubiquitous yet strange interactions of matter and form that can be natural philosophical, poetic, rhetorical, logical, theological and political.

Chapter 1 focuses on Bradstreet's debate poem "The Four Elements" (1650). It argues that the four elements' seventeenth-century ontological precarity catalyses Bradstreet's deconstruction of traditional elemental hierarchies, and the social, gendered and theological hierarchies that elemental philosophy upholds.

Chapter 2 turns to Hutchinson's translation of Lucretius' *De rerum natura*. I argue that Hutchinson draws a liberating theory of translation as transformation from the recombinatorial theory of atomic-poetic form embedded in Lucretius' atom-letter analogy which she then turns back on the *De rerum natura*'s atomic doctrines. In particular, Hutchinson recombines the poem's atomism to interrogate the potential role(s) form might have to play in atomic physics and metaphysics, finding surprising continuities between atomic and hylomorphic understandings of form.

In chapter 3, I focus on Margaret Cavendish's *Poems and Fancies* (1653). I argue that her natural philosophical theory of fancy as the material, figurative motions of her mind, emerges in conversation with a seventeenth-century, royalist poetics that values free, easy and smooth couplets. By reemphasising the importance of motion to Cavendish's natural philosophical theory of form (or figure), I suggest that fancy should be thought of as akin to rhythm, a material form that unfolds over time.

The final chapter examines Hester Pulter's breathy poetics. I argue that Pulter's invocations of breath and sighs are informed by both scripture and a detailed understanding of seventeenth-century acoustics. Like many seventeenth-century theories of sound, Pulter makes matter do the unifying work of form.

Table of Contents

Conventions

I have silently modernised VV/vv and long ‘s’ in all early modern quotes. Otherwise, I have maintained the original spelling, punctuation, capitalisation and italicisation of all quotations from early modern texts.

Referencing follows the Chicago Manual of Style 17th edition notes and bibliography style.

Abbreviations

KJV	*King James Bible.* Quoted from *The Holy Bible conteyning the Old Testament, and the New, newly translated out of the originall tongues, and with the former translations diligently compared and reuised, by His Maiesties special comandement; appointed to be read in churches.* London: by Robert Barker, 1611.
OED	*Oxford English Dictionary,* online (https://www.oed.com/)
SEP	*Stanford Encyclopedia of Philosophy,* ed. Edward N. Zalta and Uri Nodelman. (https://plato.stanford.edu/)

Acknowledgements

This work was supported by the Arts & Humanities Research Council (grant number AH/L503848/1) through the White Rose College of the Arts & Humanities.

I'm exceptionally grateful to my supervisors, Kevin Killeen and Namratha Rao. Kevin oversaw the origins of this project in an MA dissertation, and it would not have taken the shape it has without his wisdom and guidance. Nam has challenged me to think deeper and write with precision. Thank you both for your intellectual generosity, enduring patience and good humour through supervision meetings and chaotic early drafts.

I'm also grateful to Lauren Working and Anna Wall for their insightful feedback and comments during TAP meetings. Thank you, too, to Katherine Hunt, who supervised the very earliest stages of this thesis and whose advice helped shape chapter two.

My thinking has been fundamentally shaped by my time in the University of York's department of English and Related Literature from 2016, when I began my BA, to now. The department has been a supportive and intellectually stimulating home throughout my studies, and I am thankful to all the lecturers and support staff who have aided my development as a researcher. I am also grateful to the Centre for Renaissance and Early Modern Studies for providing an enriching research community.

Thank you to Eleanor Bale and Isaac Myer who have been a constant during my years in York and who have been the source of much laughter and happiness. Thank you for being great friends. To Aaron White, thank you for your selflessness and for always lending an ear when I needed to talk through an idea.

Finally, I am unendingly grateful to my family. Thank you to Chester and Wispa, the best distractions and the best (and greediest) lunch break companions, and to my brother, Sam, for helping to keep me sane. Finally, to my Mum and Dad: I am thankful beyond words. Without your unwavering support, encouragement and belief over the years I would not be where I am today. This thesis is dedicated to you.

Declaration

I declare that this thesis is a presentation of original work, and I am the sole author. This work has not previously been presented for a degree or other qualification at this University or elsewhere. All sources are acknowledged as references.

Introduction

In a piece of early seventeenth-century literary criticism, Anne Southwell asserts the radical identity between the matter and form of the world and of poetry:

> Therefore, (Noble & wittye Ladye) giue mee your hand, I will leade you vpp the streame of all mankind. Your great great grandfather had a father, & soe the last, or rather the first father, was God; whose neuer enough to bee admired creation, was poetically confined to 4. generall genusses, Earth, Ayre, water & fire. The effectes w^{ch} giue life vnto his verse, were, Hott, Cold, Moist & Drye, w^{ch} produce Choller, melancholye, Bloud & flegme. By these iust proportions, all thinges are propagated. Now being thus poetically composed; How can you bee at vnitye wth your self, & at oddes wth your owne composition:[1]

Addressed to Lady Ridgeway, Southwell's letter in defence of poetry challenges assumptions about early modern women's intellectual commitments both in its act of poetic theorising, and in the natural philosophical and medical terms of that theorising, as Elizabeth Scott-Baumann and Cassandra Gorman have observed.[2] The Book of Nature was a common metaphor used to read and interpret God's presence in the world.[3] Southwell understands the Book of Nature specifically as a book of verse and she chooses elemental physics and humoral theory to build out this metaphor. Her controlled tetracolons reveal her knowledge of elemental logic as she groups the antithetical pairs "Earth, Ayre" and "water & fire", and their similarly contrasting qualities "Hott, Cold" and "Moist & Drye". For Southwell, these two aspects of nature's book—its elemental matter and verse form—are fundamentally entwined: God's creation is particularly admirable, and particularly poetic, because of its "iust proportions", a phrase that echoes Philip Sidney's *Defence of Poetry* (c.1580) where poets are found "peising each syllable of each word by just proportion according to the dignity of the subject".[4] Whereas Sidney's "just proportion" indicates the decorum of fitting appropriate words and verse form to subject matter, Southwell repurposes the phrase for God's self-imposed limitations in making the world from tetrads of matter, qualities and humours. She therefore evokes the common

[1] Anne Southwell, *The Southwell-Sibthorpe Commonplace Book, Folger MS V.b.198,* ed. Jean Klene (Tempe: Medieval and Renaissance Texts and Studies, 1997), 4.
[2] Elizabeth Scott-Baumann, "'Crittickize uppon the smallest word': Anne Southwell and the Place of Gender in Early Modern Criticism", in *The Places of Early Modern Criticism,* ed. Gavin Alexander, Emma Gilby and Alexander Marr (Oxford: Oxford University Press, 2021), 143–57; Cassandra Gorman, "Universal Verse: The Cosmological Poetics of Anne Southwell", *Parergon* 40, no.2 (2023): 87–88. See also Danielle Clarke and Marie-Louise Coolahan, "Gender, Reception, and Form: Early Modern Women and the Making of Verse", in *The Work of Form: Poetics and Materiality in Early Modern Culture,* ed. Elizabeth Scott-Baumann and Ben Burton (Oxford: Oxford University Press, 2014), 144–49.
[3] See Katherine Calloway, *Literature and Natural Theology in Early Modern England* (Cambridge: Cambridge University Press, 2023), esp. 11–20.
[4] Philip Sidney, "A Defence of Poetry", in *Miscellaneous Prose of Sir Philip Sidney,* ed. Katherine Duncan-Jones and Jan van Dorsten (Oxford: Oxford University Press, 1973), 82.

association of poetic form with limits and restrictions (for example, Sidney's account of verse as the "peising" or weighing of syllables) to elevate God's inexhaustibly praiseworthy creative act in forming "all thinges" from only "4. generall genusses". The interplay between the near limitless variety of "all" and these isomorphic limits makes the world poetic: to be "poetically confined" and still produce "all thinges" is to be "poetically composed".

Yet Southwell proceeds to turn the metaphor inside out, drawing from the Book of Nature a careful theory of verse. Nature is not only a poem that can be read to reveal the order and harmony of God's creation, but poetry is theorised in natural philosophical terms. The alignment of divine with poetic creation is not unusual, but Southwell makes the metaphor peculiarly literal. If "all thinges" are made from "4. generall genusses" then, as a part of created nature, verse must be included in this. On one level, it seems ludicrously unhelpful to assert that poetry is literally made from earth, air, water and fire. However, on another level, it seems perfectly logical. Southwell deftly draws together the poetic and natural philosophical with her question "Now being thus poetically composed; How can you bee at vnitye wth your self, & at oddes wth your owne composition". She points to Lady Ridgeway's body as part of nature's book, formed of elements and humours. However, she also points to any *poetic* "composition" the Lady may herself write. Southwell's argument progresses from the analogical to the physical as both poet and verse are made part of nature's matter and processes. Southwell's defence suggests not only that the world is a poem that can be understood and interpreted in poetic terms, but that verse itself might be a book of nature, the "worldes true vocall Harmonye", explicable in natural philosophical terms.[5]

If the Book of Nature is Southwell's bridge for setting natural philosophy and poetry into conversation, then the foundations of her comparison are the shared concepts of matter and form. The commonplace rhetorical *res* (subject matter) and *verba* (words) give way to the specificity of the four elements and their tetradic "iust proportions". The term "element", although not present in Southwell's letter, derives from the Latin *elementum*, meaning, amongst other things, a letter of the alphabet.[6] *Res* shades into *verba,* a curious materialism erupting into Southwell's poetics as the elements become the structural building blocks of verse and universe. This specificity allows Southwell to construct her theory of poetry as an isomorphic microcosm of cosmic harmony and order identified not with the music of the spheres but with the confines of elemental matter theory. As I suggested above, these limitations become imbricated with the confines of verse form, the tenor of Southwell's metaphor exerting a transforming influence over the vehicle: it is less that poetic

[5] Southwell, *The Southwell-Sibthorpe Commonplace Book,* 4.
[6] *OED*, "element (*n.*), Etymology", last modified December 2024, https://doi.org/10.1093/OED/6470069537.

limitations are like a quaternion of matter, but that the quaternion of matter is bounded in the same way as verse. Southwell makes verse form a natural philosophical theory of form that creates plenteous unity, a *concordia discors*, through the conjoining of antithetical kinds into a cohesive whole.[7]

This is not the only theory of form at play in Southwell's letter. Her further characterisation of poetry as the "Herald of all Ideas" evokes the Platonic sense of transcendent, universal Forms that poetry can announce or proclaim.[8] This is perhaps another Sidneian allusion to the "*idea* or fore-conceit of the work".[9] Whether Sidney's "*idea*" is Platonic, Neoplatonic or Aristotelian in origin has been much debated, but Michael Mack argues convincingly that early modernity's synthesising impulses render such absolute distinctions unfruitful.[10] Whereas Sidney's radical move is locating this "*idea*" in the mind of the poet rather than of God, Southwell's phrase refuses to locate her "Ideas": is this a critique of Sidneian poetic ambition by making these "Ideas" entirely transcendent?[11] If so, then her additional Sidneian allusion complicates the picture further. Responding to the familiar Platonic accusation that "Poesye is a fiction, & fiction is a lye", she argues that "heerin, Poesye seemes to doe more for nature, then shee is able to doe for her selfe, wherein, it doth but lay downe a patterne what man should bee; & shewes, that Imagination goes before Realitye".[12] By laying down an instructive "patterne" verse's idealised worlds are rendered beneficial to readers as in the Horatian paradigm of *dulce et utile*. But Southwell's valorisation of poetry exceeds even Sidney's. Where Sidney declares the poet to walk "hand in hand with nature", Southwell prioritises poetry entirely: "Imagination goes before Realitye".[13] Southwell's idealising impulse leads her beyond a reductive materialism that in linking poetry and world physically, risks doing so deterministically. But, in making elemental nature "Realitye" rather than the "Ideas" or "patterne[s]", she resists an equally reductive idealism. Such "patterne[s]", aligned with "fiction" and the "Imagination", are aspirational ("what man *should* be") rather than existent. Poetic theory does not always map easily onto poetic practice. But Southwell's theory remains grounded in natural philosophy while nonetheless maintaining poetry's creative potency.

---

[7] See S.K. Heninger, *Touches of Sweet Harmony: Pythagorean Cosmology and Renaissance Poetics* (San Marino, CA: Kingsport Press, 1974), esp. 364–97.
[8] Southwell, *The Southwell-Sibthorpe Commonplace Book,* 4.
[9] Sidney, "A Defence of Poetry", 79.
[10] Michael Mack, *Sidney's Poetics: Imitating Creation* (Washington DC: Catholic University of America Press, 2005), 56, 60. For a survey of the history of "idea" see 54–80.
[11] Mack, *Sidney's Poetics,* 54.
[12] Southwell, *The Southwell-Sibthorpe Commonplace Book,* 4.
[13] Sidney, "A Defence of Poetry", 78.

Southwell's letter offers one woman's answer to the major concerns of this thesis. In the subsequent chapters, I argue that Anne Bradstreet (1612–1672), Lucy Hutchinson (1620–1681), Margaret Cavendish (1623–1673) and Hester Pulter (1605–1678) appropriate and generate interactions between verse and natural philosophy to hypothesise, examine and, at times, challenge existing poetic and natural philosophical theories. Writing contemporaneously between the 1630s and 1660s, these women and their poetry are, in many ways, very different from each other, spanning republican and royalist, Puritan and Anglican, manuscript and print, and, in the case of Bradstreet, a different continent. However, they are united by their writing of shrewd and witty natural philosophical poetry. Like Southwell, these women build their poetics from the ubiquitous yet strange interactions of matter and form, that can be poetic and natural philosophical, physical and metaphysical, rhetorical and logical. Analysing Bradstreet's elemental quaternions, Hutchinson's translation of *De rerum natura*, Cavendish's *Poems and Fancies* (1653) and Pulter's devotional poetry, I demonstrate the sophistication of their natural philosophical and poetic interventions.

Expanding on foundational research by critics such as Marjorie Hope Nicolson and Robert Schuler, recent criticism has thoroughly established early modern literature and science to be "mutually informing and mutually sustaining", as Howard Marchitello and Evelyn Tribble identify.[14] Southwell's witty prose models just such a reciprocally elucidating relationship without subordinating or subsuming one into the other, poetry merely beautifying natural philosophy or natural philosophy legitimising poetry. Rather, Southwell's letter reveals her engagement with this hybrid natural philosophical-poetic culture, drawing indiscriminately on elemental matter, humoralism, theology, theories of verse form, Platonic metaphysics and Sidneian poetic theory (itself already invested in a blended Platonic-Aristotelian poetic, philosophical tradition) to construct her theory of poetry. I join these critics, showing that seventeenth-century women poets are not just versifying ancient or contemporary natural philosophical ideas, but are working within a disciplinarily messy intellectual culture where natural philosophy and poetry are already fundamentally entangled. This means that, as I argue in chapter 1, Bradstreet's poetry is invigorated by elemental matter's newfound, yet ancient, poeticism, and that Cavendish (chapter 3) can make the figurative motions of her easy, free couplets the motions of her material mind. In attending to poetry specifically as opposed to

[14] Howard Marchitello and Evelyn Tribble, "Introduction", in *The Palgrave Handbook of Early Modern Literature and Science,* ed. Howard Marchitello and Evelyn Tribble (London: Palgrave Macmillan, 2017), xxvi. See Marjorie Hope Nicolson, *The Breaking of the Circle: Studies in the Effect of the 'New Science' Upon Seventeenth Century Poetry* (Evanston: Northwestern University Press, 1950); Robert M. Schuler, "Three Renaissance Scientific Poems", *Studies in Philology* 75, no.5 (1978): i–152; Schuler, "Theory and Criticism of the Scientific Poem in Elizabethan England", *English Literature Renaissance* 15, no.1 (1985): 3–41; Schuler, "Francis Bacon and Scientific Poetry", *Transactions of the American Philosophical Society* 82, no.2 (1992): i–65.

literature, I demonstrate the importance of *verse form*'s volatile work in early modern women's natural philosophical engagements.

In making this argument, I expand on important work done on largely male, canonical poets such as Edmund Spenser, John Donne, Andrew Marvell and John Milton.[15] Their natural philosophical canniness has in large part been recovered by rigorous, historicised close readings of their poetry that generate nuanced and complicating interpretations of their natural philosophical engagements. Southwell boldly includes "Noble & wittye Ladye[s]" in the patriarchal literary genealogy she traces. Building on recent feminist formalist scholarship by critics such as Scott-Baumann, Lara Dodds and Michelle Dowd, amongst others, I show that seventeenth-century women's poetry is not only capable of withstanding sustained close reading but that Bradstreet, Hutchinson, Cavendish and Pulter all write dazzling poetry where their natural philosophical sophistication is fundamentally imbricated in their formal sophistication.[16]

Pulter's devotional poetry, for example, often indulges in fantasies of material dissolution that are both philosophical and poetic in nature. In "The Perfection of Patience and Knowledge", she expresses the pervasiveness of nature's laws by comparing flowers and corpses:

> My soul, in struggling thou do[st] ill;
> The chicken in the shell lies still,
> So doth the embryo in the womb,
> So doth the corpse within the tomb,
> So doth the flower sleep in its cause,
> Obedient all to Nature's laws.[17]

---

[15] See, for example, Jon A. Quitslund, *Spenser's Supreme Fiction: Platonic Natural Philosophy and "The Faerie Queene"* (Toronto: University of Toronto Press, 2001); Debapriya Sarkar, "Dilated Materiality and Formal Restraint in *The Faerie Queene*", *Spenser Studies* 31, no.1 (2018): 137–66; James A. Knapp, *Immateriality and Early Modern English Literature: Shakespeare, Donne, Herbert* (Edinburgh: Edinburgh University Press, 2020); John Rogers, *The Matter of Revolution: Science, Poetry, and Politics in the Age of Milton* (Ithaca, NY: Cornell University Press, 1996); Stephen M. Fallon, *Milton among the Philosophers: Poetry and Materialism in Seventeenth-Century England* (Ithaca, NY: Cornell University Press, 1991); N.K. Sugimura, *"Matter of Glorious Trial": Spiritual and Material Substance in "Paradise Lost"* (New Haven, CT: Yale University Press, 2009).

[16] Elizabeth Scott-Baumann, *Forms of Engagement: Women, Poetry and Culture, 1640–1680* (Oxford: Oxford University Press, 2013); Lara Dodds and Michelle Dowd, "The Case for a Feminist Return to Form", *Early Modern Women* 13, no.1 (2018): 82–91; Lara Dodds and Michelle Dowd, "Happy Accidents: Critical Belatedness, Feminist Formalism, and Early Modern Women's Writing", *Criticism* 62, no.2 (2020): 169–93; Lara Dodds and Michelle Dowd, eds., *Feminist Formalism and Early Modern Women's Writing: Readings, Conversations, and Pedagogies* (Lincoln, NE: University of Nebraska Press, 2022). See also Sasha Roberts, "Feminist Criticism and the New Formalism: Early Modern Women and Literary Engagement", in *The Impact of Feminism in English Renaissance Studies,* ed. Dympna Callaghan (Basingstoke: Palgrave Macmillan, 2007), 67–92.

[17] Hester Pulter, "39. The Perfection of Patience and Knowledge", in *Poems, Emblems, and The Unfortunate Florinda,* ed. Alice Eardley (Toronto: Iter Press, 2014), 1–6.

Liza Blake convincingly argues that in Pulter's poetry "cause" has "physical and metaphysical meanings" that draw specifically on Aristotle's fourfold understanding of causation.[18] This image comes to Pulter, however, from a popular Caroline love poem attributed to Thomas Carew:

> Aske me no more where *Iove* bestowes,
> When *Iune* is past the fading rose:
> For in your beauties orient deepe,
> These flowers as in their causes, sleepe.[19]

Carew reworks the common Petrarchan image of roses blooming in a lady's cheek into a metaphysical conceit where the beloved becomes "both the source and the storehouse of beautiful things".[20] Pulter, in turn, adapts this erotic image and puts it to natural philosophical and devotional work. Both Pulter's "cause" and Carew's "causes" paradoxically blend beginnings and endings, but in Pulter's case she ties this to the promised resurrection on Judgement Day:

> The chirping bird will break its shell,
> The infant leave its loathéd cell,
> The sleeping dust will rise and speak,
> And will her marble prison break,
> The flower her beauty will display,[21]

In the opening lines, Pulter's anaphoric "So" connects the "embryo" and "corpse" to the initial verb phrase "lies still". However, in these lines Pulter retroactively reveals that "sleep" is the verb that should have been transferred backwards. The corpse's "sleeping dust" becomes superimposed upon the flower's "cause", suggesting a shared materiality. However, the promised renewal of the flower's "beauty" suggests that Pulter's "cause" is not only the Aristotelian material cause, but also the formal cause—the flower's essential characteristics—and potentially the final cause, the flower's end or *telos* that allows it to grow and bloom. Indeed, the certainty of Pulter's repeated "will" bespeaks a teleological understanding of nature's divine design and purpose. Pulter's intermingling of matter and form in this poem is suggestive of her wider poetics that, as I will argue in chapter 4, make matter do the work of form. Reading Pulter's poem for form reveals her transformative engagement

---

[18] Liza Blake, "Hester Pulter's Particle Physics and the Poetics of Involution", *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 78–80.

[19] Thomas Carew, *Poems* (London: Printed by I.D. for Thomas Walkley, 1640), sig. N2v. For attribution difficulties see, Scott Nixon, "'Aske me no more' and the Manuscript Verse Miscellany", *English Literary Renaissance* 29, no.1 (1999): 99–103. Nixon (129n66) and Scott-Baumann have suggested this poem's influence on Pulter's elegy for her daughter "11. On the Same [1]". Elizabeth Scott-Baumann, "Hester Pulter's Well-Wrought Urns: Early Modern Women, Sonnets, and New Criticism", *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 128.

[20] Edward I. Selig, *The Flourishing Wreath: A Study of Thomas Carew's Poetry* (New Haven: Yale University Press, 1958), 138.

[21] Pulter, "The Perfection of Patience and Knowledge", 11–15.

with her blended contemporary intellectual culture as well as her natural philosophical and poetic savviness.

Above all, I contend that women's natural philosophical poetry is energised by the recognition that natural philosophy and poetry—their matter and their forms—are both productively similar and generatively different. I keep alive this tension, recognising—as Bradstreet, Hutchinson, Cavendish and Pulter do—that poetry does not simply emulate and enact natural philosophical theories of matter and form (although it might), but also exercises its own theories of matter and form to transformative effect. Therefore, these writers use their poetics of matter and form to engage with the same pressing questions that seventeenth-century natural philosophy was grappling with: What *is* matter and how might we understand its operations? What role(s) does form still have to play in an increasingly mechanistic and corpuscular physics? What opportunities for innovation are created by the crumbling of older knowledge systems and how might those systems continue to exert their influence? And, ultimately, what does natural philosophy look like in the mid-seventeenth century?

In the remainder of this introduction, I begin by examining the disciplinary sprawl that characterises natural philosophy and poetry's shared history. This history was not always harmonious, and during the early modern period efforts were made, by both poets and philosophers, to divorce them. However, whether in dialogue or debate, natural philosophy and poetry remain in productive conversation, a conversation that is vital for seventeenth-century women's creative interventions. I then lay out the place of matter and form in seventeenth-century natural philosophy, poetry, rhetoric and logic, their protean shifting that distinguishes and merges divergent systems into messy amalgams. This motley duo, ever-present and utterly mundane, and profoundly mysterious and perplexing, fascinated early modern natural philosophers and poets alike, prompting speculation and experimentation. I contend that recovering their joint poetic-philosophical heritage means attending not only to natural philosophical forms and theories of form, but also to how poetic forms and theories of form have exerted a powerful influence in natural philosophy.

Natural Philosophy and Poetry

Natural philosophy has always been poetic. Empedocles, the founder of the four element system adapted by Southwell, was a philosopher, mystic and poet who wrote his now fragmented treatises in verse. In his *Lives and Opinions of Eminent Philosophers,* Diogenes Laertius identifies the metaphysician Parmenides as a poet in a tradition of philosophical poets, including Empedocles,

Xenophanes and, perhaps surprisingly, Hesiod.[22] More notoriously, Titus Lucretius Carus translated Greek Epicureanism into Latin verse in his *De rerum natura*. Rediscovered by Poggio Bracciolini in 1417, *De rerum natura* had an enduring influence on classical poets such as Virgil and Ovid, but also neo-Latin and vernacular poetry, including natural philosophical verse, into the early modern period.[23] Lucretius was, of course, not the only Latin writer of philosophical verse: Marcus Manilius' five book *Astronomica* is the earliest surviving treatise on astrology that likewise had an influence on Renaissance cosmological poems, such as Giovanni Pontano's *Urania*.[24]

Early modern poetic theorists celebrated this long history of natural philosophical verse. Sidney makes it one of the pillars of his *Defence*: "the philosophers of Greece durst not a long time appear to the world but under the masks of poets. So Thales, Empedocles, and Parmenides sang their natural philosophy in verses".[25] He suggests a symbiotic relationship where poetry's ancient reputation granted philosophy an authority which is then repaid in the *Defence* where philosophy's early modern influence legitimises poetry. George Puttenham concurs, generalising this sentiment in his *Arte of English Poesie* (1589) where he writes that poets

> were the first observers of all natural causes and effects in the things generable and corruptible, and from thence mounted up to search after the celestial courses and influences, and yet penetrated further to know the divine essences and substances separate, as is said before, they were the first astronomers and philosophers and metaphysics.[26]

Poetry, once again, comes first and Puttenham frames philosophy as the natural extension of poetic practice: tracing philosophical poetry, he progresses from the natural; to the astronomical and astrological; to the metaphysical and theological, all supported by the appropriately technical vocabulary of "causes and effects", "things generable and corruptible", and "essences and substance". The poet's keen sense of insight allows them to move beyond the observable world and penetrate increasingly remote and abstract forms of knowledge. Sidney and Puttenham understand poetry to possess a cultural authority, and hence access to natural philosophical understanding, that now seems foreign.

---

[22] Diogenes Laertius, *Lives of Eminent Philosophers, Volume II: Books 6–10,* trans. R.D. Hicks (Cambridge, MA: Harvard University Press, 1925), 431.
[23] See Martin Korenjak, "Explaining Natural Science in Hexameters. Scientific Didactic Epic in the Early Modern Era", *Humanistica Lovaniensia* 68, no.1 (2019): 135–75.
[24] See Yasmin Haskell, "Renaissance Latin Didactic Poetry on the Stars: Wonder, Myth, and Science", *Renaissance Studies* 12, no.4 (1998): 495–522.
[25] Sidney, "A Defence of Poetry", 75.
[26] George Puttenham, *The Art of English Poesy: A Critical Edition,* ed. Frank Whigham and Wayne A. Rebhorn (Ithaca, NY: Cornell University Press, 2007), 99.

Neither Sidney's nor Puttenham's claims of poetry's priority are disinterested. However, they are also not entirely propagandistic fluff, as the preceding list of ancient philosophical poetry indicates. In the *Republic,* Plato identifies (or, possibly, instigates) a "long-standing dispute between philosophy and poetry", but his polemical assertion has been historicised and challenged by Andrea Wilson Nightingale as the "unknown stripling" of philosophy "brashly measuring himself against [the] venerable giant" of poetry.[27] Thomas Sprat employs this precise imagery in *The History of the Royal Society* (1667), beginning his account with "the fabulous Age" characterised by the presence of "*Fables*", "the ornaments of *Fancy*" and "the charms of [poet's] Numbers" in philosophy, such that "the first Masters of knowledge amongst them, were as well *Poets,* as *Philosophers*".[28] This age left its mark on philosophy, giving "the *Grecians* occasion ever after of exercising their wit, and their imagination, about the works of Nature, more then was consistent with a sincere Inquiry into them".[29] Sprat contends that eventually "*Philosophy* took a little more courage; and ventured more to relye upon its own strength, without the Assistance of *Poetry*".[30] In this story of scientific advancement, the brave philosophical minnow challenges the cultural leviathan of poetry with the former triumphing over both poetry's suasive usefulness and imaginative excess. While Sprat dispenses with poetry deceptively early in his history, he nevertheless admits philosophy's, perhaps regrettable, secondariness.[31] Both early modern poets and natural philosophers understood their disciplines to have a shared, although not always harmonious, history.

It is unsurprising, then, that natural philosophy continued to be written in verse into the seventeenth century. In *A Proposition for the Advancement of Experimental Philosophy* (1661), Abraham Cowley laments the "want [of] good Poets… who have purposely treated of solid and learned, that is Natural Matters" and recommends the creation of an anthology housing "all the scattered little parcels among the ancient Poets that might serve for the advancement of Natural Science" to be used in a school where boys can be "initiated in Things as well as Words".[32] Sprat was Cowley's literary executor. Despite his historical evaluation of poetry's distortion of philosophy, he nonetheless claims that when Cowley wrote his botanical poem *Plantarum libri sex* (1668) that he

---

[27] Plato, *Republic, Volume II: Books 6–10,* ed. and trans. Christopher Emlyn-Jones and William Preddy (Cambridge, MA: Harvard University Press, 2013), 607b5–6; Andrea Wilson Nightingale, *Genres in Dialogue: Plato and the Construct of Philosophy* (Cambridge: Cambridge University Press, 1995), 60.
[28] Thomas Sprat, *The History of the Royal-Society of London, For the Improving of Natural Knowledge* (London: Printed by T.R. for J. Martyn and J. Allestry, 1667), sig. A3v.
[29] Sprat, *The History of the Royal-Society,* sig. A3v.
[30] Sprat, *The History of the Royal-Society,* sig. A3v.
[31] Sprat seems to suggest the "fabulous Age" ended with Socrates, although he does also mention "the *Walks,* and *Porches,* and *Gardens*", alluding to the Stoic Porch and Epicurean Garden of Hellenistic philosophy. Sprat, *The History of the Royal-Society*, sig. A4r–B1r.
[32] Abraham Cowley, *A Proposition for the Advancement of Experimental Philosophy* (London: Printed by J.M. for Henry Herringman, 1661), sig. C7v–C8r, C6r.

"enter'd with great advantage on the studies of Nature, even as the first great Men of Antiquity did, who were generally both Poets and Philosophers".[33] For Sprat, Cowley's status as a poet grants him an "advantage" in his botanical studies, echoing Sidney and Puttenham as the poet is imagined as particularly suited to natural philosophical enquiry. Sprat makes Cowley into a worthy heir to an ancient poetic-natural philosophical tradition that Cowley may well also have thought himself part of. Other seventeenth-century poets also participated in this lofty tradition. Henry More, a Cambridge Platonist, wrote his three earliest philosophical works in Spenserian stanzas.[34] Phineas Fletcher's allegorical, anatomical *The Purple Island* (1633) is also Spenserian in spirit, while Margaret Cavendish began her writing career with atomic poems in the first section of *Poems and Fancies* (1653) and *Philosophical Fancies* (1653), a prosimetrum where she lays out the earliest instantiation of her vitalist materialism.

As this brief survey suggests, seventeenth-century natural philosophy was a nebulous discipline and one undergoing change in this central period of the "Scientific Revolution", a contentious term for a contentious phenomenon that has been rightly criticised for implying a more total and rapid degree of change than occurred across the early modern period.[35] However, over the seventeenth century both the scope and methodology of natural philosophy did shift. In the Middle Ages and early Renaissance, "natural philosophy" primarily denoted scholastic, Aristotelian physics, and was distinguished from medicine, alchemy, the quadrivium (arithmetic, geometry, music, astronomy) and the mixed mathematical sciences like mechanics and optics. These disciplinary boundaries began to break down during the early modern period, and consequently natural philosophy became increasingly medical, mathematical, experimental and empirical.[36] Likewise, natural philosophical theories became more eclectic, moving away from various Aristotelianisms and towards various atomic, mechanistic and corpuscular approaches to nature. Nonetheless, seventeenth-century natural philosophy was not yet science; while encompassing disciplines that would become modern physics, chemistry and astronomy, amongst others, it remained thoroughly

[33] Sprat, "An Account of the Life and Writings of Mr Abraham Cowley", in *The Works of Mr Abraham Cowley* (London: Printed by J.M. for Henry Herringman, 1668), sig. e1r.
[34] See Cassandra Gorman, "Allegorical Analogies: Henry More's Poetical Cosmology", *Studies in Philology* 114, no.1 (2017): 148–70; Cassandra Gorman, *The Atom in Seventeenth-Century Poetry* (Cambridge: D.S. Brewer, 2021), 37–73.
[35] See, for example, Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1996), 1–8.
[36] Christoph Lüthy, "What to do with Seventeenth-Century Natural Philosophy? A Taxonomic Problem", *Perspectives on Science* 8, no.2 (2000): 165. See also, Stephen Gaukroger, *The Emergence of Scientific Culture: Science and the Shaping of Modernity 1210–1685* (Oxford: Oxford University Press, 2006); H. Floris Cohen, "The Onset of the Scientific Revolution: Three Near-Simultaneous Transformations", in *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy,* ed. Peter R. Anstey and John A. Schuster (Dordrecht: Springer, 2005), 9–33.

entangled with astrology, alchemy and the occult.[37] Like Peter Anstey and John A. Schuster, then, I understand natural philosophy capaciously as the "central category for the study of nature" in the early modern period that includes the full range of seventeenth-century theories and methodologies.[38]

Throughout this thesis, I use "natural philosophy" as a wide-ranging and inclusive term that involves physics, metaphysics and their theological implications and entanglements. The connections between natural philosophy and both metaphysics and theology (themselves sometimes overlapping and sometimes distinct) was and remains disputed. While the Aristotelian tradition associated natural philosophy primarily with physics, this remained a thoroughly "metaphysical physics", to borrow Dmitri Levitin's words.[39] Levitin has recently diagnosed the increasing de-metaphysicisation of natural philosophy across the seventeenth century, particularly in its latter half, as experimental philosophy distinguished itself from this scholastic "metaphysical physics".[40] Yet in many ways natural philosophy, physics, metaphysics and theology remained constellated. In *The Advancement of Learning* (1605) Francis Bacon makes natural philosophy his umbrella category, composing it of natural history, physics and metaphysics.[41] Similarly, Cavendish conceives of her metaphysical project in conjunction with her natural philosophical one.[42] Moreover, extensive research has demonstrated how theology remained deeply imbricated in the study of nature—whether under the guise of natural philosophy, natural theology or physico-theology—well into the eighteenth century beyond a simple rhetorical or defensive posture to fend off accusations of atheism.[43]

---

[37] See Stephen Clucas, "Astrology, Natural Magic, and the Scientific Revolution", in *The Cambridge History of Philosophy of the Scientific Revolution*, ed. David Marshall Miller and Dana Jalobeanu (Cambridge: Cambridge University Press, 2022), 167–83; Penelope Gouk, *Music, Science, and Natural Magic in Seventeenth-Century England* (New Haven: Yale University Press, 1999).

[38] Peter R. Anstey and John. A Schuster, "Introduction", in *The Science of Nature in the Seventeenth Century*, 1–2.

[39] Dmitri Levitin, *The Kingdom of Darkness: Bayle, Newton, and the Emancipation of the European Mind from Philosophy* (Cambridge: Cambridge University Press, 2022), 26. For the association of natural philosophy with Aristotelian physics see, Lüthy, "What to do with Seventeenth-Century Natural Philosophy?", 165; Peter Dear, *Revolutionizing the Sciences: European Knowledge and Its Ambitions, 1500–1700,* 2nd ed. (Princeton: Princeton University Press, 2009), 3.

[40] Levitin, *The Kingdom of Darkness,* 25–119.

[41] Francis Bacon, *The Oxford Francis Bacon, Volume 4: The Advancement of Learning,* ed. Michael Kiernan (Oxford: Oxford University Press, 2000), 80–83.

[42] See Marcy P. Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway: Monism, Vitalism, and Self-Motion* (New York: Oxford University Press, 2023), 154–72.

[43] Peter J. Forshaw and Kevin Killeen, "Introduction: The Word and the World", in *The Word and the World: Biblical Exegesis and Early Modern Science,* ed. Kevin Killeen and Peter J. Forshaw (Basingstoke: Palgrave Macmillan, 2007), 1–22; Kevin Killeen, *The Unknowable in Early Modern Thought: Natural Philosophy and the Poetics of the Ineffable* (Stanford: Stanford University Press, 2023); Peter Harrison, *The Bible, Protestantism, and the Rise of Natural Science* (Cambridge: Cambridge University Press, 1998); Peter Harrison, *The Fall of Man and the Foundations of Science* (Cambridge: Cambridge University Press, 2007); Peter Harrison, "Physico-Theology and the Mixed Sciences: The Role of Theology in Early Modern Natural Philosophy", in *The Science of*

Maintaining the interconnections between natural philosophy, metaphysics and theology is particularly important for my focus on the poetics of matter and form. Matter and form were never solely the remit of natural philosophy defined narrowly as "physics". As I will expand upon in the following section, matter and form bridge physics, metaphysics and theology—as well as poetry, rhetoric and logic—and are shuttled back and forth between them throughout the seventeenth century as they are redefined and reconceptualised. Much of what is fascinating and contentious about matter and form in the seventeenth century emerges from these overlaps and the tensions they create between different systems and ways of knowing. Of course, it remains the case that natural philosophical speculation was not *always* metaphysical or theological in character. Therefore, I also use physics and metaphysics, for example, in their more specialised senses, while employing "natural philosophy" as a term that involves—although is not coextensive with—these specific pursuits.

This capacious definition of natural philosophy is crucially more welcoming of the diverse forms of early modern women's interests and writings. Feminist historians of science have stressed that incorporating women into natural philosophical history necessitates reworking the paradigms that have been constructed without women—and technicians, artisans and assistants—in mind, both because they are inaccurate and anachronistic, but also because they work to further obscure women's involvement in natural philosophy.[44] As such, Patricia Fara argues that the history of science needs to include "how knowledge was reached, taught and used", as well as the natural philosophical theories and ideas themselves.[45] Early modern women's writing is a significant location where women *used*—theorised, transformed, critiqued—natural philosophical knowledge. Claire Preston convincingly argues that "saying and doing early-modern science are not wholly distinct", suggesting that natural philosophy happened on the page as well as the laboratory (or still-room, kitchen, study or dining room).[46] Work on recipe collections, how-to books, letters and epistolary networks, and more traditional philosophical treatises has thoroughly demonstrated early modern

Nature in the Seventeenth Century, 165–83; Courtney Weiss Smith, *Empiricist Devotions: Science, Religion, and Poetry in Early Eighteenth-Century England* (Charlottesville: University of Virginia Press, 2016); Alexander Wragge-Morley, *Aesthetic Science: Representing Nature in the Royal Society of London, 1650–1720* (Chicago: University of Chicago Press, 2020).

[44] Lynette Hunter and Sarah Hutton, "Women, Science and Medicine: Introduction", in *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* ed. Lynette Hunter and Sarah Hutton (Stroud: Sutton Publishing, 1997), 1–6; Patricia Fara, *Pandora's Breeches: Women, Science and Power in the Enlightenment* (London: Pimlico, 2004), esp. 9–31; Nina Rattner Gelbart, "Adjusting the Lens: Locating Early Modern Women of Science", *Early Modern Women: An Interdisciplinary Journal* 11, no.1 (2016): 116–27.

[45] Fara, *Pandora's Breeches,* 25.

[46] Claire Preston, *The Poetics of Scientific Investigation in Seventeenth-Century England* (Oxford: Oxford University Press, 2015), 10. For the often-domestic location of early modern natural philosophy see Hilary Rose, "Foreword: From Household to Public Knowledge, to A New Production System of Knowledge", in *Women, Science and Medicine 1500–1700,* xi–xx.

women's natural philosophical engagements and expertise across the practical, experimental, theoretical and abstract.[47]

Poetry is also an important site of early modern women's engagements with natural philosophy. Recent criticism has compellingly identified literature and science to be "productively *in-distinct* cultural undertakings and operations".[48] These scholars are concerned to avoid the problem, powerfully articulated by Tita Chico, of "textual belatedness" that privileges "scientific over literary regimes long before the verdict has been issued" by relying on scientific context to interpret literary texts.[49] What Chico critiques variously as "allusive reading", the "influence argument" and "the idea of representation as reflection" elevates and stabilises natural philosophy, and renders the literary passive and impotent.[50] Consequently, literature is made natural philosophy's handmaiden, capable of neutrally disseminating science's truths or ornamenting them to propagandistic effect. On the other hand, should a literary text challenge natural philosophical knowledge, "textual belatedness" means that the criticism seems backwardly nostalgic or reactionary, a naïve holdout against scientific progress.

Careful to circumvent "textual belatedness", one strain of criticism has stressed poesy and natural philosophy's shared imaginative dimensions to expand a literary epistemology into natural philosophy's knowledge-making domain: for Elizabeth Spiller, the "belief in the made rather than the found character of early modern knowledge unites poets and natural scientists"; Joanna Picciotto alternatively identifies those seventeenth-century writers who "turn[ed] the mirror of mimesis into a penetrating lens"; and Debapriya Sarkar has recently powerfully articulated the "possible" as a distinctly literary mode of knowing that allowed early modern writers to mobilise "acts of literary worldmaking to forge new theories of physical and metaphysical reality".[51] Collectively, these studies

---

[47] See Hunter and Hutton, ed., *Women, Science and Medicine 1500–1700,* esp. chapters by Elizabeth Tebeaux, "Women and Technical Writing, 1475–1700: Technology, Literacy, and Development of a Genre", 29–62; Margaret P. Hannay, "'How I these Studies Prize': The Countess of Pembroke and Elizabethan Science", 108–21; Hunter, "Sisters of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh", 178–97; Reid Barbour, "Lucy Hutchinson, Atomism and the Atheist Dog", 122–37; Francis Harris, "Living in the Neighbourhood of Science: Mary Evelyn, Margaret Cavendish and Greshamites", 198–217; Hutton, "Anne Conway, Margaret Cavendish and Seventeenth-Century Scientific Thought", 218–34. See also, Wendy Wall, *Recipes for Thought: Knowledge and Taste in the Early Modern Kitchen* (Philadelphia: University of Pennsylvania Press, 2016); Helen Smith, "Cultures of Correspondence: Women and Natural Philosophy", in *The Oxford Handbook of Early Modern Women's Writing in English, 1540–1700,* ed. Elizabeth Scott-Baumann, Danielle Clarke and Sarah C.E. Ross (Oxford: Oxford University Press, 2022), 97–112.

[48] Marchitello and Tribble, "Introduction", xxvi.

[49] Tita Chico, *The Experimental Imagination: Literary Knowledge and Science in the British Enlightenment* (Stanford: Stanford University Press, 2018), 7–8.

[50] Chico, *The Experimental Imagination,* 7, 9.

[51] Elizabeth Spiller, *Science, Reading, and Renaissance Literature: The Art of Making Knowledge, 1580–1670* (Cambridge: Cambridge University Press, 2004), 2; Joanna Picciotto, *Labors of Innocence in Early Modern England* (Cambridge, MA: Harvard University Press, 2010), 323; Debapriya Sarkar, *Possible Knowledge: The*

encompass the early modern sense of "invention" that, in Spiller's words, "understands discovery and contrivance as integrally related".[52] *Inventio* was the rhetorical canon for the discovery or finding out of *res* (subject matter), both in the world and in other texts. Yet across the early modern period, invention also accrued its now more common meaning of an innovative act of creation or making. These meanings are frequently in productive tension in early modern poetic theory, compounding potential friction between poesy defined in terms of *mimesis* or imitation, and poesy defined etymologically as making.[53]

I build upon this important work, arguing that poetry facilitates early modern women's imaginative interventions in natural philosophy to necessarily transformative effect. But I take a different approach to Chico's problem of "textual belatedness". As suggested above, early modern writers understood poetry to have a temporal priority over natural philosophy, or, rather, that natural philosophy had long been contiguous with poetry. I extend previous work by recognising that early modern poets were working within a long blended intellectual culture where poetry could be, and frequently was, the source of natural philosophical knowledge and inspiration. As Frédérique Aït-Touati observes, in the early modern period

> each of the two discourses was still being established, and our texts display a confusion of categories. Science as such did not yet have its own place, and its discourse had no fixed form; it made its appearance across a heterogeneous range of texts and domains.[54]

While she focuses on the shared strategies of writers and astronomers who both transport their readers to distant worlds, I focus on the contested area of women's natural philosophical poetry.

Critics who have explored the connections between early modern women's writing and politics have emphasised that to fully account for women's engagements with their intellectual culture we need to be prepared to look elsewhere. Sarah C.E. Ross, for example, has observed that women's political thought is often mediated by the religious forms (lyric, meditation, biblical paraphrase) in which they were writing.[55] As with politics, seventeenth-century women's natural

---

Literary Forms of Early Modern Science (Philadelphia: University of Pennsylvania Press, 2023), 1. See also, Chico, *The Experimental Imagination*; Smith, *Empiricist Devotions.*

[52] Spiller, *Science, Reading, and Renaissance Literature*, 4.

[53] See Namratha Rao, "Ground-plots of Invention: Poetics of the Material and Difficult Thinking in *The Faerie Queene*", *English Literary Renaissance* 53, no.2 (2023): 225–28.

[54] Frédérique Aït-Touati, *Fictions of the Cosmos: Science and Literature in the Seventeenth Century,* trans. Susan Emanuel (Chicago: University of Chicago Press, 2011), 5.

[55] Sarah C.E. Ross, *Women, Poetry, and Politics in Seventeenth-Century Britain* (Oxford: Oxford University Press, 2015), 11–19. See also Danielle Clarke, *The Politics of Early Modern Women's Writing* (2001; repri., London: Routledge, 2013), esp. 7–15, 123–86; Susan Wiseman, *Conspiracy and Virtue: Women, Writing, and Politics in Seventeenth-Century England* (Oxford: Oxford University Press, 2006), esp. 5–8.

philosophical poetry is often refracted through their religious reading and writing. Pulter's natural philosophical poetry is deeply invested in scripture, as well as the devotional verse of George Herbert. Moreover, Joshua Sylvester's enormously popular translation of Guillaume de Salluste Du Bartas' *Divine Weeks and Works* (1604), a hexameral creation poem filled with eclectic natural philosophical knowledge, was enabling not only for early modern women's religious and political writing, as Ross and Peter Auger have identified, but also for their natural philosophical poetry.[56] Du Bartas' influence on Bradstreet's elemental quaternions has long been noted, but, as I will show in chapter 2, Hutchinson's engagement with Lucretius is partially mediated by her reading of the *Divine Weeks and Works,* a poem which itself contains notable Lucretian paraphrases and translations. When Bartasian (or Sylvestrian) language asserts itself in Hutchinson's *De rerum natura,* then, we can see not only the convoluted threads of early modern intellectual culture as they entwine and entangle, but also how a biblical verse paraphrase can become a source of natural philosophical knowledge.

Locating early modern women's natural philosophical interventions requires a flexible manoeuvring through early modernity's synergistic intellectual culture. Therefore, I attend to Bradstreet, Hutchinson, Cavendish and Pulter's natural philosophical, poetic, *and* natural philosophical-poetic contexts. I put their writing in conversation with ancient and contemporary philosophers such as Aristotle, Francis Bacon and Walter Charleton. Yet I also look beyond philosophical treatises, to natural philosophical poems like Ovid's *Metamorphoses,* Sylvester's translation of Du Bartas' *Divine Weeks and Works,* fragments of surviving Empedoclean verse in translated classical texts and, of course, Lucretius' *De rerum natura*, as well as poets such as John Denham, Edmund Waller, John Donne and George Hebert, to uncover a much more vibrant story of natural philosophical and poetic exchange. This is especially important for women like Bradstreet with less obvious connections to contemporary natural philosophical enquiry but is also crucial for understanding the dexterity with which all these women writers negotiated their intellectual culture. Indeed, even Cavendish—the only woman poet in this thesis often labelled a natural philosopher in her own right—seems to draw her sense of fancy's agile movements from a seventeenth-century understanding of the heroic couplet as a free, easy and smooth form, poetic theory permeating her materialist philosophy.

Above all, seventeenth-century thought hopscotches irreverently through the physical, metaphysical, theological, poetic, rhetorical, mythological, geographical, historical and political. This

[56] Ross, *Women, Poetry, and Politics,* 14–15, 80–96, 174–210; Peter Auger, *Du Bartas' Legacy in England and Scotland* (Oxford: Oxford University Press, 2019), 7–9.

sprawl enables Cavendish to make motion's imperceptibility both divinely mysterious and potentially suspect. In a poem called "Of the *Subtlety* of *Motion*", she speculates that knowledge of "the severall *Motions* of *Life*" would move people to "adore *God* more".[57] However, two poems previously, in "*Motion* makes *Atomes* a *Bawd* for *Figure*", motion is figured in a far seedier capacity:

> DID not wild *Motion* with his subtle wit,
> Make *Atomes* as his *Bawd,* new *Formes* to get.
> They still would constant be in one *Figure*,
> And as they place themselves, would last for ever.[58]

Motion's subtlety catalyses Cavendish's imagination, bridging her two seemingly contradictory discussions. Motion's lewdness is necessary for the creation of "new *Formes*" and is also divine in origin. This same disciplinary sprawl allows Bradstreet's personified Earth to ironically subvert the traditional poetic invocation of the Muses by threatening Mount Parnassus itself ("Sweet *Parnassus,* I dote too much on thee, / Unlesse thou prove a better friend to me"), claim her benefit to "*Galenists*" whose "Drugs" come from her, and in the next breath do the work of God by swallowing "*Korah* and all his Company".[59] Attending to the diverse voices of women's natural philosophical poetry—Bradstreet's angry but articulate elements, Hutchinson's forensic but playful dissecting of Lucretian atomism, Cavendish's witty appropriation and naturalisation of royalist poetics, and Pulter's pious dabblings in heterodoxy—restores the vitality and strangeness of seventeenth-century natural philosophy.

By focusing on poetry specifically, as opposed to literature more broadly, I emphasise the importance of *verse form* to these women's engagements with natural philosophy. Despite widespread work on the interactions between early modern literature and science, relatively little critical work has focused on the affordances of verse form for natural philosophical enquiry. Gorman is amongst those who redress this imbalance, framing her project in *The Atom in Seventeenth-Century Poetry* (2021) as "part of a bigger mission to reconceive the complex relations between… specific uses of poetic form and intellectual thought in early modern culture".[60] I join Gorman, arguing that verse produces natural philosophical knowledge not able to be produced elsewhere or otherwise. I analyse a variety of poetic forms, from Hutchinson's verse translation of *De rerum natura* (less a form than a process of form*ing*), Bradstreet's idiosyncratic quaternion form, Cavendish's heroic couplets, and Pulter's devotional lyrics, but throughout I remain attentive to the

[57] Cavendish, *Poems, and Fancies* (London: Printed by T.R. for J. Martin, and J. Allestrye, 1653), sig. D1v.
[58] Cavendish, *Poems, and Fancies,* sig. D1r.
[59] Anne Bradstreet, *The Tenth Muse Lately sprung up in America. Or Severall Poems, compiled with a great variety of Wit and Learning, full of delight* (London: For Stephen Bowtell, 1650), sig. B5v–B6v. For the story of Korah see Numbers 16 (*KJV*).
[60] Gorman, *The Atom in Seventeenth-Century Poetry,* 36.

particular affordances of verse. I examine not only the way early modern women deployed literary and rhetorical techniques like antithesis, personification and metaphor (available in prose as well as verse), but also how they use aspects of verse form—stanzas, metre, rhyme, enjambment, the lyric 'I'—to catalyse their engagements with natural philosophy. In arguing that these women were writing natural philosophical poetry, I demonstrate the foundational influence of natural philosophy on their poetics and, vice versa, poetics on their natural philosophy.

Matter, Form and Formalism

In attending to poetics, I engage with the flourishing field of "new formalism". New formalist scholars have criticised Cleanth Brooks' project in *The Well Wrought Urn* (1947), to "read as one has learned to read Donne", for excluding poems that do not adhere to his unifying model, including those by women.[61] As Caroline Levine observes, "wholes", the category of forms containers such as urns fall into, are always created by joining "disparate elements into one" and are "maintained by acts of exclusion".[62] Although Brooks denies that poetic form acts as a simple container, *The Well Wrought Urn* itself has acted as a totalising whole to the detriment of women's writing.[63] All four women poets in this thesis have been criticised for writing 'bad' poetry, including by those sympathetic to their writing, often because their writing does not conform to prevailing assumptions about poetry learned from canonical, largely male, writers.[64]

[61] Cleanth Brooks, *The Well Wrought Urn: Studies in the Structure of Poetry* (New York: Reynal and Hitchcock, 1947; repr., London: Dennis Dobson Ltd, 1960), 177. See, for example, Blake, "Margaret Cavendish's Forms: Literary Formalism and the Figures of Cavendish's Atom Poems", in *Feminist Formalism and Early Modern Women's Writing,* esp. 38–41; Marshelle Woodward, "Formalism Dispossessed: Pulter, Donne, and the Obliviated Urn", in *Feminist Formalism and Early Modern Women's Writing,* 166–84.

[62] Caroline Levine, *Forms: Whole, Rhythm, Hierarchy, Network* (Princeton: Princeton University Press, 2015), 31.

[63] Brooks, *The Well Wrought Urn,* 206.

[64] See Lara Dodds, "Bawds and Housewives: Margaret Cavendish and the Work of 'Bad Writing'", *Early Modern Studies Journal* 6 (2014): 29–65; Patricia Pender, "The Critical Fortunes of the Tenth Muse: Canonicity and Its Discontents", in *A History of Early Modern Women's Writing,* ed. Patricia Phillippy (Cambridge: Cambridge University Press, 2018), 66–82; Alice Eardley, "Hester Pulter's 'Indivisibles' and the Challenges of Annotating Early Modern Women's Poetry", *Studies in English Literature 1500–1900* 52, no.1 (2012): 117. Nigel Smith condemns Pulter by faint praise: "a good deal of [Pulter's] verse is not all that promising. The unusual nature of the river poems is counterbalanced by the predictable rhymes of the 'anxious' pregnancy poems, and I haven't even addressed the mediocre prosody and form of both. It is a poetry in which prosopopoeia and lexis stand out to manifest something distinctive and special. Yet of the poems in the Brotherton manuscript, I would say that at least 70 per cent are worth saving in a modern edition on grounds of excellence". Nigel Smith, "The Rod and the Canon", *Women's Writing* 14, no.2 (2007): 240. Hutchinson has to some extent avoided such modern criticism, but see Hugh Munro, "Mrs Lucie Hutchinson's Translation of Lucretius", *The Journal of Classical and Sacred Philology* 4 (1858): 132.

For this reason, much recent scholarship has advocated for flexible formalist methods that emerge from the concepts of form immanent to a text, rather than imposed from without.[65] As my focus is natural philosophical poetry, I join those critics who approach early modern form as a "literary-philosophical problem".[66] Form is notoriously difficult to pin down, a nexus of connected and competing ideas that are at once literary, social, metaphysical and physical. Plato's transcendent *eidos,* Aristotle's informing *morphē* and atomic definitions of *forma* or *figura* as physical shape cover the full spectrum of meaning from the essential and definitional, to the external and superficial, confirming Angela Leighton's observation that form is always liable to being "pulled inside out".[67]

Form does, however, frequently acquire meaning through its opposite and complement: matter. This is true in modern criticism where the recent widespread return to form has reconciled form and matter by emphasising form's historical and contextual specificities, as well as the material forms of print and manuscript texts.[68] It is also true in the early modern period where matter is crucial for grasping form's "literary-philosophical" work. Seventeenth-century matter and form vary to the extent that Bradstreet characterises resurrection as "new things, their old form must retain", whereas Pulter "gladly will [her] form resign" as it is her "dust" that will be risen.[69] Cavendish refuses to see a significant difference between matter and form in her philosophical system, claiming that "*Figure, Matter, Motion,* all is one, / Can never separate, nor be alone".[70] At the beginning of *Order and Disorder* Hutchinson exploits form's polyvalence by imagining her mind as a material chaos where "light and beauty lie wrapped up in seed" that needs God's forming influence: "Her rude

---

[65] Scott-Baumann, *Forms of Engagement*, 11; Jenny C. Mann and Debapriya Sarkar, "Introduction: 'Capturing Proteus'", *Philological Quarterly* 98, no.1/2 (2019): 15; Liza Blake, "The Physics of Poetic Form in Arthur Golding's Translation of Ovid's *Metamorphoses*", *English Literary Renaissance* 51, no.3 (2021): 355.

[66] Mann and Sarkar, "Introduction: 'Capturing Proteus'", 2. See also, Henry S. Turner, "Lessons from Literature for the Historian of Science (and Vice Versa): Reflections on 'Form'", *Isis* 101, no.3 (2010): 578–89; Liza Blake, "The Physics of Poetic Form", 331–55; Blake, "Hester Pulter's Particle Physics", 71–98; Blake, "Margaret Cavendish's Forms", 38–55.

[67] Angela Leighton, "The Work of Form, Some Afterwords", in *The Work of Form,* 199.

[68] See Stephen Cohen, ed., *Shakespeare and Historical Formalism* (Aldershot: Ashgate, 2007); Allison K. Deutermann and András Kiséry, ed., *Formal Matters: Reading the Materials of English Renaissance Literature* (Manchester: Manchester University Press, 2013)*;* Scott-Baumann and Burton, ed., *The Work of Form*. See also, Naomi Levine, *The Burden of Rhyme: Victorian Poetry, Formalism, and the Feeling of Literary History* (Chicago: University of Chicago Press, 2024), esp.15–36. For a reassessment of the relationship between formalism and historicism see Stephen Cohen, "Between Form and Culture: New Historicism and the Promise of Historical Formalism" in *Renaissance Literature and Its Formal Engagements,* ed. Mark David Rasmussen (New York: Palgrave, 2002), 17–41; Richard Strier, "Afterword: How Formalism Became a Dirty Word, and Why We Can't Do Without It", in *Renaissance Literature and Its Formal Engagements,* 207–15. These approaches broadly align with what Marjorie Levinson calls "activist formalism". Marjorie Levinson, "What is New Formalism?", *PMLA* 122, no.2 (2007): 558–69. As many of these studies acknowledge, the dichotomy between formalist and historicist, Marxist or cultural materialist approaches to literature has never been absolute. See, for example, Fredric Jameson, *Marxism and Form: Twentieth-Century Dialectical Theories of Literature* (Princeton: Princeton University Press, 1971).

[69] Bradstreet, *The Tenth Muse,* sig. O6r; Pulter, "16. The Revolution", 25–26.

[70] Cavendish, *Poems and Fancies,* sig. D1v.

conceptions into forms dispose, / And words impart which may those forms disclose".[71] As these examples suggest, matter and form were linguistically and conceptually protean, pulling natural philosophy, theology, politics and poetry together inconsistently and unpredictably. Therefore, rather than focusing on material form, formed matter or any specific seventeenth-century materialism, I maintain the capacious openness of "matter *and* form".[72]

These examples also suggest the sophistication of early modern women's poetics of matter and form. The women poets who feature in this thesis all have a well-theorised sense of form that is grounded in seventeenth-century natural philosophical questions and debates. I begin this section by unpacking matter and form's philosophical associations in the seventeenth century, providing crucial theoretical background for the chapters that follow. Bradstreet, Hutchinson, Cavendish and Pulter are also well-versed in contemporary poetics, an equally important aspect of form's "literary-philosophical" nature. As such, in the second half of this section I theorise the relationship between early modern form's philosophical and poetic dimensions.

In the seventeenth century, the competing currents of continuity and change eddy around the concepts of matter and form.[73] Aristotle's "form" is notoriously nebulous, operating on multiple different levels across his logical, physical and metaphysical works: as species, as one of his four causes, as an explanation for both accidental (qualitative) change and substantial change (where something new comes into existence or ceases to exist), as the rational soul, as the definitional or essential aspect of a being, as that which actualised matter into a particular kind of thing.[74] Crucially, for Aristotle, matter and form are only theoretically or analytically, not physically, separable and neither could subsist independently. Indeed, Aristotle criticises Plato's transcendent, eternal Forms or Ideas for losing touch with matter and thus becoming explanatorily useless.[75] Across late medieval and early renaissance philosophy, competing Aristotelianisms emerged as his philosophy became

---

[71] Lucy Hutchinson, *Order and Disorder,* ed. David Norbrook (Oxford: Blackwell, 2001), 1.24–30.
[72] See Sugimura for the value of the "combinatory and exploratory 'and'" when discussing early modern matter and poetry. Sugimura, "Milton and Matter", *Oxford Handbook Topics in Literature* (Online Edition, Oxford Academic, 16 December 2013), https://doi.org/10.1093/oxfordhb/9780199935338.013.11.
[73] See Christoph Lüthy and William R. Newman, "'Matter' and 'Form': By Way of a Preface", *Early Science and Medicine* 2, no.3 (1997): 215–18.
[74] David Bostock goes as far as to call Aristotle's theory of form a "complete failure". His admittedly pejorative account nonetheless covers the variety of uses Aristotle put form to. David Bostock, *Space, Time, Matter, and Form: Essays on Aristotle's 'Physics'* (Oxford: Oxford University Press, 2006), 79, 79–102.
[75] In the *Metaphysics,* for instance, Aristotle questions "Above all we might examine the question what on earth the Forms contribute to sensible things, whether eternal or subject to generation and decay; for they are not the cause of any motion or change in them. Again, they are no help towards the *knowledge* of other things (for they are not the substance of things, otherwise they would be *in* things), nor to their *existence,* since they are not present in the things which partake of them" Aristotle, *Metaphysics, Volume I: Books 1–9,* trans. Hugh Tredennick (Cambridge, MA: Harvard University Press, 1933), I.9.991a9–19.

combined with various aspects of Platonism, Neoplatonism and Christian theology.[76] Christianised, scholastic theories of the rational soul, understood as a special instance of substantial form, frequently insisted on its ability to continue to exist separate from the body in ways not found in Aristotle. On the other hand, Roger Ariew, Marjorie Grene and Robert Pasnau argue that scholastic philosophers increasingly drew on form as primarily a physical—rather than metaphysical or logical—explanation, leading to an increased dualism in later scholastic texts and making form vulnerable to corpuscular accounts of the emergence of qualities within bodies.[77] The theory of form inherited by seventeenth-century natural philosophers was not purely Aristotelian, unified or singular, but was already a messy amalgamation of multiple philosophical traditions.

As Aristotelianisms were increasingly challenged, it was form, especially substantial form, that was most heavily criticised. In the *Novum Organum* (1620), Bacon claims that Aristotelian (and Platonic) "forms are fictions of the human soul", while physician and atomist Walter Charleton demands to know "*Wherein that substance, or Form,* which *Aristotle* affirm's to arise, *de novo, in Generation, lay hid before Generation?*"[78] He mocks anticipated scholastic, metaphysical answers that the form "was contained in the Matter, not in *Act*, but onely in *Power,* or *Capacity*" by employing the materialist metaphor of an empty purse: "He that wanted money, might starve before He could prove, that [coins] were contained therein by an Eductive power".[79] In *The Origin of Forms and Qualities (According to the Corpuscular Philosophy*) (1666), Robert Boyle largely excuses Aristotle himself from criticism, but condemns scholastic philosophers who have "either knowingly Confess'd themselves unable to explain [forms], or unwittingly Prov'd themselves to be so, by giving unsatisfactory Explications of them".[80] He illustrates his argument with damning quotations from Julius Caesar Scaliger ("*Formarum cognitio est rudis, confusa*" [Understanding of forms is crude and confused]) and Thomas Aquinas ("*Formæ substantiales sunt incognitæ nobis*" [Substantial forms are

[76] Norma E. Emerton, *The Scientific Reinterpretation of Form* (Ithaca, NY: Cornell University Press, 1984), 48–75; Cees Leijenhorst, Christoph Lüthy and Johannes M.M.H. Thijssen, "The Tradition of Aristotelian Natural Philosophy. Two Theses and Seventeen Answers", in *The Dynamics of Aristotelian Natural Philosophy from Antiquity to the Seventeenth Century*, ed. Cees Leijenhorst, Christoph Lüthy and Johannes M.M.H. Thijssen (Leiden: Brill, 2002), 1.
[77] Robert Pasnau, *Metaphysical Themes 1274–1671* (Oxford: Oxford University Press, 2011), 560–65; Roger Ariew and Marjorie Grene, "The Cartesian Destiny of Form and Matter", *Early Science and Medicine* 2, no.3 (1997): 310.
[78] Francis Bacon, *The Oxford Francis Bacon, Volume 11: The Instauratio Magna Part II: Novum Organum and Associated Texts,* ed. Graham Rees and Maria Wakely (Oxford: Oxford University Press, 2004), 89; Walter Charleton, *Physiologia Epicuro-Gassendo-Charltoniana, or, A Fabrick of Science Natural, Upon the Hypothesis of Atoms, Founded by Epicurus, Repaired [by] Petrus Gassendus, Augmented [by] Walter Charleton* (London: Printed by Tho. Newcomb for Thomas Heath, 1654), sig. 3H4r.
[79] Charleton, *Physiologia,* sig. 3H4r–v.
[80] Robert Boyle, "The Origin of Forms and Qualities (1666–7)", in *The Works of Robert Boyle, Volume 5: The Origin of Forms and Qualities and Other Publications of 1665–7,* ed. Michael Hunter and Edward B. Davis (Oxford: Pickering & Chatto, 1999), 339.

unknown to us]).[81] For his own part, Boyle cannot see "what use this puzling Doctrine of substantial Forms is of in Natural Philosophy".[82]

Despite such widespread criticism, form did not disappear and continued to be defined in terms of its relationship to matter. In her important study, *The Scientific Reinterpretation of Form* (1984), Norma E. Emerton compellingly argues that in the seventeenth century "a loud outcry against the scholastic substantial form accompanied a quiet, persistent reinterpretation of the form concept itself".[83] As the Aristotelian system was deconstructed, a huge variety of idiosyncratic theories flourished. Charleton, for example, redefines form when "considered abstractly or by it self" as "onely a meer Quality, Accident, or Event, of which the Atoms, which compose that Body or substance, are naturally capable, when thus consociated and mutually related", almost entirely reducing form to material arrangements.[84] Form had never been only a topic of physics, and metaphysics continues to assert itself as seventeenth-century philosophers grappled with form. Charleton exempts the rational soul from his criticism of substantial form, while in his combined Platonic atomism Henry More coins the term "*Atom-lives*" to describe "the indivisibility of the inmost essence it self; the pure *essentiall form* I mean of plant, beast or man, yea of angels themselves, good or bad" (my emphasis).[85] More merges the physical indivisibility of the atom with the metaphysical indivisibility of essences and substantial form. Even Bacon maintains that

> The work and aim of human knowledge is to discover (and the following are the terms which I possess that come closest to what I mean) the form, or true difference, or *natura naturans,* or source from which a given nature arises.[86]

Bacon struggles with the suitability of his terms, but here "form" still seems to mean something like essence or principle of individuation ("true difference"). Nevertheless, he cautions against "abstract forms and ideas undetermined or poorly determined in matter", recycling Aristotle's critique of Plato for both Aristotelian and Platonic forms.[87] Bacon's forms are laws of simple natures such that "the form of heat, or form of lumen is the same thing as the law of heat or of lumen".[88] Bacon insists that "the investigation of forms, eternal and immutable as they are (by reason surely, and according to

[81] Boyle, "The Origin of Forms and Qualities", 339.
[82] Boyle, "The Origin of Forms and Qualities", 340.
[83] Emerton, *The Scientific Reinterpretation of Form,* 14.
[84] Charleton, *Physiologia,* sig. 3I1v.
[85] Charleton, *Physiologia,* sig. 3H4r; Henry More, *Democritus Platonissans, or, An Essay Upon the Infinity of Worlds out of Platonick Principles* (Cambridge: Printed by Roger Daniel, 1646), sig. D6r.
[86] Bacon, *Novum Organum,* 201. For Bacon and form see Stephen Clucas, "'The Infinite Variety of Formes and Magnitudes': 16th- and 17th-Century English Corpuscular Philosophy and Aristotelian Theories of Matter and Form", *Early Science and Medicine* 2, no.3 (1997): 253–58; Emerton, *The Scientific Reinterpretation of Form,* 66–69; Graham Rees, "Introduction", in *Novum Organum,* lxvii–lxxi.
[87] Bacon, *Novum Organum,* 255.
[88] Bacon, *Novum Organum,* 255.

their law), constitutes *Metaphysics*".[89] The generalisable, abstract and unchanging nature of these formal laws brings them into the realm of metaphysics, while nonetheless retaining their basis in matter. These accounts demonstrate clear seventeenth-century attempts to repurpose form that nonetheless suggest continuities with older traditions. Moreover, they indicate, as Stephen Clucas has observed, that "the search for explanations of the internal configurations of substance" led "back to a variety of concepts of form which were not strictly reducible to matter".[90] Whether "Quality, Accident, or Event", "Atom-lives", laws, or, indeed, soul, spirits, pneuma, or vis, seventeenth-century form diversified into an eclectic range of organisational concepts.[91]

The re-conceptualisation of form was facilitated by shifting senses of matter, and vice versa. Charleton observes

> that there must be one Catholique Matter, of which all things are Elemented, and into which they may be again, by Dissolution, reduced: are Positions, to which all men most readily prostrate their assent.[92]

Pasnau argues that Charleton is correct that the "*substratum thesis*" was believed to be true by nearly every philosopher—whether scholastic, atomic, corpuscularian—from the late medieval period through to the end of the seventeenth century.[93] What was less agreed upon was the nature of this matter. Aristotle's matter theory incorporated both the four elements, adapted from Platonic and Empedoclean philosophy, and his hylomorphic theory of matter and form. Whereas Empedocles argued that the four elements were eternal and immutable, Aristotle insisted that they could be transformed into one another. This raised the still contentious issue of *prima materia* or prime matter in his philosophy. If change requires an enduring, underlying substratum then what is that substratum for the four elements? How does this affect their elementality? For scholastic philosophers, prime matter, if it existed, did so only metaphysically. Matter and form could only be conceptually, not physically, separated, and so prime matter (matter without form) is pure potentiality, giving rise to the paradox of something existing without existing *actually,* without being *actualised* by form. Aristotelian prime matter is thus a conundrum: intangible, incorporeal and utterly characterless, it is essentially unknowable.[94]

---

[89] Bacon, *Novum Organum,* 215.
[90] Clucas, "'The Infinite Variety of Formes and Magnitudes', 258.
[91] See Clucas, "'Infinite Variety of Forms and Magnitudes'", 258–71; Gideon Manning, ed., *Matter and Form in Early Modern Science and Philosophy* (Leiden: Brill, 2012).
[92] Charleton, *Physiologia*, 3G4r.
[93] Pasnau, *Metaphysical Themes,* 18.
[94] The existence and specific nature of Aristotelian prime matter was and still is a matter of debate. For a modern overview see, Thomas Ainsworth, "Form vs. Matter", in *SEP,* published February 8, 2016, last modified 27 June, 2024, https://plato.stanford.edu/archives/sum2020/entries/form-matter/, esp. "2. Prime matter". For the medieval and early modern debate see Pasnau, *Metaphysical Themes*, 35–52.

Atomist and corpuscularian philosophers, both ancient and early modern, actualise their prime matter, making it exist physically and giving it properties, and thus make some traditional aspects of form adhere to matter. And yet, here too, there was little consensus. A variety of theories—atomic, corpuscular, plenist, monist, dualist, mechanist, vitalist, panpsychic—flourished, and each understood matter in distinct ways.[95] Bacon's pneumatic matter theory includes "spirits", a variety of rarified, active, weightless matter that is nonetheless corporeal.[96] Descartes' dualist system defines matter in terms of extension and divisibility, while atomists like Pierre Gassendi and Charleton grant matter figure (or shape), weight, and physical indivisibility. In her mature system, Cavendish believed nature to be composed of three degrees of one kind of matter—the inanimate, sensitive and rational. Both sensitive and rational matter are capable of self-motion and so Cavendish's theory has become known as vitalist materialism. It should be noted that despite a shift towards experimental and empirical methods, many aspects of early modern matter theories—matter's divisibility or indivisibility, its mechanical or self-motion—had to be argued metaphysically, rather than proved experimentally.[97] Cavendish turns to her monist, vitalist conception of matter, for example, because she cannot see how individual, randomly moving atoms can collaborate to produce natural order.[98] Like form, the nature of early modern matter was eclectic, a topic of philosophical fascination and contention rather than certainty.

Critics have long observed the influence of philosophical theories of form (and matter) on rhetoric, poetics and literary criticism. The impact of Platonic Ideas on writers such as Sidney and Spenser (a "constant disciple of *Platoes* School" according to Kenelm Digby) is well established.[99] Moreover, Blake argues that, however unconsciously, modern literary critics' enduring "understanding of the forms of a poem, in which we analyze the formal features that shape the content-matter—the understanding that founds the assumptions with which we teach, write, and

[95] See Antonio Clericuzio, *Elements, Principles and Corpuscles: A Study of Atomism and Chemistry in the Seventeenth Century* (Dordrecht: Kluwer Academic Publishers, 2000); Christoph Lüthy, John E. Murdoch and William R. Newman, eds., *Late Medieval and Early Modern Corpuscular Matter Theories* (Leiden: Brill, 2001); Andrew Pyle, *Atomism and its Critics: Problem Areas Associated with the Development of the Atomic Theory of Matter from Democritus to Newton* (Bristol: Thoemmes Press, 1995).
[96] Graham Rees, "Matter Theory: A Unifying Factor in Bacon's Natural Philosophy?", *Ambix* 24, no.2 (1977): 110–25; D.P. Walker, "Francis Bacon and *Spiritus*", in *Music, Spirit and Language in the Renaissance,* ed. Penelope Gouk (London: Variorum Reprints, 1985), 121–30.
[97] Catherine Wilson, *Epicureanism at the Origins of Modernity* (Oxford: Oxford University Press, 2008), 50–70; Pasnau, *Metaphysical Themes,* 25.
[98] Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 17–20.
[99] Kenelm Digby, *Observations on the 22. stanza in the 9th. Canto of the 2d. book of Spencers Faery Queen* (London: Printed for Daniel Frere, 1643), sig. B4v. See, for example, Quitslund, *Spenser's Supreme Fiction*; Kenneth Boris, *Visionary Spenser and the Poetics of Early Modern Platonism* (Oxford: Oxford University Press, 2017). See also, S.K. Heninger, *The Subtext of Form in the English Renaissance: Proportion Poetical* (Pennsylvania: Pennsylvania State University Press, 1994).

study the forms of literature—is essentially taken from Aristotelian physics".[100] For Blake, this logic abounds in formalist analyses and it is easy to see how Brooks' understanding of the reciprocally conditioning relationship between form and matter (or content) might be interpreted as corresponding to an Aristotelian, hylomorphic model.[101]

Such a hylomorphic understanding of texts is not inherently problematic, as Blake observes, but any totalising concept of form is liable to exclude as much as it includes.[102] Blake finds a compelling solution in the myriad ancient, medieval and early modern matter and form theories, arguing that these "are ripe with concepts that will allow us to articulate new formalisms out of physics other than Aristotelian".[103] As detailed above, the number of these theories exploded in the seventeenth century and therefore provide a rich source for alternative formalist approaches. Bacon's theory of form as simple material laws finds its way into his definition of poesy in *The Advancement of Learning*:

> POESIE is a part of Learning in measure of words for the most part restrained: but in all other points extreamely licensed: and doth truly referre to the Imagination: which beeing not tyed to the Lawes of Matter; may at pleasure ioyne that which Nature hath seuered: & seuer that which Nature hath ioyned, and so make vnlawfull Matches & diuorses of things.[104]

Bacon engages with Sidney's sense of the poet's freedom to make "forms such as never were in nature", but substitutes "forms" for his own natural philosophical sense of form as the "Lawes of Matter".[105] In Bacon's analysis, it is not only that poetry creates mythical creatures, but that this results from poetry's ability to make matter interact in "vnlawfull ways". Bacon's definition of poetry suggests the inherent closeness of poetic and natural philosophical form.

Yet intriguingly, Bacon's definition also indicates the importantly non-reflective relationship between verse and world, and between poetry and natural philosophy. Early modern poetic theories—including Sidney's, Southwell's *and* Bacon's—insist on poetry's creative potential to either surpass or do otherwise than the natural world. By insisting that poetry is not "tyed to the Lawes of Matter" but to the pleasures of the imagination, Bacon suggests that poetic forms might exist outside the realm of natural philosophical speculation. Poetic forms are "vnlawfull" because they do not conform to the inferred "Lawes of Matter" but operate according to different formal logics that

[100] Blake, "The Physics of Poetic Form", 332. See also, Anthony J. Cascardi, *The Cambridge Introduction to Literature and Philosophy* (Cambridge: Cambridge University Press, 2014), 127–29.
[101] Blake, "The Physics of Poetic Form", 332; Brooks, *The Well Wrought Urn,* 178.
[102] Blake, "The Physics of Poetic Form", 355.
[103] Blake, "The Physics of Poetic Form", 333.
[104] Bacon, *The Advancement of Learning*, 73.
[105] Sidney, "A Defence of Poetry", 78.

exist in uncertain relation to nature. We might contrast Bacon's account of poetry with Cavendish's distinction between fancy and reason in the preface to *The Blazing World* (1666):

> by *reason* I understand a rational search and enquiry into the causes of natural effects; and by *fancy* a voluntary creation or production of the mind, both being effects, or rather actions of the rational parts of matter.[106]

Like Bacon, Cavendish draws on her own theory of vitalist matter to define reason and fancy, and their respective products, "truth" and "fiction".[107] Unlike Bacon, Cavendish is clear that fancy (and fiction) and reason (and truth) both result from the "effects, or rather actions" available to rational matter, even if the particular actions that produce them differ from each other. Neither are "vnlawfull" but are simply different available actions of matter. Both Bacon and Cavendish use their physical and metaphysical theories of matter and form, paradoxically, to define what differentiates "POESIE" or "fiction" from natural philosophy. These accounts demonstrate the evocative connections between natural philosophy and poetry, even as they were distinguishing themselves from each other.

Matter is also ambiguously poetic and natural philosophical. In rhetoric, *res* is typically understood as subject matter or content, as opposed to *verba* (words). However, the common trope of the humanist bee gathering from the flowers of others' writing demonstrates the ease with which one person's *verba* can become another's *res*. There is a long tradition of thinking of *verba* as *res*. As previously noted, the English word "element" derives from the Latin "elementum", which in turn comes from the Greek "stoicheoin", likely coined in the sense of underlying matter by Plato in the *Timaeus.*[108] Yet both "elementum" and "stoicheion" also denoted the letters of the alphabet.[109] A similar allegiance between letters and matter emerges in Lucretius' *De rerum natura*, where he puns on the atomic and verbal similarity of "Ignes" [fire] and "lignis" [wood] in an analogy so reliant on its specific materialisation in Latin that it defies easy translation, as I will explore more in chapter 2.[110] This difficulty threatens to undermine Lucretius' merging of *verba* and *res,* reimposing its analogical rather than physical basis by exposing the gap between meaning, content or subject matter and material word. Moreover, Bacon explicitly challenges the convergence of *verba* and *res* in the *Advancement of Learning,* criticising those who "hunt more after wordes, than matter".[111] Bacon

---

[106] Margaret Cavendish, *The Blazing World and Other Writing*, ed. Kate Lilley (London: Penguin, 2004), 123–24.
[107] Cavendish, *The Blazing World,* 123.
[108] David Macauley, *Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas* (Albany: State University of New York Press, 2010), 143.
[109] David Macauley, *Elemental Philosophy,* 60.
[110] The Latin is taken from the early modern version of *De rerum natura* included in *The Works of Lucy Hutchinson, Volume 1: Translation of Lucretius: Part 1, Introduction and Text*, ed. Reid Barbour, David Norbrook and Maria Christina Zerbino (Oxford: Oxford University Press, 2012), 1.910.
[111] Bacon, *The Advancement of Learning,* 22.

strives to reorient matter back towards the world, a project his successors laud him for. In Cowley's words, Bacon

> From Words, which are but Pictures of the Thought,
> (Though we our Thoughts from them perversly drew)
> To Things, the Minds right Object, he it brought,[112]

Bacon and Cowley's critique is precisely that the *res* of natural philosophical writing has become inappropriately discontinuous with the matter of the world. *Res* and *verba* merge, overlap and draw apart both from each other and the matter of the world in these accounts, suggesting that we should not be too quick to collapse these distinctions even in texts, such as *De rerum natura*, where it is encouraged.

Approaching form as a "literary-philosophical problem" therefore requires attending to aspects of form (and matter) that do not find easy reconciliation with natural philosophical theories. Levine reminds us that literary forms do not straightforwardly reflect prior reality. Rather, forms, whether literary, social or (I would add) natural philosophical are "equally real in their capacity to organize materials, and equally un*real* in being artificial, contingent constraints".[113] Literary forms—rhyme and metrical schemes, stanza forms, genres like epic and lyric—have their own histories and traditions, and thus accrue their own meanings, that are not coextensive with natural philosophical theories of form. Recent scholarship has begun to unpack the variety of literary theories of form at play in the early modern period, from Puttenham's extensive use of "form" in *The Art of English Poesy* for genre, verse form and shape*,* to rhetorical figures of speech that Colleen Ruth Rosenfeld argues can help us "approach the problem of form from an oblique but productive angle".[114] Furthermore, in *The Fetters of Rhyme* (2021) Rebecca Rush has deftly demonstrated how early modern writers understood rhyme as a site of liberty and binding where the cosmological, political, ethical, romantic and theological dimensions of freedom could be negotiated and worked out.[115] Collectively, studies such as these fulfil Stephen Cohen's promise of a formalism where literary forms are understood as "historically specific, historically determined, and historically efficacious", and therefore "multiple and variable in their results, neither consistently ideological nor inherently

[112] Cowley, "To the *Royal Society*", in *The History of the Royal-Society*, by Thomas Sprat, sig. B2r.
[113] Levine, *Forms,* 14.
[114] Scott-Baumann and Burton, "The Work of Form: Poetics and Materiality in Early Modern Culture", in *The Work of Form: Poetics and Materiality in Early Modern Culture,* 8–13; Colleen Ruth Rosenfeld, *Indecorous Thinking: Figures of Speech in Early Modern Poetics* (New York: Fordham University Press, 2018), 8. For a seminal essay on "figure" see, Erich Auerbach, *Scenes from the Drama of European Literature* (Meridian, 1959; repr. Minneapolis, University of Minnesota Press, 1984), 11–76.
[115] Rebecca M. Rush, *The Fetters of Rhyme: Liberty and Poetic Form in Early Modern England* (Princeton: Princeton University Press, 2021).

demystificatory but instead reacting unpredictably with each other and with other cultural discourses".[116]

Reinstating form's volatile work is crucial for understanding the impact of poetic forms on natural philosophy. Ellen Rooney contrasts what she calls "reading" *per se* with "reading-as-summary" or "reading sans form", arguing that "reading sans form" produces analyses in which texts paraphrase theory.[117] Against this, she defines form as "theory's interlocutor" and hence "the contrariness of the text insofar as it is the moment at which the reading both blocks and engages with any theory and thus exposes the formality of theory itself".[118] Although Rooney is discussing form's relationship with critical theory, her sense of form as an "interlocutor" valuably emphasises its ability to alter, complicate and challenge the content and ideas it comes into contact with, including natural philosophical theories. In her account of form, Levine importantly stresses the multiplicity of forms at work at any given moment, identifying how different forms "collide to strange effect", sometimes being mutually reinforcing and at other times disrupting or disordering each other.[119] This is true of the interactions between the multiple literary forms that constitute a single text, as well as the interactions between these and natural philosophical and political forms. In this capacity, form is not only "theory's interlocutor" but also form's interlocutor, with natural philosophy and poetry existing in dialogic, transformative relation.

Reading for form is therefore an important method for recovering early modern women's poetic and natural philosophical sophistication. Decades of feminist scholarship has recovered swathes of texts across a variety of genres and forms by early modern women in manuscript and demonstrated that women were involved in the creation of "early modern printed books at each stage of their production, dissemination, and appropriation".[120] Such accounts have robustly challenged rigid barriers between the "public" and "private", print and manuscript. Writing on Pulter's intensely royalist verse, Margaret Ezell, for instance, emphasises the need to "rethink what defines 'participation' or engagement with political events" given Pulter's self-declared isolation and that her manuscript appears to have been largely unread outside her family circle for over three

[116] Cohen, "Introduction", *Shakespeare and Historical Formalism,* 3. See also, Douglas Bruster, "The Materiality of Shakespearean Form", in *Shakespeare and Historical Formalism,* 31–48.
[117] Ellen Rooney, "Form and Contentment", *Modern Language Quarterly* 61, no.1 (2000): 26, 29–30.
[118] Rooney, "Form and Contentment", 34–35.
[119] Levine, *Forms,* 18.
[120] Helen Smith, *'Grossly Material Things': Women and Book Production in Early Modern England* (Oxford: Oxford University Press, 2012), 4. See Margaret Ezell, *Writing Women's Literary History* (Baltimore: John Hopkins University Press, 1996); Clarke, *The Politics of Early Modern Women's Writing*; Gillian Wright, *Producing Women's Poetry, 1600–1730: Text and Paratext, Manuscript and Print* (Cambridge: Cambridge University Press, 2013).

hundred years.[121] Ezell emphasises that women's contributions to intellectual culture need not have had a discernible contemporary impact to classify as participation. Indeed, requiring women's contributions to have made waves in the spaces (physical or intellectual) from which they were habitually or formally excluded is to continue to reinforce their exclusion after the fact. A feminist formalist approach can help, therefore, reestablish women's often elusive participation in contemporary culture, a sustained attention to the forms that women read and wrote allowing for the recovery of the communities in which they partook. As Scott-Baumann argues, women poets are "able to be original *because* they write in dialogue with traditions of poetic form".[122] Following Scott-Baumann, in this thesis I read Bradstreet's, Hutchinson's, Cavendish's and Pulter's poetry for form to reinstate their engagements with their intellectual culture.

Throughout the subsequent chapters, I approach the poetics of matter and form in mid-seventeenth-century women's poetry as a "literary-philosophical problem" that keeps alive the kinship between natural philosophical and poetic theories, and their productive differences. In the women's poetry I examine, multiple theories of matter and form—poetic and natural philosophical—collide in surprising and complex ways. Close reading their poetry not only reveals their engagements with poetic and natural philosophical theories, but also the specific *uses* to which they put this knowledge, whether that be sympathetic engagement, adaptation and transformation, or criticism and challenge. The full range of these responses can be found in Cavendish, Hutchinson, Bradstreet and Pulter's poetry as they uncover existing interconnections between natural philosophy and poetry and forge their own. In some chapters, the political (chapter 1) and the theological (chapter 4) also feature prominently, but in all cases, poetic forms do not simply emulate or enact natural philosophical forms but exert their own structural logics to transformative effect. The chapters proceed in broadly chronological order from Bradstreet's poetry likely written in the 1630s or 1640s (but first printed in 1650), to Pulter's manuscript poetry that was composed from the 1640s to the 1660s. Nonetheless, I do not attempt to tell a chronological story of development or evolution over time but instead demonstrate the coherence and energy (a *concordia discors* perhaps) to this group of contemporaneous mid-seventeenth century women writers who are united by their commitment to matter and form's messy and generative poetic and natural philosophical heritage.

In chapter 1, I begin with Bradstreet's debate poem "The Four Elements", arguing that the four elements' seventeenth-century ontological precarity catalyses Bradstreet's reconstruction of elemental philosophy. Seventeenth-century criticism of the elements' poetic and rhetorical origins

[121] Margaret Ezell, "The Laughing Tortoise: Speculations on Manuscript Sources and Women's Book History", *English Literary Renaissance* 38, no.2 (2008): 344.
[122] Scott-Baumann, *Forms of Engagement,* 2.

provides the impetus for Bradstreet's encyclopaedic vision of personified, feminised elements in constant argumentation. Bradstreet draws especially on antithesis as a rhetorical form integral to Aristotelian elemental matter theory, using it as a prompt for the invention and structuring of *res*. While here natural philosophical and poetic forms merge and bolster each other, Bradstreet also uses her quaternion's dialogue form to deconstruct the overlapping cosmological and social hierarchies that elemental philosophy maintains. By deliberately staging the elements' debate over speaking order and by personifying all her elements as women, Bradstreet deliberately exposes the hierarchising mechanisms that structure allegorical debate poems. Consequently, she agitates the traditionally neat and teleological elemental sublunar cosmos into a state of openness. Her levelling impulses do not stop here, and in the final part of this chapter I identify the influence of Empedoclean elemental physics on the personified forces of amity and enmity that animate Bradstreet's elements. The result is a vision of the world where the elements are not only equalised amongst themselves, but humanity, the world and perhaps even God are all brought into more horizontal relation. Overall, this chapter demonstrates how rhetorical or poetic forms like antithesis and personification have long been integral to elemental philosophy, and how multiple poetic, natural philosophical and social forms can be set into transformative collision.

In chapter 2, I turn to Hutchinson's translation of Lucretius' *De rerum natura*. I argue that Hutchinson draws a liberating theory of translation as transformation from the theory of material atomic-poetic form embedded in *De rerum natura* that she then turns against *De rerum natura*'s dogmatic atomism. I show that whereas many early modern translators employ a broadly Aristotelian, hylomorphic metaphysics to theorise the change they make to a text, Hutchinson draws from Lucretius' atom-letter analogy an empowering theory of translation as recombination that authorises her transformation of the poem's content. In particular, I show that Hutchinson exploits the opportunity presented by Lucretius' frequent, often-lengthy, repetitions of the same Latin phrases to translate them differently on each occasion, recombining and challenging the poem's atomist doctrines, including the same atomic sense of "form" that grounds her translational poetics. Hutchinson's exacting interrogation of form's potential role(s) in atomism reveals atomism's continuities with other philosophical traditions, including hylomorphism.

Much criticism has demonstrated the extent to which Cavendish's natural philosophical theories impinge upon her poetics. In chapter 3, I take a different approach, arguing that in *Poems and Fancies*, Cavendish's natural philosophical theory of fancy as the material, figurative motions of her mind, emerges in conversation with a seventeenth-century, largely Royalist, poetics that prioritises easy, free and smooth couplets. Cavendish frequently prioritises "fancy" over aspects of verse form like metre and rhyme, and as such critics have, appropriately, treated Cavendish's sense of

fancy as something like a poem's imaginative content. By recovering the importance of motion in Cavendish's theory of material forms (or figure), I reconceive of fancy as rhythm, a material form which unfolds over time. In so doing, I identify Cavendish's adaption of seventeenth-century couplet theories, including those of Edmund Waller and John Denham, to characterise her free-flowing fancy. As with Bradstreet, then, this chapter demonstrates the extent to which poetic forms can infiltrate natural philosophical theories.

In the final chapter, I examine Pulter's breathy imagery that has scriptural, poetic and natural philosophical origins. Two of the titles of Pulter's manuscript, one in her own hand, imagine her poetry as "breath'd forth", a generative metaphor for poetic forming that draws on breath's divine, soulful *and* material valences. Specifically, I suggest that Pulter's invocations of breath and soul are informed by early modern physiology and acoustics that recognises breath as the material medium of the voice. Breath's diffuse and ephemeral materiality proves simultaneously essential for its scattering to multiple auditors who all, crucially, hear the same sound, but also threateningly fragile, capable of petering out or being blown off course. As such, theories of sound also require a theory of form to keep them stable and coherent despite this diffusion, a theory of form that draws on scholastic ideas of the soul as the body's substantial form. Pulter's poetry enacts this movement in her repetition of key terms that echo throughout the manuscript, and in verse forms that seem to come apart even as they cohere. In her poetry, Pulter makes matter do the identity sustaining and unifying work of form, even as that matter dissolves, transforms and scatters.

Chapter 1: Dialogue and Debate: Reconstructing Elemental Philosophy in Anne Bradstreet's "The Four Elements"

> And new philosophy calls all in doubt:
> The element of fire is quite put out,
> The Sun is lost, and th'Earth, and no man's wit
> Can well direct him where to look for it;
> —John Donne, "The First Anniversary"[1]

John Donne's hyperbolic lament has come to characterise what Debapriya Sarkar has recently called the "dual crisis of epistemological uncertainty and ontological precarity" of the sixteenth and seventeenth centuries.[2] As Ayesha Ramachandran has argued, this crisis was both cosmological as older knowledge systems were dismantled, and global as European exploration rapidly expanded the limits of the known world.[3] This was also in part a crisis of matter and form, where the universe's material foundations and structural arrangement were being reconceived and debated. Donne's lines specifically attest to the changing status of the four elements—fire, air, water and earth—in the early modern period. At the cosmic scale, astronomers were challenging the geocentric model of concentric elemental spheres; at the microcosmic scale, the elements' identities as first principles were being undermined, with many natural philosophers instead favouring mechanistic and corpuscular matter theories. In the *Advancement of Learning* (1605), Francis Bacon asserts that "the cogitations of Man, doe fayne unto them *Relatiues, Parallelles, and Coniugates,* whereas no such thinge is; as they haue fayned an Element of Fire to keepe square with Earth, Water, and Ayre".[4] Where Donne mourns the universe's loss of coherence, Bacon asserts that this coherence was always a fiction; people's habit to "*faine in Nature a greater equalitie and vniformitie, than is in truth*" obscures nature's disorder and irregularities.[5] For Bacon, the existence of fire as an element is the result of an imaginative geometry designed to keep the essentially irregular universe comfortingly neat. Thus, Donne's verb phrase "put out" succinctly evokes both the dislodging of the sublunar fiery sphere and fire's extinguishing as an element. Cosmologically displaced and materially demoted, these accounts of the four elements are a testament to a historical moment where the matter and form of the universe were being radically rewritten.

---

[1] John Donne, "The First Anniversary: An Anatomy of the World", in *The Complete Poems of John Donne,* ed. Robin Robbins, rev. ed. (London: Routledge, 2013), 205–08.
[2] Sarkar, *Possible Knowledge,* 1.
[3] Ayesha Ramachandran, *The Worldmakers: Global Imagining in Early Modern Europe* (Chicago: University of Chicago Press, 2015), 4–6.
[4] Bacon, *The Advancement of Learning*, 116.
[5] Bacon, *The Advancement of Learning,* 116.

In Anne Bradstreet's "The Four Elements", first printed in 1650, the elements defiantly assert their "usefulnesse, and force".[6] Consequently, the poem risks seeming embarrassingly belated, a nostalgic and reactive backwards glance in the face of the "new philosophy". Bradstreet had likely read *The Advancement of Learning* and was certainly cognizant of the four elements' changing natural philosophical status.[7] Whereas Donne presents the upheaval of elemental philosophy as anxiety-inducing, Bradstreet's personified elements are "put out" in the (admittedly anachronistic) sense of annoyed or angry.[8] Air condemns those who

> (of late) have been so bold,
> Me for no Element, longer to hold.
> Let such suspend their thoughts, and silent be;
> For all Philosophers make one of me.
> And what those Sages, did, or spake, or writ,
> Is more authentick then their moderne wit.
> (C2r)

The "cause" of her demotion, Air claims, is her ability to transform into fire when "rarifi'd" and water when "condens'd" (C2r). The Aristotelian account of the elements' ability to transform into one another had long raised sticky questions about the existence of prime matter and the elements' elementariness. Seventeenth-century atomists like Walter Charleton did deny the primacy of the four elements by calling them "*Elementa Secundaria,* Elements Elementated, *i.e.* consisting of Atoms, as their First and Highest Principles".[9] Bradstreet's Air perceives her devaluation as a slight, berating "moderne wit" for its "bold[ness]". Yet her defence amounts to her asserting the authority of ancient "Sages" and the belittling of contemporary science; she provides no account of what she actually *is.* Fire, too, begins her speech by deferring the question of "what I am" to the authority of "learned *Grecians*", choosing instead to focus on what she "can doe" and the "benefit all Beings, by [her] finde" (B3v). This is characteristic of Bradstreet's style across "The Four Elements". Within the poem she shows little interest in philosophical argumentation to prove the elements' primacy, instead drawing on their contemporary ontological precarity as an impetus to imaginative intervention.

In this chapter, I argue that by tracing the paradoxical tension between the elements' experiential and conceptual availability, and yet "fayned" origins and structures, Bradstreet teases

---

[6] Anne Bradstreet, *The Tenth Muse Lately sprung up in America. Or several poems, compiled with a great variety of Wit and Learning, full of delight* (London: Stephen Bowtell, 1650), sig. B5r. All further references will be to this edition and referenced parenthetically by page signature.
[7] Margaret Olofson Thickstun, "Introduction", in *Poems and Meditations,* by Anne Bradstreet, ed. Margaret Olofson Thickstun (Toronto: Iter Press, 2019), 31.
[8] *OED*, "'to put out' in put (*v.*), sense 9.d", last modified September 2024, https://doi.org/10.1093/OED/1147896355.
[9] Charleton, *Physiologia,* sig. O2v.

from their shared poetic-philosophical heritage a vibrant and incendiary vision of an unpredictable and precarious world. She does so by partially returning to the "learned *Grecians*", Empedocles—the first philosopher in the Western tradition to posit the familiar four element system—and Aristotle, adapting and challenging their elemental philosophies in her quaternion form. And yet, Bradstreet's return is fundamentally mediated by "moderne wit", by the suspicion that the elements might just be "fayned". Bradstreet embraces the newfound doubt in elemental matter theory and cosmology to animate her poem into a state of openness and contingency, the crumbling of older systems providing the opportunity for the construction of new ones. It is thus precisely Bradstreet's belatedness that proves empowering, enabling her to embrace elemental uncertainty and turn it into a tool of worldmaking.[10] In Ramachandran's formulation, worldmaking encompasses the "methods by which early modern thinkers sought to imagine, shape, revise, control, and articulate dimensions of the world" that required "deft oscillation between local details and global frameworks and a reconfiguration of the particular against the universal. It was a task of metaphysical, and not just practical dimensions".[11] Bradstreet engages in just such a movement, identifying the elements as

> These same are they, of whom we being have,
> These are of all, the life, the nurse, the grave,
> …
> Of these consists, our bodyes, cloathes, and food,
> The world, the usefull, hurtfull, and the good:
> (B1r–v)

In arguing for her pre-eminence Air alone contends

> Nay, what are words, which doe reveale the mind?
> Speak, who, or what they will, they are but wind.
> Your Drums, your Trumpets, and your Organs sound,
> What is't? but forced Aire which must rebound,
> And such are Ecchoes, and report o'th gun
> Which tells afar, th' exployt which he hath done.
> Your songs and pleasant tunes, they are the same,
> And so's the notes which Nightingales do frame.
> Ye forging Smiths, if Bellowes once were gone;
> Your red hot work, more coldly would go on.
> Ye Mariners, tis I that fill your Sailes,
> And speed you to your Port, with wished gales.
> When burning heat, doth cause you faint, I coole,
> And when I smile, your Ocean's like a Poole.

[10] For Bradstreet's belated worldmaking see Samuel Fallon, "Lately Sprung up in America: Anne Bradstreet's Untimely Worldmaking", *Journal for Early Modern Cultural Studies* 18, no.4 (2018): 100–23.
[11] Ramachandran, *The Worldmakers*, 7.

I ripe the corne, I turne the grinding mill;
And with my selfe, I every vacuum fill.
(C1v)

Air is ever-present. She addresses natural philosophical questions around the medium of voice and sound (something I will return to in chapter 4) and the mechanism of "Ecchoes" that reveals Air's capacity to tell tales of soldier's "exployt[s]". She also broaches more metaphysical debates about the existence of "vacuum" or void. Air is professional, domestic and international; she is, perhaps, also mythological with the reference to "Nightingales" evoking the well-known story of Philomela told in Ovid's *Metamorphoses*. Bradstreet's "The Four Elements" roves indiscriminately between the material and abstract, the particular and universal, the physical, metaphysical and ethical in a vibrant encyclopaedic vision of elemental worldbuilding.

Bradstreet was potentially at both a geographical and temporal distance from the mid-seventeenth-century, English natural philosophical debates and poets I discuss in the following chapters. She was "Lately sprung up in AMERICA" (Title page), and while the poetry in *The Tenth Muse* is difficult to date with certainty, it was likely written after Bradstreet settled in the Massachusetts Bay Colony in 1630.[12] As the story commonly goes, Bradstreet's brother-in-law, John Woodbridge, carried a now lost manuscript of her poetry back to England in 1647 and had it printed in 1650, ostensibly without Bradstreet's permission.[13] Peter Auger highlights the danger of historicising Bradstreet's poetry too closely to its print date as threatening to dislocate her authorial agency in favour of the volume's compilers.[14] However, recent criticism has compellingly placed Bradstreet in a transatlantic context, particularly with regard to her republicanism, puritanism, millenarianism, and her "settler poetics" that sought to tie together New England and Old.[15] Early

[12] Some of the poems in *The Tenth Muse* are dated: her elegy for Philip Sidney (1638), her elegy for Du Bartas (1641), and "A Dialogue between Old England and New" (1642). Wright observes that some poems added to the posthumous *Several Poems* (1678) are dated earlier than those in *The Tenth Muse* including the earliest "Upon a Fit of Sickness, Anno. 1632", disrupting perceived binaries between Bradstreet's early "public" poetry and later "private" poetry. Bradstreet, *The Tenth Muse,* sig. N8r, sig. O2v, sig. N2v. Bradstreet, *Several Poems Compiled with great variety of Wit and Learning* (Boston: Printed by John Foster, 1678), sig. P7r; Wright, *Producing Women's Poetry,* 79.

[13] Thickstun, "Introduction", 1. See also, Wright, *Producing Women's Poetry,* 57–96. Bradstreet's apparent ignorance about the publication has been challenged by Patricia Pender, *Early Modern Women's Writing and the Rhetoric of Modesty* (Palgrave Macmillan, 2012), 149–70.

[14] Peter Auger, "Old England and New in Anne Bradstreet's Poetry", in *The Oxford Handbook of Early Modern Women's Writing in English,* 437– 49. For dilemmas around authorial agency see also, Sarah C.E. Ross and Elizabeth Scott-Baumann, "'Corrected by the Author': Women, Poetry, and Seventeenth-Century Print Publication", *Huntington Library Quarterly* 84, no.2 (2021): 353–81, esp. 363–70.

[15] Auger, "Old England and New", 441. Susan Wiseman, *Conspiracy and Virtue,* 179–209; Kate Chedgzoy, *Women's Writing in the British Atlantic World: Memory, Place and History, 1550–1770* (Cambridge: Cambridge University Press, 2007), 125–67; Catharine Gray, *Women Writers and Public Debate in 17th-Century Britain* (New York: Palgrave Macmillan, 2007), 143–81. For a nuanced reading of Bradstreet through the lens of settler colonial theory see Ana Schwartz, "Anne Bradstreet, Arsonist?", *New Literary History* 52, no.1 (2021): 119–43.

modern natural philosophy's imperial imperatives have long been observed, with Timothy Earl Miller convincingly arguing for the importance of the Hartlib circle's Baconian program in New England, particularly in the Massachusetts Bay Colony and Virginia.[16] This was a two-way exchange. Imperial expansion brought a huge range of flora and fauna previously unknown to Europeans that was enthusiastically catalogued, experimented on, and traded.[17] Later in the seventeenth-century, Hester Pulter includes new world animals like racoons (although the description seems to be of beavers) and moose in her emblems, going beyond her natural historical and emblematic antecedents by bringing these relatively recently 'discovered' species into her wider symbolic scheme.[18]

Written in America and printed in England, Bradstreet's poetry is part of this wider exchange. Bradstreet would have had access to Baconian texts, English translations of classical texts like Pliny's *Natural History* and Plutarch's *Moralia,* and natural philosophical poems like Ovid's *Metamorphoses* and Joshua Sylvester's translations of Du Bartas' *Divine Weeks and Works* (1604).[19] These texts are part of a common stock of knowledge that was also available to Hutchinson, Cavendish and Pulter. Furthermore, Bradstreet's poetry could have been known by them. *The Tenth Muse* is listed amongst numerous single-author poetry collections (including Cavendish's *Poems and Fancies*) in William London's *A Catalogue of the Most Vendible Books in London* (1658) and Bathsua Makin includes Bradstreet as an "excellent" poet in *An Essay to Revive the Antient Education of Gentlewomen* (1673).[20] Bradstreet's work was clearly known and read over twenty years after its publication. Less speculatively and more importantly, Bradstreet engages with the same vexing questions that reappear in natural philosophical works throughout the seventeenth century: Cavendish and Pulter both also confront the role of the four elements in the wake of the new philosophy, and Bradstreet's vitalist impulses potentially anticipate those of Cavendish. Putting Bradstreet in conversation with

[16] Timothy Earl Miller, "Gold for Secrets: The Hartlib Circle and the Early English Empire, 1630–1660 (PhD Thesis, University of Oxford, 2020), esp. 87–220. See also James Delbourgo and Nicholas Dew, "Introduction: The Far Side of the Ocean", in *Science and Empire in the Atlantic World,* ed. James Delbourgo and Nicholas Dew (New York: Routledge, 2008), 1–28; Anthony Grafton (with April Shelford and Nancy Siraisi), *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge, MA: The Belknap Press of Harvard University Press, 1995).

[17] See, for example, Kathryn Napier Gray, "Curiosities of the New World and John Winthrop, Jr.'s, Epistolary Visits to the Royal Society", in *Transatlantic Traffic and (Mis)Translations,* ed. Robin Peel and Daniel Maudlin (Durham, NH: University of New Hampshire Press, 2013), 23–43.

[18] Pulter, "Emblem 7", "Emblem 21" and "Emblem 27", in *Poems, Emblems, and The Unfortunate Florinda,* ed. Eardley, p.195, 213, 223; Elizabeth Kolkovich, "Raccoon or Beaver?" (Curation, Poem 86), in *The Pulter Project: Poet in the Making,* ed. Leah Knight and Wendy Wall (2018), http://pulterproject.northwestern.edu; Charlotte Newcombe, "Moose: Fact and Fiction" (Curation, Poem 92), in *The Pulter Project,* ed. Knight and Wall.

[19] Elizabeth Sauer, "Book Passages and the Reconstruction of the Bradstreet's New England Library", in *Women's Bookscapes in Early Modern Britain: Reading, Ownership, Circulation,* ed. Leah Knight, Micheline White and Elizabeth Sauer (Ann Arbor: University of Michigan Press, 2018), 59–76.

[20] William London, *A Catalogue of the Most Vendible Books in England, Orderly and Alphabetically Digested* (London, 1658), sig. 2E4v–F1r; Bathsua Makin, *An Essay to Revive the Antient Education of Gentlewomen* (London: Printed by J.D., 1673), sig. C2v.

the other writers in this thesis allows us to better understand her poetry as part of the seventeenth-century's intellectual flux and reclaims her place as a writer of natural philosophical verse.

The four elements are philosophically overdetermined, manifesting in diverse philosophical systems from the Empedoclean, to the Platonic, to the Aristotelian. They also have a rich poetic lineage, stretching from Empedocles who was a philosopher-poet, through to Ovid's eclectic cosmology in the *Metamorphoses* and hexameral creation poems such as the *Divine Weeks and Works*. The influence of Sylvester's translation of the *Divine Weeks and Works* on Bradstreet has been widely noted.[21] Two anagrams that preface *The Tenth Muse* rearrange Bradstreet's name (with some spelling liberties) into "Deer Neat *An Bartas*" and "Artes bred neat *Ann*" (A8v), finding a domestic tidiness and an indebtedness to Du Bartas embedded within her name. Bradstreet herself admits Du Bartas' influence in the process of denying it in her dedicatory poem to her father: "Some thing of all (though mean) I did intend, / But fear'd you'ld judge, one *Bartas* was my friend, / I honour him, but dare not wear his wealth" (B1v). The *Divine Weeks and Works,* particularly the first week, is a copious compendium of historical and natural philosophical knowledge structured around Genesis. Bradstreet's elegy to Du Bartas, also in *The Tenth Muse*, eulogises him for his extensive knowledge:

> Thy profound Learning; viewing other while
> Thy Art, in Naturall Philosophy:
> Thy Saint-like minde in grave Divinity,
> Thy peircing skill in high Astronomy,
> And curious in-sight in Anatomy;
> Thy Phisick, Musick, and State policy,
> Valour in War, in Peace good Husbandry.
> (O3r)

As noted in the "Introduction", Sarah C.E. Ross has identified the importance of biblical poetry, including Du Bartas, for women writers' "socio-political engagement", while Auger argues that recognising Du Bartas' massive influence in England and Scotland "allows us to hear early modern literary culture beyond the dominant voices of its most famous poets".[22] Bradstreet's elegy suggests Du Bartas' enabling function for other kinds of engagement, including the natural philosophical. Bradstreet may not have read Aristotle directly, but she certainly knew of the elements' Aristotelian qualities and the challenges such theories were coming under, both of which were available to her via Du Bartas. The elements were ubiquitous almost to the point of mundanity in the early modern

[21] See Adrienne Rich, "Anne Bradstreet and Her Poetry", in *The Works of Anne Bradstreet,* ed. Jeannine Hensley (1967; repri., Cambridge, MA: Harvard University Press, 2005), xi–xii; Ann Stanford, *Anne Bradstreet: The Worldly Puritan. An Introduction to Her Poetry* (New York: Burt Franklin and Co, 1974), 29–35; Auger, *Du Bartas' Legacy in England and Scotland,* 168–76.
[22] Ross, *Women, Poetry, and Politics*, 99; Auger, *Du Bartas' Legacy in England and Scotland*, 7.

period and Bradstreet draws on their messy transmission through philosophical and literary history to inform her account of their conceptual and material plenitude.

Bradstreet finds a value in elemental philosophy that challenges neat narratives of progression in the history of science. Modern environmental philosophers like David Macauley, and ecocritical scholars such as Jeffrey Jerome Cohen, Lowell Duckert and Steve Mentz also return to the elements, prizing their cultural and physical ubiquity. Defending "elemental philosophy" from anticipated accusations of anachronism, Macauley argues that the elements "are more concrete and less abstract than the often elusive and elastic notion of nature" and consequently that it is easier "to engage these entities with the senses and to experience them physically and viscerally and then, in turn, to know them intellectually".[23] Likewise, Cohen and Duckert observe that the elements, "smaller than gods and larger than atoms", exist at a "humanly knowable scale".[24] Mentz's account of *Shipwreck Modernity* draws the elements into discussions of early modern globalisation and colonisation, focusing specifically on water's oceanic role in a "global ecology in which all material things in the world—animals, plants, viruses, cultures—were distributed around the globe".[25] Like these critics, Bradstreet values the four elements' material and conceptual availability that allows them to be both tangibly and imaginatively felt.

The elements' accessibility makes them vibrant actors in the world. Recent new materialist and posthumanist criticism has begun to identify the vitality of Bradstreet's material world, particularly in poems like "Contemplations" (first published posthumously in *Several Poems* (1678)) where she encounters the world with "feeling knowledg".[26] I, too, locate the vitality of Bradstreet's matter, but focus on "The Four Elements" to argue that Bradstreet's vivacious elemental speakers capture the materialist panpsychism of Empedoclean philosophy. David Skrbina defines panpsychism as the idea that "all things have a mind or mind-like quality", noting widespread sympathies for panpsychism throughout the early modern period despite the rise of mechanist systems.[27] Similarly, John Rogers identifies what he calls the "Vitalist Moment" of the mid-seventeenth century, exactly

[23] Macauley, *Elemental Philosophy,* 4.
[24] Jeffrey Jerome Cohen and Lowell Duckert, "Introduction: Eleven Principles of the Elements", in *Elemental Ecocriticism: Thinking with Earth, Air, Water, and Fire,* eds. (Minneapolis: University of Minnesota Press, 2015), 7.
[25] Steve Mentz, *Shipwreck Modernity: Ecologies of Globalization, 1550–1719* (Minneapolis: University of Minnesota Press, 2015), 2.
[26] Bradstreet, *Several Poems,* sig. O7v. Joshua Bartlett, "Anne Bradstreet's Ecological Thought", *Women's Studies* 43, no.3 (2014): 290–304; Patricia Phillippy, "Anne Bradstreet's Family Plots: Puritanism, Humanism, Posthumanism", *Criticism* 62, no.1 (2020): 29–68; Benjamin Crawford, "The World after Eden: Spiritual Engagement and Environmental Awareness in Bradstreet", *Early Modern Women* 18, no.1 (2023): 133–41.
[27] David Skrbina, *Panpsychism in the West (Revised Edition*) (The MIT Press, 2017), 2, 77–119.

the period in which *The Tenth Muse* was printed.[28] He characterises vitalism as a spectrum of theories which "holds in its tamest manifestation the inseparability of body and soul, and in its boldest, the infusion of all material substance with the power of reason and self-motion" and finds evidence of this movement in the writings of Marvell, Milton and Cavendish amongst others.[29] Bradstreet's elements, following Empedoclean physics, are animated by the dual forces of amity and enmity, the order of the world coming to rest on the unpredictable whims of a highly emotional kind of matter. As such, we not only encounter Bradstreet's elements tangibly and sensorially, but also affectively.

Critics have struggled to reconcile Bradstreet's "great variety of Wit and Learning" that *The Tenth Muse*'s title page advertises, finding them to coexist uneasily in poems labelled rigid, flawed and imitative.[30] "The Four Elements" is the first of Bradstreet's four interlinked quaternions and is followed by "The Four Humours", "The Four Ages of Man" and "The Four Seasons of the Year".[31] These are encyclopaedic dialogue poems, quasi-political bragging matches, where personified speakers boast of their value in heroic couplets. Perhaps more than any other writer in this thesis, Bradstreet's poetic legacy has been troubled by the notion that her poetry hewed too closely to masculine literary tradition and lacked the subjectivity of true feminine experience, the poems' intellectual content conceived as irreconcilable with early modern femininity.[32] There is the further sense that this content stultifies the poetry. John Berryman is "appalled" at "all this bald / abstract didactic rime" in his "Homage to Mistress Bradstreet" (1953).[33] Adrienne Rich concurs, condemning the quaternions as "pedestrian, abstract, mechanical".[34] She argues that the quaternions "read like a commonplace book put into iambic couplets, the historical, scientific journal of a young woman with a taste for study".[35] Devaluing Bradstreet's *poiesis* into a mere "put[ting] into iambic couplets"

[28] Rogers, *The Matter of Revolution,* 1.
[29] Rogers, *The Matter of Revolution,* 1. See also Diane Kelsey McColley, *Poetry and Ecology in the Age of Milton and Marvell* (Aldershot: Ashgate, 2007).
[30] Elizabeth Wade White, "The Tenth Muse—A Tercentenary Appraisal of Anne Bradstreet", *The William and Mary Quarterly* 8, no.3 (1951): 361; Rosemary Laughlin, "Anne Bradstreet: Poet in Search of Form", *American Literature* 42, no.1 (1970): 2; Kenneth A. Requa, "Anne Bradstreet's Poetic Voices", *Early American Literature* 9, no.1 (1974): 6.
[31] In *The Tenth Muse,* the spelling of these titles is inconsistent between the titlepage, individual titles and running page headers. I have used the version of the titles that follows modern English.
[32] See, for example, White, "A Tercentenary Appraisal of Anne Bradstreet", 361; Rich, "Anne Bradstreet and Her Poetry", xvi–xix. See also Pender, "The Critical Fortunes of the Tenth Muse: Canonicity and Its Discontents".
[33] John Berryman, "Homage to Mistress Bradstreet", *Collected Poems 1937–1971,* ed. Charles Thornbury (London: Faber and Faber, 1990), 135.
[34] Rich, "Anne Bradstreet and Her Poetry", xii.
[35] Rich, "Anne Bradstreet and Her Poetry", xiii. Rich later reflected that the foreword "shows the limitations of a point of view which took masculine history and literature as its center". Rich, "Postscript", in *The Works of Anne Bradstreet,* xxi. See also, Marion Rust, "Making Emends: Adrienne Rich, Audre Lorde, Anne Bradstreet", *American Literature* 88, no.1 (2016): 93–125.

suggests both that nothing of aesthetic interest is to be found in Bradstreet's quaternions and her unmediated regurgitating of knowledge. More troublingly, it implies that poetic form has no reformative power over the information it contains. Jane Donahue Eberwein is more correct that the "quaternion format allowed [Bradstreet] to classify, integrate, and at times simply show off her wealth of information".[36]

Identifying Bradstreet's sophisticated understanding of poetic forms unlocks her witty, irreverent and deconstructive approach to elemental philosophy. Critics have begun to note Bradstreet's formal ingenuity, particularly in her complex uses of dialogue's polyvocal potential for political ends.[37] I join this rich work that has recognised the political savvy of *The Tenth Muse*, as well as that which has reappraised Bradstreet's natural philosophical knowledge. Such analyses have focused on "The Four Humours" to reveal Bradstreet's transformational and critical approach to humoral medicine.[38] Tamara Harvey and Katharine Gillespie, in particular, have stressed the interconnectedness of scientific and political strains in Bradstreet's writing, especially regarding the patriarchal gender hierarchy that humoralism upholds and Bradstreet troubles.[39] I share with this work a sense of Bradstreet's canny deployment and adaptation of ancient and contemporary natural philosophical knowledge, but my focus differs in drawing on Bradstreet's engagement with matter theories rather than physiology. As such, I take "The Four Elements" as my focus with a view to understanding how the elemental dynamics of this poem at least partially inform the structural logics of the subsequent quaternions.

I argue that Bradstreet draws on the elements' rhetorical and poetic origins to forge an elemental philosophy from poetic form. In so doing, I build upon Sarkar's reclamation of "the imaginative dimensions of emergent scientific methods as components of a *literary* epistemology".[40] The four elements have always been poetic, something Bradstreet recognises and exploits in "The Four Elements". As seventeenth-century natural philosophers discredited elemental matter, its poetic

[36] Jane Donahue Eberwein, "The 'Unrefined-Ore' of Anne Bradstreet's Quaternions", *Early American Literature* 9, no.1 (1974): 19.
[37] Tamara Harvey, "'Now Sisters… Impart Your Usefulnesse, and Force': Anne Bradstreet's Feminist Functionalism in *The Tenth Muse* (1650)", *Early American Literature* 35, no.1 (2000): 5–28; Patricia Pender, "Disciplining the Imperial Mother: Anne Bradstreet's *A Dialogue Between Old England and New*", in *Women's Writing 1550–1750,* eds. Jo Wallwark and Paul Salzman (Melbourne: Meridian, 2001), 115–31; Kate Chedgzoy, *Women's Writing in the British Atlantic World: Memory, Place and History 1550–1770* (Cambridge: Cambridge University Press, 2007), 129. See also Louisa Hall, "The Influence of Anne Bradstreet's Innovative Errors", *Early American Literature* 48, no.1 (2013): 1–27.
[38] Branka Arsić, "Brain-Ache: Anne Bradstreet on Sensing", *English Literature History* 80, no.4 (2013): 1009–1043; Lucas Hardy, "No Cure: Anne Bradstreet's Frenzied Brain", *Women's Studies* 43, no.3 (2014): 318–331.
[39] Harvey, "Anne Bradstreet's Feminist Functionalism", 5–28; Katharine Gillespie, *Women Writing the English Republic 1623–1681* (Cambridge: Cambridge University Press, 2017), 194–241.
[40] Sarkar, *Possible Knowledge,* 5.

and rhetorical forms—the antitheses that defined their Aristotelian relations and the personification that facilitates Empedoclean vitalism—came into sharper relief. These are not natural philosophical theories *of* form, but they are nonetheless forms embedded in elemental philosophy. Bradstreet embraces the elements' poetic potential and finds the form of her quaternion in their dual material-discursive horizons. Bradstreet's natural philosophical sophistication emerges from her formal reworking of elemental matter, recognising the elements' ontological precarity as an opportunity to deconstruct traditional hierarchical models and reconstruct them into alternate orders. I also, therefore, draw on Caroline Levine's account of hierarchies as forms that arrange material asymmetrically.[41] Although she focuses on literary and social forms, hierarchical forms are also an important natural philosophical concept. Crucially, Levine contends that when multiple hierarchies "collide, they are capable of generating more disorder than order".[42] In "The Four Elements" Bradstreet sets natural philosophical, social and literary forms to work, recognising the potential of these forms to both bolster each other—as is the case for antithesis and the quaternion form—but also disorder each other—as when she uses the openness of her dialogue form to disorder traditional, teleological elemental hierarchies. Bradstreet's personification pulls in both directions, energising her elemental system and cementing her undermining of hierarchies.

This chapter has three parts. In the first, I argue that Bradstreet finds the impetus for the debate form of "The Four Elements" from the elements' antitheses. The elements serve as a prompt for the gathering of *res* and as the quaternion's structural scaffold. In the next section, I show that Bradstreet deconstructs the overlapping cosmological and social hierarchies of elemental philosophy with her dialogue form. Bradstreet deliberately exposes the mechanisms that structure dialogue poetry by having the elements debate their speaking order. The result is that the quaternions' structures are agitated into a perpetually unsettled state, their final form only one possible order amongst many. In "The Four Elements" in particular, Bradstreet refuses to conclude the debate, creating a sophisticated and highly structured account of elemental disorder. Overall, the dialogue structure of "The Four Elements" creates an elemental system of openness, contingency and irregularity. In the final part of the chapter, I turn to Bradstreet's personification as the animating force behind "The Four Elements" that reimagines the relationship between humanity and world in more equal fashion. Ultimately, Bradstreet's reconstruction of elemental philosophy reveals the world to be inherently unpredictable.

[41] Levine, *Forms,* 82.
[42] Levine, *Forms*, 85.

Antithesis: Elemental Order

Bradstreet's elements take inspiration from the Aristotelian tradition. Aristotle defines the four elements by their possession of two of four qualities: fire is hot and dry; air is hot and moist; water, cold and moist; and earth, cold and dry. These elements are fundamentally *formed,* possessing qualities rather than being defined by their shape, size or extension. Bradstreet draws on these definitions in the dedicatory poem "To her Most Honoured Father *Thomas Dudley* Esq" that introduces the first two quaternions.[43] She identifies the elements as "the hot, the cold, the moist, the dry" (B1r). A further key tenet of the Aristotelian account of the four elements was that they could change into one another, and this too is found in "The Four Elements" when Air claims "when I'm throughly [sic] rarifi'd, turn fire. / So when I am condens'd, *I* turne to water" (C2r).[44] Although Air suggests that this is a special feature of her nature, all of the elements have this ability in Aristotelian natural philosophy.

By the time Bradstreet was writing "The Four Elements", the elements' existence as elements—as the basic underlying material principle—had been rigorously questioned. As mentioned previously, Bacon asserts that the "Element of Fire" was "fayned", moving it into the realm of "fictions and fantasies" that have been erroneously "brought into naturall Philosophie".[45] He expands his critique in the *Novum Organum* (1620), giving the four elements as an example of an Idol of the Tribe, an error that arises from human nature: "The human intellect is constitutionally prone to supposing that there is more order and equality in things [rebus] than it actually finds [inuenit]… Hence the element of fire with its orb is brought in to make up a quaternion [quaternionem] with the other three which sense detects".[46] Bacon frequently criticises Aristotle for contaminating his natural philosophy "with Logicke" and argues that dialectical demonstrations as traditionally practised "work so as virtually to enslave and surrender the world to human thought, and human thought to words".[47] His "inuenit" gestures towards *inventio,* the rhetorical canon for discovering subject matter that had been partially co-opted by logic during the sixteenth- and early seventeenth-centuries.[48] Here, Bacon's "inuenit" is directed outwards towards the matter or *res* of the world that is then distorted by the "human intellect" such that the unobserved fiery sphere is

[43] Although positioned as an introduction to all four quaternions, in 1650 the poem only refers to the first two quaternions on the elements and humours.
[44] Aristotle, "On Coming-to-be and Passing Away", in *On Sophistical Refutations. On Coming-to-be and Passing Away. On the Cosmos,* trans. E.S. Forster and D.J. Furley (Cambridge, MA: Harvard University Press, 1955), II.4.
[45] Bacon, *The Advancement of Learning,* 116.
[46] Bacon, *Novum Organum,* 82–83.
[47] Bacon, *The Advancement of Learning,* 30; Bacon, *Novum Organum,* 109, see also 89, 99.
[48] See Katrin Ettenhuber, *The Logical Renaissance: Literature, Cognition, and Argument, 1479–1630* (Oxford: Oxford University Press, 2023), esp. 40–48.

feigned to accompany the other elements which can be sensed. Bacon makes this aspect of his criticism explicit when he also gives elementary fire as an Idol of the Market, those things that have "slipped into the intellect through the alliance of words and names… For men believe their reason rules words but it also happens that words turn and bend *their* power back upon the intellect".[49] The "element of fire" is an example of "names of things which do not exist", "names which through flights of fancy lack an object".[50] Elemental fire exists only nominally, or conventionally. Bacon tends to distinguish what he thinks of as true invention, the discovery of previously unknown knowledge, from rhetorical or logical invention that only "recouer[s] or resu*m*mon[s] that which wee alreadie knowe".[51] But this criticism is in tension with logic and rhetoric's power to distort the world. With fire, logic and rhetoric are not only *maintaining* the false existence of fire as something which "wee alreadie knowe", but words have turned their power "back upon the intellect", colluding with "human intellect", to create elemental fire. Invention as discovery shades into invention as making, *inventio* into "fancy". Elemental fire is logically or, perhaps worse, rhetorically derived rather than empirically observed.

Although Bacon's claims are polemical, Aristotle did partially derive the four elements logically, specifically through antitheses. Definitions of antithesis vary across ancient, classical and early modern sources, but it generally involves a pair of opposites that are put into relation.[52] Colleen Ruth Rosenfeld charts antithesis' contested role in early modern logic and rhetoric as both a place of *inventio* and a figure of *elocutio*, an argumentative prompt and stylistic figure, operating at the level of *res* as well as *verba*.[53] This is not only an early modern phenomenon, and Jeanne Fahnestock observes that Aristotle evokes antithesis in his rhetorical and his logical works where it acts as a prompt for "potential premise generation".[54] This is precisely how Aristotle generates his theory of the four elements from the four fundamental, tangible qualities of hot, cold, moist and dry in *On Generation and Corruption.*[55] He argues that these four qualities can be combined into six mathematically possible pairs (hot-cold; hot-moist; hot-dry; cold-moist; cold-dry; moist-dry), but two of these pairs (hot-cold and moist-dry) are discounted as impossible because nothing can be absolutely hot and cold, or moist and dry simultaneously.[56] As only four pairs are logically, and hence

[49] Bacon, *Novum Organum,* 93.
[50] Bacon, *Novum Organum,* 93–95.
[51] Bacon, *The Advancement of Learning,* 111.
[52] See Jeanne Fahnestock, *Rhetorical Figures in Science* (New York: Oxford University Press, 1999), 45–58.
[53] Rosenfeld, *Indecorous Thinking,* 124–27.
[54] Fahnestock, *Rhetorical Figures in Science,* 53.
[55] Hot, cold, moist and dry are primary qualities because they are tangible, because other tangible qualities (e.g. viscous and brittle) can be derived from them, and because they cannot be derived from each other (e.g. heat cannot cause moist or dry). Aristotle, "On Coming-to-be and Passing Away", II.2.
[56] Aristotle, "On Coming-to-be and Passing Away", II.3.330a30–330b21.

physically, possible, Aristotle posits four elements, one for each pair. Following Aristotle's method, the existence of the other three elements necessitates the existence of fire as an element to account for the hot-dry combination; in Bacon's words, fire is "brought in to make up a quaternion". Logical deduction impinges upon and dictates what is deemed naturally possible. Rosenfeld's insight that figures of speech "organize imaginary worlds along peculiar axes of relation that amount to the physical laws of their universes" is particularly suggestive of antithesis' role in elemental philosophy.[57] However, identifying the foundational influence of antithesis in elemental philosophy suggests the rogue power of rhetorical figures to not only become the "physical laws" of "imaginary worlds", but our own world.

Bradstreet discovers dramatic potential in the four elements' antithetical qualities, making them into the "physical laws" of "The Four Elements". In Bradstreet's list of qualities "the hot, the cold, the moist, the dry", she explicitly arranges them into antithetical pairs, something that comes into greater relief when she states her intended purpose to show "How hot, and dry, contend with moist, and cold, / How Aire, and Earth, no correspondence hold" (B1v). Antithesis is often accompanied by the figure of isocolon, a structural parallelism of similar length clauses that heightens antitheses' contrasts.[58] Bradstreet uses antithesis and isocolon to place the elements into antagonistic relation. By grouping "hot, and dry" and "moist, and cold", Bradstreet not only expresses the opposition between these contrary qualities, but also evokes the opposing elements defined by these qualities; fire (hot and dry) and water (cold and moist) possess no qualities in common and are entirely antithetical. The anaphora of "How" also draws "Aire, and Earth", two further entirely antithetical elements who hold "no correspondence", into this parallel structure. Identifying that Fire and Water, and Air and Earth have "no correspondence" blurs natural philosophical understandings of "correspondence" as similarity or sympathy with the more interpersonal sense of communication.[59] Unable to agree, these antithetical elements can only "contend" against one another, a verb that teeters on the edge of elemental agency.

Elemental philosophy thus provides Bradstreet with the debate form of "The Four Elements". The poem begins *in medias res,* thrusting the reader into a world of elemental conflict:

> Fire, Aire, Earth, and Water did all contest
> which was the strongest, noblest, & the best,
> (B3r)

[57] Rosenfeld, *Indecorous Thinking,* 7.
[58] Fahnestock, *Rhetorical Figures in Science,* 49–51; Rosenfeld, *Indecorous Thinking,* 123.
[59] *OED,* "correspondence (*n.*)", last modified July 2023, https://doi.org/10.1093/OED/9344766064, senses 2a, 3 and 5.

Bradstreet's list of elements interjects a subtle elemental jarring into the line by disrupting the iambic rhythm. In the further three quaternions, debates take place on a "stage" (D5r) where the speakers either "step up" (C3r) or the narrator "bring[s them] on" (E4v). In contrast, "The Four Elements" begins with no indication of spatial or temporal position. Although the verb phrase "did… contest" locates the elements' debate in an unknown past, the temporal ambiguity makes their competition less atemporal than omnitemporal. For Bradstreet's elements, "contest" is a constant state, a "physical law" created by their antithetical relations. Crucially, Bradstreet calls this initial state of competition "this amity" only a few lines later (B3r). The initial metrical irregularity is balanced by the regular iambic rhythm of the second line and rhymes, both line-end and internal, between "contest", "strongest", "noblest" and "best" that harmonises the competition. As a "physical law" this "contest" still generates order, rather than disorder.

As a place of *inventio*, elemental antithesis also generates the poem's *res*. In *The Art of English Poesy* (1589) George Puttenham personifies what he terms "*antitheton*" as "the Quarreler, for so be all such persons as delight in taking the contrary part of whatsoever shall be spoken".[60] Characterised as a figure "fit for amplification", less a figure of speech than a copious principle of arguing *in utrumque partes*, antithesis provides Bradstreet with her method of argumentation by sheer accumulation of evidence.[61] This is apparent at the beginning of Fire's speech, which is inspired by Sylvester's translation of Du Bartas' *Divine Weeks and Works.* When the first week of the *Divine Weeks* was first printed in 1578, and Sylvester's translation in 1605, the elements (particularly fire) were already coming into philosophical disrepute. Du Bartas disparages those who disregard fire:

> Yet some, more crediting their eies, then Reason;
> From's proper place this Essence doo disseasin;
> And vainly strive, after their Fancies sway,
> To cut the World's best Element away,
> The nimble, light, bright-flaming, heat-full Fire,
> Fountaine of life, Smith, Founder, Purifier,
> Cooke, Surgian, Soldier, Gunner, Alchimist,
> The source of Motion, briefely, what not is't?
> Apt for all, acting all; whose armes embrace,
> Under Heav'ns armes, this Universall Masse.[62]

As Susan Snyder notes, "crediting their eies" alludes to the role of optics and astronomers in disproving the existence of a sublunar fiery sphere, something Bacon, too, suggests when he claims

[60] Puttenham, *The Art of English Poesy,* 295.
[61] Puttenham, *The Art of English Poesy,* 295.
[62] Guillaume de Salluste Du Bartas, *The Divine Weeks and Works of Guillaume de Saluste, Sieur du Bartas, Volume 1,* trans. Joshua Sylvester, ed. Susan Snyder (Oxford: Oxford University Press, 1979), 1.2.963–72. All further quotations are to this edition and cited parenthetically by week, day and line number.

that the fiery sphere is not available to the senses.[63] Bradstreet directly responds to Du Bartas, massively expanding upon his lines:

> What is my worth (both ye) and all things know,
> Where little is, I can but little show,
> But what I am, let learned *Grecians* say;
> What I can doe, well skill'd Mechanicks may,
> The benefit all Beings, by me finde;
> Come first ye Artists, and declare your minde.
> What toole was every fram'd, but by my might;
> O Martialist! what weapon for your fight?
> To try your valour by, but it must feele
> My force? your sword, your Pike, your flint and steele,
> Your Cannon's bootlesse, and your powder too
> Without mine ayd, alas, what can they doe?
> The adverse wall's not shak'd, the Mine's not blowne,
> And in despight the City keeps her owne,
> But I with one Granado, or Petard,
> Set ope those gates, that 'fore so strong was barr'd,
> Ye Husband-men, your coulter's made by me,
> Your shares, your mattocks, and what e're you see,
> Subdue the earth, and fit it for your graine,
> That so in time it might requite your paine;
> Though strong limb'd *Vulcan* forg'd it by his skill,
> I make it flexible unto his will.
> Ye Cooks, your kitchin implements I fram'd,
> Your spits, pots, jacks, what else I need not name,
> your dainty food I wholesome make, I warme
> Your shrinking limbs, which winters cold doth harme;
> Ye Paracelsians too, in vaine's your skil
> In chymestry, unlesse I help you Stil,
> And you Philosophers, if ere you made
> A transmutation, it was through mine aide.
> Ye Silver-smiths, your ure I do refine,
> What mingled lay with earth, I cause to shine.
> (B3v–B4r)

Auger argues that the copious, encyclopaedic nature of the *Divine Weeks and Works* "invited poets to add to" it.[64] Bradstreet accepts this invitation, expanding Du Bartas' list of "Smith, Founder, Purifier / Cooke, Surgian, Soldier, Gunner, Alchimist" into over twenty-five lines of verse. While Du

[63] Susan Snyder, *The Divine Weeks and Works of Guillaume de Saluste, Sieur du Bartas, Volume 2,* trans. Joshua Sylvester, ed. Susan Snyder (Oxford: Oxford University Press, 1979), 1.2.963n.
[64] Auger, *Du Bartas' Legacy,* 16. See also, Abigail Shinn and Angus Vine, "Introduction: Theorizing Copiousness", *Renaissance Studies* 28, no.2 (2014): 178.

Bartas suggests that fire's elementariness might only be accessible to "Reason" rather than "eies", the catalogue of professions does suggest fire's experiential quality. Bradstreet utilises this further. Whereas Du Bartas personifies fire as these professions, Bradstreet's Fire argues that "Martialists", "Husband-men", "*Vulcan*", "Cooks", "Paracelsians", "Philosophers" and "Silver-smiths" would be lost without her "ayd". This difference draws fire into the material world and makes her qualities self-evident to these experts. Bradstreet further expands Du Bartas by nesting lists within lists of even more specific examples: Du Bartas names fire a "Cooke", while Bradstreet makes "Cooks" Fire's witnesses of her usefulness in framing their "implements" including "spits, pots, jacks" (another list); in cooking "dainty food"; and in warming "shrinking limbs". Bartasian fire *is* a "Soldier" and "Gunner", whereas Bradstreet's "Martialist[s]" are powerless without a stocked arsenal of weapons: "sword", "Pike", "flint and steele", "Cannon", "powder", "Mine", "Granado" and "Petard". Bradstreet's storehouse of material examples takes on the weight of practical observation, her Bartasian *res* combining with the *res* of the world.

Bradstreet's elements are intuitively experiential and unremittingly bookish. Across "The Four Elements", her copiousness makes the elements both discursive and material in an encyclopaedic distortion of the Baconian inductive method. Throughout the poem, wider categories are rarely left un-itemised. Continuing with Fire, Etna and Vesuvius are given for volcanoes, and Ninevah, "*Troy*", "*Carthage*", "*Zion*", "*Diana*'s Temple" and "*Sodome*" as examples of places destroyed by fire (B4v–B5r). The other elements catalogue various animals as belonging to them (land animals for Earth, fish for Water, and birds for Air), and Fire anticipates this by naming "*Sal'manders*" and the "*Pyrausta*" (B4r), a mythical insect capable of resisting fire. Bradstreet's source is likely Philemon Holland's translation of Pliny's *Natural History,* printed as *The Historie of the World* (1601), where the "Pyrausta" is described as "engendered" within the element of "fire".[65] Early modern natural histories, including those inspired by Pliny like Edward Topsell's *History of Four-Footed Beasts* (1607) and *History of Serpents* (1608), roved well beyond the natural world in describing animals, with Tospell advertising the *History of Serpents* as containing "their diuine, naturall, and morall descriptions… collected out of divine scriptures, fathers, phylosophers, physitians, and poets, amplified with sundry accidentall histories, hierogliphicks, epigrams, emblems, and aenigmaticall obseruations".[66] As such, Bradstreet's mention of the salamander need not necessarily suggest a belief in their fire-resistance or in the case of the pyrausta its existence; Bradstreet has Earth claim lions, panthers and leopards, but also the biblical "Behemoth" and, with a note of scepticism, the

[65] Pliny, *The Historie of the World. Commonly called, the Natvrall Historie of C. Plinivs Secvundvs,* trans. Philemon Holland (London: Printed by Adam Islip, 1601), Volume 1, Book 11, chapter xxxvi, sig. 2F3v.
[66] Edward Topsell, *The Historie of Serpents, or, the second booke of liuing creatures* (London: Printed by William Jaggard, 1608), title page.

"rare found Unicorne" (B5v). Returning to Fire, Pliny's observation that salamanders are "marked with spots like to stars", may inspire Bradstreet's subsequent playful employment of astrology to Fire's cause: "Yet men and beasts, Astronomers can tell, / Fixed in heavenly constellations dwell" (B4r).[67] The stars and planets are reimagined as fiery creatures, with Bradstreet cataloguing no fewer than twenty-four different "constellations" including "The Ram, the Bull, the Lyon, and the Beagle; / The Bear, the Goate, the Raven, and the Eagle" (B4r). Bradstreet's copious collecting of particulars grabs indiscriminately at the mythical, poetic, biblical, historical, geographical and astronomical, giving the elements a curious ontological texture. Found in both word and world, past and present, globally and celestially, Bradstreet exploits the elements' widespread availability to span multiple moods of possibility.

Consequently, Bradstreet employs the elements' conceptual flexibility not only as a topic of copious invention, but as an ordering principle. Claire Preston observes that the new philosophical focus on the abundance of particulars brought with it an intendant anxiety about "description and naming" that "threatens an atomic, random, and disorganized differentiation of natural features, a lexical but also a philosophical difficulty".[68] As Preston notes the discovery of new things necessitated the concomitant invention of new words, and she argues that seventeenth-century natural philosophers found a solution to the endless atomisation of *res* and *verba* partly in neologisms, but also in analogous descriptions and compound adjectives that drew things into comparative relation.[69] Bradstreet addresses the same problem by using the elements' conventional existence to organise her abundant examples. As concepts, the elements function as universals that can group particulars of various ontological valences. To this end, the speech prefixes that precede each elements' speech function similarly to commonplace book headings, the poem broken into distinct sections or stanzas that maintain order. Against the atomising of knowledge, Bradstreet offers knowledge's more manageable *elementising.*

The elements' speeches are further ordered by their antithetical division into their "good, and then their rage" (B1v). Bradstreet establishes this structure in "To Her Most Honoured Father", and again at the beginning of "The Four Elements" where "Who the most good could shew, & who most rage" (B3r) is offered as part of the competition's evaluative criteria. Fire concludes her opening speech by offering hers as a model, commanding the subsequent speakers to "pray proceed, each in her course, / As I: impart your usefulnesse, and force" (B5r). Of the above examples taken from Fire's

[67] Pliny, *The Historie of the World,* Volume 1, Book 10, chapter lxvii, sig. 2D3r.
[68] Claire Preston, "'Meer nomenclature' and the Description of Order in *The Garden of Cyrus*", *Renaissance Studies* 28, no.2 (2014): 307–08.
[69] Preston, "'Meer nomenclature'", 308.

speech, the various professions and constellations demonstrate her "good" or "usefulnesse" in the first half of her speech, while the destruction of the various cities falls into her "rage" or "force". The volcanoes act as a hinge, first offered as one of Fire's "wonders", before Fire acknowledges that "*Vesuvius*… / The over-curious second *Pliny* slew" (B4v). The turning point is more rigidly maintained in the next two speeches. Earth begins with her "wealth and use" (B5r) before indicating her switch to "shew [her] adverse quality" because Fire's "method is [her] imitation" (B6v), while Water also advertises the change: "These be my benefits which may suffice: / I now must shew what force there in me lyes" (B8v). Water's statement that she "*must* shew" (my emphasis) her "force" rings out with the power of a rhetorical physical law. Even Air, the element presented as the least combative, concludes her speech by bragging "what's their worth, or force, but more's in me" (C2v). Just as the elements themselves act as argumentative stimuli, these antithetical categories prompt Bradstreet into copious argument and organise that argument into cohesive parts. The maintenance of this parallel structure throughout each of the elements' speeches (first their good qualities, and then their bad) evokes a large-scale, stanza-length isocolon that emphasises these structural antitheses. By exposing the quaternion's rhetorical scaffold through the repeated allusions to this structure, Bradstreet also gestures towards her sophisticated understanding of rhetoric and debate.

While for Bacon the elements might only have a nominal rather than elemental existence, for Bradstreet this makes them no less material. Bradstreet's elements are both experiential, particular and physical, as well as conceptual, universal and metaphysical. In "The Four Elements", Bradstreet uses the elements' dual discursive-material possibilities for expansiveness and for order, finding in elemental philosophy and its rhetorical and logical forms the *res* and *verba* of her poem. The sense that the elements might be simultaneously found and made (invention in its two aspects) acts as a spur for imaginative and poetic intervention. In this section, I have shown this intervention to be essentially one of poetic order, where natural philosophical and poetic matter and form align. However, in the next section I will demonstrate how Bradstreet deconstructs elemental matter's constructed forms to disorderly effect.

Hierarchy and Debate: Elemental Disorder

"The Four Elements" is not simply a long poem divided into elemental stanzas, but a dialogue or debate poem. Virginia Cox argues that the self-conscious staging of communication that dialogues afford reflects a "crisis in communication" that "may be epistemological or sociolinguistic, or a combination of the two: the breakdown of traditional certainties, a failure of confidence in the

concept of certainty itself, a major shift in the medium or audience of literary discourse".[70] It was not only at the microcosmic level that element philosophy was being challenged in the early modern period, but at the macrocosmic level where the scrutinising of the Ptolemaic geocentric model also involved the undermining of the sublunar elemental spheres. Bradstreet embraces the breakdown of these "traditional certainties", using her dialogue form to agitate the traditionally neat sublunar model of the four elements into a state of openness and contingency. By highlighting the rhetorical construction of her dialogue, Bradstreet deconstructs elemental cosmology and refuses to naturalise or essentialise the social and gendered hierarchies it upheld.

Bradstreet's deconstruction of elemental order manifests in her consideration of speaking order. Despite the opening gambit of elemental competition, this was to have been a highly ordered and ultimately harmonious debate. However, this order breaks down:

> And in due order each [element] her turne should speake,
> But enmity this amity did breake:
> All would be cheife, and all scorn'd to be under,
> Whence issu'd raines, and winds, lightning and thunder;
> (B3r)

Bradstreet informs us of this prescriptive "due order" only for it to "breake" and, as I will show, never materialise in the poem. The phrase "due order" evokes the rhetorical concept of *decorum.* Rosenfeld observes that *decorum* operates according to a "logic that locates its authority in the construction of the natural world" because it seeks to align style (*verba*) with subject matter (*res*) and thus represent the world as it really is.[71] For Rosenfeld, *decorum* is never simply neutral, always upholding orthodox ideologies and hence amounting to a kind of political conservatism, or at least quietism.[72]

Bradstreet's "due order", therefore, likely references the sublunar elemental spheres. As well as defining the elements by their contrary qualities, Aristotle defined them by their natural tendency to move in a particular direction if unimpeded: earth is absolutely heavy and so tends to move downwards towards the centre of the universe, and fire is absolutely light and so moves upwards towards the circumference. Water and air are neither completely heavy nor light, although air is the lighter of the two. Consequently, the sublunar universe stratifies into concentric spheres where earth

[70] Virginia Cox, *The Renaissance Dialogue: Literary Dialogue in its Social and Political Contexts, Castiglione to Galileo* (Cambridge: Cambridge University Press, 1992), 7.
[71] Rosenfeld, *Indecorous Thinking,* 74.
[72] Rosenfeld, *Indecorous Thinking,* 6–7.

is inner/lowermost, followed by water, air and then fire when progressing outwards.[73] The introduction of weight into elemental philosophy brings with it a further antithesis between fire and earth, the light and the heavy. This stratification fundamentally rests on each element sharing one quality with the element(s) next to it: air, for instance, exists between fire and water because it shares "hot" with fire and "moist" with water. This factor lends an additional neatness to Aristotle's theory as the antithetical relationships and concentric spheres align with and bolster each other.

The tidiness of Aristotle's theory lent itself to accounts of divine creation. For Aristotle, topology was teleological, things striving towards their natural, proper place, and when Christianised, this teleology was read as evidence of God's divine plan.[74] A rich poetic tradition attests to this strand of elemental thinking. George Sandys' translation of Ovid's *Metamorphoses* begins with a (non-Christian) "God, the better Nature", ordering the elements from their initial chaos into stratified arrangement:

> With strifelesse peace He to their seats confin'd.
> Forth-with vp-sprung the quick and waightlesse Fire,
> Whose flames vnto the highest Arch aspire:
> The next, in leuitie and place, is Ayre:
> Grosse Elements to thicker Earth repayre
> Self-clog'd with waight: the Waters, flowing round,
> Possesse the last, and solid *Tellus* bound.[75]

The combination of divine will and the natural weighted movement of the elements bespeaks a view of nature ordered according to a plan. Du Bartas was undoubtedly influenced by Ovid's description in his *Divine Weeks and Works.* In Sylvester's translation, this elemental order emerges "Not casually, but so disposed fit / By him, who Nature in her kind to keepe, / Kept due proportion in his Workmanship" (1.2.310–12), the image developing into an interlinked chain:

> But all the Lincks of th'holy Chaine, which tethers
> The many Members of the World togethers,
> Are such, as none but onely he can breake-them,
> Who at the first did of meere nothing make them.
> Water, as arm'd with moisture and with cold,
> The cold-dry Earth with her one hand doth hold;
> With th'other th'Aire: The Aire, as moist and warme,

[73] Aristotle, *On the Heavens,* trans. W.K.C. Guthrie (Cambridge, MA: Harvard University Press, 1939), IV.4.311a15–b13. See also, Macauley, *Elemental Philosophy,* 186–92.
[74] See Kellie Robertson, *Nature Speaks: Medieval Literature and Aristotelian Philosophy* (Philadelphia: University of Pennsylvania Press, 2017), 45–46.
[75] G[eorge] S[andys], *Ovid's Metamophosis Englished* (London: [By William Stansby], 1626), sig. A1r–v.

Holds Fire with one; Water with th'other arme:
(1.2.319–26)

Du Bartas evokes the common idea of the Great Chain of Being or the *scala naturae,* where nature is divided into ascending degrees of being, beginning with the inanimate and raising up through plants, animals and humans all the way to God.[76]

This teleological model of elemental position was not a neutral weight-based stratification, but a potentially more insidious hierarchical system. As Carolyn Merchant argues, "[a] view of nature can be seen as a projection of human perceptions of self and society onto the cosmos. Conversely, theories about nature have historically been interpreted as containing implications about the way individuals or social groups behave or ought to behave".[77] Although any specific matter theory can be employed or interpreted in terms of diverse theological, political or social stances, the theory of the four elements lends itself to a hierarchical model where order is upheld by adherence to vertical position. Scholastic topology was not only teleological, but tropological. While the elemental stratification is anthropocentric because geocentric, earth is also fundamentally the lowliest element, the one from which God made human bodies and therefore the most inextricably corporeal, material and base.[78] Fire as the lightest element is the closest to Heaven and the most spiritual. Indeed, Aristotle associates fire with form and earth with matter.[79]

This hierarchy also has gendered dimensions. In the *Divine Weeks and Works* the elements are not personified consistently, but they are referred to as "twin-twins (two Sons, two Daughters) / To wit, the Fire, the Aire, the Earth, and Waters" (1.2.53–54). As Snyder observes, the gendering of the elements here is consistent with their grammatical gender in Latin, but also with orthodox hierarchies that place men (Fire and Air) above women (Water and Earth), a distinction that further maps onto gendered hierarchies where women were seen as more material and hence passive.[80] Levine observes the tendency for hierarchised binaries to overlap in mutually upholding ways.[81] In this case, heat, form, spirit and masculinity align to the detriment of cold, matter, and femininity in ways that became naturalised in humoral medicine where sexual difference is caused by the heat of the body. Bradstreet alludes to this idea in "The Four Humours" when Choler (the hot-dry humour) claims "What differences the Sex, but only heat?" (C5v). The link between these elemental and

[76] See Robertson, *Nature Speaks,* 55–60; Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (1936; repr., Cambridge, MA: Harvard University Press, 2001).
[77] Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins, 1990), 69.
[78] Shapin, *The Scientific Revolution,* 24.
[79] Aristotle, *On the Heavens,* IV.3.310b11–15; IV.4.312a13–21.
[80] Snyder, *Divine Weeks and Works, Vol. 2*, 2.53–54n.
[81] Levine, *Forms,* 83.

gendered hierarchies is therefore not only metaphorical or abstract but are naturalised and essentialised within physiology and medicine.

Bradstreet was aware of this hierarchical structure. She references it in "To her Most Honoured Father" when she describes the elements indirectly as those "That sinke, that swim, that fill, that upwards flye" (B1r), precisely arranging her list to mimic the largescale arrangement of the elements, proceeding upwards from earth to fire. Furthermore, her choice of verbs indicates a recognition of the importance of movement to the elemental system where heaviness and lightness are not quantified but defined by natural movement. She characterises earth precisely by its tendency to "sinke" and fire "upwards flye", while water and air are granted the more ambiguously, or multi-, directional movements of "swim[ming]" and "fill[ing]".

By affirming her knowledge of this "due order", only to break it, Bradstreet explicitly signals her rejection of this arrangement and its associated ideological hierarchies. As early modern astronomers gradually replaced the geocentric model with Copernican heliocentrism, the underlying physics and metaphysics of the elemental system became disrupted: if the earth is no longer central and fire no longer peripheral, then their prevailing Aristotelian definitions, weights and movements become unsettled. Bradstreet would have been aware of this from Du Bartas, who disparages Copernican astronomy (1.4.171–78) and maintains that fire is the "best Element" (1.2.966). Yet her imagination is invigorated by these crumbling systems. If Bacon is correct that elemental philosophy is "fayned", created by the regularising tendency of the human mind, then where does this leave the social hierarchies that elemental philosophy sustained? Levine identifies that literary and social forms "are equally real in their capacity to organize materials, and equally *un*real in being artificial contingent constraints".[82] Bradstreet recognises that if these hierarchies are "artificial, contingent constraints", "fayned" in Bacon's terminology, then they can be undone. By "break[ing]" the elements' "due order" Bradstreet enters the realm of the "indecorous" that Rosenfeld theorises as "an innovative act of evaluation" that "affirms neither traditional hierarchies of value nor the dominant ideological paradigms of the ruling class".[83] In Rosenfeld's theory, indecorum, in comparison to *decorum,* is fundamentally nonmimetic, forging fictive worlds that take the blatant artifice of figures of speech as their physical laws.[84] Throughout "The Four Elements", Bradstreet flaunts the artificiality and hence indecorum of her dialogue, highlighting not only the deft rhetorical

[82] Levine, *Forms*, 14.
[83] Rosenfeld, *Indecorous Thinking,* 80–81.
[84] Rosenfeld, *Indecorous Thinking,* 7.

construction of her poem, but also of elemental philosophy and its hierarchies, refusing to naturalise them.

Signalling the artificiality of these systems opens the possibility of their deconstruction. Firstly, Bradstreet de-essentialises the traditional gendered hierarchy by presenting all four elements as feminine. This in itself is not especially radical. However, as Alice Henton argues, Bradstreet frequently "restructures gender norms in a way that *highlights* the transgressive potential of her poetry" (my emphasis), indecorously drawing attention to her decision.[85] The second quaternion, "The Four Humours", begins with Choler acknowledging that both herself and her mother, Fire, are usually known as masculine:

> My self, and Mother [Fire], one as you shal see,
> But she in greater, I in lesse degree;
> We both once Masculines, the world doth know,
> Now Feminines (a while) for love we owe
> Unto your Sister-hood, which makes us tender
> Our noble selves, in a lesse noble Gender.
> (C3v)

Bradstreet's characteristically ironic approach to gender and literary tradition has been amply demonstrated.[86] She approaches Choler's speech in precisely this way. Choler only speaks first because of her "imperiosity" (C3v), the assertion of arrogance rendering her claim that her usual masculine form is more "noble" untrustworthy at best. Although Bradstreet's feminising of the humours and elements has been read as carving out a greater space for female agency and authority, in this instance Bradstreet's larger point is that the elements or humours are fundamentally *ungendered*.[87] Bradstreet's choice to have the world "know" Fire and Choler as "Masculines" indicates that this is a question of convention rather than necessity. The very possibility of becoming "Feminines (a while)" highlights the nonessential and performative nature of gender to allegorised personifications, particularly in the English language where these nouns do not have a grammatical gender. Indicating that the gendering of the personified elements (and humours) is only a matter of convention also enables Bradstreet to draw into question the hierarchical social structures that those

[85] Alice Henton, "'One Masculine… Now Feminines Awhile': Gendered Imagery and the Significance of Anne Bradstreet's *The Tenth Muse*", *The New England Quarterly* 85, no.2 (2012): 316.
[86] See, for example, Jane Donahue Eberwein, "'No Rhet'ric We Expect': Argumentation in Bradstreet's 'The Prologue'", *Early American Literature* 16, no.1 (1981): 19–26.
[87] Henton, "Gendered Imagery", 304; Gillespie, *Women Writing the English Republic,* 196–98. Harvey notes, alternately, Bradstreet has clearly "considered the lack of consistency between feminization of abstractions and the attribution of many of those abstractions primarily to men". Harvey, "Anne Bradstreet's Feminist Functionalism", 12.

personifications are both symptomatic of and uphold.[88] If as Merchant suggests, natural philosophical and societal models or, in Levine's terminology, forms, can be mutually sustaining, then by indecorously presenting the constructed nature of one, the other can be deconstructed.

In Bradstreet's careful staging of the debate over speaking order she further deconstructs elemental hierarchies. The decorous speaking order that "breake[s]" does so because all the elements "would be cheife, and all scorn'd to be under" (B3r). Bradstreet's adjective "cheife" is particularly telling, taking on multiple overlapping but distinct meanings. Firstly, in terms of elemental cosmology, the topological association of "cheife" with being above or highest, as opposed to "under", suggests that Bradstreet spurns the natural motion of the Aristotelian weight-based system that should render it impossible for elements other than fire to desire highest position. Bradstreet replaces this arrangement based on weight with a political struggle where each element desires more influence or importance than the other three, a second sense of "cheife". The third sense of "cheife" gestures towards the dialogue form of "The Four Elements", indicating the elements' desire to speak first in the debate. The political hierarchy of importance comes into destabilising collision with the poetic form of the debate. The debate over speaking order breaks out precisely because Bradstreet has the elements conflate speaking first ("cheife" in the third sense) with being the most important or powerful element ("cheife" in the second sense). However, these forms are not mutually sustaining. The nature of a dialogue means that the final speaker's view is left uncontested and is foremost in the reader's mind upon finishing the poem. Particularly in a poem such as "The Four Elements" where each element only speaks once and so no rebuttals occur, this leaves the first speaker most distant from the reader's memory and means their own argument has been undercut by the three subsequent speakers. If the elements were astute readers of poetry, or astute orators, they should desire to speak last, not first. Instead, they fundamentally misunderstand the affordances of the dialogue form in which their debate is to take place. Bradstreet, on the other hand, understands that the hierarchy of elemental importance is negatively correlated to speaking order.

Bradstreet uses the disordering collision of these hierarchies to destabilise and deconstruct the structures of elemental philosophy. She does not let the poem settle into an equally rigid hierarchy where the final speaker, Air, emerges as the victor. Rather, Bradstreet stages speaking order as continually under negotiation and contingent on factors other than the element's superiority. In an ironic nod to the usual supremacy of fire in elemental philosophy, Bradstreet has Fire speak first,

[88] Blake offers an opposing argument about "gynaecomorphism" in Cavendish's poetry. Blake, "After Life in Margaret Cavendish's Vitalist Posthumanism", *Criticism* 62, no.3 (2020): 449.

beginning her speech by haughtily referencing “What is my worth (both ye) and all things know” (B3v). Fire indicates a consensus among the other elements and all other “things”, presumably including the poem’s reader, but, once again, the verb “know” subversively suggests that this is conventional rather than natural. The poem’s third person narrator makes the real reason Fire speaks first abundantly clear: “That Fire should first begin, the rest consent, / Being the most impatient Element” (B3r). Against Fire’s assertion of her universally agreed supremacy, the narrative and elemental perspectives combine to “consent” that the one accolade Fire can unproblematically claim is “most impatient”, a superlative completely unconnected from the poem’s opening that declares the competition as an evaluation of who is “strongest, noblest, & best”. Bradstreet effectively creates a distance between the elements’ assertions of their importance and the order in which they speak.

Bradstreet repeats this strategy across “The Four Elements”, having every element misjudge the value of speaking next. Earth speaks second because, as the narrator tells us, “The next in place, Earth judg’d to be her due” (B5r). Water follows in sheer indignation at Earth’s “ingratitude” for not crediting her as the “Cause of [her] fruitfulnesse” (B7r), immediately undercutting Earth’s main argument that she is the most fruitful element (B5r). Even Air, the final speaker, begins her speech by claiming that she is “Content… to speake the last… / Though not through ignorance, first was my due” (C1r). Although Air’s reasonable approach, as well as her uncontradicted final position, give her claim to first place ostensibly more validity, the narrator never supports any of these claims independently and thus it is not clear that Air is any more of a reliable orator than the other elements. Moreover, Air’s insistence that “first was [her] due” reveals her misunderstanding of the dialogue form, again conflating speaking first with being the worthiest. Ultimately, Air’s patience grants her final speaking position, just as Fire’s impatience grants her the first, more than her judgment that this is the best position to be in.

Bradstreet stages similar debates around speaking order at the beginning of each of the elemental quaternions, exposing the rhetorical mechanisms behind their structures so their orders never become entirely essentialised. “The Four Humours” begins with a sixteen-line discussion about speaking order, with Choler eventually speaking first because of her “imperiosity” (C3v) and Flegme last because, like Air, she is “patient” (D3r). “The Four Ages of Man” proceeds, perhaps expectedly, in chronological order from Childhood to Old Age. However, the narrator informs us that this is only because Old Age “give[s] precedency” to Childhood (D5v). In “The Four Seasons” where their temporal cyclicity makes speaking order less clear cut, the narrator informs us that Spring will speak first because she “At present claim’d, and had priority” (E4v). The primary justification seems to be that “at present”, when the poem was being composed, it was spring, making her “priority” a matter of temporal coincidence external to the poem and debate, rather than intrinsic value. Furthermore,

although all the humours, ages and seasons claim relation to one of the elements, their ancestry also does not guarantee the inheritance of a certain speaking position, with each quaternion varying the speaking order according to its own internal logic: Fire and Choler, for instance, do both speak first, but Middle Age speaks third and Summer second; and, while Flegme speaks last and seems to 'win' the debate in "The Four Humours", her descendant Childhood speaks first.

By explicitly staging the negotiation of speaking order amongst the elements, Bradstreet removes the sense of a teleological design behind the final arrangement. By refusing to settle on one definitive arrangement, the reader is left with the impression that "The Four Elements" is only one possible outcome among many and that no definitive elemental hierarchy exists. Far from a divinely or naturally ordered golden chain, Bradstreet's quaternion more resembles Du Bartas' depiction of the original (Ovidian) elemental chaos:

> Earth, Aire, and Fire, were with the Water mixt,
> Water, Earth, Aire, within the Fire were fixt,
> Fire, Water, Earth, did in the Aire abide,
> Aire, Fire, and Water, in the Earth did hide.
> (1.1.257–60)

Sylvester's translation evokes intermixture via the various permutations of elemental order. Yet Du Bartas also informs us that other orders are not possible. He contends that if God had not placed air and water as intermediary umpires between fire and earth that their "brail" would "doubt-lesse" have "dis-Created All" (1.2.307–08). Notably, none of the alternatives listed in these four lines enact this two-part distance between fire and earth. These alternate orders represent abortive beginnings, the failure of elemental *self*-organisation to produce a coherent and harmonious universe. In Du Bartas' account, nature and the divine collude in establishing order. Bradstreet, on the other hand, leaves the elements to their own devices. When "enmity" breaks out over speaking order, the ensuing fight is figured in apocalyptic terms that seem to directly undo God's division of heaven, earth and waters in Genesis 1:4–10: "The sea did threat the heavens, the heavens the earth, / All looked like a Chaos" (B3r). Although Bradstreet's poems do have a fifth voice, a third-person narrator, this narrator never attempts to mediate or settle the debates. In fact, as I have shown, Bradstreet uses this disinterested and detached narrator as a source of further ironic destabilisation. If this voice is aligned with Bradstreet's authorial voice, it is a voice that refuses to accept responsibility for the poem's final arrangement, deliberately obfuscating a sense of intentional, authorial design. Yet, like Du Bartas' carefully ordered lists of elemental chaos, Bradstreet's "The Four Elements" is a highly skilful, structured display of elemental disorder that demonstrates her deft understanding of elemental and dialogue form.

Just as the question of correct speaking order remains open, the elements' power struggle is never settled and no victor ever emerges from the competition. Rosenfeld argues that the "perfect lesson in *antithesis* never ends", but this irresolution is also an affordance of dialogue form.[89] Cox distinguishes between dialogues that are "monologues in disguise" and those "genuinely dialectical" dialogues that posit "an open relationship between utterance and knowledge".[90] If we only read "The Four Elements" as a static encyclopaedia that divides and catalogues according to the elements, then it seems like a monologic foray. However, if we read "The Four Elements" as a dynamic debate among competing hierarchies of order then we can reinstate its "genuinely dialectical" character in refusing to settle elemental conflict into a particular arrangement.

This dynamism chimes with Angus Fletcher's observations about the power struggles that underlie allegorical systems:

> The mode is hierarchical in essence, owing not only to its use of traditional imageries which are arranged in systems of 'correspondences,' but furthermore because all hierarchies imply a chain of command, of *order* in the secondary sense that is meant when we say 'the general *ordered* his officers to command their *subordinates*.' Hierarchy is never simply a system giving people their 'proper place'; it goes further and tells them what their legitimate *powers* are… Allegories are far less often the dull systems that they are reputed to be than they are symbolic power struggles.[91]

In her deliberate obfuscation of authorial design and indecorous display of debates around speaking order, Bradstreet not only deconstructs the traditional elemental "systems of 'correspondences'" but also exposes the "symbolic power struggles" that underlie orthodox elemental philosophy, and the theological, social and gendered hierarchies it maintains. For Fletcher, personified allegorical figures are *kosmoi* in the original sense of *kosmos* as both the overarching universe and an ornamental aspect within the hierarchy of that overall universe.[92] An individual, allegorical image thus contributes to the overall system of the whole. Bradstreet never lets her elements settle and we can never be sure of their overall rank within the system. Ultimately, she may be presenting us with a chaos, rather than a cosmos.

Bradstreet's impulses, however, are not only towards the deconstructive, but also the reconstructive. The disorder that erupts from elemental "enmity" may look "like a Chaos" but it is also a "new birth" (B3r). The dismantling of the orthodox elemental hierarchies leaves open the

[89] Rosenfeld, *Indecorous Thinking,* 132.
[90] Cox, *The Renaissance Dialogue,* 2, 6.
[91] Angus Fletcher, *Allegory: The Theory of a Symbolic Mode,* rev. ed. (Princeton: Princeton University Press, 2012), 22–23.
[92] Fletcher, *Allegory,* 109, 69–146. See also Rosenfeld, 77–81.

possibility for an alternative system that not only levels the elements, but also the world more broadly. In the final section of the chapter, I turn to the alternative elemental system that emerges from "The Four Elements", expanding my analysis of the elements' antithetical and dialogic natures from not only their relationship with each other, but their relationship with humanity.

Personification: New Order

By recognising that elemental enmity can produce both "a Chaos, or new birth" Bradstreet identifies a generative potential in disorder. She finds this potential in Empedoclean vitalist physics that agitates the world into flux. Bradstreet continues her dismantling of orthodox hierarchies by extending the dual elemental forces of amity and enmity throughout the material world. Unlike the hierarchical motions of the Aristotelian elements, amity and enmity are fundamentally horizontal, and thus levelling, moods of relationality. She achieves this via personification. Bradstreet's personified elements teeter on the edge of a panpsychic or vitalist materialism. By focusing on the elements' (re)actions Bradstreet finds a passionate agency in matter that combines poetic conceit and natural philosophical cause. Many philosophers turn to a form of vitalism as a shield from mechanist determinism that nonetheless explains the regularity of the world through recourse to universal reason.[93] Bradstreet instead grants her matter a volatile emotional quality that explains the unpredictability of the material world.

Empedocles was the founder of the four element system. His writings only survive in fragments, but aspects of his natural philosophy were available in English in the early seventeenth-century in Philemon Holland's translation of Plutarch's *Philosophie commonlie called The Morals* (1603).[94] References to and fragments of Empedocles' philosophy are littered throughout, but especially in the section, now considered apocryphal, titled "The Opinions of Philosophers".[95] As the name suggests, this section includes numerous chapters summarising the opinions of philosophers such as Empedocles, Pythagoras, Plato, Aristotle, and Epicurus on a range of topics from "What is Nature?" to "Why Mules be barrain".[96] These philosophers' diverse opinions are listed textbook-like in their multiplicity, providing the perfect resource to gather information about multiple

[93] See Fallon, *Milton among the Philosophers,* 96–110.
[94] For Empedocles' early modern reception see, Sacvan Bercovitch, "Empedocles in the English Renaissance", *Studies in Philology* 65, no.1 (1968): 67–80.
[95] Philemon Holland, *The Philosophie, commonlie called,The Morals Written By the learned Philosopher Plutarch of Chaeronea. Translated out of Greeke into English and conferred with the Latine translations and the French, by Philemon Holland of Coventrie, Doctor in Physicke* (London: Printed by Arnold Hatfield, 1603), sig.3X5v. "The Opinion of Philosophers" is now considered an abridgement by a different Plutarch (referred to as pseudo-Plutarch) from a now lost text called *Placita* by Aetius. For a reconstruction of this text see Aetius, *Placita,* ed. and trans. Jaap Mansfeld and David T. Runia (Cambridge, MA: Harvard University Press, 2023).
[96] Holland, *The Morals,* sig. 3Y1r, sig. 4B2v.

philosophical traditions. In a lengthy chapter called "Of Principles or first beginnings, what they be", we are told that Empedocles believed that "There be foure elements, fire, aire, water, and earth; also two principall faculties or powers, namely, accord, and discord, or amitie and enmitie, of which, the one hath puissance to unite, and the other to dissolve".[97] The Empedoclean elements are animated by the two forces now more commonly referred to as Love and Strife. Empedocles theorised that if Love dominated, then all things would be inexorably drawn together into a homogenous mass; if Strife, then they would be forced apart and never meet.

The Empedoclean forces of Love and Strife are not mutually exclusive but exist in a *concordia discors* (or *discordia concors*) that energises the world into flux and change. A concept now most familiar from Samuel Johnson's famous characterisation of metaphysical wit, the term originally denoted a cosmology principle of unity in multiplicity, or order emerging from disorder that can be traced back to pre-Socratic philosophy.[98] Horace ponders, for example, "what is the meaning and what the effects of Nature's jarring harmony [concordia discors] whether Empedocles is doting or subtle Stertintius".[99] The evocation of Empedocles specifically suggests that elemental philosophy is a prime example of *concordia discors,* where dissimilar, jarring elements can be combined into an orderly unity. The oxymoronic phrasing of *concordia discors* perfectly evokes the dual forces of Love and Strife, amity and enmity. This is a kind of *concordia discors* in the most literal sense of Love and Strife acting simultaneously to produce the world.

Empedocles' personified universal forces of Love and Strife hint at the wider panpsychism of his system. Skrbina primarily identifies Empedocles' panpsychism from arguments in surviving fragments of his work.[100] While he concedes that the forces of Love and Strife are "clearly suggestive of [Empedocles'] belief that animate powers were at work in the cosmos", in general Skrbina remains suspicious of the philosophical value of personification, stressing that modern "discussions of the meaning of panpsychism should avoid the most anthropocentric terms".[101] Although he does not comment specifically on personification or anthropomorphism, his suggestion that words such as "consciousness", "soul", "cognition" and even "thought" might imply a too human-like quality of mind to be useful in a philosophically rigorous discussion of panpsychism is haunted by the idea that

[97] Holland, *The Morals,* sig.3Y2r-v.
[98] Samuel Johnson, "Cowley", in *The Lives of the Most Eminent English Poets: With Critical Observations on Their Works, Volume 1*, ed. Roger Lonsdale (Oxford: Oxford University Press, 2006), 200. For the origins of *discordia concors,* see Melissa C. Wanamaker, *Discordia Concors: The Wit of Metaphysical Poetry* (Port Washington, N.Y: Kennikat Press, 1975), 3–13.
[99] Horace, *Satires. Epistles. The Art of Poetry,* trans. H. Rushton Fairclough (Cambridge, MA: Harvard University Press, 1926), 328–29.
[100] Skrbina, *Panpsychism in the West,* 34–36.
[101] Skrbina, *Panpsychism in the West,* 34, 10.

these terms have a too powerful figurative capacity to project the human mind backwards onto the natural world, reducing all panpsychism into mere personification.[102]

Personification, however, was vital to Empedocles' natural philosophy. To quote Philip Sidney, Empedocles "sang [his] natural philosophy in verses" in a time when philosophers "durst not a long time appear to the world but under the masks of poets".[103] Writing when modern disciplinary boundaries were non-existent, Empedocles' philosophy is fundamentally poetic, and his figurative language should not be dismissed as ornamental. A fragment of Empedocles' verse in translation is included in Holland's translation of *The Morals*:

> Foure seeds and rootes of all things that you see,
> Now listen first, and hearken what they be:
> Lord *Jupiter* with his ignipotence,
> And lady *Junoes* vitall influence,
> Rich *Pluto,* and dame *Nestis* weeping ay,
> Who with her teares, our seed-sourse weets alway.[104]

Despite Empedocles' promise to introduce us to the elements, or "roots" as he calls them, the absence of the elements *per se* is immediately apparent. Rather, they are only present as personified deities. The text helpfully interprets the fragment as "By *Jupiter* hee meaneth fierie heat, and ardent skie; by *Juno* giving life, the aire; by *Pluto,* the earth; by *Nestis* and this humane fountaine of naturall seed, water".[105] As Macauley observes, by choosing to represent the elements as deities, Empedocles theorises that the elements are "eternal and immortal" (as opposed to Aristotle's mutable elements), further implying the elements are "the new governing powers (*archai*) of the world, posited and so positioned to supplant traditional mythology or at least imbue it with a *logos* (reason or order)".[106] Careful interpretation of the personification reveals not only Empedocles' panpsychism, but other aspects of his matter theory and his philosophical ambition. Personification is not extrinsic from, but constitutive of the vitality of Empedoclean natural philosophy.

---

[102] Skrbina's concern is similar to those of new materialist and ecocritical scholars who wish to recover matter's vitality without reducing such vitality to anthropomorphism. See Diana Coole and Samantha Frost, "Introducing the New Materialisms", in *New Materialisms: Ontology, Agency, and Politics,* ed. Diana Coole and Samantha Frost (Durham, NC: Duke University Press, 2010) 1–43; Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010). For a recent critique that new materialist analyses nonetheless expand the remit of the human see Steven Swarbrick, *The Environmental Unconscious: Ecological Poetics from Spenser to Milton* (Minneapolis, MN: University of Minnesota Press, 2023), esp. 5–9; Blake, "After Life in Margaret Cavendish's Vitalist Posthumanism", esp. 433–37.
[103] Sidney, "A Defence of Poetry", 75.
[104] Holland, *The Morals,* sig. 3Y2v.
[105] Holland, *The Morals,* sig. 3Y2v.
[106] Macauley, *Elemental Philosophy*, 107.

Bradstreet would have been aware of the contours of this Empedoclean system. While there is no definitive evidence that Bradstreet read Holland's translation of *The Morals*, she was certainly familiar with other English translations of classical works, including Thomas North's translation of Plutarch's *Lives of Noble Grecians and Romans* (1595), Holland's translation of Livy's *Romane Historie* (1600), and likely Holland's translation of Pliny's *Natural History* as I suggested in the first section of this chapter.[107] Given Bradstreet's clear interest in natural philosophy and her known reading habits, it seems likely that Plutarch's *Morals* would also have formed part of her reading. Empedoclean natural philosophy was also available to her in Ovid's *Metamorphoses.* The primordial chaos at the beginning of Book 1 is philosophically eclectic, but primarily elemental, with matter striving against itself. George Sandys makes the Empedoclean aspect of this chaos particularly clear, writing in the "Minde of the Frontispeece" of his translation:

> Fire, Aire, Earth, Water, all the Opposites
> That stroue in *Chaos,* powrefull LOVE vnites;
> And from their Discord drew this Harmonie[108]

Sandys' "Minde" evokes the "LOVE" and "Discord" of Empedoclean physics, as well as the *concordia discors* as "Opposites" are united in "Harmonie".

Like Empedocles, Bradstreet personifies the four elements and animates them with the emotive forces of "amity" and "enmity". To recall the beginning of "The Four Elements",

> Fire, Aire, Earth, and Water, did all contest
> which was the strongest, noblest, & the best,
> …
> And in due order each her turne should speake,
> But enmity, this amity did breake:
> (B3r)

Bradstreet's "amity" and "enmity", the same terms used in *The Morals,* alludes to the Empedoclean forces of Love and Strife. Like Empedocles' forces, Bradstreet's "amity" and "enmity" are not mutually exclusive. The elements' "amity" is not peaceful but competitive, shot through with strife, evoking the idea of *concordia discors.*

Having the elements "speake" is indicative of a particularly early modern understanding of personification, or prosopopoeia. Puttenham defines prosopopoeia as "if ye will attribute any human quality, as reason or speech, to dumb creatures or other insensible things", prioritising reason and

[107] Sauer, "Book Passages and the Reconstruction of the Bradstreet's New England Library", 67. For a printed version of Thomas Dudley's (Bradstreet's father) books from the 1653 inventory see Elizabeth Wade White, *Anne Bradstreet: "The Tenth Muse*" (New York: Oxford University Press, 1971), 383–90.
[108] Sandys, *Ovid's Metamorphosis,* np.

speech as the primary indices of humanity (and hence prosopopoeia), above and beyond the need for human shape.[109] In his insightful analysis of early modern prosopopoeia, Gavin Alexander convincingly argues that renaissance writers understood

> that any character created in words was a performance of a persona – the creation and adoption of a mask, a *prosopopoeia*… The figure exploits its metonymic basis – it does not in fact create a person, or a mask or face, or even a voice, but rather the words that person is imagined as saying. And in doing this it suggests that it may not be possible to distinguish selfhood from the words we speak. The figure tests the ability of words, sung, spoken, or even simply read, to give the impression that a ghostly presence has been summoned into being.[110]

Prosopopoeia is the rhetorical figure behind all poetic voices. By highlighting the fuzzy boundary between speech and "selfhood" in texts, Alexander enmeshes subjectivity in the material word, mind in matter. Barbara Johnson similarly argues that "'I' and 'you' are persons because they can either address or be addressed".[111] Both Alexander and Johnson suggest that personification operates according to a vocal metaphysics of *dico ergo sum* that conjures "the impression" of "a ghostly presence" into being.

In the case of Bradstreet's elements, their voices constitute an agency that is not confined to human, women's bodies. This becomes apparent in the opening of the poem where the debate over speaking order results in an Ovidian elemental brawl of apocalyptic proportions:

> The quaking Earth did groan, the skie look't black,
> The Fire, the forced Aire, in sunder crack;
> The sea did threat the heavens, the heavens the earth,
> All looked like a Chaos, or new birth;-
> Fire broyled Earth, and scorched Earth it choaked,
> Both by their darings; Water so provoked,
> That roaring in it came, and with its source
> Soone made the combatants abate their force;
> The rumbling, hissing, puffing was so great,
> The worlds confusion it did seeme to threat;
> (B3r)

Personification slips away in favour of meteorological and geological descriptions; or, rather, they become productively indistinguishable. With the "quaking Earth did groan" Bradstreet simultaneously describes the feeling and sound of an earthquake and the physiological symptoms of

[109] Puttenham, *The Art of English Poesy,* 324.
[110] Gavin Alexander, "Prosopopoeia: the speaking figure", in *Renaissance Figures of Speech,* eds. Sylvia Adamson, Gavin Alexander and Katrin Ettenhuber (Cambridge: Cambridge University Press, 2007), 111–12.
[111] Barbara Johnson, *Persons and Things* (Cambridge, MA: Harvard University Press, 2008), 6.

either pain or fear. Likewise, "the skie look't black" presents both the image of darkening clouds and the Air's rage. Bradstreet's persistent onomatopoeia ("groan", "crack, "roaring", "rumbling, hissing, puffing") echoes the cacophony of a world in tumult *and* the noise of elemental argumentation. Scott Knickerbocker's theory of "sensuous poiesis" identifies the value of nonmimetic, artificial poetic language that "inspires, startles, or coaxes us into knowing the world with revivified senses".[112] In particular, he argues that audible and visual poetic effects can "act as a physically palpable analogue for direct experience of nature".[113] Far from a carefully articulated personified voice, the audible effect of Bradstreet's onomatopoeia collapses the distinction between the nonverbal sounds of the phenomenal world and the elements' voices, providing just this "analogue for direct experience". Moreover, the inherent figurative capacity of the English language means that the elements' actions seem perfectly capable of being enacted by non-anthropomorphic elements. Fire, obviously, can broil and scorch the earth, and we do not need to imagine her "choak[ing]" of Earth as resulting from a manual strangulation rather than the impact of smoke. In this opening framing, the vast materiality of the elements is never quite confined into neat human bodies. Yet the personification creates the generative possibility that the elements are acting consciously, with agency and intention. This is a thoroughly material matter *and* one infused with mind.

As per Empedoclean philosophy, Bradstreet not only infuses the elements with a capacity for "reason or speech", but emotion. While the initial description of "enmity, this amity did breake" seems to externalise these forces in ways reminiscent of Empedocles' gravitational Love and repulsive Strife, Bradstreet transforms and internalises "amity" and "enmity" into modes, or moods, of contact. As the brawl suggests, the elements' "enmity" does not pull them apart but rather further entangles them in a physical and violent altercation; similarly, the initial amity produces not a homogenous mass but a competitive, although orderly, relationality of distinct types of matter. Susan James observes that, in early modern accounts, the passions are fundamentally liminal, crossing "two boundaries—that between soul and body, and that between the body and the physical space around it".[114] Passions happen in the body and in the soul, internally and externally. As a matter theory, panpsychism or vitalism fundamentally collapses the distinction between body and mind, and so it is perhaps not surprising that Bradstreet's elements are fundamentally emotive.

---

[112] Scott Knickerbocker, *Ecopoetics: The Language of Nature, the Nature of Language* (Amherst: University of Massachusetts Press, 2012), 18.
[113] Knickerbocker, *Ecopoetics,* 17.
[114] Susan James, *Passion and Action: The Emotions in Seventeenth-Century Philosophy* (Oxford: Oxford University Press, 1997), 86.

Emotion's ability to transgress the "body and the physical space around it" also presents a generative way of thinking about the elements' amity and enmity as causes in a physical system. Empedoclean elemental philosophy presents the world not only as a material assemblage, but as Drew Daniel argues, as an "affective assemblage, swooping through treacherously unstable mood swings".[115] Daniel emphasises that elemental philosophy in this form presents the "being of feeling, the feeling of being as an energetic multiplicity".[116] Macauley likewise observes that in Empedoclean philosophy "an intensive, volitional dimension is invested in the physical world and designated as an objective motivating fact. There is, in brief, the development of what we could call *e-motional matter*".[117] In the above quoted elemental brawl, Bradstreet uses very few conjunctions to indicate the causal relationship between the elements' actions, instead relying on the rapid succession of paratactic clauses to convey the chaos of the fight: "The quaking Earth did groan, the skie look't black, / The Fire, the forced Aire, in sunder crack; / The sea did threat the heaven, the heavens the earth". E-motions are simultaneously active and reactive, creating affective chain reactions where cause and effect become mingled. The near instantaneous simultaneity of the elements' motions and emotions is epitomised at the beginning of Water's speech: "Scarce Earth had done, but th'angry waters mov'd; / Sister (quoth she) it…" (B7r). The sheer speed of Water's reaction to Earth is indicated by "Scarce" but also by the evocative concision of "angry waters mov'd" that not only collapses the distinction between passion and action, but speech; the following line launches straight into Water's voice in such a way that aligns "mov'd" with "quoth". It is less that Water was "mov'd" and then spoke, or "mov'd" to speak, but that her e-motion *is* the speech. This is the reciprocal "being of feeling, the feeling of being" that Daniel identifies, an emotive materialism where actions are affective, each motion an emotion.

Consequently, a world governed by elemental amity and enmity is deeply contingent and unpredictable. Fire establishes her benefit to many professions when she feels amicable, as I have shown. However, this assistant kindness is never guaranteed, as Fire testifies: "And though I be a servant to each man; / Yet by my force, master my master can" (B4v). The topsy-turvy inversion in Fire's statement manifests in Bradstreet's skilful polyptoton of "master". Placing the modal, modifying verb "can" in the final position, after the main verb "master", injects further uncertainty into Fire's statement, reconfiguring the previous phrase in a final jolting, unpredictable manoeuvre; the reversal of fortune "can" happen at any time and any place, or it might not. Fire continues this theme of inversion ("The rich I oft make poore, the strong *I* maime, / Not sparing life when I can take

[115] Drew Daniel, "The Empedoclean Renaissance", in *The Return of Theory in Early Modern English Studies, Volume II,* ed. Paul Cefalu, Gary Kuchar and Bryan Reynolds (Basingstoke: Palgrave Macmillan, 2014), 288.
[116] Daniel, "The Empedoclean Renaissance", 291.
[117] Macauley, *Elemental Philosophy,* 116.

the same" (B5r)) that is then taken up by the other elements. In Earth's speech, she does not dwell on the natural conditions that might cause crop failure, only noting that men "sometimes findes, maugre his toyling paine, / Thistles and thornes, where he expected graine" (B6v), or that miners are buried alive "Before they know" (B6v). Water, too, boasts of her capricious unpredictability, men seek her out "in River and in Well" and "If I supply, his heart and veines rejoyce; / If nor, soon ends his life, as did his voyce" (B7v). The natural world is the product of the whims of elemental amity or enmity in, to borrow Gail Kern Paster's term, an "ecology of the passions" that easily overcomes humanity.[118]

Bradstreet achieves this levelling via the shared causation that exists between elements and humans. While she focuses on scholastic interpretations of Aristotelian natural motion and inclination, Kellie Robertson's account of a common causation that physically connects the world across ontological boundaries (both stones and humans naturally incline towards their given place), is suggestive for Bradstreet's physics that imagines a world agitated by amity and enmity.[119] These motions are inherently more horizontal than Aristotle's teleological model, but nonetheless bind together disparate natural kinds. In Fire's description of the sun, for instance, she calls on Earth, man and beast as witness:

> Good sister Earth, no witnesse needs but thine;
> How doth his warmth refresh thy frozen backs,
> And trim thee gay, in green, after thy blacks?
> Both man and beast, rejoyce at his approach,
> And birds do sing, to see his glittering Coach.
> (B4r)

We not only experience the sun's "fiery heat" (B4r), but the emotional consequences of this heat. Fire's claim to "trim [the Earth] gay, in green, after [her] blacks" is both a play on the adornment of the ground in greenery and a brightening of the Earth's mood from her "blacks", the colour associated with Earth's daughter Melancholy in "The Four Humours". Fire's "warmth" is simultaneously tangible and emotional. Likewise, "man and beast, rejoyce" and birds "sing" at the approaching sun. Earth also relies on her visceral dimensions when describing famine:

> Then dearth prevailes, that Nature to suffice,
> The tender mother on her Infant flyes:
> The Husband knowes no Wife, nor father sons;
> But to all outrages their hunger runnes.
> Dreadfull examples, soon I might produce,

[118] Gail Kern Paster, *Humoring the Body: Emotions and the Shakespearean Stage* (Chicago, IL: University of Chicago Press, 2004), 9.
[119] Robertson, *Nature Speaks,* 25–27, 55–60.

> But to such auditours 'twere of no use.
> (B6v)

This image is horrifying because it is so unexpected. It is the culmination of Earth's first example of her "adverse quality" in the second half of her speech and is preceded by the description of failing crops that we expect to end in an explanation of how this "work[s] mans mortality" (B6v). The most obvious route for this explanation to have taken is a description of starvation. Instead, Earth draws on the more visceral image of a family turning against each other in their starvation, hunger and anger combining to then become violence (one of the main senses of "outrages" in the seventeenth century is "an act of violence").[120] Bradstreet's hangry family is not killed (directly) by starvation, but by the "outrages" they inflict on one another. Earth feigns ignorance when refusing to give further "Dreadfull examples" as they would not affect her "auditours", presumably the other elements who are unlikely to feel hunger. Yet, as Cox observes, one key affordance of dialogue form is that it "acts as a kind of fictional shadow to the literary transaction between the reader and the text".[121] In strategically forgetting her *other* "auditours", the readers, Earth allows further "Dreadfull" images to bloom in the reader's mind, further extending her affective reach.

In Earth's depiction of mining, Bradstreet reminds us that man's unpredictable rage can also turn against the elements:

> Ye greedy misers who do dig for gold;
> For gemmes, for silver, treasures which I hold:
> Will not my goodly face, your rage suffice?
> But you will see what in my bowels lyes?
> (B6r)

The miner's "rage" parallels and (in this materialist vision of the world) perhaps originates from the elements' own. Earth's beneficence in providing "gold", "gemmes", "silver" and "treasures" does nothing to assuage the rage of the "misers". Just as dearth turns families against each other, the miners bypass Earth's "goodly face" and continue their violence.

Jane Bennet's new materialist account of anthropomorphism provides a productive lens for analysing the ethical and political implications of Bradstreet's personification:

> an anthropomorphic element in perception can uncover a whole world of resonances and resemblance–sounds and sights that echo and bounce far more than would be possible were the universe to have a hierarchical structure… A touch of anthropomorphism, then, 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. In revealing similarities across

[120] *OED*, "outrage (*n.*), sense 2.a", last modified December 2024, https://doi.org/10.1093/OED/1197209211.
[121] Cox, *The Renaissance Dialogue,* 5.

> categorical divides and lighting up structural parallels between material forms in 'nature' and those in 'culture,' anthropomorphism can reveal isomorphisms.[122]

In Bennett's formulation anthropomorphism is not useful because we ultimately believe that all matter is alive in an identical way to humans. Rather through "resonances and resemblance" (rather than identity) it can trigger a deeper "sensibility", a feeling not dissimilar to Alexander's "impression [of] a ghostly presence", towards the underlying vibrancy of matter that forms "confederations", such as human beings. If successful, what begins as anthropomorphism at some point reverses directions and forces us to conceive of human life in terms of matter. Bennett's aim with vital materialism is not a political ecology that "'horizontalize[s]' the world completely" but rather "a polity with more channels of communication between members".[123] "The Four Elements" cultivates just such a feeling towards the world. By personifying the elements and collapsing their structural hierarchies, Bradstreet also troubles the hierarchy that places the human as superior to the nonhuman. The ethical ramifications of Bradstreet's elemental philosophy come to the fore if we return to her dedication "To her most Honoured Father" where she claims that "Of these [the elements] consists, our bodyes, cloathes, and food, / The world, *the usefull, hurtfull, and the good*" (B1v, my emphasis). Bradstreet's inclusion of ethical categories in her list seems odd when taken individually. But, when understood in relation to the shared causality of amity and enmity, it suggests that agency comes with a responsibility that stretches from the elements to humans.

Bradstreet's anarchic vision of the world, however, differs in temperament from many modern new materialist and ecocritical analyses. For Bennett, recognising the vibrancy of matter is the necessary first step towards "more ecological and more materially sustainable modes of production and consumption".[124] Bradstreet's "The Four Elements" lacks this optimism. The miner's look at Earth's "goodly face" and dig anyway. Bradstreet's extending of agency and ethical responsibility creates a new, more level, order than that associated with the Aristotelian elements. Doing so results in a dynamic and vibrant vision of the world, a *concordia discors* of perpetually competing components. But crucially, this vision of the world is also inherently more unpredictable and precarious: the elements can and frequently do "master" their "master" at uncertain times and places. Indeed, Fire's polyptoton suggests the constant revolutionary nature of Bradstreet's elemental world that is not statically horizontal but is rather an unending series of conquests and overthrows. Bradstreet's "touch of anthropomorphism", then, reveals an inherently more frightening world.

---

[122] Bennett, *Vibrant Matter,* 99.
[123] Bennett, *Vibrant Matter,* 104.
[124] Bennett, *Vibrant Matter,* ix.

Bradstreet's dismantling of hierarchies also has far-reaching theological implications. Her open debate form resists a teleological interpretation in terms of a divine plan, and her inclusion of biblical examples amongst the natural, domestic, geographic, historical and mythological threatens to occlude God's agency. When Earth offers "*Korah* and all his Company" as evidence of her capacity to "oft intombe" (B6v), Bradstreet directly quotes from Numbers 16 where "Korah, and all his company" are swallowed by the earth because they "prouoked the Lord" and in the process seems to replace God's righteous anger with Earth's.[125] Likewise, when Fire closes her speech with an invocation of her role in Judgement Day, she emphasises her "raging ire" over divine providence:

> And in a word, the World I shal consume,
> And all therein at that great day of doome;
> Not before then, shal cease my raging ire,
> And then, because no matter more for fire:
> (B5r)

In his recovery of oceanic agency, Mentz observes the tendency for shipwreck narratives to recuperate contingency and disorder through a "Providentialist vision" that asserts the hidden "eternal or panhistorical truth" of God's divine plan.[126] Fire's anticipated self-annihilation could be read from the providentialist perspective: Fire's burning out because "no matter" is left for her is a clever rhetorical manoeuvre at the moment where Fire's oratorical *res* comes to an end, but it also signals the end of "matter", and hence volatile elemental agency, perhaps reimposing divine order. However, this "panhistorical truth" is repeatedly undermined. Judgement Day is evoked in the second half of Fire's speech—the section on her rage, force or hurtfulness—and without a comforting reminder of the promised resurrection, the ceasing of "matter" certainly seems more threatening than reassuring. Moreover, Earth ends her subsequent speech by directly contradicting Fire's conclusion: "And after death, whether inter'd, or burn'd; / As earth at first, so into earth return'd" (B7r). Earth, of course, is not necessarily talking apocalyptically, and the biblical association of the body with earth is perfectly orthodox. But her concluding claim that "earth" will remain even if the body is "burn'd" reverses Fire's professed power to burn away "matter" entirely. Bradstreet's debate form pits scripture against itself such that no final, ordering resolution emerges.

Rogers observes the tendency of vitalist matter "to burst the ideological frame fashioned for it" due to "an organizational rhetoric so hostile to hierarchy, any hierarchy, that nearly all its adherents at one point or another, were compelled to retreat for its broadest social and political implications".[127] In Rogers' formulation, vitalist literary matter has a life of its own, dragging unwitting

[125] Numbers 16: 6–32.
[126] Mentz, *Shipwreck Modernity,* 6.
[127] Rogers, *The Matter of Revolution,* 15–16.

theorists into a more radical politics and, in Bradstreet's case, theology, than they intend. Bradstreet was no atheist, but neither does she retreat from the vibrant agency of her elemental matter. On the one hand, the poem's materialist conceptual scheme makes no space for the immaterial—for the soul, for angels and, most significantly, for God—safely bracketing away the theological from the philosophical implications of the poem. On the other hand, including scriptural references but occluding God's role in those events risks a more dangerous kind of divine evacuation, leaving it ambiguous as to whether God is being incorporated into Bradstreet's elemental philosophy or excluded from it, his divine plan being replaced by the whims of elemental matter. As Patricia Phillippy observes, recentring matter in Bradstreet's writing brings her "duet of orthodoxy and originality" to the fore.[128]

Ultimately, Bradstreet's "The Four Elements" is not a didactic poem that—like Lucretius' *De rerum natura*—theorises and argues for a particular physics and metaphysics. Rather, it is a poetic provocation that shuns closure and conclusion. Bradstreet relishes the opportunity afforded by the elements' seventeenth-century instability and consequent flexibility—their possible fictionality—to deconstruct traditional hierarchies. Her appropriation of the rhetorical and poetic origins of elemental matter affirms the potency of poetic forms that can both constitute and indecorously undermine natural philosophical (and political) systems, something that will also become clear in Hutchinson's transformation of Lucretian atomism—another inherently poetic-philosophical system—in the next chapter.

The new reading of "The Four Elements" I offer in this chapter recovers Bradstreet's formal, natural philosophy and political sophistication, and allows us to better position her poetry in its intellectual context. For many natural philosophers, including seventeenth-century philosophers (and poets) like Margaret Cavendish and Milton, panpsychism or vitalism explained the logic and regularity of the universe in contrast to the random, potentially deterministic motions of atomic or mechanistic matter.[129] Understanding Bradstreet's "The Four Elements" in relation to these vitalist systems recovers the vibrancy of her imaginative intervention in elemental philosophy. Yet doing so also raises new questions, including the wider implications—ethical, political, theological—of this panpsychism. Unlike many others, Bradstreet's panpsychic matter does not explain universal, divine order, but the opposite: the chaotic, unpredictable, and thoroughly irregular feeling of a feeling world.

[128] Phillippy, "Anne Bradstreet's Family Plots", 31.
[129] Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 17–18.

Chapter Two: Understanding Lucretius: Atoms and Form in Lucy Hutchinson's Transformation of *De rerum natura*

> The Energy of Nature is definite and praescribed: nor is she Commissioned with any other Efficacy, then what extends to the moulding of *Old Matter* into *New Figures*; and so, the noblest Attribute we can allow her, is that of a *Translator.*
> —Walter Charleton, *Physiologia Epicuro-Gassendo-Charltoniana*[1]

> And so shall we know *LUCRETIUS* in your Book, though it retains neither his voyce, nor yet his hairynesse;
> —Richard Fanshawe, "For My Honored Friend and Kinsman John Evelyn Esq"[2]

Lucy Hutchinson's translation of Lucretius' controversial and atheistic epic, *De rerum natura,* has been seen, to borrow Jessie Hock's provocative phrase, as "an extramarital dalliance… [that] undermines the coherence and orientation" of her otherwise theological and family-centric corpus.[3] This perceived disruption has prompted valuable scholarship that has historicised Hutchinson's translation in terms of her gender, puritanism, republican politics, and the mid-seventeenth century Epicurean revival, as well as scholarship that has demonstrated Hutchinson's ongoing engagement with Lucretian atomism.[4] Consequently, Hutchinson's *De rerum natura* has been firmly situated within her wider corpus. However, an almost exclusive focus on how Hutchinson adapts atomism in her later writing—the *Memoirs of the Life of Colonel Hutchinson, Elegies,* and *Order and Disorder*—has meant her transformational choices in the translation itself have been largely overlooked. In this

[1] Charleton, *Physiologia,* sig. M4v.
[2] Richard Fanshawe, "For my Honored FRIEND and KINSMAN JOHN EVELYN Esq;" in *John Evelyn's Translation of Titus Lucretius Carus* 'De Rerum Natura': *An Old-Spelling Critical Edition,* ed. Michael M. Repetzki (Frankfurt am Main: Peterlang, 2000), 19.
[3] Jessie Hock, *The Erotics of Materialism: Lucretius and Early Modern Poetics* (Philadelphia: University of Pennsylvania Press, 2021), 125.
[4] See Reid Barbour, "Between Atoms and Spirit: Lucy Hutchinson's Translation of Lucretius", in *Ashgate Critical Essays on Women Writers in England, 1550–1700: Volume 5: Anne Clifford and Lucy Hutchinson,* ed. Mihoko Suzuki (London: Routledge, 2016): 333–48; Barbour, "Lucy Hutchinson, Atomism and the Atheist Dog", in *Women, Science and Medicine 1500–1700,* 122–37; David Norbrook, "Margaret Cavendish and Lucy Hutchinson: Identity, Ideology and Politics", *In-between: Essays and Studies in Literary Criticism* 9, no.1&2 (2000): 179–203; Hock, *The Erotics of Materialism,* 118–44; Jessie Hock, "'transeant Things': Materialism and Mortality in the Lyrics of Lucy Hutchinson and Margaret Cavendish", *English Literary Renaissance* 53, no.3 (2023): 425–49; Jonathan Goldberg, *The Seeds of Things: Theorizing Sexuality and Materiality in Renaissance Representations* (New York: Fordham University Press, 2009), 122–78; Cassandra Gorman, "Lucy Hutchinson, Lucretius and Soteriological Materialism", *The Seventeenth Century* 28, no.3 (2013): 293–309; Gorman, *The Atom in Seventeenth-Century Poetry,* 175–213; Liza Blake, "Non-Atomic Atomism and Atomic Epistemologies in the Poetry of Margaret Cavendish and Lucy Hutchinson", *English Literary Renaissance* 53, no.3 (2023): 401–24.

chapter, I analyse Hutchinson's precisely differentiated choices in *De rerum natura* to show that she understood translation as a philosophically valuable, experimental process of change.

Hutchinson was fascinated by form's conceptual and semantic flexibility. *Order and Disorder* begins with an invocation to God that exploits form's polysemy, as Cassanda Gorman and Elizabeth Scott-Baumann have observed:

> My soul in her imperfect strugglings aid,
> Her rude conceptions into forms dispose,
> And words impart which those forms disclose.[5]

In these lines, form is both quasi-Aristotelian as "rude" chaotic "conceptions" are informed and quasi-Platonic where form pre-exists verbal matter. Yet Hutchinson's experiments with form predate *Order and Disorder.* These lines echo Hutchinson's translation of Lucretius' speculation that he will die

> Ere I can each particular forme in verse
> And my conceptions in due words rehearse.
>
> Quam tibi de quauis vna re versibus omnis
> Argumentorum sit copia missa per auris.
>
> before the whole store of demonstrations on any one matter has been poured in my verses through your ears. (*Loeb* 1.416–17)[6]

Here, as elsewhere in her translation, Hutchinson inserts "forme" where there is no direct Latin equivalent. She prioritises authorial forming over Lucretius' metaphor of liquid dissemination, less concerned with spreading atomic "Argumentorum" [demonstrations] than finding "due words" for them. Whereas in *Order and Disorder* Hutchinson requests form, in *De rerum natura,* Hutchinson transforms Lucretius and assertively claims "I… forme".

In this chapter, I argue that Hutchinson recognises the liberating potential of atomic definitions of form to authorise her transformation of *De rerum natura* and challenge the poem's dogma. Atomism confounds the boundary between generation and alteration—forming and

---

[5] Hutchinson, *Order and Disorder,* 1.28–30. Gorman, "Lucy Hutchinson, Lucretius and Soteriological Materialism", esp. 300–02; Scott-Baumann, *Forms of Engagement,* 1–3.

[6] Lucy Hutchinson, *The Works of Lucy Hutchinson, Volume 1: Translation of Lucretius: Part 1, Introduction and Text*, ed. Reid Barbour, David Norbrook and Maria Christina Zerbino (Oxford: Oxford University Press, 2012), 1.418–19 (English), 1.416–17 (Latin). References to Hutchinson's translation and the Latin text of *De rerum natura* are taken from this edition and hereafter cited parenthetically by book and line number. As this edition uses a Latin text based on the early modern editions of *De rerum natura* available to Hutchinson, the text and line numbers may vary slightly from modern editions. Modern English translations are from Lucretius, *On the Nature of Things,* trans. W.H.D Rouse, rev. Martin F. Smith, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1924) and are abbreviated "*Loeb*" and cited parenthetically by book and line number.

transforming—that Aristotelian, hylomorphic conceptions of change uphold, such that nature herself becomes "a *Translator*", as this chapter's first epigraph from Charleton's *Physiologia* suggests. Hutchinson exploits her understanding of atomic-poetic form that emerges from Lucretius' famous atom-letter analogy to reimagine translation as recombination. However, Hutchinson turns *De rerum natura*'s poetics against its atomism, using the opportunity presented by Lucretius' frequent repetitions to translate them differently on each occurrence, recombining and critiquing the poem's atomism. Ultimately, Hutchinson's investigations into form's potential atomic role(s)—occurring simultaneously at the level of *verba* and *res*—find atomism's surprising continuities with other philosophical traditions, specifically Aristotelian hylomorphism.

Lucretius' early modern reception has received considerable attention in recent years.[7] These studies have revealed the contradictory responses to *De rerum natura*, a poem ostensibly denounced and yet pervasively influential.[8] In the wake of this work, Dmitri Levitin has cautioned against the "tendency to equate such 'literary' or 'cultural' Epicureanism with the natural philosophical revival of atomism or even with the scientific revolution more generally", taking particular issue with "vague associations between literary works (especially translations of Lucretius) and natural philosophical texts".[9] It is true that early moderns did not embrace Lucretius indiscriminately: he was read for his poetry, his atomism, and the ethics and politics this atomism entails, although not necessarily all at the same time. Ada Palmer's detailed study of *De rerum natura'*s early readers identifies their initial interest as primarily philological, mining the poem in humanistic fashion for new or rare Latin words or noting influences on literary successors like Virgil.[10] More recently, Gorman has carefully

[7] Gerard Passannante, *The Lucretian Renaissance: Philology and the Afterlife of Tradition* (London: University of Chicago Press, 2011); Gerard Passannante, *Catastrophizing: Materialism and the Making of Disaster* (Chicago: University of Chicago Press, 2019); Ada Palmer, *Reading Lucretius in the Renaissance* (Cambridge, MA: Harvard University Press, 2014); David Norbrook, Stephen Harrison, and Philip Hardie, ed., *Lucretius and the Early Modern* (Oxford: Oxford University Press, 2016); Jacques Lezra and Liza Blake, ed., *Lucretius and Modernity: Epicurean Encounters Across Time and Disciplines* (New York: Palgrave Macmillan, 2016); Hock, *The Erotics of Materialism*; Goldberg, *The Seeds of Things*. For the Epicurean revival see Reid Barbour, *English Epicures and Stoics: Ancient Legacies in Early Stuart Culture* (Amherst: University of Massachusetts Press, 1998); Wilson, *Epicureanism at the Origins of Modernity*. For Lucretius' later reception see Amanda Jo Goldstein, *Sweet Science: Romantic Materialism and the New Logics of Life* (Chicago: University of Chicago Press, 2017). For Epicurean reception more broadly see Brooke Holmes and W.H. Shearin, ed., *Dynamic Reading: Studies in the Reception of Epicureanism* (Oxford: Oxford University Press, 2012).

[8] I am here alluding to Passannante's idea of "pervasive influence" as "at once the diffusion of an idea – its pervasive spread or dissemination – and the ways in which an influence might be said to inhabit the structure of a body, a thought, a poem at the very deepest level, or at least claim to". For Passannante, *De rerum natura*'s pervasive influence is part of its materialist poetics that seems to anticipate and theorise "its own reception". Passanante, *The Lucretian Renaissance,* 157, 5, esp. 154–97; see also Adam Rzepka, "Discourse *Ex Nihilo*: Epicurus and Lucretius in Sixteenth-Century England", in *Dynamic Reading: Studies in the Reception of Epicureanism,* 113–32.

[9] Dmitri Levitin, *Ancient Wisdom in the Age of the New Science: Histories of Philosophy in England c.1640–1700* (Cambridge: Cambridge University Press, 2015), 335.

[10] Palmer, *Reading Lucretius in the Renaissance*, 50–96.

distinguished mentions of "the atom" in seventeenth-century poetry from Lucretian atom*ism,* "tracing a poetics of the atom that was inspired by the concept of indivisibility rather than the features of Lucretian atomism".[11] Every mention of the atom does not entail a sustained engagement with either *De rerum natura* nor Epicurean atomism more broadly.

However, it is also true that, in David Hopkins' words, the "distinction between 'poetic' and 'philosophical' responses to Lucretius can never be absolute".[12] The "bitter potion" of the poem's atomism travels with the sweet "honie" of the verse (1.943–44). Lucretius was admired for his poetic skill *and* cited for his atomic insights, a poet who "taught Virgil and Milton how to make the epic simile into an engine of physics" to borrow Gerard Passannante's evocative phrase.[13] Levitin concedes that translators like "Evelyn and Hutchinson had natural philosophical interests", but he nonetheless contends that "[i]t was not translating Lucretius but engaging in detail with Gassendi's vision of Epicureanism" that was "a sign of serious natural philosophical interest in ancient matter theory".[14] Yet Gassendi himself quotes nearly three quarters of *De rerum natura* dismembered and scattered across his works, and his English counterpart, Charleton, incorporates Lucretian citation into *The Darknes of Atheism Dispelled* (1652) and *Physiologia Epicuro-Gassendo-Charltoniana*.[15] For Charleton, Lucretius was a philosophically useful "witty villain", but also unavoidably a poet.[16] He treats Lucretius as Epicurus' "faithful Disciple" who, for better or worse, "ingenuosly", "plainly", "most elegantly", "well expresseth" and "with lively Arguments" renders atomic doctrine in verse.[17] Writing on the "stink of corrupting Carcasses", Charleton offers the deodorizing effect of Lucretius: "If you had rather hear this in Verse, be pleased to listen to that Tetrastich of *Lucretius*".[18] Lucretius' poetry is smooth and elegant, and filled with philosophically valuable witty comparisons and vivid arguments.

Given Lucretius' entwined *verba* and *res,* it is unsurprising that seventeenth-century writers and natural philosophers turned to translation as a mode of atomic engagement. After all, Lucretius himself was a translator of Greek Epicureanism into Latin verse, something his readers, including Hutchinson, were conscious of. In a marginal note next to Lucretius' first encomium to Epicurus*,*

---

[11] Gorman, *The Atom in Seventeenth-Century Poetry,* 8. See also, Blake, "Non-Atomic Atomism", 401–24.
[12] David Hopkins, "The English Voices of Lucretius from Lucy Hutchinson to John Mason Good", in *The Cambridge Companion to Lucretius,* ed. Stuart Gillespie and Philip Hardie (Cambridge: Cambridge University Press, 2007), 254.
[13] Passannante, *The Lucretian Renaissance*, 3.
[14] Levitin, *Ancient Wisdom,* 335.
[15] Passannante, *The Lucretian Renaissance,* 172.
[16] Walter Charleton, *The Darknes of Atheism Dispelled by the Light of Nature. A Physico-Theologicall Treatise* (London: Printed by J.F. for William Lee, 1652), sig. L3v.
[17] Charleton, *Physiologia,* sig. C4v, D1v, N1r, 2M2r, 3K2v.
[18] Charleton, *Physiologia,* sig. 2H3r.

Hutchinson writes "Mention of Epicurus whose philosophie our Poet translates" (1.61m). Michel de Marolles' 1650 French translation of *De rerum natura* found approval amongst English virtuosi in Paris, including Charleton, John Evelyn and Kenelm Digby, and Gassendi may have helped him revise it for its second, 1659, edition.[19] Evelyn became a founding member of the Royal Society and also produced an English verse translation of *De rerum natura,* book 1 of which was printed in 1656. His print translation ends with lengthy "Animadversions" where Lucretian atomism is contextualised and critiqued through references to ancient and modern philosophers including Gassendi, Charleton and Descartes.[20] In his 1682 translation, Thomas Creech appreciates that "the particulars of Natural Philosophy are so happily exprest in these Numbers", claiming that Thomas Hobbes' politics and natural philosophy are "sung by our Poet", that Gassendi has "convert[ed] and draw[n] out this Poem into three large Volumes in Prose", and that *De rerum natura* contains "Pearls of Cartesianism".[21] Furthermore, Thomas Matthew Vozar convincingly argues that Creech's translation was written with a virtuoso reader in mind and that its accompanying notes appeal to contemporary experimental philosophy, particularly debates between Hobbes and Robert Boyle concerning the air pump.[22] None of these translators conceived of their project as detached from contemporaneous developments in natural philosophy, and Hutchinson, too, turns to Lucretius because of her natural philosophical curiosity.

Hutchinson's *De rerum natura,* likely composed during the 1650s at the family's Nottinghamshire estate in Owthorpe, is the first full English verse translation of the poem.[23] The only extant manuscript is a presentation copy given to Arthur Annesley, Earl of Anglesey, at his "coṁand" and dated 11th June 1675.[24] Books one to five have been copied by a scribe, while book six is in Hutchinson's hand. The manuscript also contains a dedication to the Earl of Anglesey, original verse arguments to each of the poem's six books and helpful (and only rarely disparaging) marginal

[19] Line Cottegnies, "Michel de Marolles' 1650 French Translation of Lucretius and its Reception in England", in *Lucretius and the Early Modern,* esp. 168–71.
[20] John Evelyn, *An Essay on the First Book of T. Lucretius Carus De Rerum Natura. Interpreted and Made English Verse by J. Evelyn Esq;* (London: Printed for Gabriel Bedle, and Thomas Collins, 1656), sig. G1r–M5r. For speculation on Evelyn's reasons for translating *De rerum natura* and a list of the works quoted in the "Animadversions", see Michael M. Repetzki, *John Evelyn's Translation of Titus Lucretius Carus* 'De Rerum Natura'*,* l–lii, 235–42.
[21] Thomas Creech, *T. Lucretius Carus the Epicurean Philosopher, His Six Books De Natura Rerum, Done into English Verse, with Notes* (Oxford: Printed by L. Lichfield for Anthony Stephens, 1682), sig. b3v.
[22] Thomas Matthew Vozar, "The New Science and the Virtuoso Reader in Thomas Creech's Lucretius", *Modern Philology* 120, no.3 (2023): 356–77.
[23] See Norbrook and Barbour, "Introduction", in *The Translation of Lucretius,* ed. Barbour, Norbrook and Zerbino, xix–xxviii. The Bodleian holds an anonymous English prose translation of Lucretius' *De rerum natura* that could predate Hutchinson's verse translation. MS Rawlinson D.314, Bodleian Library, Oxford.
[24] Lucy Hutchinson's translation of *De rerum natura*, Additional MS 19333, British Library, London, fol. 1v; Hutchinson, *The Translation of Lucretius,* 5.

apparatus all also in Hutchinson's hand. Moreover, Hutchinson has corrected the manuscript throughout.[25] All of this indicates a much greater investment in the translation than her modest claim that "euen at the first I did not employ any serious studie in" it suggests.[26]

Against older criticism that aligned women's and translation's supposed secondariness, recent scholarship has emphasised translations as important sites where women, like men, could signal their linguistic and intellectual skill.[27] Indeed, translation is a key component of Hutchinson's corpus: her commonplace book contains part of an early version of John Denham's translation of Virgil's *Aeneid,* Book 4 of Sidney Godolphin's translation of the same, as well as her own short translations of secular Latin poetry including Ovid's *Metamorphoses* and *Heroides*.[28] She also translated large sections of John Owen's *Theologoumena Pantopada* (1661).[29] Defined more broadly, Hutchinson's verse paraphrase of the first thirty-one chapters of Genesis, *Order and Disorder,* can be seen to partake in her interest in translation, as can her critical, line-for-line rewriting of Edmund Waller's "Panegyrick to my Lord Protector".[30] In her dedication to *De rerum natura*, Hutchinson reveals the "little glory [she] had among some few of [her] intimate friends, for vnderstanding this crabbed poet".[31] It is unclear whether this "glory" comes from her linguistic "vnderstanding" of Lucretius' Latin, her "vnderstanding" of the poem's doctrines, or likely both. Far from being a modest mode of writing, translation allows Hutchinson to achieve intellectual acclaim.

---

[25] For a description of the manuscript see Jonathan Gibson, Norbrook and Barbour, "Introduction", cxxiv–cxxxiii.
[26] Hutchinson, *The Translation of Lucretius,* 7.
[27] Hilary Brown, *Women and Early Modern Cultures of Translation: Beyond the Female Tradition* (Oxford: Oxford University Press, 2022), esp. 19–34; Danielle Clarke, "Translation", in *The Cambridge Companion to Early Modern Women's Writing,* ed. Laura Lunger Knoppers (Cambridge: Cambridge University Press, 2009), 167–80; Smith, *'Grossly material things',* 30–40; Liz Oakley-Brown, *Ovid and the Cultural Politics of Translation in Early Modern England* (Aldershot: Ashgate, 2006), 124; Karen Newman and Jane Tylus, "Introduction", in *Early Modern Cultures of Translation,* ed. Karen Newman and Jane Tylus (University of Pennsylvania Press, 2015), 20.
[28] For an analysis of the commonplace book's contents see Anna Wall, "Articulating Community and Constructing the Church in the Manuscript Writings of Lucy Hutchinson (1620–1681)" (PhD Thesis, University of East Anglia, 2021), 34–72. See also Jerome De Groot, "John Denham and Lucy Hutchinson's Commonplace Book", *Studies in English Literature, 1500-1900* 48, no.1 (2008): 147–63.
[29] Hutchinson, "Of Theologie", in *The Works of Lucy Hutchinson, Volume 2: Theological Writings and Translations, Part 1: Introductions and Texts,* ed. Elizabeth Clarke, David Norbrook and Jane Stevenson (Oxford: Oxford University Press, 2018), 327–432.
[30] David Norbrook, "Lucy Hutchinson versus Edmund Waller: An Unpublished Reply to Waller's *A Panegyrick to My Lord Protector*", *The Seventeenth Century* 11, no.1 (1996): 61–86. Critics note the Virgilian and Ovidian echoes in *Order and Disorder* that could themselves amount to translation, paraphrase or imitation. See Russell M. Hillier, "Cain Furens: Imitations of Virgil and Ovid in Canto Six of Lucy Hutchinson's *Order and Disorder*", *Literature and Theology* 37, no.2 (2023): 91–118; Wesley Garey, "Rewriting Epic and Redefining Glory in Lucy Hutchinson's *Order and Disorder*", *Christianity and Literature* 69, no.3 (2020): 399–417; Edward Paleit, "Women's Poetry and Classical Authors: Lucy Hutchinson and the Classicisation of Scripture", in *Early Modern Women and the Poem,* ed. Susan Wiseman (Manchester: Manchester University Press, 2013), 21–41.
[31] Hutchinson, *The Translation of Lucretius,* 13.

Moreover, Hutchinson values translation as an investigative process. Conversations surrounding translation and science often stress translation's role in disseminating natural philosophy to a wider audience.[32] Aphra Behn, for instance, praises Creech's translation of *De rerum natura* for "advanc[ing]" women's "Knowledge from the State of Ignorance; / And Equallst Vs to Man!".[33] Although Hutchinson's translation may have had some limited circulation, increasing the accessibility of Lucretius was not her primary motivation. Rather, in the dedication Hutchinson explains that she "translated [*De rerum natura*] only out of youthfull curiositie, to vnderstand things [she] heard so much discourse of at second hand".[34] Hutchinson's justification indicates a belief that *translating* could increase her "vnderstand[ing]" of *De rerum natura* beyond simply *reading* it in Latin, something she was more than capable of.[35] Her comment speaks to what Terence Cave identifies as the early modern tendency to use translation as a "preferred instrument of cognition".[36] As Helen Smith argues, early modern translation "was understood as a skilled, and frequently a collaborative, venture, in which translator and author both worked to discover the full sense of the text".[37] Philemon Holland prefaces his translation of Pliny's *Natural History* (1601) with the confession that while translating he "not only gained thereby encrease of the Latin tongue (wherein these works were written) but also growne to farther knowledge of the matter and argument therein contained".[38] Translation is a process of knowledge acquisition for the translator that occurs simultaneously at the level of *verba* and *res*.

It is precisely translation's transformative and interpretive nature that makes it a philosophically potent form. Liza Blake's analysis of Arthur Golding's translation of Ovid's *Metamorphoses* reveals translation to be a fertile method of natural philosophical enquiry specifically because of Golding's strategic translation choices that draw out and systemise a latent neo-Platonic physics of shape in the text.[39] Hutchinson's translation is also invested in Lucretius' philosophy. Her express desire to "vnderstand things" evokes the important Lucretian vocabulary of

[32] For example, Sietske Fransen, "Introduction: Translators and Translations of Early Modern Science", in *Translating Early Modern Science,* ed. Sietske Fransen, Niall Hodson, Karl A.E. Enenkel (Leiden: Brill, 2017), 1–14.
[33] Aphra Behn, "To the Unknown Daphnis on his Excellent Translation of *Lucretius*", in *T. Lucretius Carus, the Epicurean Philosopher, His Six Books De Natura Rerum Done into English Verse, With Notes,* by Thomas Creech (Oxford: Printed by L. Lichfield for Anthony Stephens, 1683), sig. d4r.
[34] Lucy Hutchinson, *The Translation of Lucretius,* 7.
[35] In her short autobiography Hutchinson claims, "My father would have me learn Latin, and I was so apt that I outstripped my brothers who were at school". Hutchinson, *Memoirs of the Life of Colonel Hutchinson, with a fragment of autobiography,* ed. N.H. Keeble (London: Orion, 1995), 15.
[36] Terence Cave, "Epilogue", in *The Culture of Translation in Early Modern England and France*, ed. Tania Demetriou and Rowan Tomlinson (Basingstoke: Palgrave Macmillan, 2015), 194.
[37] Smith, *'Grossly material things'*, 32.
[38] Philemon Holland, "The Preface to the Reader", in *The Historie of the World,* np.
[39] Blake, "The Physics of Poetic Form", 331–55.

res [thing or things] and seems to respond to Lucretius' boast in both Book 1 and 4 that "magnis doceo de rebus" (1.929; 4.6) [my teaching is of high matters; *Loeb* 1.931, 4.6]; Lucretius claims to teach ("doceo") of "rebus", literally "things", and in Hutchinson he finds a willing student, someone who wishes to "vnderstand things".[40] Hutchinson translates "rebus" as "weightie things" at 4.6. But in Book 1 she renders the phrase differently, choosing "greate misteries" (1.937). As Lucretius does, Hutchinson puns on *De rerum natura*'s profound atomic subject matter in both versions, but "greate misteries" gestures towards the infinitude of the atomic universe, while "weightie things" zooms in on the minute atoms themselves as the smallest possible things possessing weight. Here, as elsewhere in her translation, Hutchinson exploits Lucretius' frequent repetitions across books to explore multiple connotations of a single Latin phrase, and thus multiple dimensions of atomic physics. Her method ultimately differs from Golding's regularisation of Ovid, tending instead towards variety and the desystemisation of the poem's doctrines. In so doing, however, Hutchinson recognises translation's transformative capacity for natural philosophical investigation.

Recovering the changes Hutchinson makes to *De rerum natura* is vital for recovering her authorial agency. In praising Hutchinson's translation, critics have typically highlighted her fidelity to, by all accounts, an exceptionally difficult Latin poem. While Jonathan Goldberg, for example, ultimately suspends the question of accuracy from his analysis, not addressing Hutchinson's changes to the Latin means that we are left with his introductory assessment that her "faithful" translation is "remarkable… not only [for] its accuracy but also its concision".[41] Such praise, however well-intentioned, downplays the creative choices Hutchinson makes in translating the poem and consequently elides her agency with Lucretius'.[42] A.E.B. Coldiron promotes a productive alternative to fidelity-based analyses, encouraging critics to read translations as "variant version[s] in potentially equal-horizontal rather than only subservient-vertical relation to [their] prior foreign text[s]".[43] Doing so, she argues, encourages the analysis of changes between different language versions in terms of "process and agents: exactly by whom and in what context, exactly how, did the differences come to be?".[44] I follow Coldiron's approach to Hutchinson's changes as it centres the differences between her version of *De rerum natura* and Lucretius' without assuming they result from translational or natural philosophical misunderstandings. Coldiron's analysis is part of a larger cultural turn in early

[40] For other echoes of *De rerum natura* in Hutchinson's dedicatory letter see Norbrook and Barbour, "Introduction", xciii–xcvi.
[41] Goldberg, *The Seeds of Things,* 157, 155.
[42] See Lawrence Venuti, "Introduction", in *Rethinking Translation: Discourse, Subjectivity, Ideology,* ed. Lawrence Venuti (London: Routledge, 1992), 1–17.
[43] A.E.B. Coldiron, "Translation and Transformission; or, Early Modernity in Motion", *Canadian Review of Comparative Literature* 46, no.2 (2019): 207.
[44] Coldiron, "Translation and Transformission", 210.

modern translation studies that, in Tania Demetriou and Rowan Tomlinson's words, has emphasised "the social and material conditions" in which translations were produced and read.[45] Critics have begun to note how Hutchinson's translation choices may have been motivated by her religious or political leanings.[46] I show that Hutchinson is fully cognizant of the wider philosophical culture in which she is translating, particularly Aristotelian hylomorphism that corpuscular philosophy was increasingly challenging.

In this chapter, I argue that Hutchinson, an attentive reader of Lucretius, recognises the re-combinatorial potential of atomic form and uses it to authorise her transformative labour in translating *De rerum natura*. I build on the work of Blake who argues that "early modern physics are ripe with concepts that will allow us to articulate new formalisms other than Aristotelian".[47] Atomic definitions need to be included in this renewed attention to form. One such definition is offered by Charleton in his *Physiologia*. Writing when Hutchinson was likely undertaking her translation, he provides an important touchstone for the kinds of atomic "discourse" Hutchinson was privy to. "Form," Charleton asserts, "is nothing really distinct from, but is the very Atoms themselves, as they are thus, and no otherwise ordered and composed".[48] By theorising form as emerging from atomic interactions, *De rerum natura* and Charleton collapse the Aristotelian distinction between matter and form, and trouble the resultant scholastic theory of change.

This chapter falls into three parts. In the brief first section, I explore how matter, form and natural philosophical theories of change feature in early modern translation paratexts. In the second, I excavate a theory of atomic-poetic form from Lucretius' atom-letter analogy that brings with it a corresponding understanding of translation as recombination. Unlike scholastic theories of change that pose the addition of a new form, atomic translation suggests that a new form is generated from the rearrangement of pre-existing matter. As such, an atomic theory of form suggests that reading for change is reading for form. In the third, I focus on Hutchinson's multiple retranslations of Lucretius' repetitions to demonstrate how Hutchinson exploits her understanding of atomic-poetic form to recombine and probe the poem's atomism. She morphs single phrases into multiple forms not to infer her way back to an essential, unchanging truth embedded in *De rerum natura.* Instead, by trialling multiple explanations for a given phenomenon, Hutchinson exerts pressure on Lucretius'

[45] Tania Demetriou and Rowan Tomlinson, "Introduction: 'Abroad in Mens Hands': The Culture of Translation in Early Modern England and France", in *The Culture of Translation in Early Modern England and France,* 7.
[46] See, for example, Norbrook and Barbour, "Introduction", lxv–lxxi, lxxxi–lxxxix. See also David Norbrook, "Atheists and Republicans: Interpreting Lucretius in Revolutionary England", in *Lucretius and the Early Modern,* 223–58.
[47] Blake, "The Physics of Poetic Form", 333.
[48] Charleton, *Physiologia,* sig.3I1r–v.

atomism, undoing some of his most dogmatic assertions and identifying continuities with other philosophical theories, such as hylomorphism. In the final two sections, I favour the language of *transformation* over *translation.* If translation etymologically suggests the transference of meaning, then transformation implies a material morphing appropriate for *De rerum natura*'s atomism.[49] Furthermore, it encapsulates the changes Hutchinson makes to Lucretius' Latin, as well as those between her multiple English versions of single Latin phrases.

Matter, Form and Change

Early modern translators frequently theorise the change they make to a text in terms of a division between *res* and *verba.* In his preface to *The Destruction of Troy* (1656)—a revised, royalist version of the translation of Book 2 of Virgil's *Aeneid* found in Hutchinson's commonplace book—John Denham evokes Horace to claim "I conceive it a vulgar error in translating Poets, to affect being *Fidus Interpres*; let that care be with them who deal in matters of Fact, or matters of Faith".[50] John Dryden likewise quotes Horace in his preface to *Ovid's Epistles* (1680) ("Nec verbum verbo curabis reddere fidus Interpres"), providing Wentworth Dillon's translation of the line into English: "*Nor word for word too faithfully translate*".[51] In the translation of poetry, Denham and Dryden prioritise the preservation of sense over exact verbal correspondence, suggesting that a word-for-word approach is overly restrictive and likely to produce both a bad translation and bad poetry. In Denham's words, "the grace of the Latine will be lost by being turned into English words; and the grace of the English, by being turned into the Latine Phrase".[52]

By distinguishing sense or subject matter from words, these accounts render *res* curiously immaterial, something essential to a text, something rather like form. On the other hand, *verba* becomes the materially unruly exterior. Lawrence Venuti suggests that accounts such as these are suggestive of a Platonic metaphysics suspicious of change; visible deviance from the source text is conceived of as inherently bad, evidence that translations are simulacral or bad copies.[53] He argues that translators compensate by employing "fluent" translation strategies, such as sense-for-sense translation, to bypass the troublesome resistance of verbal matter and evoke the illusory presence of

[49] *OED*, "translation (*n.*), Etymology", last modified December 2024, https://doi.org/10.1093/OED/9382890370.
[50] John Denham, *The Destruction of Troy, An Essay Upon the Second Book of Virgil Æneis. Written in the year, 1636* (London: Printed for Humphrey Moseley, 1656), sig. A2v.
[51] John Dryden, *Ovid's Epistles, Translated by Several Hands* (London: Printed for Jacob Tonson, 1680), sig. R8v.
[52] Denham, *The Destruction of Troy,* sig. A3r.
[53] Venuti, "Introduction", 3–4. See also Lawrence Venuti, *The Translator's Invisibility: A History of Translation,* 3rd edition (London: Routledge, 2017), 39.

the original author in the translated text. For Venuti, these strategies culminate in the invisibility of the translator and their labour.[54]

Denham's and Dryden's Platonic metaphysics of translation is rhetorically created. Coldiron has convincingly argued that claims of the early modern translator's invisibility need to be historicised, identifying that "many early printed paratexts… used elaborate, suggestive metaphors for translation" that "demand the reader's attention to the complexity of the translation process itself, making the translators and their work anything but invisible".[55] Although Denham's claim that he has "not the vanity to think [his] Copy equal to the Original" and that he "made it [his] principle care to follow him [Virgil], as he made it his to follow Nature in all his proportions" do suggest translation's thirdhand, simulacral remove from nature, they can also be understood as part of the modesty topos frequently deployed in authorial paratexts.[56] In other words, the apparent Platonic metaphysics may be an outgrowth of conventional rhetorical posturing. When translators are less modest, the Platonism falls away. In the preface to his "Pindarique Odes", Abraham Cowley claims "I have seen *Originals* both in *Painting* and *Poesie,* much more beautiful then their *natural Objects*; but I never saw a *Copy* better then the *Original*".[57] While still claiming the translation is a "*Copy*", Cowley subverts the Platonic relationship between nature ("*natural Object*") and art ("*Original*"), suggesting that poetry exceeds nature. If the poem exceeds nature, but the translation falls short of the original poem then this ultimately leaves the status of the translation ambiguous. Moreover, Cowley asserts that if his own "libertine way" of translating prevents it from being called translation, then he is "not so much enamoured of the *Name Translator,* as not to wish rather to be *Something Better*, though it want yet a *Name*".[58] Far from secondary or simulacral, Cowley boasts that his innovative translation method lacks a name and therefore, perhaps, a metaphysical model.

Many other paratextual translation metaphors imagine texts as hylomorphic composites of matter and form to theorise the translation's transformative nature. The clothing metaphor was especially common. As Massimiliano Morini observes, clothing metaphors revolve around the pairs "sense (or, sentence) and sound, meaning and words, or—metaphorically—soul and body, body and clothes" where the first part is "considered essential, the second superfluous".[59] Yet he notes that in the seventeenth century these metaphors become more complicated, with translators attempting to

[54] Venuti, *The Translator's Invisibility,* 1. See also, 35–82.
[55] A.E.B. Coldiron, "Visibility Now: Historicizing Foreign Presences in Translation", *Translation Studies* 5, no.2 (2012): 193, 189–200. See also, Newman and Tylus, "Introduction", 7.
[56] Denham, *The Destruction of Troy,* sig. A2v, A3v.
[57] Abraham Cowley, *Poems* (London: Printed for Humphrey Moseley, 1656), sig. 3A2r.
[58] Cowley, *Poems,* 3A2v.
[59] Massimiliano Morini, *Tudor Translation in Theory and Practice* (Aldershot: Ashgate, 2006), 36.

reclothe the harder to define style of the author.[60] Dryden, for instance, claims "Nor must we understand the Language only of the Poet, but his particular turn of Thoughts, and of Expression, which are the Characters that distinguish, and as it were individuate him, from all other writers".[61] Evoking the author themselves, a body-soul composite, breaks down the barriers between matter and form, *res* and *verba,* suggesting a much more complicated process of change. Dryden's word "individuate" situates translation amongst knotty contemporary metaphysical debates about what distinguishes one individual from another of the same kind, and, therefore, what it is that makes that individual the individual it is.[62] Aristotle held matter to be the individuating principle, with form providing the species or kind, but this was complicated in scholastic philosophy where priority began to be given to the soul, and hence form, as the individuating factor in humans.[63] By trying to identify exactly what it is about Ovid and his writing that "distinguish[es]" him, Dryden attempts a logical and metaphysical definition of what it is that his translation should attempt to preserve. For Dryden a poet's "particular turn of Thoughts, and of Expression", something about their matter *and* their form, matters. In the *Sylvae* (1685) Dryden continues this effort, identifying Virgil as "succinct and grave", while Lucretius' "distinguishing Character… his Soul and Genius" is his "noble pride, and positive assertion of his Opinions", perhaps an allusion to the dogmatism sometimes associated with Epicureanism in the seventeenth century.[64] By evoking the author as an individuated hylomorphic substance, these translators ambitiously aim to convey nothing less than the full individuated being of the author and text in their translations.

These writers optimistically imagine translation as a kind of accidental change in the Aristotelian sense. Richard Fanshawe, for instance, praises John Evelyn's translation of *De rerum natura*'s first book in hylomorphic terms:

> so shall we know *LUCRETIUS* in your Book, though it retains neither his voyce, nor yet his hairynesse; since it hath both his Soule, and his lineaments. Nor have you in

[60] Morini, *Tudor Translation,* 37.
[61] Dryden, *Ovid's Epistles,* sig. a2v–a3r.
[62] Udo Thiel, "Individuation", in *The Cambridge History of Seventeenth-Century Philosophy, Volume 1,* ed. Daniel Garber and Michael Ayers (Cambridge: Cambridge University Press, 1998), 212. See also, Raymond Williams, "Individual", *Keywords: A Vocabulary of Culture and Society, Revised Edition* (New York: Oxford University Press, 1985), 114–16. Williams observes that "individual" originally meant indivisible, and was used in logic and biology to denote something that could not be further divided into a specific group. Dryden uses "individuate" in this logical sense as he attempts to define what distinguishes an individual poet (e.g. Lucretius, Ovid, Virgil etc.) from the larger group of "Poet".
[63] For these debates see Thiel, "Individuation", 212–62; Pasnau, "Metaphysical Themes", 552–57.
[64] John Dryden, *Sylvæ*, *or, The Second Part of Poetical Miscellanies* (London: Printed for Jacob Tonson, 1685), sig. A5r, sig. A8v–a1r. For Lucretius' dogmatism see Levitin, *Ancient Wisdom,* 330.

> my conceit (however I finde it difficult to explain) so much put him into your clothes, as out of his own person,[65]

Fanshawe's metaphor is carefully balanced around Lucretius' essential "Soule" and "lineaments" and superfluous "voice" and "hairynesse". Yet in this metaphor Morini's distinction between the "essential" and the "superfluous" cannot be straightforwardly aligned with matter and form. Rather, Fanshawe evokes not only a hylomorphic theory of substance, but *also* an Aristotelian metaphysics that distinguishes between accidental and substantial forms and between two corresponding varieties of change. In accidental change, a substance gains an accidental form or quality; in substantial change, matter gains a new substantial form. Accidental change does not alter the substance's essence and is commonly referred to as alteration whereas in substantial change something new comes into being (generation) or ceases to exist (corruption).[66] It is no wonder that Fanshawe "finde[s] it difficult to explain"; he is attempting nothing less than a physical and metaphysical definition of Lucretius and, metonymically, *De rerum natura.* When Fanshawe claims that Evelyn has shaved Lucretius' "hairynesse", this quality is identified as accidental and can be removed without altering Lucretius' being. The same is true of his "voyce", and hence the poem's being in Latin. Lucretius's "Soule" remains unchanged, evoking the soul as substantial form, while "lineaments" suggests something material about his appearance. Fanshawe, therefore, theorises translation as an accidental change whereby the poem gains the quality of being in English, while its essence or meaning, remains unchanged—Evelyn's translation is still Lucretius, "his own person". While perhaps a more modest kind of change in that it does not claim to generate something new, Fanshawe nonetheless perceives this as a testament to Evelyn's translation skill. In this case, accidental change may be the more difficult kind of change to enact. Hylomorphism provides a

[65] Fanshawe, "For my Honored FRIEND and KINSMAN JOHN EVELYN Esq;", 19–20. In the 1656 edition of Evelyn's translation the first part of this quote only reads "And so shall we know *LUCRETIUS* in your Book, though it retains neither his voyce nor yet his lineaments". The errata indicates that "lineaments" should be replaced with "Hairiness", but the latter part of the quote goes unmentioned (Evelyn, *An Essay on the First Book of T. Lucretius Carus De Rerum Natura,* sig. B4v, M7r). Evelyn complained extensively about the poor printing of his translation, even suggesting that the experience discouraged him printing the remainder of the translation. It seems likely that this part of Fanshawe's letter was one of these errors which even the errata did not fully correct. The full quote is evident in the original letter Fanshawe wrote to Evelyn dated 27th December 1653 which is transcribed and printed in William E. Simeone, "A Letter from Sir Richard Fanshawe to John Evelyn", *Notes and Queries* 196, no.21 (1951): 315–16. For Evelyn's complaints about the printing see Repetzki, "The History and Basis of the Text", in *John Evelyn's Translation of Titus Lucretius Carus,* xci–xciv.

[66] Aristotle, *Physics, Volume I: Books 1–4,* trans. P.H. Wicksteed and F.M. Cornford (Cambridge, MA: Harvard University Press, 1957), I.7. Aristotle's specific treatment of the body and soul as a hylomorphic compound is more complicated than (and potentially contradicts) his general account of change. Aristotle holds that the body is essentially ensouled (and hence informed) and therefore ceases to be a body, properly speaking, after death. This might imply that the body—matter in this hylomorphic analysis—does not actually underly the substantial change in this instance. See Ainsworth, "Form vs. Matter", esp. "1. Matter and Form Introduced".

model whereby translation can maintain its relationship to the original text, whilst also acknowledging the skilful change wrought by the translator.

De rerum natura presents a radically different physics and metaphysics from the hylomorphism that Fanshawe uses to interpret Evelyn's translation. Blake argues that literary criticism is still dominated by a hylomorphic understanding of texts that limits our ability to interpret those that operate according to different formal logics.[67] "If literary theory adheres, however unconsciously, to an understanding of form that comes from Aristotelian physics," she asks, "how would it change our discussion of form if we draw from other physics instead?"[68] Following Blake's prompt, in the next section I articulate the theories of atomic form and translation that emerge from Hutchinson's *De rerum natura* and inform her translation.

First, I want to dwell on one final metaphor from Denham's preface that once again suggests a very different model of translation:

> Poesie is of so subtle a spirit, that in pouring out of one Language and into another, it will all evaporate; and if a new spirit be not added in the transfusion, there will remain nothing but a *Caput mortuum*.[69]

In Denham's alchemical metaphor, a bad translator simply pours from one language to another, consequently producing a "*Caput mortuum*", the "worthless residue" of a distillation or sublimation suited only for disposal. Rather, good poetic translation is a semi-controllable material process of adding, mixing and recombining. While the translator controls the material they add, they cannot control the material lost in the process or, implicitly, the reaction which occurs between new and old spirit; the mixing's impact cannot be predicted prior to translation and is evident only in the product. Here, Denham negotiates what Venuti identifies as the "ratio of loss and gain" inherent to the transformative process of translation that can produce "unforeseen effects".[70] For Denham, as I will show for Hutchinson, translation is a process of experimental, transformative discovery that increases the translator's understanding of the material involved. Pursuing this non-hylomorphic metaphor lends itself to a different physics, or in this case chemistry, of change. Although Denham's metaphor is alchemical rather than atomic, his focus on recombination comes closer to Hutchinson's method when she transforms *De rerum natura* through the rearrangement of parts. Yet the flexibility with which seventeenth-century translators use metaphors that engage various physical and metaphysical theories of change—Platonic, hylomorphic, alchemical—to grapple with translation is

[67] Blake, "The Physics of Poetic Form", 332.
[68] Blake, "The Physics of Poetic Form", 332.
[69] Denham, *The Destruction of Troy,* sig. A3r.
[70] Venuti, "Introduction", 10.

perhaps suggestive of the continuities between these different systems. As I will show in the final part of this chapter, Hutchinson observes and explores this slipperiness, her repeated interjections of "form" in her translation drawing on its overdetermined philosophical legacy to complicate rigid distinctions between atomism and other systems.

"by its changes, are the creatures changd": Atomic Form and Transformation

Lucretius' universe is composed entirely of atoms and void. Atoms are material, physically indivisible, and possess weight, extension and shape. Lucretius is clear that atoms are infinitely many, but only of an inconceivably large variety of shapes; or, as Hutchinson pithily translates, "principles of like forms infinite be, / But limited in their varietie" (2.522–23). Lucretius argues that these differently shaped atoms produce all of nature's macroscopic variety by combining variously to form compound beings. The three key properties that influence the compound produced are "ordo, positura, figuræ" (1.685)—order, position, and shape—where order refers to the atoms' arrangement and position to their orientation. Lucretius sometimes elaborates that the atoms' "Interualla, vias, connexus, pondera, plagas, / Concursus, motus" (2.725–26) [intervals, passages, connexions, weights, blows, meetings, motions; *Loeb* 2.726–27] also impact the type of compound produced. These doctrines form the basis of Lucretius' combinatorial materialism.

These principles also form the foundation of Lucretian poetics. In early modern editions of *De rerum natura,* like the 1631 Daniel Pareus edition that Hutchinson uses, the above long list of atomic interactions is repeated later in Book 2 as part of Lucretius' atom-letter analogy.[71] In its repeated form, the terms "ordo, positura, figuræ" are also included, combining both lists into one catalogue of ten items. Charleton takes issue with this longer list's superfluity, arguing that several of the terms are synonymous.[72] Far from suggesting that Lucretius' expanded list is indicative of philosophical rigor, he accuses Lucretius of having had "more regard to the smoothness of his Verses, then the Methodical traction of his Subject".[73] By claiming that Lucretius prioritised prosodic "smoothness" over his "Subject", Charleton divides the poem into its verse form and atomic subject matter, and hints that at this moment they may be working against each other, the poetry deforming the "Subject". However, Lucretius' atom-letter analogy indicates contrarily that the poem's "Subject" is inseparable from its "Verses":

> Quin etiam refert nostris in versibus ipsis,
> Cum quibus, & quali sint ordine quæque locata:
> Namq́ue eadem cœlum, mare, terras, flumina, solem

[71] Lucretius, *Titi Lucretti Cari philosophi & poëtæ antiquissimi De rerum natura libri sex,* ed. Daniel Pareus (Frankfurt: Wolfgang Hofmannus, 1631), 2.1018–19.
[72] Charleton, *Physiologia,* sig. S2r.
[73] Charleton, *Physiologia,* sig. S2r.

Significant, eadem fruges, arbusta, animantis:
Si non omnia sint, at multò maxuma pars est,
Consimilis; verùm positura discrepitant res.
Sic ipsis in rebus item iam materiaï
Interualla, viæ, connexus, pondera, plagæ,
Concursus, motes, ordo, positura, figuræ
Cùm permutantur, mutari res quoque debent.
(2.1011–20)

> Moreover, it is important in my own verses with what and in what order the various elements are placed. For the same letters denote sky, sea, earth, rivers, sun, the same denote crops, trees, animals. If they are not all alike, yet by far the most part are so; but position marks the difference in what results. So also when we turn to real things: when the combinations of matter when its [intervals, passages, connexions, weights, blows,] motions, order, position, shapes are changed, the thing also must be changed. (*Loeb* 2.1013–22; 2.726)[74]

Gorman observes that "Metaphorical accommodation of the 'atom' achieves an advanced closeness between tenor and vehicle because, ultimately, both sides of the metaphor are made of the same stuff".[75] In an atomic universe, atoms and void compose both the physical "mare" [the sea] and the word "mare". This is true not only because the poem is composed of paper and ink, but because Lucretius' account of perception theorises thin atomic sheets—simulacra— that are shed by atomic compounds and enter the eye to allow sight (4.33–52 in Hutchinson's translation). As Alessandro Schiesaro identifies, the poem's atomism dictates that the simulacra shed by words on the page enter the reader's eyes and then instruct the mind in forming a representative atomic image.[76] Lucretius contends that every stage (words, simulacra, mental image) are made of atoms and void.[77] Consequently, the poem becomes ontologically involved in and subject to the causal processes it describes.[78] Therefore, Schiesaro argues that Lucretius' analogy implies that many of the "stylistic and rhetorical features of the poem are actually devised to reflect a set of underlying atomic phenomena".[79] Lucretius' atom-letter analogy indicates that the poem's poetics operate according to its physics and metaphysics.

Returning to Lucretius' list in terms of this atomic poetics, rather than obscuring the "Subject", the "Verses" create their argument that dynamic atomic interactions alone can produce

[74] 2.1018 in the cited edition of Hutchinson's translation, and early modern editions of *De rerum natura* like the Pareus edition Hutchinson used, is omitted by the *Loeb* and many modern editions of *De Rerum Nature* as this line's placement is no longer considered authorial. I have interpolated the modern English translation of 2.1018 from *Loeb* 2.726.
[75] Cassandra Gorman, "Poetry and Atomism in the Civil War and Restoration", *Literature Compass* 13, no.9 (2016): np, https://doi.org/10.1111/lic3.12335.
[76] Alessandro Schiesaro, "The Palingenesis of 'De Rerum Natura'", *Proceedings of the Cambridge Philological Society* 40 (1994): 87–88.
[77] For the importance of void to Lucretius' analogy see Swarbrick, *The Environmental Unconscious,* 9–12.
[78] Schiesaro, "The Palingenesis of 'De Rerum Natura'", 87.
[79] Schiesaro, "The Palingenesis of 'De Rerum Natura'", 85.

extreme variety. As item after item piles up, the variety of ways in which the atoms' "Interualla, viæ, connexus, pondera, plagæ, / Concursus, motes, ordo, positura, figuræ" could interact with each other and impact the compound created, accumulate to an almost incomprehensible level. Despite criticising Lucretius' excess, Charleton somewhat hypocritically uses a similar technique of listing even nearer synonyms to present a very similar argument: "when a Thing is Generated, multitudes of Atoms are congregated, commixed, composed, disposed, & complicated after such a determinate manner, as that from these doth necessarily result a body of such a particular species, appearance, and consequently of such a respective denomination".[80] Like Lucretius, Charleton uses the form of his sentence to argue for the complexity and specificity of atomic interactions. The atom-letter analogy suggests that the form of the line cannot be distinguished from the matter, the atomism, in any meaningful way.

The analogy loses none of its explanatory power in Hutchinson's translation:

> These lines, where euery letter hath its place,
> For with the same, disposed seuerall ways,
> We write, men, plants, corne, sun, heaven, earth & seas;
> And if all be not like, the most part farre,
> Only in their positions, different are,
> Soe, as the distance, iuncture, motion, weight,
> Force, manner, order, concourse, figure, state
> Of the first matter variously is rang'd,
> So by its changes, are the creatures changd.
> (2.1039–47)

Her emphatic "These lines" draws attention to the materiality of the text on the page, encouraging a reader to atomise the lines, to notice "euery letter" and particularly the "same" letters "disposed seuerall ways" before the meaning of the words. Just as Lucretian atoms combine variously into composites, "letter[s]" build to syllables, syllables to words, and words to "lines". Hutchinson also displays this kind of atomic thinking in her dedication where she claims to have "numbred the sillables of [her] translation by the threds of the canvas [she] wrought in".[81] Her focus on "sillables" as combinable units demonstrates an atomic understanding of poetic form as emerging from the interactions of smaller parts.

As atomic-poetic form is fundamentally material and combinatorial, it is also mutable. Whereas Aristotle theorised change as the joining or disjoining of forms to matter, Lucretius explains change as the accumulation, loss, or rearrangement of the atoms themselves. Hutchinson's translation provides ample evidence for Lucretius' point that the same letters arranged differently

[80] Charleton, *Physiologia,* sig. 3I1r.
[81] Hutchinson, *The Translation of Lucretius,* 7.

produce different words: Lucretius' list of example words ("cœlum, mare, terras, flumina, solem / … fruges, arbusta, animantis") contains fifteen different letters, with twelve appearing more than once; Hutchinson's English ("men, plants, corne, sun, heaven, earth & seas") contains fourteen different letters, with seven appearing more than once. In its translated form, the analogy accrues additional explanatory power by reminding us of English and Latin's largely shared alphabet, and so the many more possible combinations of letters across different languages.[82] Hutchinson's acknowledgement that "most" of the letters are the "same" rings true not only internally to her list, but across Lucretius' Latin words and her English ones which share eleven letters. Recombining letters allows you to not only go from English to English or Latin to Latin, but Latin to English.

Unlike broadly Aristotelian conceptions of translation, *De rerum natura*'s strict atomism allows for no unchanging essence that remains distinct from its material composition. To repeat Charleton's definition, atomic form "is the very Atoms themselves, as they are thus, and no otherwise". Even when "considered abstractly or by it self", "the Forme of a thing" is "onely a meer Quality, Accident, or Event, of which the Atoms, which compose that Body or substance, are naturally capable, when thus consociated and mutually related".[83] Atomic forms do not shape matter but emerge from specific and dynamic atomic interactions; they are not transcendent or universal but material and highly particular. In Hutchinson's words, as "the first matter variously is rang'd, / So by its changes, are the creatures changd". Meaning emerges from specific material forms and, as Hutchinson's translation of an earlier passage highlights, rearranging letters changes both the "sounds and sence" (1.837) of the words produced. Even the minimal recombination of "es" for "d" alters the present tense "changes" to the past tense "changd", a choice that recreates Lucretius' repetitive "permutantur, mutari".

Atomism therefore blurs the distinction between generation and alteration. Charleton acknowledges that Aristotle "sharply taxeth" pre-Socratic philosophers, including the early atomists Democritus and Leucippus, for "Confounding Generation with Alteration".[84] He pursues an atomic definition of change but still retains a theoretical distinction between generation ("when a Thing is Generated, multitudes of Atoms are congregated, commixed, composed, disposed, & complicated after such a determinate manner, as that from these doth necessarily result a body of such a particular species, appearance, and consequently of such a respective denomination") and alteration ("a Body is not produced *de novo,* but onely acquires some new Quality, or some Accidentary

[82] Charleton contends (without showing his working) that the 24 letters of the alphabet can combine "to make such a vast diversity of words, which cannot be enumerated by fewer then 39 cyphers, *viz.* 29523279903960414084761860964352000000". Charleton, *Physiologia,* 3K1r.
[83] Charleton, *Physiologia,* sig.3I1v.
[84] Charleton, *Physiologia,* sig.3H1r.

Denomination"), using references to Aristotle as support.[85] However, his rejection of Aristotelian substantial forms does nonetheless reduce the difference between generation and alteration, substantial and accidental change. Charleton partially confesses this in this discussion of creation *ex nihilo* and annihilation. Whereas Lucretius denies the possibility of creation *ex nihilo* and annihilation entirely, Charleton's baptised atomism reserves these types of change for God alone. Consequently, he concludes that nature's power only "extends to the moulding of *Old Matter* into *New Figures*; and so, the noblest Attribute we can allow her, is that of a *Translator*".[86] Imagining form atomically as a recombination of previously existing elements means that every act of formation is also a transformation, all forming inherently a transforming.

The poem's material intractability could prove a potential problem to an ambitious translator such as Hutchinson. What Creech terms the "extream stubborn[ness]" of the poem's "Matter" is nowhere more pronounced than in Lucretius' Book 1 invocation of the atom-letter analogy:[87]

> Iámne vides igitur, paullo quod diximus antè,
> Permagni referre eadem primordia sæpe,
> Cum quibus, & quali positura contineantur?
> Et quos inter se dent motus, accipiantque?
> Atque eadem paullo inter se mutata creare
> Ignes é lignis? quo pacto verba quoque ipsa
> Inter se paullo mutatis sunt elementis,
> Cum ligna, atque ignis distincta voce notemus.
> (1.905–12)

> Do you see now, as I said a little while ago, that it is often of very great importance with what and in what position these same first-beginnings are held in union, and what motions they impart and receive mutually, and how the same elements a little changed in their relations create fires and firs? Just as the words themselves too consist of elements a little changed, when we mark fires and firs with a distinct name. (*Loeb* 1.907–14)[88]

Lucretius relies on the near identical materiality of the words "Ignes" [fires] and "lignis" [wood]. This makes the phrase difficult to translate into English, threatening to reimpose a gap between *res* and *verba.* In the *Loeb* edition W.H.D. Rouse and Martin F. Smith choose "fires" and "firs", prioritising the wordplay over the precise meaning of the words. Hutchinson takes a different approach in her translation:

[85] Charleton, *Physiologia,* sig. 3I1r, 3G4v.
[86] Charleton, *Physiologia,* sig. M4v.
[87] Creech, *De Natura Rerum,* sig. b4r–v.
[88] Line 912 differs slightly in the *Loeb* edition, reading "ignes et lignum" compared to the early modern edition used by Hutchinson which has "Ignes é lignis" at line 910 as quoted.

This then confirms, that which was sayd before
That the same principles, as they are ioynd,
Moove, or are moovd, or have their place assignd,
Divers effects produce; thus there will need
But a small change, to make the fire proceed
Out of the wood, as in our writings wee,
By altring their positions variously,
lignis. Ignis. Of the same letters these two words compose.
(1.914–21)

Hutchinson chooses the more literal translation of "fire" and "wood", but in doing so loses the words' material similarity. To compensate, she uses the margins of her manuscript to record the Latin words "*lignis. Ignis*".[89] Smith argues that margins were sites where "crucial acts of translation and interpretation took place, and in which the matter of the text was unfolded, identified, and explored".[90] Hutchinson uses the margins as an extension of the poetic line, "these two words" gesturing outwards to the margins rather than back to "fire" and "wood". The order she writes "*lignis. Ignis*" mirrors her phrase "to make the fire proceed / Out of the wood". The unfolding of poetic matter in the margins also allows Hutchinson the freedom to mix-and-match "lignis" and "ignis", the two most similarly spelt declensions of the Latin from two separate lines of verse. She outdoes Lucretius in this regard by supplying a more perfect equivalence than either the juxtaposition of "Ignes" and "lignis" in line 910 ("ignes" and "lignum" in modern editions) or "ligna" and "ignis" in line 912. Hutchinson's creative solution suggests that the poem's unruly materiality is generative rather than restrictive.

Recognising the material mutability of atomic form liberates a translator from restrictive notions of absolute fidelity to the text. Passannante argues that Lucretian atomic poetics transformed the "material practices of poets and philosophers well into the seventeenth century" as they grappled with the idea of "the text in flux".[91] While this loss of stability could be anxiety-inducing, it could also be intensely freeing, allowing readers to interrogate "one of the most enduring questions of the period: what does it mean for a text, a poem, a philosophy to be reborn?"[92] The fuzzy boundary between generation and alteration, forming and transforming, that atomism cultivates suggests precisely that this rebirth is necessarily also a transformation. Indeed, if in

[89] Hutchinson, Additional MS 19333, fol. 23r.
[90] Helen Smith, "Matter in the Margins", in *Thresholds of Translation: Paratexts, Print, Cultural Exchange in Early Modern Britain (1473–1660),* ed. Marie-Alice Belle and Brenda M. Hosington (Cham: Springer, 2018), 27.
[91] Passannante, *The Lucretian Renaissance,* 14, 12.
[92] Passannante, *The Lucretian Renaissance,* 8.

Charleton's formulation nature is a "*Translator*", then translation and original composition, translator and author, become virtually indistinct.

Consequently, atomist physics and metaphysics also allow for the reassertion of Hutchinson's agency in the translation. Nicholas Hardy cautions against interpretations of Lucretius' atom-letter that extend beyond the formation of words alone. He insists that to apply it to whole texts would be an "anti-Lucretian manoeuvre" in which the author becomes an omnipotent creative figure who should, properly speaking, be absent from the atomism of the poem.[93] Yet in the realm of natural philosophy, Catherine Wilson argues that experimental philosophers found a greater freedom and personal authority in atomic accounts of causation and transformation:

> atomism awards a permission and provided for a locus of control that hexameral creationism and Aristotelian hylomorphism did not. By experimentation and reason the natural philosopher might succeed in inferring his way to the original alphabet and its combinatorial principles, and human art could emulate nature's own productions by mastering her mechanical methods of transformation.[94]

Although ancient atomists, including Lucretius, thought atoms were beyond human control, making form immanent to matter and thus alterable by human agency was an empowering aspect of corpuscular philosophy for experimental philosophers.[95] Bacon was no Epicurean atomist, but he too argues that knowing a thing's "forme", by which he means the laws of matter, allows the "*possibilitie* of *superinducing* that *Nature* vpon *any varietie of Matter*".[96] Hutchinson recognises the potential of her own "human art" to recombine the "alphabet" and master the "methods of transformation". This may be an "anti-Lucretian manoeuvre" but it was one very much available to Hutchinson who was no dogmatic atomist, as I will expand upon in the following section. The atomic theory of form suggested by *De rerum natura* grants the translator a degree of "permission" and "control", reasserting Hutchinson's agency in the translation. Any similarities or differences between Hutchinson's *De rerum natura* and Lucretius' stem not from the metaphysical transference of an immutable meaning, but from Hutchinson's transformational choices.

An atomic formalism, therefore, recognises that we can think about form by attending to Hutchinson's precise changes throughout the translation. One such example is her transformation of Lucretius' "Namq́ue eadem cœlum, mare, terras, flumina, solem / Significant, eadem fruges, arbusta, animantis" in the previously quoted atom-letter analogy. Hutchinson makes several significant

[93] Nicholas Hardy, "Is the *De rerum natura* a Work of Natural Theology? Some Ancient, Modern, and Early Modern Perspectives", in *Lucretius and the Early Modern,* 206-207.
[94] Wilson, *Epicureanism at the Origins of Modernity,* 69.
[95] Wilson, *Epicureanism at the Origins of Modernity,* 69.
[96] Francis Bacon, *The Advancement of Learning,* 85.

changes in rendering this as, “We write, men, plants, corne, sun, heaven, earth & seas”. Firstly, she relocates the verb (“Significant”) from the middle of the Latin list to the beginning of the English one and condenses Lucretius’ two verse lines into one long, asyndetic list. This is the perfect form to present an argument about order and position as the words and their constituent letters are offered more immediately to the reader for comparison in a line otherwise devoid of grammatical relation. Hutchinson also changes “animantis” [animals] to “men”, removes “flumina” [rivers] and ends the line with “heaven, earth & seas” where their equivalents (“cœlum*,* mare*,* terras”) begin Lucretius’ list. In English, this is the most argumentatively effective arrangement as “earth & seas” are composed entirely of letters from the preceding words. Lucretius uses a similar effect with his final word “animantis” which is also compiled only of previously occurring letters. Transforming Lucretius’ words and their order allows Hutchinson to effectively represent the atomic concept the Latin lines express.

Hutchinson’s transformation goes further, demonstrating her dynamic understanding of atomic form as contingent on “distance, iuncture, motion, weight, / Force, manner, order, concourse, figure, state” (2.1044–45). These complex atomic interactions materialise in her transformation of both this and the above list where interpretive possibilities emerge from weighty metrical stress, the force of rhyme and the motion of rhythm. In the first, Hutchinson’s reordering results in the dense accumulation of monosyllabic words at the line’s beginning, which disrupts the expected iambic rhythm, as each word is stressed; only the first foot, “We write” is potentially iambic. This disruption effectively disguises the line’s hypermetricality as the reader is lulled into scanning the final four syllables in an iambic rhythm. The line’s relentless stress hammers home the materiality of the words as we concentrate on their spelling over their meaning.[97] Conversely, in the second list Hutchinson confines the monosyllables to the beginning and end of the lines to create a regular iambic rhythm. Furthermore, although her selection of words makes it difficult to tell which English words correspond to which Latin ones, her choices create internal half rhymes between “distance”, “force”, and “concourse”, and “iuncture”, “manner”, “order” and “figure”.[98] Hutchinson’s transformation of this list concisely demonstrates that the diverse, complex interactions forged between words in verse

[97] Hutchinson’s metrical irregularity has been long noted. Hugh Munro observes (patronisingly), “Perhaps her children happened at such times to be making a noise and so caused her to miscount ‘the threds of the canvas’ and consequently ‘the sillables of her translation’”. Hugh de Quehen observes that roughly 1 in 100 of Hutchinson’s lines is longer or shorter than ten syllables. Hugh Munro, “Mrs Lucie Hutchinson’s Translation of Lucretius”, *The Journal of Classical and Sacred Philology* 4 (1858): 132; Hugh de Quehen, “Ease and Flow in Lucy Hutchinson’s Lucretius”, *Studies in Philology* 93, no.3 (1996): 296. See also Elizabeth Scott-Baumann, “Lucy Hutchinson, Gender and Poetic Form”, *The Seventeenth Century* 30, no. 2 (2015): 265–84.

[98] Norbrook and Barbour also note this difficulty. Norbrook and Barbour, eds., *The Works of Lucy Hutchinson, Volume 1: Translation of Lucretius: Part 2, Commentary, Bibliography, and Index* (Oxford: Oxford University Press, 2012), 2.1044–45n.

can create a harmonious whole, just as atoms interact dynamically to form various "creatures". Although one set of changes tends towards irregularity and the other towards regularity, in both cases Hutchinson makes the lists' form a part of their argument. Giving due weight to Hutchinson's transformational choices reveals the extent of her engagement with Lucretian atomism.

"New forme": Transforming and Interrogating Lucretius

If acknowledging that the "same" letters produce different meanings when "disposed seuerall ways" liberates a translator from restrictive notions of absolute fidelity to the text, as I have argued, then *De rerum natura's* attention to form's mutability is likely to have made Hutchinson acutely aware of her ability to alter the poem's meaning. In the previous section, Hutchinson's transformational choices allowed her to enact the atomic principle being described. However, she also exploits her understanding of atomic form to probe and challenge the poem's atomism. This is best exemplified in Hutchinson's retranslating of Lucretius' repetitions each time they appear. Hugh de Quehen notes that Hutchinson is less fond of repetition than Lucretius.[99] Alternatively, Norbrook and Barbour propose that Hutchinson's retranslations may be evidence that she "worked in chunks without going back over earlier passages".[100] In this section, I argue instead that Hutchinson's choice to vary the repetitions results from her sophisticated understanding of atomic form's re-combinatorial capacity. In their account of early modern form's Protean nature, Jenny C. Mann and Debapriya Sarkar claim that "form is a mode of being *and* a process of becoming that is arrested in moments of knowledge production".[101] As I identified in the second section, atomism makes forming—a "process of becoming"—synonymous with transforming. By comparing Hutchinson's multiple transformations of a single Latin phrase, we can see moments where her "process of knowledge production" is "arrested" before it continues onward, recombining and transforming the poem anew. Doing so recovers the value Hutchinson places on translation as a natural philosophical process of knowledge formation and transformation.

When she retranslates repetitions, Hutchinson brings her understanding of atomic form into her translation practice. One example of this is Lucretius' statement, repeated four times in *De rerum natura,* about the value of atomism for achieving ataraxia (peace of mind or imperturbability):

> Hunc igitur terrorem animi, tenebrasq́ue necesse est
> Non radii Solis, neque lucida tela diei
> Discutiant, sed naturæ species, ratioq́ue;

[99] Quehen, "Ease and Flow in Lucy Hutchinson's Lucretius", 302.
[100] Norbrook and Barbour, "Introduction", liv.
[101] Mann and Sarkar, "Introduction", 6.

(1.146–48, 2.58–60, 3.91–93, 6.38–40)[102]

> This terror of mind therefore and this gloom must be dispelled, not by the sun's rays or the bright shafts of day, but by the aspect and law of nature.
> (*Loeb* 1.146–48, 2.59–61, 3.91–93, 6.39–41)

Hutchinson translates these lines differently each time they occur. Rather than reading this variation as simply a preference or an accident of the translation process, we should read it as an end in itself. In all four translations Hutchinson reverses the order of the first two lines, beginning with

> For not the sunne, nor the bright beames of day, (1.149)
>
> Wherefore not the suns beames, nor days bright ray, (2.57)
>
> Yett not the sunns bright beams, nor days cleare ray (3.95)
>
> Wherefore not the suns beames, nor dayes bright ray (6.39)

Across these versions, Hutchinson negotiates the "ratio of loss and gain" that Venuti identifies as crucial to all translations. She revels in the re-combinatorial potential of atomic form. Should "beames" or "ray[s]" be "bright"? And should those "beames" belong to the sun or day? By compressing the possessive in the first translation from "bright beames of day" to "days bright ray" in the following translation, Hutchinson gains a syllable to translate both "radii" and "tela" as "ray" and "beames". By shortening "Wherefore" to "Yett" she finds another syllable to include "cleare" and "bright" in the third version, effectively translating "lucida" twice. You can almost see her "numbr[ing] the sillables". Hutchinson's recombining continues in the following lines where "the minds mists and terrors" (1.150, 3.96), or "fears & shaddows" (2.58), or "fears & terrors" (6.40) are either "drive[n]" (1.150) or "chace[d] away" (2.58, 3.96, 6.40), meaning none of the four versions are completely identical. As Norbrook and Barbour note, "minds mists and terrors" evokes Lucretius' alliterative "terrorem animi, tenebrasque".[103] Arguably, the later translation of "shaddows" aligns closer with the sense of "tenebrasque" [darkness] and hence Lucretius' metaphor of light and dark. This recombination is playful, but it is also interrogatively engaged with the potential of the English language and pentameter line. In her recent translation of Homer's *Odyssey,* Emily Wilson comments that she "used the opportunity offered by repetitions to explore the multiple different connotations of each epithet".[104] Hutchinson similarly takes the opportunity of Lucretius' repetitions to render the implicit polysemy of each phrase explicitly. Adding, removing, and recombining various linguistic

[102] In the edition referenced, capitalisation, punctuation, and diacritical marks often vary slightly across the repetitions. Unless otherwise stated, I directly quote the lines' first appearance.
[103] Norbrook and Barbour, *The Translation of Lucretius: Part 2,* 1.150n.
[104] Emily Wilson, "Translator's Note", in *The Odyssey,* by Homer, trans. Emily Wilson (New York: W.W. Norton, 2018), 84.

atoms allows her to explore multiple possible translations of a line, not to iteratively improve the English lines or come closer to the Latin, but to probe the differences her changes produce.

Moreover, Hutchinson exploits the interrogative potential of retranslating repetitions to manipulate and challenge Lucretius' atomism. For example, she transforms Lucretius' repeated distich that asserts the mortality of mutable things on each appearance:

> Nam quodcumque suis mutatum finibus exit,
> Continuò hoc mors est illius, quod fuit antè.
> (1.670–71, 1.791–92, 2.752–53, 3.520–21)

> For whatever by being changed passes outside its own boundaries, at once this is the death of that which was before. (*Loeb* 1.670–71, 1.792–93, 2.753–54, 3.519–20)

Hutchinson renders this as

> For whatsoere passing its bound receiues
> New forme, causeth the death of that it leaves.
> (1.675–76)
>
> For whatsoere goes forth of its owne forme
> And changes to a new, it needs must kill
> That which it left,
> (1.804–06)
>
> All who their old bounds change & new formes take,
> Still cause the death of those which they forsake;
> (2.760–61)
>
> For whatere quitts its bounds & changes makes,
> Allways dissolues that forme which it forsakes.
> (3.537–38)

Lucretius uses these lines to argue for atoms as the only suitable first principles given their immutability (Book 1), their colourlessness (Book 2), and the soul's mortality (Book 3). Although used in different contexts, through their repetition the lines accrue a generalisable meaning: mutable things are eventually reduced to nothing and cease to exist, whereas immutable things exist indefinitely. The endurance of the distich unchanged across Lucretius' books becomes metapoetic support for the statement, counterintuitively suggesting that the poetic lines are as immutable as the atom-letters and spaces that form them. By retranslating the lines on each occurrence, Hutchinson completely disrupts this dogmatism and asserts the opposite relationship between the poetic lines and their subject matter: the lines are formed of atoms and void and hence are subject to transformation.

Hutchinson's transformational choices also alter the atomist doctrine this distich expounds. To interpret these differences, it is necessary to briefly detour into Lucretius' crucial concept of "finibus" [boundaries]. As Hardy argues, while scholarship on Lucretius has tended to focus on *De rerum natura*'s celebration of flux and change, the poem is also deeply concerned with boundaries, limits, and the laws of nature (*foedera naturae*).[105] These laws "prescribe… limitts" to different species of animal, for example, dictating "What each one may and what they may not doe" (1.583–84), and their natural lifespan. More generally, they are invoked to explain the perceived regularity of the universe. In another of his repeated phrases, Lucretius stresses that limits control which things come into existence and their capabilities: "quid possit oriri, / Quid nequeat; finite potestas denique cuique / Quanam sit ratione; vtq́ue altè terminus hereât" (1.75–77, 1.587–89) [what can come into being, what can not, in a word, how each thing has its powers limited and its deep-set boundary mark; *Loeb* 1.75–77].[106] These lines also appear at 5.89–91 and 6.63–65, with the exception that the opening half-line reads "quid queat esse" [what can be; *Loeb* 5.88, 6.64], as part of a larger repetition. Lucretius' repeated references to boundaries, limits, and laws do not refer to rules imposed by a deity or underlying mathematical laws of nature, nor do they indicate a teleology to nature. Rather, they are a fuzzier concept that highlights nature's tendency to act consistently, without necessarily suggesting that they *cause* nature's regularity.[107]

However, as Hardy observes, Lucretius' language of natural laws could be particularly appealing to early moderns who might recognise them as "components of a sort of godless natural theology".[108] Characteristically, Hutchinson translates these lines differently on each of their appearances, including a highly equivocal version when they praise Epicurus' discovery of "What could admitt beginnings, what could not, / What powers are limited, and what are free, / And why the bounds of things still fixed be" (1.76–78). Hutchinson adds the balancing clause "what are free", in a supremely anti-Lucretian manoeuvre that seems to insert God's infinite power into the poem. None of Hutchinson's other three transformations of these lines assert freedom from these limits, the final two even emphasising their "strict terms" (5.94) and "how strictly" things "Within their limited prescriptions stay" (6.66–67). Her final version does, however, specifically evoke "iust bounds" (6.66), inserting a degree of morality into the lines that is absent from the Latin and that, again, perhaps subtly indicates an underlying benevolent power. As with Lucretius' light metaphor,

[105] Hardy, "Is the *De rerum natura* a Work of Natural Theology?", 201–03.
[106] The *Loeb* translates "haerens" rather than "h[a]ereat." The *Loeb* translates these lines slightly differently at 1.594–96: "what could arise and what could not, in a word in what way each thing has its power limited and its deep-set boundary mark."
[107] Hardy, "Is the *De rerum natura* a Work of Natural Theology?", 212. See also A.A. Long, *From Epicurus to Epictetus: Studies in Hellenistic and Roman Philosophy* (Oxford: Oxford University Press, 2006), 157–77.
[108] Hardy, "Is the *De rerum natura* a Work of Natural Theology?", 215.

Hutchinson uses the opportunity afforded by Lucretius' repetitions to investigate the varying implications of bounds, sometimes accommodating them to a Christian, providential worldview.

Returning to Lucretius' distich on the mortality of mutable things, when he uses "finibus" [boundaries], he evokes both a thing's physical superficies and the metaphysical attributes usual to a particular denomination of being. Although in a much looser sense, Lucretius' "finibus" does some of the work of Aristotle's substantial forms—the essential or definition aspect of a being that makes it the kind of thing it is. This explains why a change that causes the crossing of "finibus" results in the "mors" [death] of what previously existed, because, in Aristotelian terms, this enacts a substantial change, in this case corruption. Charleton's definition of corruption, indeed, seems to paraphrase these lines: "CORRUPTION, *that whereby she [nature] Dissolves a Thing so that thenceforth it ceaseth to be what it was*… when a Thing perisheth, and loseth the right of its former Denomination; it is as truely said to be Corrupted".[109] Charleton's "*what it was*" and "loseth the right of its former Denomination", mirrors Lucretius' "illius, quod fuit ante" [of that which was before] and is the vital qualifier that suggests that this is a substantial change without reference to substantial form.

This also explains why Hutchinson inserts "forme" into each of her four translations where there is no equivalent Latin word. Hutchinson was deeply interested in the conceptual and semantic flexibility of "form".[110] Throughout her translation, she prefers "form" over "figure" and "shape", and frequently incorporates it into her translation when not strictly indicated by the Latin.[111] She uses "forme" for the shape of individual atoms (2.423, 2.445, 2.522), for the compound forms created from the atoms and void (1.559, 4.673, 5.446, 5.600), and for the generating power of the atoms (1.559, 2.590, 3.200) amongst other things. As I discussed in the "Introduction", despite the seventeenth-century criticism of Aristotelian natural philosophy and the often-vehement rejection of substantial form, "form" did not disappear but was redefined variously. Gideon Manning argues that this was particularly the case when change was under discussion, as it is here.[112] Therefore, there is nothing fundamentally anti-Lucretian (or anti-atomist) about Hutchinson's use of "forme" and it instead reflects her familiarity with natural philosophical parlance. It also suggests that Hutchinson saw atomism as not utterly discontinuous with scholastic philosophy.

[109] Charleton, *Physiologia,* sig.3G4v.
[110] See also Gorman, "Soteriological Materialism", esp. 300–02.
[111] By my count, Hutchinson uses "form" (noun or verb) 73 times in her translation. For contrast, Evelyn uses "form" roughly 30 times in his translation of Books 1, 3–6 (in the same five books, Hutchinson uses "form" 51 times).
[112] Gideon Manning, "Three Biased Reminders about Hylomorphism in Early Modern Science and Philosophy", in *Matter and Form in Early Modern Science and Philosophy*, esp. 16–32.

Hutchinson's engagement with *De rerum natura* was not occurring in a poetic or natural philosophical vacuum. Her prefatory claim to have heard "discourse at second hand" about Lucretius potentially gestures towards texts such as Charleton's *Physiologia* where Lucretius is cited and where form is redefined in atomic terms, as I have shown. She also could have encountered atomism in less sympathetic contexts, such as Sylvester's translation of Du Bartas' *Divine Weeks and Works*, a poem that paraphrases *De rerum natura* on multiple occasions but explicitly denies the possibility of atomic physics.[113] Sylvester's translation is littered with an eclectic vocabulary form, particularly in its early sections on the creation of the world where it is frequently used in either Platonic or Aristotelian contexts.[114] Yet, in one of Du Bartas' Lucretian paraphrases, Sylvester too invokes form in an atomic context:

> Nought's made of nought; and thus nothing turns to nothing:
> Thinges birth or death, change but their formall clothing
> Their Formes doo vanish, but their bodies bide;
> Now thick, now thin, now round, now short, now side.
> (1.2.161–64)

Sylvester translates Du Bartas' "moule" [mould] as form and inserts the metaphor of "formall clothing" entirely.[115] The lines from *De rerum natura* that Du Bartas paraphrases do not mention a concept of form at all, and both "Formes" and "formall clothing" are philosophically ambiguous.[116] "Formes doo vanish" is a potentially atomic reference to material form, given the assertion that the "bodies bide", but Aristotelian accounts of substantial form also suggest that matter persists while losing a particular form. The "change" of "formall clothing" also perhaps returns us to the frequently hylomorphic clothing metaphors with which I began this chapter. Sylvester uses a familiar concept of "form" to bridge his hexameral account of creation and Lucretian atomism, either accommodating form to atomism, or atomism to form.

---

[113] For example, "Once All was made; not by the hand of *Fortune* / (As fond *Democritus* did yerst importune) / With jarring Concords making Motes to meete, / Invisible, immortall, infinite" (1.1.31–34); "Of those new Worlds that fond *Leucyppus* founds" (1.1.340). See also Virgil K. Whitaker, "Du Bartas' Use of Lucretius", *Studies in Philology* 33 (1936): 134–46.

[114] For example, "It may be also, that he mediated / The Worlds *Idea,* yer it was Created" (1.1.85–86); "Yet did this *Nothing* not at once receave / Matter and Forme" (1.1.229–30); "and in the very face / Retains the Forme of beauty and of grace" (1.2.111–12); "Yet thinke not, that this *Too-too-much,* remises / Ought into nought: it but the Forme disguises / In hundred fashions" (1.2.153–55).

[115] Du Bartas' French quoted from, Whitaker, "Du Bartas' Use of Lucretius", 135.

[116] Whitaker identifies that these lines draw from 1.215–16 in *De rerum natura*: "Huc accedit, vti quæque in sua corpora rursum / Dissoluat natura, neque ad nihilum interimat res" [Adds to this that nature resolves everything again into its elements, and does not reduce things to nothing; *Loeb* 1.215–16]. Whitaker, "Du Bartas' Use of Lucretius", 135. Hutchinson translates these lines as "Nature her works dissolues into their owne / First principles, annihilating none (1.222–23).

Hutchinson had read the *Divine Weeks and Works* by the time she was translating *De rerum natura*. She uses the compound "all-forming" three times in her translation, first to describe "all-forming nature" (1.625) (a translation of Lucretius' "natura creatrix" (1.622)) and then two more times to describe the "th'allforming" or "All forming" earth (2.708, 5.876). On the last two occasions Hutchinson characteristically inserts the adjective where the Latin contains none. Sylvester is the likely source of this word, using it twice in the *Divine Weeks,* first to describe the "All-forming elements" (2.Argument.2) and secondly to describe Adam's naming of the Earth's creatures: "th'All-forming voice adorned faire, / Th'inhabitants of sea, and earth, and ayre" (2.2.2.429–30). Du Bartas' influence on Hutchinson's *Order and Disorder* has been noted (indeed, she also describes God's "all-forming Word" in the poem's second book), but, to my knowledge, its influence on her translation of *De rerum natura* has not been observed.[117] Here, we can see Hutchinson translating Lucretius mediated through Sylvester translating Du Bartas (who has also translated or paraphrased Lucretius). This overlapping reception demonstrates how form's conceptual flexibility made it ripe for reinterpretation in multiple philosophical and poetic contexts—biblical, scholastic, atomic—in so doing, collapsing and muddying distinctions between different natural philosophical traditions.

When Hutchinson transforms Lucretius' distich on each occurrence, she exploits form's philosophical plasticity to present four different accounts of form's role in atomic change. In the first three translations Hutchinson introduces the gaining of a new form into the couplet, something that is not present in the Latin, which only states the death of what previously existed. She thus transforms these lines into statements about the simultaneity of generation and corruption. Her first translation is particularly strange because she transforms Lucretius' verb "mutatum" into "receiues / New forme".[118] While "forme" is not problematic, the verb "receiues" implies the pre-existence of the "forme" separate from matter, evoking an Aristotelian hylomorphism where generation results from the accession of a form to matter. This translation would have riled atomists like Charleton who condemn Aristotelian theories of generation precisely by questioning where that "Form, which Aristotle affirm's to arise *de novo, in Generation, lay hid before Generation?*"[119] Furthermore, Hutchinson reverses the sequence of the Latin where change causes the passing of boundaries, transforming the line instead into a statement where the passing of boundaries causes a substantial change (the acquisition of a "New forme"). In this version, form is not necessarily immaterial, but it is doing the metaphysical work of substantial form. Yet, given her subsequent transformations of these

[117] Hutchinson, *Order and Disorder,* 2.5. See Norbrook, "*Order and Disorder:* The Poem and Its Contexts", in *Order and Disorder,* ed. Norbrook, xxv–xxvi; Ross, *Women, Poetry, and Politics,* 174–210.
[118] Norbrook and Barbour also note this. *The Translation of Lucretius: Part 2,* 1.675–76n.
[119] Charleton, *Physiologia,* sig. 3H4r.

lines, the change clearly arises from a deliberate choice on Hutchinson's part, rather than a misunderstanding of Lucretius.

The next two versions reinstate some of atomic form's more material dimensions. In the second transformation, "forme" is no longer a translation of "mutatum", but instead Hutchinson transforms "finibus" [boundaries] into "forme" taking advantage of both terms' simultaneous materiality and abstractness. Form essentially replaces, and hence becomes equivalent with, boundaries in this translation. Now, it is not a body receiving a new form that describes change, but the "go[ing] forth" of a "forme / And chang[ing] to a new". While "goes forth" could suggest the exchange of one "forme" for another, it could also suggest that the "forme" itself is transforming "[in]to a new" one. This second sense of material morphing is supported by the liminal status of these lines, which are heavily enjambed and straddle two rhyming couplets, denying the pithy closure afforded by the couplet rhyme in the other three versions. Hutchinson was evidently capable of translating these lines as a couplet, but here chooses to spill over into a third line, making the passing of boundaries a formal characteristic of the verse rather than a linguistic element of the translation. In the third version Hutchinson reinstates "bounds" linguistically and formally, recontaining the lines into a closed rhyming couplet. This boundedness continues with the parallelism of "old bounds change & new formes take" that firmly aligns "bounds" with "formes", rather than replacing the first with the second. Applying the verb "change" directly to "bounds" evokes the material image of a changing physical shape and comes closer to the Latin where the change precedes and causes the changing of bounds. These versions are certainly more atomic than the first one. Nonetheless, by either replacing "finibus" with form, or making "bounds" and "formes" synonymous, Hutchinson merges atomic and Aristotelian vocabulary, exploiting the full physical and metaphysical capacities of both.

The final translation is the most atomic. This is the only version where Hutchinson does not introduce the idea of generation, likely because in Book 3 the lines are used to prove the dissolution of the soul after death. For Lucretius, the soul's mortality was reassuring; this is not so for Hutchinson. Although strictly speaking closer to the Latin, these now blasphemous lines lack the optimism of new creation that she had inserted into her previous translations, rendering the lines comparatively more pessimistic in English. Perhaps this is why she transforms "mors" into "dissolues", offering in one highly material word the precise nature of atomic death. Form still appears in this translation, but now it expands the unspecified "illius" [of that] into "that forme". The "forme" itself "dissolu[ing]" makes "forme" into something fully material, an atomic compound rather than the semi-abstract concept operating in her three prior transformations. Indeed, in this version it is not clear that "bounds" and "forme" are synonyms at all; "bounds" is doing most of the

metaphysical heavy lifting of Lucretius' theory of limits and natural laws. The lack of a "new forme" is particularly striking given that this is the final time the lines occur in the poem, leaving the impression that the lines may have indeed dissolved and been dispersed into the remaining three books.

Hutchinson offers four equally intentional, equally authorial versions of the same line. Although Venuti argues that translation always necessarily exposes "multiple and divided meanings in the foreign text and displaces it with another set of meanings, equally multiple divided", Hutchinson's retranslations multiply this effect further as each different iteration of a single Latin phrase introduces another set of meanings to be considered.[120] This proliferation of meaning is philosophically and hermeneutically unsettling as these changes significantly impact the poem's meaning, sometimes in un-atomic ways. While in the second part of this chapter I demonstrated how Hutchinson is empowered by the material, atomic-poetic sense of form that emerges from *De rerum natura*, in this section I have shown that this sense of form was not the only one operating in Hutchinson's translation. Rather, her experiments with form indicate her awareness of the continuities between different philosophical systems, specifically Aristotelian hylomorphism and atomism. Trialling "forme" in various configurations with "change" and "bounds" allows Hutchinson to scrutinise the specific role, or roles, "forme" might play in atomism. In a supremely metatextual moment, by transforming these lines variously, Hutchinson scrutinises the nature of change that is so crucial to translation. Ultimately, Hutchinson's "chang[ing]" of these lines into "new formes" to probe and challenge their atomism emblematises her approach across the translation. It is this interrogative process of transformation, the putting of the poem into a "new forme" that necessarily changes it from what it was before, that makes translation so philosophically enriching for Hutchinson.

In her later writing, Hutchinson continues to use recombination and transformation to explore metaphysical questions about change. In the multiple versions of the epitaph she writes for her husband, John, we can see these questions accrue political and theological dimensions. She plays, even at this moment of mourning, with exchanging "Consecrated Attomes" in two drafts for the more scriptural language of "Consecrated Dust", "Pretious Ashes" or "sacred dust" in others.[121] Moreover, Hutchinson recognises that the nature of death, a substantial change, complicates commemorative praise by problematising its appropriate terms. Two drafts begin

[120] Venuti, "Introduction", 8.
[121] Lucy Hutchinson, "Elegies", in David Norbrook, "Lucy Hutchinson's *Elegies* and the Situation of Republican Woman Writer (with text)", *English Literary Renaissance* 27, no.3 (1997): Poem 15, l.1; Poem 18, l.1; Poem 16, l.8; Poem 17, l.1; Poem 19, l.7.

Here a greate Patriot lies if w:^{ht} y^{e} Grave
Reteines right to Th'illustrious Title haue[122]

The first of these continues "Of noble blood & virtuous parentage", while the other lists "Religious Good Wise Honorable Just / Constant to God & to his Publick trust".[123] Across these two versions Hutchinson swaps inherited features for John's more personal qualities, the aspects that individuate him from others. But in both cases she remains uncertain if his material remains deserve this praise. In two further drafts Hutchinson has it both ways, singing John's praises while denigrating earthly existence:

The Pretious Ashes wee haue treasurd here
Might Large Inscriptions & faire Titles beare
Prizd wee y^{e} Glories y^{t} are prizd on earth
Of great Atcheuments & exalted birth

…This heape of sacred dust
Poore reliques of y^{e} graue y^{e} wise y^{e} Just
This was not him Twas but his veyle his tent
Rather his Prison his Impediment[124]

Torn between pious earthly vanitas and the desire to acknowledge John's personal and political achievements, Hutchinson debates where, if anywhere, John's "Glories" might apply. Does John's body retain his prestige? Or, if his body "was not him" then do his proper attributes belong to his soul? What use would such "Titles" have in Heaven? The epitaph that adorns John's tomb reads decisively "This Monument doth not Com[m]emorate / Vaine ayrie Glories *Titles Birth & State*", honouring instead "y^{e} Reliques" that are to "be new made & in more lustre worne" at the resurrection.[125] This conclusiveness is hard won, and the profundity of Hutchinson's rejection of these "Vaine ayrie Glories" is only realised in contrast to the other, more equivocal, versions. As in her translation of *De rerum natura*, rewriting becomes a means of physical and metaphysical investigation.

The atomic close reading I have employed throughout this chapter reveals the specificities of Hutchinson's understanding of Lucretian atomism. *De rerum natura*'s definition of atomic-poetic form reverses the common, hylomorphic idea that form shapes matter. Rather, atomic forms are created from specific, complex material interactions, and thus are highly particular and highly susceptible to change. As such, an atomic formalism recognises that we can think about form by

[122] Hutchinson, "Elegies", Poem 16, l.1–2; Poem 18A, l.1–2 (with slightly different spelling).
[123] Hutchinson, "Elegies", Poem 16, l.3; Poem 18A, l.3–4.
[124] Hutchinson, "Elegies", Poem 17, l.1–4; Poem 19, l.7–10.
[125] Hutchinson, "Elegies", Poem 21, l.1–2, 9–10.

thinking about transformation and change. Yet Hutchinson also uses atomic notions of poetic form to undermine *De rerum natura*'s atomic arguments. By repeatedly inserting "forme" into the poem, Hutchinson identifies continuities between hylomorphism and atomism, particularly between the Lucretian concept of the bound or limit, and Aristotelian substantial form. Hutchinson's *De rerum natura* is a testament to the muddy terrain of seventeenth-century natural philosophy, where different philosophical traditions were both contrasted and synthesised. As with Bradstreet, reading Hutchinson's translation for form recovers moments where she uses her poetics to engage with, transform *and* resist existing natural philosophical theories.

My argument also demonstrates the broader scientific potency of translation as a process of knowledge formation and transformation that empowers the translator to engage with, interrogate, and contest the ideas and arguments of the text. For early modern women, translation often allowed them to access previously inaccessible knowledge in languages, classical or vernacular, that they did not speak or read. However, for women who did speak multiple languages, translation could also be a process of natural philosophical enquiry. Attending to moments where Hutchinson simultaneously engages with and challenges Lucretius' atomism by morphing a single Latin phrase into multiple forms recovers her natural philosophical agency without reducing her to either a sloppy, unknowledgeable translator or a dogmatic atomist. Rather, Hutchinson prioritises an exploratory process of transformation that interrogates the poem's matter with renewed vigour over a dogmatically faithful translated product. Returning to the dedication, Hutchinson claims to have translated *De rerum natura* to "vnderstand things [she] heard so much discourse of at second hand, but *without* the least inclination to propagate any of the wicked pernitious doctrines in it" (my emphasis).[126] While the second half of this statement's rhetorical nature is worth noting, it is also true that Hutchinson does not simply "propagate" Lucretius' "doctrines". She transforms and probes them. She recognises atomic form's re-combinatorial potential and manipulates it to reconfigure the poem and its atomism again and again and again.

In the next chapter, I turn to Margaret Cavendish's *Poems and Fancies* (1653). Cavendish, like Lucretius, insists on the materiality of both mind and language, and she too makes poetic and natural philosophical form a material product of atomic interactions. Yet Cavendish's Nature is no translator. In her idiosyncratic atom theory, Nature is firmly tied to the freedom and originality of matter's figurative motions, motions that come to look rather like those of the heroic couplet.

[126] Hutchinson, *The Translation of Lucretius,* 7.

Chapter 3: Prosodic Fancy: Motion, Figure and Matter in Margaret Cavendish's *Poems and Fancies* (1653)

Make Wit & Fancy soe combine
In Numbers true & feet to joygne
As if all Dance & Musikes art
Were heer brought in to bear a part
(For the contrivement I'd averr
'Twould pussel a Philosopher)
The Stile, the Method and the Phrase
Do haighten soe the Authress prayse
—Mildmay Fane, "Upon the Lady Margaret Marchioness of Newcastle her Rare Poems new come forth"[1]

Written into the front of his personal copy of *Poems and Fancies* (1653), Mildmay Fane's praise of Margaret Cavendish's verse cuts against the grain of Cavendish's own assessment of her poetry and current scholarship. Against Fane's observation of her "Numbers true", Cavendish closes *Poems and Fancies* by pleading guilty to the charge of bad writing. Confessing her difficulty in finding "so many *Rhythmes,* as to joyn the *sense* of the *Subject*" and anticipating critics who will "finde *fault* with the *Numbers*", Cavendish concludes "All I can say for my selfe is, that *Poetry* consists not so much in *Numbers, Words and Phrase*, as in *Fancy*".[2] Cavendish has become a keystone of feminist formalist criticism, with critics such as Lara Dodds and Elizabeth Scott-Baumann persuasively establishing Cavendish's sophisticated understanding and uses of form. One strand of this work has demonstrated the evolution of Cavendish's style across the 1653, 1664 and 1668 editions of *Poems and Fancies* towards greater metrical regularity and stronger rhymes, sometimes to the detriment of sense.[3] This scholarship has shown Cavendish to be a careful stylist, but also rightly observes (with Cavendish and contra Fane) that the 1653 version of *Poems and Fancies* does contain numerous metrical

[1] Mildmay Fane, *The Poetry of Mildmay Fane, Second Earl of Westmorland from the Fulbeck, Harvard and Westmorland Manuscripts,* ed. Thomas Cain (Manchester: Manchester University Press, 2001), 292, l.7–14. This edition follows the version of the lines included in Fulbeck Hall MS 3. Liza Blake quotes the version of the lines found in Fane's copy of *Poems and Fancies* that contain minor differences in spelling, capitalisation and punctuation, in "Textual and Editorial Introduction", in *Margaret Cavendish's Poems and Fancies: A Digital Critical Edition,* ed. Liza Blake, website published May 2019, https://library2.utm.utoronto.ca/poemsandfancies/.

[2] Cavendish, *Poems, and Fancies* (London: Printed by T.R. for J. Martin, and J. Allestrye, 1653), sig.2K3v. All further references will be to this edition unless otherwise stated and referenced parenthetically by page signature.

[3] Scott-Baumann, *Forms of Engagement,* 63–65; Ross and Scott-Baumann, "'Corrected by the Author'", 370–78; Blake, "Textual and Editorial Introduction", esp. "II. Changes between First and Second Editions".

irregularities and predictable, strained or off-rhymes.[4] Another strand of this work has demonstrated how thoroughly Cavendish's poetics, particularly her sense of form, are informed by her natural philosophical theories.[5] As such, Fane's assessment that Cavendish's poetry would "pussel a Philosopher" but the "Stile, the Method and the Phrase" are praiseworthy reads strangely in a critical climate that increasingly takes Cavendish's philosophy seriously while broadly accepting Cavendish's defence of her 1653 irregularity.[6] In this chapter, I follow Fane's lead, reassessing the contentious relationship between "*Numbers, Words,* and *Phrase*" and "*Fancy*" in the 1653 *Poems and Fancies* and pursuing the influences of seventeenth-century poetics on Cavendish's natural philosophy. Cavendish's tendency to collapse distinctions suggests a vital continuity between poetic and natural philosophical matter, figure and motion that both run and "Dance" on "feet".

To matter and form, Cavendish adds a third term: motion. Cavendish's sense of motion is crucially distinct from matter and form but also fundamentally entangled with them both. Motion is vital for Cavendish's natural philosophical theory of form, particularly for fancy's much celebrated speed and agility. I argue that in *Poems and Fancies,* fancy's characteristic formed fluidity comes to look rather like the flow of iambic pentameter, the mind's figurative motions like those of poetry. In making this argument, I join Debapriya Sarkar in reversing the direction of influence between Cavendish's natural philosophy and her poetics. Sarkar argues that "Cavendish's theories of literary making are the ground for her theories about the material world" and hence that "the literary form Cavendish chooses is a *cause*, and not merely representational vehicle, of the characteristics of her physics".[7] Furthermore, although *Poems and Fancies*' prosodic and structural irregularities have often been attributed to Cavendish's unrestrained fancy, I reposition Cavendish's statements of poetic freedom as indicating not a freedom from verse form, but theorising a particular kind of form. Rather than reading her notorious invocation of stylistic liberty "Give *Mee* the *Free,* and *Noble Stile,* / Which seems *uncurb'd,* though it be *wild*" (P3v) in relation to her defence that "*Poetry* consists not so much

[4] See, for example, Lara Dodds, "Bawds and Housewives: Margaret Cavendish and the Work of 'Bad Writing'", 50; Scott-Baumann, *Forms of Engagement,* 63–65.
[5] Lara Dodds, "Form, Formalism, and Literary Studies: The Case of Margaret Cavendish", in *World-Making Renaissance Women: Rethinking Early Modern Women's Place in Literature and Culture,* ed. Pamela S. Hammons and Brandie R. Siegfried (Cambridge University Press, 2021), 136–150; Blake, "Margaret Cavendish's Forms", 38–55; Liza Blake, "Margaret Cavendish's Sammelbände: Bound-Together Volumes and Joined Texts in Cavendish's Corpus", *Early Modern Women: An Interdisciplinary Journal* 19, no.1 (2024): 30–63; Hock, *The Erotics of Materialism,* 145–70; Gorman, *The Atom in Seventeenth Century Poetry,* 149–73.
[6] Recent monographs on Cavendish's philosophy include Lisa T. Sarasohn, *The Natural Philosophy of Margaret Cavendish: Reason and Fancy during the Scientific Revolution* (Baltimore: The John Hopkins University Press, 2010); David Cunning, *Cavendish* (London: Routledge, 2016); Deborah Boyle, *The Well-Ordered Universe: The Philosophy of Margaret Cavendish* (New York: Oxford University Press, 2018); Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway.*
[7] Sarkar, *Possible Knowledge,* 124, 126.

in *Numbers, Words* and *Phrase*", I ask what happens to Cavendish's poetics if we read it in relation to her assertions that verse form is crucial to the best poetry:

> Those *Verses* still to me do seem the best,
> Where *Lines* run smooth, and *Wit* eas'ly exprest.
> (T4r)

Reemphasising the importance of verse form, particularly prosody and the couplet, to *Poems and Fancies* reveals the limitations and constraints that necessarily underlie and allow Cavendish's expressions of natural freedom. It is not my purpose to flatten the irregularities of the 1653 *Poems and Fancies*, but I do argue that reading Cavendish's more positive poetic statements in relation to other seventeenth-century theories of verse form indicates her greater, earlier engagement with the operations and intricacies of verse form than has been suggested. Recentring motion to Cavendish's poetic and natural philosophical theories of matter and form accounts for both *Poems and Fancies*' careful formal structuring and the dynamism of a book that often seems to charge on relentlessly, relishing the dizzying motion sickness and disorienting whiplash it causes its readers.

Poems and Fancies emerges from the thriving intellectual and cultural milieu Cavendish was immersed in during the 1640s and early 1650s. Inaugurating Cavendish's prolific career as a writer in print, *Poems and Fancies* is an internally eclectic collection, divided into five parts connected by "Claspe" sections that thematically bridge these parts. I largely focus on the first section, the atom poems that are Cavendish's first foray into natural philosophy, and the "Fancies" that form the third part of the book. Despite Cavendish's assertions of utter originality ("I never read, nor heard of any *English Booke* to Instruct me" (A6r)), critics have put Cavendish's idiosyncratic atom theory in conversation with Lucretius, the wider atomism of the Cavendish or Newcastle Circle, and the philosophers—Thomas Hobbes, Kenelm Digby, René Descartes and Pierre Gassendi—who visited the Cavendish household while they were in exile in Paris during the 1640s.[8] Furthermore, Dodds, Scott-Baumann and Hero Chalmers have convincingly identified her engagement with the writing of Donne, Milton, William Davenant, John Denham and Cavalier poets such as Robert Herrick, Thomas

[8] Emma L.E. Rees, *Margaret Cavendish: Gender, Genre, Exile* (Manchester: Manchester University Press, 2003), 54–79; Hock, *The Erotics of Materialism,* 145–70; Brandie R. Siegfried, "Introduction", in *Poems and Fancies with The Animal Parliament,* ed. Brandie R. Siegfried (Toronto: Iter Press, 2018), 22–23; Lisa Walters, "Epicurus and Gender in the British Newcastle Circle: Charleton, Hobbes and Margaret Cavendish", in *A Companion to the Cavendishes,* ed. Lisa Hopkins and Tom Rutter (Leeds: Arc Humanities Press, 2020), 181–98; Stephen Clucas, "The Atomism of the Cavendish Circle: A Reappraisal", *The Seventeenth Century* 9, no.2 (1994): 247–73; Katie Whittaker, *Mad Madge: Margaret Cavendish, Duchess of Newcastle, Royalist, Writer and Romantic* (London: Vintage, 2004), 95–97; Sarah Hutton, "In Dialogue with Thomas Hobbes: Margaret Cavendish's Natural Philosophy", *Women's Writing: the Elizabethan to the Victorian Period* 4, no.3 (1997): 421–32; L.E. Semler, "Margaret Cavendish's Early Engagement with Descartes and Hobbes: Philosophical Revisitation and Poetic Selection", *Intellectual History Review* 22, no.3 (2012): 327–53.

Carew and Richard Lovelace.[9] Cavendish knew some of these writers personally: Davenant served under her husband during the Civil War and was in Paris with other exiled Royalists such as Edmund Waller (who also dined with the Cavendishes) and Abraham Cowley.[10] When Cavendish temporarily returned to England in 1651, she would have encountered the numerous single-author poetry collections, including the largely Royalist collections published by Humphrey Moseley.[11] I build upon this work, identifying Cavendish's appropriation of terms and images from seventeenth-century poetics, particularly theories of the couplet, to characterise the motions of fancy and wit.

Fancy is perhaps the most important singular term for Cavendish's poetics, but her definitions of it are many and difficult to reconcile. Broadly speaking, she uses fancy in two senses. First, as a natural, inventive mental faculty tied to the swift material motions of the mind and often constellated with similar faculties such as imagination and wit. Indeed, in *The Worlds Olio* (1655)—largely written prior to *Poems and Fancies* but printed later—Cavendish claims "imaginations we call fancies, which fancies is wit [sic]".[12] Wit is also described as "the childe of nature, neither hath she made any thing so like her self as it" (B3v) and the "swiftest motion of the braine" (B3r). Cavendish also uses fancy for the written products of the mental faculty, as the title of *Poems and Fancies* and its companion volume, *Philosophicall Fancies* (1653), suggests. These two senses are thoroughly intertwined with fancy emerging as producer and product.[13]

How fancy's two aspects are related is ambiguous. Jessie Hock characterises Cavendish's conception of "poetic fancy" as "the imaginative expression of the natural and variable motions of thoughts".[14] This definition suggests an immediacy between the "motions of thoughts" and "imaginative expression" that indicates an ideal isomorphism between mental fancy and its written creations. However, Cavendish often uncouples fancy from verse form, particularly when she asserts her lack of prosodic skill and contrasts "*Rhythmes*" and "*Numbers*" with "*sense*" and "*Fancy*". As Dodds observes, Cavendish's defensive denunciations of form align two familiar dichotomies to secure the merit of her writing: form and formlessness, and form and substance.[15] By aligning fancy

[9] Lara Dodds, *The Literary Invention of Margaret Cavendish* (Pittsburgh: Duquesne University Press, 2014), esp. 57–120; Scott-Baumann, *Forms of Engagement,* 31–59; Hero Chalmers, "'Flattering Division': Margaret Cavendish's Poetics of Variety", in *Authorial Conquests: Essays on Genre in the Writings of Margaret Cavendish,* ed. Line Cottegnies and Nancy Weitz (Madison: Fairleigh Dickinson University Press, 2003), 123–44.
[10] Whittaker, *Mad Madge,* 91–94.
[11] Dodds, *The Literary Invention of Margaret Cavendish,* 111–20; Randall Ingram, "First Words and Second Thoughts: Margaret Cavendish, Humphrey Moseley, and 'the Book'", *Journal of Medieval and Early Modern Studies* 30, no.1 (2000): 101–24.
[12] Margaret Cavendish, *The Worlds Olio* (London: Printed for J. Martin and J. Allestrye, 1655), sig. C2r. All further references are taken from this edition and referenced parenthetically by page signature.
[13] See also Gorman, *The Atom in Seventeenth-Century Poetry,* 153.
[14] Hock, *The Erotics of Materialism,* 146.
[15] Dodds, "Form, Formalism, and Literary Studies", 137.

with prosodic deficiencies, Cavendish creates a connection between mental fancy and formlessness that has undoubtedly impacted her critical reception.[16] Virginia Woolf, for example, writes in somewhat begrudging admiration that "[t]he wildest fancies come to her, and she canters away on their backs", an image that seems to allude to Cavendish's freewheeling metre and as well as her fancy.[17] But, by aligning "*Fancy*" with "*sense*" or content Cavendish excuses this formlessness. Indeed, her statement is not too dissimilar to other early modern poetic theorists, like Philip Sidney, who distinguish verse form from 'true' poesy. When Sidney proclaims that the "skill of each artificer standeth in that *idea* or fore-conceit of the work, and not in the work itself", he suggests the prior, separate existence of this "*idea*" in the same way that Cavendish distinguishes "*Fancy*" from verse.[18] As such we might see Cavendish's natural philosophical sense of fancy and her poetics of fancy as tending in two different directions the first a materialist entangling of matter and figure, and the other resorting to a kind of textual dualism in which fancy as essential content or idea transcends its superficial form. In this chapter, I focus on some of Cavendish's many, less defensive statements that diminish, and at times completely remove, the distance between form and fancy. These examples do not erase Cavendish's equally numerous rejections of "*Numbers, Words and Phrase*" but they do moderate them, revealing an important, perhaps more materialist, countercurrent in Cavendish's thought that is vital for fully understanding Cavendish's poetics.

Far from being formless, Cavendish's materialist natural philosophy imagines fancy as an inherently motile form. In her mature philosophy, Cavendish argues that nature is composed of three different degrees of matter: inanimate matter, and sensitive and rational matter that are both self-moving. These degrees of matter are inextricably commingled, and it is sensitive matter's job to move the inanimate matter, while rational matter moves totally unencumbered. As Marcy Lascano identifies, Cavendish's "degrees of matter are not degrees of density, but degrees of *motion*" and hence her continuum of matter should be imagined as "that which moves the quickest and most diversely to… that which does not move itself at all".[19] Rational matter—the most agile degree—is responsible for thought (including fancy and wit) with its speed explaining the near instantaneous ability of thoughts to appear and disappear.[20] As David Cunning explains, Cavendish believes thoughts to be material, motile and figured (or formed), not immaterial, static or two-dimensional.[21]

---

[16] See, for example, Sylvia Bowerbank, "The Spider's Delight: Margaret Cavendish and the 'Female' Imagination", *English Literary Renaissance* 14, no.3 (1984): 407.
[17] Virginia Woolf, *The Common Reader* (London: Hogarth Press, 1929), 103.
[18] Sidney, "A Defence of Poetry", 79.
[19] Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 9.
[20] Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 15; David Cunning, "Margaret Cavendish on the Metaphysics of Imagination and the Dramatic Force of the Imaginary World", in *Early Modern Women on Metaphysics,* ed. Emily Thomas (Cambridge: Cambridge University Press, 2018), 195.
[21] Cunning, "Margaret Cavendish on the Metaphysics of Imagination", 191–94.

The theory laid out in the atom poems of *Poems and Fancies* is not identical to this, but, as I will show, there are important similarities, including Cavendish's emphasis on matter's self-motion, the speed of thought, and her portrayal of thoughts as figured.[22]

In exploring the role of the mind's motions in the formal texture of *Poems and Fancies,* critics frequently stress the often-bewildering variety of the collection, as well as Cavendish's readiness to offer multiple contrasting explanations or opinions. In Chalmers' words, *Poems and Fancies* is not the result of "mere muddleheadedness" but rather emerges from "the conscious espousal of a poetics of 'variety'".[23] According to Cavendish, "Great *Nature* by *Variations* lives" (T2r) primarily because of matter's motions: "*Motions Ease* is *Change,* weary soone doth grow / If in one *Figure* she doth often go" (D1r). Cavendish's wittiest depiction of this comes in "Motion *makes* Atomes a Bawd *for* Figure", where Motion (who "doth in *Change* great pleasure take") enlists Atoms, personified singularly as the bawd, to persuade Figure into a promiscuous "imbrace", thus changing the Figure (D1r–v). This process causes change in the world and also happens in the mind. As such, Jay Stevenson has argued that in *Poems and Fancies* Cavendish presents her mind as only a "provisionally ordered system" in which different material thoughts constantly jostle and coalesce.[24] This is reflected in Cavendish's figurative promiscuity across *Poems and Fancies* where ideas, images and metaphor are constantly recycled, transformed and reconstituted to disorientating and destabilising effect. While in the final part of this chapter I touch on motion's transformative role, throughout I focus more on the motions that underlie all of Cavendish's figures, from the atoms that dance into self-sustaining, rhythmic figures, to the fancies and verse lines that all run on continuously and breathlessly. Attending to

[22] There is debate about whether Cavendish was ever an atomist and, if so, at what point she changed her opinion. The 1653 *Philosophicall Fancies* (printed shortly after *Poems and Fancies*) already presents an early version of Cavendish's vitalist materialism and *Philosophical and Physical Opinions* (1655) contains "A Condemning Treatise of Atomes". Clucas argues that Cavendish never really repudiated atomic philosophy; Boyle suggests conversely that "we should not take Cavendish to be presenting atomism as a true account of nature any more than she was presenting her fairy stories as true", while Blake argues that Cavendish's atom poems are not fictional but already present a monist theory of matter akin to her later theory. Justin Begley disagrees with Blake on the basis that *Poems and Fancies* seems to allow for the existence of void (and so nature is not composed of a singular principle as in monism) but agrees that Cavendish was never a committed atomist. Cavendish, *The Philosophical and Physical Opinions* (London: Printed for J. Martin and J. Allestrye, 1655), sig. a3v; Clucas, "The Atomism of the Cavendish Circle", 247–73; Boyle, *The Well-Ordered Universe*, 57, esp. 40–61; Blake, "Non-Atomic Atomisms", 401–24; Justin Begley, "Margaret Cavendish Reads Josuah Sylvester: Epicurus, Atheism, and Atomic Skepticism in *Poems, and Fancies*", *English Literary Renaissance* 53, no.3 (2023): 377, 376–400. See also, Karen Detlefsen, "Atomism, Monism, and Causation in the Natural Philosophy of Margaret Cavendish", in *Oxford Studies in Early Modern Philosophy Volume 3,* ed. Daniel Garber and Steven Nadler (Oxford: Oxford University Press, 2006), 199–244; Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 17–20.

[23] Chalmers, "Margaret Cavendish's Poetics of Variety", 123.

[24] Jay Stevenson, "The Mechanist-Vitalist Soul or Margaret Cavendish", *Studies in English Literary, 1500–1900* 36, no.3 (1996): 532. See also Jay Stevenson, "Imagining the Mind: Cavendish's Hobbesian Allegories", in *A Princely Brave Woman: Essays on Margaret Cavendish, Duchess of Newcastle,* ed. Stephen Clucas (Ashgate, 2003; reissued London: Routledge, 2018), 143–55.

motion's role in Cavendish's poetics means not only revelling, as she does, in her playful similizing but also noticing the subtler motions that constitute Cavendish's fanciful figures.

Cavendish's theory of matter's figurative motions chimes with Caroline Levine's account of "temporally unfolding forms".[25] She argues that Cleanth Brooks' conception of the well-wrought urn "implies that narratives hold their materials together in the same way as funerary urns, when in fact they are forms organized by their unfolding over time".[26] Levine observes that due to "the unfolding structures of language, we read poems—including brief, lyric ones—as temporally unfolding sequences, even if we hypostatize them in the end".[27] Many critics acknowledge the importance of Cavendish's motile mind to her conception of fancy, but continue to treat fancy as the proper content, idea or conceit of her poetry.[28] This is unsurprising given Cavendish's tendency to objectify fancy: fancies are "Severall *Colour'd Ribbons*" (R3v), "painted *Tulips*" (S4v), "small *Gnats*" that "buz in the *Braine*" (U4r) and "*Minerall*[s]… / Some *Gold* are, *Silver, Iron, Tin,* and *Lead*" (X1r). However, Cavendish's swift and material fancy differs from the Sidneian "*idea* or fore-conceit". By understanding Cavendish's invocations of fancy as suggesting an insurmountable division between form and content, we risk immobilising her sense of fancy as the material self-motions of the mind. Although Levine does not theorise temporally unfolding forms in terms of self-moving, figured matter, the terms she uses—"sequence, flow, repetition, and duration" as well as "meter, rhyme and plot" and, as an umbrella term, "rhythms"—imply a patterning and measuring of motion apt for Cavendish's theorising of fancy as a motile form.[29] Likewise, Derek Attridge's sense of a poem as an "event" in which "meaning becomes an occurrence, not a substance or an abstraction" is useful in retaining the vibrancy of Cavendish's fancy.[30] Understanding fancy as a temporally unfolding material form, as something like rhythm, necessitates not only attending to meaning as it unfolds, but also the texture, shape and sound of words. Fancy's subtle motions become inscribed into individual poems and *Poems and Fancies* as a whole, sometimes running on swift feet, sometimes flowing like a river, and sometimes pausing for moments of ease.

This chapter is divided into three parts. In the first, I examine Cavendish's atomic theory that entangles matter, figure and motion such that figure becomes a material pattern of movement. In

[25] Levine, *Forms,* 52.
[26] Levine, *Forms*, 40.
[27] Levine, *Forms,* 29–30.
[28] Blake, for instance, writes that "The 'fancy' at stake in this part seems to mean the poetic conceit, the idea of a poem, as opposed to its external 'dressings'". Blake, "Reading Poems (and Fancies): An Introduction to Margaret Cavendish's *Poems and Fancies*", in *Margaret Cavendish's Poems and Fancies: A Digital Critical Edition.*
[29] Levine, *Forms,* 73–74, 58.
[30] Derek Attridge, *Moving Words: Forms of English Poetry* (Oxford: Oxford University Press, 2013), 29.

Cavendish's materialist theories, fancy also partakes in these motions, stimulating the mind into rhythmic figures that are reminiscent of poetry's own measure and numbers. Then, I turn to Cavendish's poetics of freedom and ease, arguing that her images of nature's witty and fanciful motions are not only implicated in her physics and metaphysics, but also in the language of seventeenth-century poetics, particularly theories of the couplet that prioritise smooth, free-flowing language. In the final part, I expand my analysis of fancy's rhythms to the structure of *Poems and Fancies* as a whole. I suggest that Cavendish's clasp sections act as necessary moments of ease amongst the breathless forward momentum of the book.

Material Figurative Motions and the Speed of Thought

Motion is key to Cavendish's materialist natural philosophy. *Poems and Fancies* begins with a sequence of poems that presents an idiosyncratic atomic theory of matter. In the first of these poems, Cavendish allegorises a council of Nature's founding principles, presided over by Nature herself:

> *Motion* was first, who had a subtle wit,
> And then came *Life,* and *Forme,* and *Matter* fit.
> (B1r)

Of these gathered principles, Motion is preeminent and initially given the most detailed description. Motion's "wit" aligns it with the mental and poetic quality that Cavendish prizes throughout her writing, while "subtle" evokes the sense of something finely woven, indicating an intricacy to motion that may not be immediately visible but nonetheless underlies all material forms. Rather than suggesting that wit emerges from motion, Cavendish's personification of Motion in an allegorical, cosmological poem reverses and collapses this causality and the chronology it implies. Wit and motion are made temporally coextensive, wit made fundamental to motion's definition.

As the poem progresses, Cavendish entangles these foundational principles:

> First *Matter* she brought the *Materialls* in,
> And *Motion* cut, and carv'd out every thing.
> And *Figure* she did draw the *Formes* and *Plots,*
> And *Life* divided all out into Lots.
> (B2r)

Cavendish uses a building metaphor that she develops in a later poem where these principles act as "severall work-men" (B3r).[31] Matter gathers materials, whereas Motion's role is of a more skilled,

[31] Sandrine Parageau notes that the house building metaphor was common in Cavendish's later philosophical writing, as well as the philosophy of Anne Conway and Descartes. Sandrine Parageau, "The Function of Analogy in the Scientific Theories of Margaret Cavendish (1623-1673) and Anne Conway (1631-1679)", *Etudes Epistémè*

artisanal nature (befitting their "subtle wit"). Figure acts like an architect, while Life emerges as the forewoman, assigning "Lots" to the other principles. Yet these distinctions begin to disintegrate even as they are established. As Dodds observes, Cavendish defines her qualities "both self-reflexively" and "relationally", the "allegory allow[ing] form to share in the qualities of matter, life, and motion".[32] This is true of each of the principles. Cavendish's personification confers a degree of motion and perhaps life to each of the concepts. This is particularly crucial for Matter's curiously tautological role: if Matter gathers "*Materialls*" we are left with a sense of self-moving matter that makes itself available for formation. Moreover, the splitting suggested by Motion's "cut[ting]" and "carv[ing]" seems to encroach both on Figure's plotting or distinguishing and Life's "divid[ing]". Cavendish's principles emerge as physically indistinguishable, and only tenuously conceptually distinguishable. As she makes explicit in a later poem: "But *Figure, Matter, Motion*, all is one, / Can never separate, nor be alone" (D1v).

Cavendish's motion takes over some of form's traditional actualising work. As the sequence of atom poems continues, Cavendish theorises four different figures of atom that each corresponds with one of the four elements: square atoms with earth, round atoms with water, long atoms with air, and sharp atoms with fire.[33] The shape of these atoms determines the kind of motion they are capable of. Square, earthy atoms are "heavy, dull, and slow", whereas round atoms can roll and hence bestow water with its ability to flow (B3v). Both long and sharp atoms are described as flying like arrows at various points in the sequence, although ultimately sharp atoms emerge as the swiftest kind (B3v, C1v). Blake argues that in *Poems and Fancies* Cavendish sometimes uses figure to mean something like an Aristotelian form that gives function to matter, and at other times as a "composite body created by the joining of other figures".[34] In "The joyning of severall *Figur'd Atomes* make other *Figures*", for example, Cavendish uses figure not only as the shape of individual atoms, but also the term for the compound being: "Severall *Figur'd Atomes* well agreeing, / When joyn'd, do give another *Figure* being" (C1r). This layered approach to figure complicates Cavendish's sense of motion, as the poem "Motion *and* Figure" succinctly explains: "Thus severall *Figures,* severall *Motions* take, / And severall *Motions,* severall *Figures* make" (D1v). The shape of individual atoms affects the motion they are capable of (for example, sharp atoms being the fastest), but when these moving atoms collaborate to create larger figured beings, their motions dictate the kind of

14 (2008), paragraph 7. https://doi.org/10.4000/episteme.731. See also, Boyle, *The Well-Ordered Universe,* 65–66.

[32] Dodds, "Form, Formalism, and Literary Studies", 145.

[33] See Siegfried, "Introduction", 26–28 for the sophisticated understanding of Euclidean geometry that informs the shapes of Cavendish's atoms.

[34] Blake, "Margaret Cavendish's Forms", 44.

compound figure produced. Like figure, motion works at multiple levels, sometimes being the effect of figure, and sometimes coming closer to a forming or distinguishing principle.

Dancing provides Cavendish with a useful conceit for envisaging the importance of motion to matter and figure. Although Cavendish's atomist poetry is not identical to her later vitalist monism, aspects of this theory, particularly material self-motion, are evident in Cavendish's *Poems and Fancies*. In "A World made by *Atomes*", it is the atoms themselves that "dance about, fit places finde" (B3r), and this conceit is expanded upon in "*Motion* directs, while *Atomes* dance":

> *Atomes* will dance, and measures keep just time;
> And one by one will hold round circle line,
> Run in and out, as we do dance the *Hay*;
> Crossing about, yet keepe just time and way:
> While *Motion,* as *Musicke* directs the *Time*:
> Thus by consent, they altogether joyne.
> This *Harmony* is *Health,* makes *Life* live long;
> But when they're out, 'tis *death,* so dancing's done.
> (D1r)

Although Lucretius never uses a dancing metaphor in *De rerum natura,* in the dedication to her translation, Hutchinson condemns his "foppish casuall dance of attoms".[35] However, Cavendish's atomic dance is orderly not random.[36] Dancing suggests a theory of form, or figure, as a material *pattern of movement*. Although the atoms constantly "run in and out" and "cross about", these acts are subtle. Zoomed in we see individual atoms "one by one", but when zoomed out they form a continuous "round circle line" in which no individual atom, nor their motion is visible, but the resulting figure is.[37] Dance is thus an apt analogy for any macroscopic figure that is superficially static while its atomic microstructure is constantly in motion.

Yet dance is not only spatial, but also has temporal dimensions, as Cavendish's repeated reference to the necessity to "keep just time" indicates. By making "*Motion*" akin to "*Musicke*" that

[35] Hutchinson, *Translation of Lucretius,* 11.
[36] The analogy in its above form may be indebted to Sylvester's translation of Du Bartas' elements dancing around a maypole (1.2.329–30). See also Begley, "Margaret Cavendish Reads Josuah Sylvester", 376–400.
[37] Lucretius uses a metaphor of a flock of sheep viewed at a distance to explain the often-imperceptible nature of atomic motion:
As motions which to vs more obvious be,
At a farre distant space seeme to stand still.
For white-fleec'd sheepe, feeding on a greene hill,
The wanton flock, wherere the pearly drop
Hangs on the springing grasse, the fresh tufts crop,
And thus fed, skip about, which farre of seene,
Appeare only white heaps, on mountains greene.
Hutchinson, *The Translation of Lucretius,* 2.317–23.

"directs the *Time*", Cavendish indicates a four-dimensional view of figure where factors like speed and rhythm are just as crucial to the kind of being created as their spatial interactions. In a series of two chapters titled "Of Dancing" and (confusingly) "Of dancing" in *The Worlds Olio* Cavendish emphasises the importance of rhythm to dance's figures.[38] She specifies that "the true art of dancing is measured figures, by the feet in divided times; for the feet keepe as just a distance of times, as notes of musick" and that therefore

> Dancing is compounded of measures, figure, and motion. Measure is Geometry; figure is Symmetry, and motion, is division.
> Geometry is equal measure, Symmetry is proportionable measures, Division is numbers. (E1r)

These definitions display the same kind of relational, circular thinking as Cavendish's attempt to allegorically distinguish matter, figure, motion and life. Just as dancing is "compounded of measures, figure, and motion", so Cavendish's definitions of these individual terms are tautologically compounded of each other: "Measure is Geometry", but "Geometry is equal measure"; and "figure is Symmetry" but "Symmetry is proportionable measures", so figure is also reducible to a kind of measure. In Cavendish's dancing metaphor, then, we can see the fullness of her natural philosophical theory where matter, motion and figure "all is one", figure and measure, dancer and dance becoming indistinguishable. Cavendish's figures are temporally unfolding forms in Levine's sense, governed by *rhythmic* patterns of motion.

In Cavendish's natural philosophical system, the mind and its thoughts are also fundamentally material, figured and motile. She specifies that "*Fancy* cannot be without some *Braines*" (O3v) and that thoughts emerge from the movements of atoms: "*Wit*, and *Vnderstanding* in the *Braine*, / Are as the severall *Atomes* reigne" (C4v). Thoughts, and particularly wit and fancy, are characterised as exceptionally quick atomic motions in Cavendish's poems. In "Of Loose *Atomes*" Cavendish argues that "In every *Braine loose Atomes* there do lye, / Those which are *Sharpe,* from them do *Fancies* flye" (C1v). Sharp atoms, the quickest type and the same that make fire, also constitute fancy. Figure and motion once again coalesce in Cavendish's assertion that these atoms are "loose", this poem building upon the preceding one where she claims that "Those *Atomes* loosely joyn'd, do not remaine / So long as those, which *Closenesse* do maintaine" (C1r). The figures created by "loosely joyn'd", "*Sharpe*" atoms are both highly agile, explaining fancy's mutability, and ultimately ephemeral. As Cavendish claims, "*loose Atomes* never can be strong. / There *Motion* having power,

[38] In the revised 1671 edition these chapters are combined into one. Margaret Cavendish, *The Worlds Olio* (London: Printed by A. Maxwell, 1671), sig. H4v.

tosses them about, / Keeps them from their right places, so *Life* goes out" (C1v). Fancies appear and disappear almost instantly, the speed of fancy its generative strength.

In *Philosophicall Fancies* (1653), Cavendish returns to the dancing metaphor to more capaciously describe the mind's figurative motions. The matter theory in *Philosophicall Fancies* is not atomic, but the earliest manifestation of Cavendish's vitalist materialism where she distinguishes between rational and sensitive matter (here called spirits) that have self-motion, and dull matter which is inanimate. As in her later theory, the rational spirits move only themselves and are largely responsible for thoughts, whereas the encumbered sensitive spirits use their motion to move dull matter. Despite the differences between this theory and that of *Poems and Fancies,* Cavendish reuses the dancing analogy for the mind's actions:

> These *Rationall Spirits,* as I may call them… only move in measure, and number, which makes *Figures*; which *Figures* are *Thoughts,* as *Memory, Understanding, Imaginations,* or *Fancy*, and *Remembrance,* and *Will*.
> Thus these *Spirits* moving in measure, casting, and placing themselves into *Figures* make a *Consort,* and *Harmony* by Numbers.
> Where the greater Quantity, or Numbers, are together of those *rationall Spirits,* the more variety of *Figure* is made by their severall *Motion,* they dance severall dances according to their company.[39]

To the language of measure and harmony from *Poems and Fancies,* Cavendish introduces "Numbers", that are both synonymous with the "Quantity" of rational spirits and, in its relation to "*Harmony*", something closer to rhythm. This description is accompanied by the marginal note that "*Dancing is a measur'd* Motion" (D8r), the analogical giving way to the literal as dance becomes the most appropriate verb for the rational spirits who "only move in measure, and number".

Cavendish elaborates a system where different kinds of dance represent different faculties of the mind:

> What *Object* soever is presented unto [the rational spirits] by the *senses,* they strait dance themselves into that *Figure*; this is *Memory*. And when they dance the same *figure* without the helpe of the *outward object*, this is *Remembrance.* When they dance *figures* of their owne invention, (as I may say) then that is *Imagination* or *Fancie. Understanding* is when they dance perfectly (as I may say) not to misse the least part of those *figures* that are brought through the sense. *Will* is to choose a dance, that is to move as they please, and not as they are perswaded by the *sensitive spirits.* (D8r)

[39] Margaret Cavendish, *Philosophicall Fancies* (London: Printed by Tho: Roycroft, for J. Martin and J. Allestrye, 1653), sig. D7v–D8r. All further references are taken from this edition and referenced parenthetically by page signature.

As noted in the "Introduction" and chapter 1, "invention" meant both discovery and creation in the early modern period, and Cavendish's characterisation of "*Imagination* or *Fancie*" as rational spirits dancing "*figures* of their owne invention" straddles both meanings. Making "invention" a material, figurative motion of the mind allows Cavendish to internalise discovery and thus maintain fancy's creative originality. "*Memory*", "*Remembrance*" and "*Understanding*" partake in mimetic figurative motions prompted by the senses, whereas Cavendish's "*Fancie*" is more akin to "*Will*", both being voluntary figurative motions of the rational spirits not occasioned by the senses.[40] Cavendish frequently associates wit and fancy with freedom, something I will return to in the following section. Here, the association between "*Fancie*" and "*Will*" is physically and metaphysically grounded.

The language of measure, harmony and number that makes dancing an appealingly orderly motion for natural philosophy, also makes it a generative metaphor for poetry with its own numbered feet and rhythms of movement. In "An *Epistle* to my *Musefull Thoughts*", one of *Philosophicall Fancies*' numerous prefatory poems, Cavendish imagines the mind's dances expressed in verse:

> *Tho*ughts, trouble not the *Soule* with falling out,
> Siding in *Factions,* with *Feare, Hope* and *Doubt*.
> But with the *Muses* dance in measur'd *feet,*
> Taking out all the *Fancies* as you meet.
> Some *Fancies* are like wilde, and *Toyish Girles,*
> And some are sober, grave; others are *Churles*.
> Let those that sober, sad, a *Pavin* measure,
> *Corantoes* are the *lighter Fancies* pleasure.
> Let *Churlish Fancies* dance with *crabbed Feet,*
> In *Numbers* odd, not even, smooth, nor sweet.
> (B1v–B2r)

While the opening apostrophe to her thoughts might suggest that these dances happen exclusively in the mind, Cavendish drags the metaphor onto the page. In the seventeenth century, "Taking out" could be used specifically as "to dance with (a chosen partner)".[41] Cavendish combines this definition with the more common sense of "take out" as "withdraw" to describe the transition of fancy from the mind into poetry. In *Poems and Fancies*, she uses similar imagery in "The *Purchase* of *Poets*", to describe the poets dancing at Fame and Homer's marriage: "Then did they dance with measure, and

[40] For Cavendish's theory of occasional causation see Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 102–20.
[41] *OED*, "'to take out' in take (*v.*), sense 6.a", last modified December 2024, https://doi.org/10.1093/OED/9663043934.

in time, / Each in their turne took out the *Muses nine.* / In *Numbers* smooth their *Feet* did run" (I1v). Motion, matter and figure are intertwined in both universe and verse.

As this suggests, the aspect of poetry most readily associated with rhythmic motions—prosody—is that which Cavendish explicitly rejects on several occasions. As Scott-Baumann argues, with poets such as Donne and Milton critics usually assume that the effects of metre and rhyme are intentional and produce rich analyses because of this.[42] Such an assumption is admittedly more complicated for a writer like Cavendish who so overtly rejects "*Number, Words,* and *Phrase*". There is a lingering irony to a poem that uses a musical metaphor like "*Motion* directs, while *Atomes* dance" (quoted above) where only one of the couplets rhymes: while assonance maintains a connection between "time"/"line" and "long"/"done", the penultimate couplet uses entirely dissimilar words: "While *Motion,* as *Musicke* directs the *Time*: / Thus by consent, they altogether joyne". Cavendish's "joyne" is reminiscent of her declared inability to find "so many *Rhythmes,* as to joyn the *sense* of the *Subject*", heightening the apparent incongruity of a couplet that declares the success of atomic "joyn[ing]" while not joining its own lines with rhyme. Given Cavendish's statement, this might be read as a failure to "joyn", a lack symptomatic of her verse's formlessness rather than an intentional decision.

Yet paying too much heed to Cavendish's rejection of metre and rhyme prematurely forecloses the possibility of reading her choices, particularly her irregular choices, as artful. In "*Motion* directs, while *Atomes* dance", Cavendish seems to make a concerted effort in the final couplet to swap into alliterative verse to depict the breakdown of harmony: "This *Harmony* is *Health,* makes *Life* live long; / But when they're out, 'tis *death*, so dancing's done". This is a much more blatant experiment with the affordances of verse form than is usually attributed to Cavendish, certainly in the first edition of *Poems and Fancies.* In the revised, more regular 1664 edition this couplet is reworked as "This *Consort's Health,* which *Life* depends upon, / But when 'tis out, 'tis Death; so Dancing's done".[43] The compromise to achieve the full rhyme is both the alliteration and metrical smoothness that gave the original lines such compelling forcefulness.[44] Consequently, this seems less a revision from unintentional formlessness to a more intentionally harmonious line, than a change from one deliberately figured line to another. Moreover, in "An *Epistle* to my *Musefull Thoughts*" Cavendish seems to attempt to match poetic rhythm to conceit: when describing the

[42] Scott-Baumann, "Lucy Hutchinson, Gender and Poetic Form", 272.
[43] Margaret Cavendish, *Poems, and Phancies* (London: Printed by William Wilson, 1664), sig. E1r.
[44] Blake's best-text edition of *Poems and Fancies* mostly follows the revised 1664 version of this poem but interestingly retains the original 1653 final couplet. Margaret Cavendish, "Motion Directs, While Atoms Dance.", in *Margaret Cavendish's Poems and Fancies: A Digital Critical Edition,* ed. Liza Blake, website published May 2019, https://library2.utm.utoronto.ca/poemsandfancies/?p=601.

"sober, sad… *Pavin*", the monosyllabic words and multiple caesuras do slow the pace of the line, while in the following line, the lack of a strong caesural pause and the proliferating of polysyllabic words perhaps mimics "*Corantoes*", a dance renowned for its quick running steps.[45] Moreover, the "*Churlish Fancies*" do partake in an "odd" line of nine syllables (unless "*crabbed*" is pronounced as two syllables). In both of these poems that foreground the importance of motion, Cavendish makes metre a more central component of her verse. Extending Cavendish the same assumption as writers such as Donne and Milton provides the same enriching opportunities to read her prosody as meaningful.

Elsewhere in *Poems and Fancies,* Cavendish is more positive about the significance of verse form. In the following section I will pay attention to some of these moments in more detail, but here I want to briefly focus on a prefatory poem to the "Fancies" where Cavendish recycles the central and intermingled principles of matter, figure and motion from the atom poems to complicate her defensive poetic dualism. The poem begins with Cavendish's familiar argument that true poetry resides in fancy rather than verse form:

> Most of our *Moderne Writers* now a daies,
> Consider not the *Fancy,* but the *Phrase.*
> As if *fine words* were *Wit*; or, *One* should say,
> A *Woman's* handsome, if her *Cloaths* be *gay.*
> Regarding not what *Beauty's* in the *Face,*
> Nor what *Proportion* doth the *Body grace*.
> (R2v)

Cavendish uses the same clothing metaphor that translators like Dryden and Fanshawe use in their translation paratexts, but she imposes a sharper dualism between body and clothes, *res* and *verba,* nature and art. "*Phrase*" and "*fine words*" become the completely ornamental and superficial "*Cloathes*", while true "*Beauty*" is found in "*Fancy*" and "*Wit*". Yet, as I have shown, Cavendish's thought tends towards the collapsing of distinctions, and the second half of the poem paints a much more entangled picture of "*Fancy*" and "*Phrase*":

> But *Fancy* is the *Eye,* gives *Life* to all;
> *Words,* the *Complexion*, as a *whited Wall*.
> *Fancy* is the *Form, Flesh, Blood, Bone, Skin*;
> *Words* are but *Shadowes,* have no *Substance* in.
> But *Number* is the *Motion,* gives the *Grace,*

[45] *OED*, "courante | courant (*n.*), sense 1", last modified December 2024, https://doi.org/10.1093/OED/1917094400.

And is the *Countenance* to a well-*form'd Face.*
(R3r)

Each of the key philosophical concepts with which I began this section—matter, form, motion and life—reappear in this poem. Once again, the differences between matter and form dissolve as "*Fancy*" becomes the "*Form, Flesh, Blood, Bone, Skin*". Words are reimagined from clothes to "*Complexion*" which could refer to makeup used to change the colour of the skin, a meaning suggested by Cavendish's reference to a "*whited"* rather than white "*Wall*".[46] However, Cavendish frequently uses "*Complexion*" in the sense of the natural colouring of the skin, as in "A *Dialogue* betwixt *Wit,* and *Beauty*" where wit argues "In all *Complexions* some *Eyes* take delight" including "*Blacke*", "*Browne*" and "*White*" (M1r).[47] "*Words*" as "*Complexion*" approaches "*Fancy*" as "*Skin*". In attempting to dispense with "*Words*", Cavendish finds them to be more substantial and hence fanciful than she is willing to admit.

"*Motion*" bridges the prominent dualism and incipient materialism of Cavendish's poetic metaphor. Pursuing her metaphor to its imaginative conclusion leads Cavendish to a surprisingly positive account of "*Number*" in comparison to "*Words*" and "*Phrase*". She conflates "*Number*" (or metre) with "*Motion*" in her natural philosophical vocabulary, metaphorically transforming both into the "*Countenance*" or expression "to a well-*form'd Face*". As a facial expression, "*Countenance*" is as outwardly as "*Cloathes*" or "*Complexion*", but as a movement of the face Cavendish makes it a *natural* enhancer of fancy rather than an *artificial* addition. Just as in Cavendish's natural philosophy where motion cannot be without matter, Cavendish suggests that "*Number*" is not extrinsic from fancy, but rather is the rhythmic motions of "*Fancy*" that make their way into poetry. Just as Cavendish entangles "*Words*" with "*Fancy*" even as she tries to extricate them, "*Number*", too, cannot be without "*Words*" and "*Phrase*": "*Words*" as "*Shadowes*" lack "*Substance*", but they do necessarily project both the "*Form*" of fancy's body *and* follow that body's "*Motion*". Understanding Cavendish's fancy as rhythm suggests that we should pay attention not only to her poem's imaginative content, but also to the pattern, shape and sound of her words.

This poem suggests that Cavendish places a much greater importance on prosody than is usually supposed in the 1653 edition of *Poems and Fancies*. Metre and fancy are united by both being material, figurative motions, one occurring in the mind and other on the page. By using her natural philosophical vocabulary in this account of poetry, Cavendish indicates the link between her philosophy and her poetics, the relative preference for "*Number*" perhaps compelled by the

[46] *OED*, "complexion (*n.*), sense I.6", last modified September 2024, https://doi.org/10.1093/OED/8420165118.
[47] *OED*, "complexion (*n.*), sense I.4.a", last modified September 2024, https://doi.org/10.1093/OED/2137891625.

importance of motion in her natural philosophy. But Cavendish's tendency to both draw and dismantle distinctions—the circular thinking that is fundamental to her materialism and her poetics—makes tracing the direction of her thought difficult: does poetry dance because fancy and matter dance? Or are fancy and matter dancing rather like poetry? *Poems and Fancies* contains other instances where verse form is imagined in a more positive, perhaps more optimistic, light than Cavendish's concluding defence of her writing. As I will show in the next section, in some of these images, the language of poetic theory and of natural philosophy become superimposed upon one another such that the mind seems to be characterised by the motions of poetry. Rather than seeing Cavendish's preference for "*Number*" as an offshoot of her theory of material self-motion, what would it mean for Cavendish's natural philosophy if matter's motions derived from the poetic motions of metre?

Smooth Flowing Fancy and the Couplet

Cavendish's poetics are kaleidoscopic in origin and effect. Her professions of natural style are frequently linked to her natural philosophical theories about the fanciful, material motions of the mind. In "Of *Poets,* and their *Theft*", she declares

> …*Fancies,* in the *Braine* that *Nature* wrought,
> Are *best*; what *Imitation* makes, are naught.
> (R2r)

Yet, in Cavendish's writing, nature often works as a principle that draws nature and artifice into constructive dialogue. As critics have argued, Cavendish's rhetoric of naturalness and originality emerges (paradoxically) in dialogue with trends in seventeenth-century poetry and natural philosophy that prize originality as a sign of modernity.[48] To this end, Cavendish's "*Nature*" is, in the words of Scott-Baumann, not only a "powerful omnipotent figure" but also "an artistic principle" that bypasses art's imitation of nature by positing Nature herself as a fundamentally witty and fanciful creator.[49] In this section, I trace Cavendish's investment in a particular strain of seventeenth-century poetics that values naturalness, ease of expression and flowing rhythms over contrivance and difficulty. Tracing qualities such as these in Cavendish's poetics focalises the relationship between mental fancy and poetic expression with which Cavendish was so concerned: how do the mind's rhythms materialise in poetry? And do their motions exceed the confines of verse form? Putting Cavendish in conversation with her poetic contemporaries suggests the influence of poetic theories of form on her natural philosophical sense of matter's rhythmic forms. Freedom, easiness and

[48] Scott-Baumann, *Forms of Engagement,* 32; Stephen Clucas, "Variation, Irregularity and Probabilism: Margaret Cavendish and Natural Philosophy as Rhetoric", in *A Princely Brave Woman: Essays on Margaret Cavendish, Duchess of Newcastle* (Ashgate, 2003; reissued London: Routledge, 2018), 199–209.
[49] Scott-Baumann, *Forms of Engagement,* 36.

smoothness are ultimately subjective qualities, but they nonetheless crystallise seventeenth-century theories about the relationship between style and content, and take us beyond questions of regularity and irregularity, towards the prosodic *style* that Cavendish most admired.[50]

Cavendish's sense of poetic naturalness is tied to her metaphysical account of freedom as voluntary, as opposed to occasioned, material self-motions. As I argued in the previous part, fancy and wit are associated with the voluntarily inventive, rather than occasioned, figurative motions of the mind. Lascano and Cunning identify that Cavendish's metaphysics suggest that, like Hobbes, she holds a compatibilist view where liberty is defined as the ability to move as desired, rather than a total freedom of will.[51] In Cunning's words, "[t]he formation of a thought is voluntary so long as the thought forms in accord with its own motions, but that does not mean that those motions could be otherwise".[52] In keeping with her sense of liberty of action, Cavendish claims that "*Fancy* goeth not so much by *Rule, & Method,* as by *Choice*" (A3r). Moreover, in "The Claspe", one of Cavendish's most well-known statements of poetic freedom, she requests a style that runs unimpeded:

> Give *Mee* the *Free,* and *Noble Stile,*
> Which seems *uncurb'd,* though it be *wild*:
> Though *It* runs wild about, *It* cares not where;
> *It* shewes more *Courage,* then *It* doth of *Feare.*
> Give me a *Stile* that *Nature* frames, not *Art*:
> For *Art* doth seem to take the *Pedants* part.
> And that seemes *Noble,* which is *Easie, Free,*
> Not to be bound with ore-nice *Pedantry*.
> (P3v)

The "*Stile* that *Nature* frames" is imagined in terms of an *"uncurb'd*" and "*wild*" horse that can run in a voluntary and "*Free*" way. A "curb" is the strap that goes under the horse's chin that allows the horse to be checked.[53] The "though" in the second line could be glossed as "as though", but it could also possibly be a contraction of "although".[54] If "although", then Cavendish would contrast a style that only "seems *uncurb*'*d*" (perhaps indicative of a tame and trained, but unrestrained horse) although it actually "be *wild*". This wildness emphasises the naturalness and freedom of a style that possesses a native, rather than learned, rhythmic quality. Indeed, in claiming that the horse "shewes

[50] Thomas Kaminski also notes how "hopelessly subjective" terms such as sweetness are, but identifies them as useful for identifying contemporary attitudes to seventeenth-century poetry. Thomas Kaminski, "Edmund Waller's 'Easy' Style and the Heroic Couplet", *Studies in English Literature, 1500–1700* 55, no.1 (2015): 108.
[51] Lascano, *The Metaphysics of Margaret Cavendish and Anne Conway,* 133–43; Cunning, *Cavendish,* 212–16.
[52] Cunning, *Cavendish,* 215.
[53] Siegfried, *Poems and Fancies,* 212n664.
[54] Siegfried, *Poems and Fancies,* 212n663.

more *Courage,* then *It* doth of *Feare*" Cavendish emphasises that her style is not a reaction of uncontrollable bolting, but a courageous choice, a voluntary charging forward.

Cavendish's "*Free*" style exists in complex relation to her position as an aristocratic, royalist woman writer. The further qualifier that the "*Free*" style is also "*Noble*" reminds us that the ability to act in accordance with desire is an inherently privileged position. And, although Cavendish frames poetry as an art particularly suited to women who have "so much waste Time, having but little imployments, which make our *Thoughts* run wildly about, having nothing to fix them upon" (A5r), this is an inherently class-mediated perception of women's lack of work. This is made abundantly clear when she imagines her thoughts as servants forced to work long, unsociable hours to produce *Poems and Fancies*:

> my *Thoughts* have been very busily imployed, these eight, or nine *Months*, when they have not been taken away by *Worldly Cares,* and *Trouble,* which I confesse hath been a great *hinderance* to this *Work.* Yet have they sat up late, and risen earely, running about untill they have been in a *fiery heat,* so as their *Service* hath not been wanton, nor their *Industry* slack. (A6v)

This image of a noblewoman marshalling her servants into action is an entirely less free image than the noble horse.[55] The reference to "*Worldly Cares,* and *Trouble*" gestures towards personal and political circumstances that hinder the voluntary, free running of thoughts and compel them to work "late" and "earely". Writing from a position of royalist defeat, Cavendish has even less work than other noblewomen because her "*Lords Estate* being taken away" means that she "has nothing for *Huswifery,* or thristry *Industry* to imploy" herself with and "no *Stock* to work on" (A7r). Having "nothing to do" (A6r) and thus able to act freely, in accordance with the motions of her mind, allows Cavendish to naturalise royalist defeat and her aristocratic privilege into a feminine poetic liberty.

Cavendish's "*Free*" style emerges from constraint. "The Claspe" has been read as emulative of its imperatives, the opening tetrameter couplet freely departing from both Cavendish's usual iambic pentameter and the full closure of rhyme in a way that aligns poetic liberty with the evasion of the constraints of verse.[56] In his "Reflections on *Vers Libre*" T.S. Eliot argues that "freedom is only true freedom when it appears against the background of an artificial limitation", imagining poetic freedom as the deliberate and continued evasion of an expected ghostly rhythm that "advance[s]

[55] See Megan J. Fung, "Art, Authority, and Domesticity in Margaret Cavendish's *Poems and Fancies*", *Early Modern* 10, no.1 (2015): 27–47.
[56] Scott-Baumann, *Forms of Engagement,* 63–64. Siegfried also suggests that the revised line in the 1668 edition is rhythmically intentional. Siegfried, *Poems and Fancies,* 212n663.

menacingly as we doze, and withdraw[s] as we rouse".[57] Although Eliot is theorising free verse of a different kind to Cavendish, there is something quasi-Hobbesian (and Cavendishian) about this model. In his political theory, Hobbes believed that stable, societal order could only emerge from the constraints of absolute monarchy, people having a greater freedom to act in accordance with their desires rather than out of necessity in an orderly society than a lawless, chaotic one.[58] Constraint paradoxically allows greater liberty than a state of natural lawlessness and freedom. Cavendish writes no dedicated work of political philosophy, but, like Hobbes, she thought a hierarchical, monarchical society was most likely to result in stability and order.[59] The presence of constraint allows for the practice of freedom. Cavendish's demand for a "*Free*" style is less a call for freedom from the constraints of verse form than a call for a particular type of verse.

For Cavendish, the free and easy style is the heroic couplet. Cavendish's poetry is written almost exclusively in iambic pentameter couplets, an exceptionally popular verse form in the seventeenth century.[60] Rebecca Rush has recently argued that long before Milton proclaimed it a "troublesome and modern bondage", rhyme had long been a "site of contention about liberty and binding" of all kinds.[61] Particular verse forms did not have fixed meanings, but rather were received and theorised variously according to the taste—poetic, political, individual—of a given writer. Abraham Cowley, for example, aligns his irregular Pindaric odes with liberty, as Scott-Baumann has shown, although he denied this liberty made them an easy form.[62] Freedom and easiness were associated with couplet poetry more broadly. Rush argues that contrary to Milton's association of rhyme with constraint, the late-Elizabethan "Licentious Rhymers" like Chrisopher Marlowe, John Marston, and John Donne viewed couplets as a site of poetic liberty in comparison to the intricate, intertwined rhyme schemes of much Elizabethan stanzaic poetry.[63] In the seventeenth century,

---

[57] T.S. Eliot, "Reflections on *Vers Libre*", in *The Complete Prose of T.S. Eliot: The Critical Edition. Volume 1: Apprentice Years, 1905–1918,* ed. Jewel Spears Brooker and Ronald Schuchard (Baltimore: John Hopkins University Press, 2014), 514.

[58] For a summary of Hobbes' political philosophy see Sharon A. Lloyd and Susanne Sreedhar, "Hobbes's Moral and Political Philosophy", in *SEP*, first published 12 Feb. 2002, last modified 12 Sep. 2022, https://plato.stanford.edu/archives/fall2022/entries/hobbes-moral/.

[59] Cunning, *Cavendish,* 286–99. For a comparison of Hobbes and Cavendish's politics see Boyle, *The Well-Ordered Universe,* 148–51; David Cunning, "Margaret Lucas Cavendish", in *SEP,* first published 16 Oct. 2009, last modified 8 Dec. 2022, https://plato.stanford.edu/archives/win2022/entries/margaret-cavendish/, esp. "Social and Political Philosophy".

[60] J. Paul Hunter estimates that of the poetry written between 1590 and 1790, almost two-thirds were in couplets, with pentameter couplets being three or four times as common as other types of couplet. J. Paul Hunter, "Formalism and History: Binarism and the Anglophone Couplet", *Modern Language Quarterly* 61, no.1 (2000): 112n7. See also J. Paul Hunter, "Couplets", in *The Oxford Handbook of British Poetry 1660–1800,* ed. Jack Lynch (Oxford: Oxford University Press, 2016), 373–85.

[61] John Milton, "The Verse", in *The Complete Poems,* ed. John Leonard (London: Penguin, 1998), 119; Rush, *The Fetters of Rhyme,* 1.

[62] Scott-Baumann, *Forms of Engagement,* 81–112, esp. 100–03.

[63] Rush, *The Fetters of Rhyme,* 57–82.

Thomas Campion dismisses rhymed poetry as "vulgar and easie" compared to the more difficult and hence more worthy (in his view) quantitative verse he favours, further aligning verse with "barbarized *Italy*" in his nationalist invective.[64] Ben Jonson, on the other hand, holds heroic couplets to be "the bravest sort of verses", especially for long poems, arguing that "cross-rhymes and stanzas… are all forced".[65] Hobbes, too, playfully observes "to chuse a needlesse and difficult correspondence of Rime, is but a difficult toy, and forces a man sometimes for the stopping of a chink to say somewhat he did never think".[66] Hobbes is specifically responding to William Davenant's choice of an ABAB rhyme scheme for *Gondibert,* but his comments suggest the continuing association of certain verse forms and rhymes with overwrought difficulty and artificiality.

In these accounts, easiness and freedom become positions on a spectrum of artifice. Jonson and Hobbes suggest that rhymed ease is valuable as its uncontrived nature does not force a poet into saying something other than intended, prioritising sense over artificial poetic rules. This seems a somewhat paradoxical stance given that rhyme is now often viewed as a constraining and artificial rule, but crucially these writers are not contrasting rhyme, or rhymed couplets, to speech, prose or blank verse, but to other, more complicated verse forms. This is a poetic freedom and ease that contrasts itself to an artificial, "unprofitable" and potentially unwise difficulty. When Cavendish contrasts her ideal style to one that is "bound with ore-nice *Pedantry*" she, too, is likely not comparing verse with prose or speech, but with an overly fastidious or contrived verse form. Like Jonson and Hobbes, Cavendish seems to distinguish between the "ore-nice", or overly intricate and difficult, binding of certain rhyming schemes and those of her couplets. It is noteworthy, then, that Cavendish's free departure from the iambic pentameter couplet at the poem's opening is balanced by her equally free choice to close with a couplet that likewise calls for easiness and freedom but is bound with the full rhyme of "*Free*" and "*Pedantry*". For Cavendish, free and natural verse is not necessarily associated with formlessness or irregularity, but with voluntary action that may sometimes manifest irregularly and sometimes regularly.

In a fragment of misplaced verse in the "Fancies" section of *Poems and Fancies*, Cavendish lays out additional criteria for the judgement of poetry that further entangles verse form and fancy:

---

[64] Thomas Campion, *Observations in the Art of English Poesie* (London: Printed by Richard Field for Andrew Wise, 1602), sig. B6r.
[65] Ben Jonson, "Informations to William Drummond of Hawthornden", ed. Ian Donaldson, in *The Cambridge Edition of the Works of Ben Jonson Online,* ed. Martin Butler, David Bevington and Ian Donaldson (Cambridge University Press, 2014), https://universitypublishingonline.org/cambridge/benjonson/, l.5–7.
[66] Thomas Hobbes, "The Answer of Mr. Hobbs to Sr. William D'Avenant's Preface before Gondibert", in *A Discourse Upon Gondibert. An Heroick POEM Written by Sr. William D'Avenant. With an Answer to it by Mr. Hobbs* (Paris: Matthiev Gvillemot, 1650), sig. F6v.

> Those *Verses* still to me do seem the best,
> Where *Lines* run smooth, and *Wit* eas'ly exprest,
> Where *Fancies* flow, as gentle *Waters* glide,
> Where *Flowry banks* of *Fancies* grow each side.
> (T4r)[67]

These lines are a rare instance of a first-person pronoun in Cavendish's often impersonal poetry. Despite the indirect, passive phrasing of the opening line, the speaker expresses their opinion with an argumentative force that brooks no disagreement: "still" carries the older sense of constancy that makes it synonymous with "always", as well as its more current sense of presentness.[68] Cavendish's use of "still" in the opening line positions these couplets within a debate as an response to an anticipated contrary opinion. The dialogic nature of these lines is crucial, as they contain multiple terms and images recurrent in seventeenth-century poetic debates. Cavendish is here taking a stance in the poetic terms of her day.

Cavendish's identification of the "best" verses as those where "*Lines* run smooth, and *Wit* eas'ly exprest" suggests that she values the sound as well as the sense of her poetry. The "run[ning]" lines evoke the common pun on metrical feet to characterise the poem's rhythm. Cavendish also expresses a preference elsewhere in *Poems and Fancies* for prosodic smoothness. In "The *Purchase* of *Poets*" the poets dance at the Fame and Homer's wedding in "*Numbers* smooth", and although Homer is the champion of the competition for "*Fames Maiden-head*" (I1v), Ovid—a poet Cavendish seems to have particularly admired—is also praised for "his *numbers* smooth" (I1r).[69]

Yet what precisely makes metre "smooth" and what the relationship between this smooth line and easy "*Wit*" may be is more ambiguous. Thomas Kaminski identifies smoothness and easiness as key qualities for which Edmund Waller's gentlemanly closed couplets were praised. Samuel Johnson, for example, claims that "much of Waller's poetic reputation was owed to the softness and smoothness of his Numbers".[70] Even Lucy Hutchinson, who certainly did not admire Waller, identifies

[67] In the 1653 edition these lines appear as part of a ten-line, untitled poem between "*Similizing* Birds *to a* Ship" and "*Similizing the* Mind". The initial 'T' of the first line is a drop capital, indicating that it is a separate poem and not just the final stanza of the previous poem. In the 1664 and 1668 editions this poem appears as the final stanza of a longer poem "The Conclusion of this Part" at the end of the "Fancies" section of the book. Cavendish, *Poems, and Phancies*, sig. 2B3r; Margaret Cavendish, *Poems, or, Several Fancies in Verse: with the Animal Parliament in Prose* (London: Printed by A. Maxwell, 1668), sig. 2G1r.
[68] *OED*, "still (*adv.*), sense 3.a", last modified December 2024, https://doi.org/10.1093/OED/7442266862.
[69] Cf. Cavendish, *The Worlds Olio,* sig. C2v; Margaret Cavendish, *CCXI Sociable Letters* (London: Printed by William Wilson, 1664), sig. 2P3r–2Q1r.
[70] Samuel Johnson, *The Lives of the Most Eminent English Poets: With Critical Observations on Their Works, Volume 2,* ed. Roger Lonsdale (Oxford: Oxford University Press, 2006), 54.

his "smooth but yet a servile Tongue".[71] Kaminski identifies Waller's perceived smoothness as originating in his awareness that certain sounds slide into each other, whereas others jar and catch at the tongue.[72] In his later emulation of smooth metre, Alexander Pope relies on aural effects: "And the *smooth Stream* in *smoother Numbers* flow".[73] His sibilance, assonance, polyptoton ("smooth… smoother"), lack of strong midline caesura and the development from monosyllabic into polysyllabic words all contribute to the flowing of the poetic line. Furthermore, Kaminski aligns the perceived easiness of Waller's verse with a "poetic expression of urbanity" designed to suggest "effortlessness and spontaneity", convincingly arguing that Waller achieves this by "adapt[ing] the rhythms of gentlemanly conversation into verse".[74] "In Waller's 'easy' couplet", Kaminski observes, "each phrase, with its individual intonation, determines the movement of the verse. Sense rather than some abstract pattern rules rhythm".[75] Waller writes in largely closed iambic pentameter couplets, but the cadences of speech direct the metre, rather than abstract metrical pattern diverting the flow of normal speech. This is a slightly different sense of "*Ease*" than that associated with the couplet in general, but one that nonetheless is associated with a carefully crafted naturalness.

When Cavendish revises her lines for the 1664 edition of *Poems and Fancies,* she edits with audible smoothness and easiness in mind: "Where *Lines* run smooth, and *Wit* eas'ly exprest" becomes "Where Lines run Smooth and Wit's with ease Exprest".[76] This is a very minor change. The sense of the line is unchanged and both versions are metrically regular. However, the alliteration and assonance in the second half of the 1664 line is much smoother to read. In 1653, the tongue catches slightly at the contracted "eas'ly" and at the transition between the long 'e' at the end of "eas'ly" and short "e" at the beginning of "exprest". However, in 1664, the contracted "Wit's" slides smoothly into "with", the closing "th" further flowing into "ease". The removal of the "ly" also improves the line's ease of pronunciation. Sound and sense merge as the impression of free and easy wit is created in and through smooth verse form, not in its absence, the movements of the mind best expressed in the unencumbered, effortless pronunciation of the line.

Cavendish's second couplet returns to the motions of fancy. Rivers were a common metaphorical place where stylistic issues around the relation between sound and sense, style and content, were debated and worked out. Robert Burton defends his prose style in *The Anatomy of*

[71] Hutchinson, "To Mr: Waller vpon his Panegirique to the Lord Protector", in David Norbrook, "Lucy Hutchinson Versus Edmund Waller: An Unpublished Reply to Waller's *A Panegyrick to my Lord Protector*", *The Seventeenth Century* 11, no.1 (1996), p.73, l.1.
[72] Kaminski, "Edmund Waller's 'Easy' Couplet", 110–111.
[73] Alexander Pope, *An Essay on Criticism* (London: Printed for W. Lewis, 1711), sig. C3v.
[74] Kaminski, "Edmund Waller's 'Easy' Couplet", 99, 104.
[75] Kaminski, "Edmund Waller's 'Easy' Couplet", 104.
[76] Cavendish, *Poems, and Phancies,* sig. 2B3r.

Melancholy (first printed in 1621) as shunning "phrases" and oral harmony in preference for a plain, natural style that emulates the naturally variable motions of a river.[77] The most famous seventeenth-century invocation of a river for the movement of verse is John Denham's Thames couplets in *Coopers Hill* that became paradigmatic of the ideal Augustan couplet:

> O could I flow like thee, and make thy streame
> My great example, as it is my theme!
> Though deep, yet cleare, though Gentle, yet not dull,
> Strong without rage, without 'ore-flowing full.[78]

Johnson's fulsome praise of these couplets focuses on their concision, antitheses, parallelism and balance, all of which contribute to Denham's reputation for poetic strength, further claiming that "the flow of the last couplet is so smooth and sweet; that the passage, however celebrated, has not been praised above its merit. It has a beauty peculiar to itself".[79] Cavendish had likely read *Coopers Hill.*[80] However, this version of Denham's Thames lines was likely unavailable to Cavendish when she was first writing *Poems and Fancies.* The print history of *Coopers Hill* is difficult to untangle, but the couplets in their above form only appeared in print in 1655.[81] In editions prior to this, the lines instead read

> O could my verse freely and smoothly flow,
> As they pure Flood, Heaven should no longer know
> Her old *Eridanus* thy purer streame,
> Should bathe the Gods and be the Poets Theame.[82]

Both couplets aim to be emulative, but neither "freely" nor "smoothly" are valued as poetic qualities in the lines' later manifestation. In their earlier form, Denham's lines lack many of the features that made them emblematic of binarism and strength, prioritising flow instead: they are not closed couplets, the caesura are less pronounced, and Denham's much celebrated antitheses and balance are virtually absent. Denham's unrevised couplets represent a different stylistic ideal for the iambic

---

[77] Robert Burton, *Anatomy of Melancholy, Volume 1: Text,* ed. Thomas C. Faulkner, Nicholas K. Kiessling, Rhonda L. Blair, com. J.B. Bamborough and Martin Dodsworth (Oxford: Oxford University Press, 1989), 18.
[78] John Denham, *Coopers Hill* (London: Printed for Humphrey Moseley, 1655), sig.C1v. Rodney Stenning Edgecombe suggests that Denham may have been inspired by Burton's use of the river metaphor. Rodney Stenning Edgecombe, "John Denham, Robert Burton, and the River Exemplum in 'Coopers Hill'", *Notes and Queries* 56, no.2 (2009): 205.
[79] Johnson, *The Lives of the Most Eminent English Poets, Vol. 1,* 239.
[80] See Anne Elizabeth Carson, "The Hunted Stag and the Beheaded King", *Studies in English Literature, 1500–1900* 45, no.3 (2005): 537–56; L.E. Semler, "Nation, Nature, and Poetics: Transitions and Claspes in Denham's 'Coopers Hill' and Cavendish's *Poems and Fancies*", in *Home and Nation in British Literature from the English to the French Revolutions,* ed. A.D. Cousins and Geoffrey Payne (Cambridge University Press, 2015), 19–32.
[81] See Brendan O. Hehir, "'Lost,' 'Authorized,' and 'Pirated' Editions of John Denham's *Cooper's Hill*", *PMLA* 79, no.3 (1964): 242–53.
[82] John Denham, *Coopers Hill* (London: Printed for Humphrey Moseley, 1650), sig. B3v.

pentameter couplet than the balanced, "Strong", Augustan couplet and one precisely keyed to Cavendish's preference for a smooth and flowing fancy.[83]

Not all seventeenth-century poets favoured the smooth style. Ben Jonson was certainly not a fan, evoking it as a term of gendered abuse for "'Women's poets'": "They write a verse, as smooth, as soft as cream; / In which there is no torrent, nor scarce stream".[84] By "Women's poets" Jonson means those who write in a 'womanly' style, rather than woman writers themselves, contrasting it with the "rough and broken" style written by those that think things "more strong and manly, that struck the ear with a kind of unevenness".[85] Jonson's sibilance parodies prosodic smoothness, while his metaphor of the "scarce stream" and "torrent" suggests that a smooth line would also lack forcefulness of meaning. Part of Jonson's problem with smooth verse is that it "runs and slides, and onely makes a sound", sacrificing significatory depth to audible harmony.[86] "You may sound these wits," he insists, "and find the depth of them, with your middle finger".[87] In lacking "torrent" such lines risk stagnating, appearing only "cream-bowl- or but puddle-deep".[88] The smooth style risks becoming all sound and no sense. Jonson also does not favour the contrived roughness of the 'masculine' style, but a moderate middle ground. As Rush has observed, Jonson's understanding of poetry as "a pattern or exemplar of the free but measured life" leads him to a couplet style that "walk[s] with an even and unaltered gait".[89] For Kaminski this "disciplined, muscular movement" differs from Waller's smooth and easy style by creating "tension between the line of verse and the period of sense; rhythm and meaning straining against one another, each asserting itself, neither triumphing".[90] In favouring a "*torrent*" style, Jonson values a turbulent flow, characterised by stops, eddies, twists and turns; a flow of wit tightly controlled and mediated by prosodic features.

Contra Jonson and more in keeping with Waller and Denham, Cavendish favours the unobtrusiveness of smooth and easy verse. In a chapter called "*Of the Labyrinth of Fancy*" in *The Worlds Olio,* Cavendish (re)uses and expands her river metaphor:

> The reason why men run in such obscure conceits, is, because they think their wit will be esteemed, and seem more when it lies an odde and unusual way, which makes their verse not like a smooth running stream; but as if they [sic] were shelves

[83] For the "Teleological Ghost" that haunts accounts of the heroic couplet's binarism see Hunter, "Binarism and the Anglophone Couplet", 112–13.
[84] Ben Jonson, "Discoveries (printed 1641)", in *The Cambridge Edition of Ben Jonson Online,* ed. Lorna Hutson, l.515–17.
[85] Jonson, "Discoveries", l.502–05.
[86] Jonson, "Discoveries", l.514.
[87] Jonson, "Discoveries", l.517–18.
[88] Jonson, "Discoveries", l.518.
[89] Rush, *The Fetters of Rhyme,* 89, 107.
[90] Kaminski, "Edmund Waller's 'Easy' Couplet", 96–97.

> of sand, or rocks in the way, and though the water in those places goeth with more force, and makes a greater sound: yet, it goeth hard and uneasy. As if to expresse a thing hard, were to make it better, but the best poetry is plain to the understanding, of easy expressions, and ful of fresh & new conceits. (C1v)

In this version of the metaphor, "easy expressions" and the "smooth running stream" of verse seem to become features of sense, "conceit" or, per the chapter title, "*Fancy*". Labyrinthine conceits that "expresse a thing hard", or too difficultly, are condemned in comparison to poetry that is "plain to the understanding" and of "easy expressions". Whereas Jonson criticises the smooth style for valuing sound instead of depth of meaning, Cavendish levels the same criticism at the torrent style that thinks itself better for its greater "force" and "sound". If, for Jonson, torrent verse is created through an emphasised poetic rhythm, we might interpret Cavendish's "shelves of sand, or rocks" as features like caesura, metre and rhyme that could potentially disrupt the free flowing of fancy and distort it into needlessly difficult expressions. The acoustic gliding of a smooth and easy style becomes reimagined as a less obstructive, freer rendering of fancy's motions. In the river metaphor in *Poems and Fancies* where "*Fancies* flow, as gentle water glide", the aural effects Jonson mocks manifest in Cavendish's alliterative *f*'s in the semi-chiasmic "*Fancies* flow" and "*Flowry* banks of *Fancies*", as well as the internal rhyme between "*Fancies* flow" and "*Fancies* grow. In keeping with Cavendish's prioritisation of fancy and naturalness, she imagines the ideal laminar flow of verse line and fancy, sound and sense.

In *Poems and Fancies,* then, the motions of fancy and wit become characterised by the terms and images of seventeenth-century poetic theory. It is tempting to interpret Cavendish's river couplets in the same dualistic way in which Cavendish often distinguishes between fancy as mental faculty (producer) and as poetic form (product), the river of fancy representing Cavendish's free flowing mind and the flowers representing the poetry that mind creates. Indeed, the internal rhyme between "*Fancies* flow" and "*Fancies* grow" is not only an acoustic effect, but bring fancy's two aspects into relation, the flowery riverbank dependent on the river. The accidents of early modern orthography that render flowery as "*Flowry*" further preserves something of fancy's "flow" inside fancy's flowers, one the natural outgrowth of the other. Such a reading already brings fancy and verse into closer relationship than Cavendish elsewhere asserts. But Cavendish's couplets implicate and merge them further still. What initially seems like the parallelism of poetic "*Lines*" and "*Wit*", fanciful river and flowery riverbank, are collapsed as the couplets unfold. Cavendish slides her two closed couplets together using the anaphoric "Where" that brings the river of fancy that "flow[s]" and "glide[s]" into association with the earlier verse "*Lines*" that "run smooth". This retroactively metamorphoses the smooth-running line of poetic feet into running water reminiscent of Denham's "smoothly" flowing Thames that shuns binarism and antitheses. Fancy's free motions and the

motions of the poetic line overlap and coalesce, the one becoming productively indistinguishable from the other.

Cavendish suggests that her mind moves in lines of verse. In *Philosophical and Physical Opinions* (1655), Cavendish speculates about the difficult of having her atomic poetry translated into Latin so that it could be read across Europe. She observes that because "it is easier to translate prose then verse, for rimes, number, and sense, are hard to match in several Languages" she contemplated rewriting her poetry into prose:

> I would have turned my Atomes out of verse into prose, and joyned it into this book, but I finding my brain would be like a river that is turned from its natural course, which will neither run so smooth, swift, easie, nor free, when it is forced from its natural motion and course… made me desist[91]

All the terms I have been discussing in this part—smooth, easy, free, natural—reoccur in this suggestive passage where Cavendish indicates that, at least when writing *Poems and Fancies,* the "natural motion and course" of her fancy was the rhythmic lines of verse form. Antithetical to a rejection of poetic form as an unnatural constraint, here it is prose that is both less natural and less free because more "forced". For Cavendish, the natural and free motions of the mind can be the rhythms of verse, particularly iambic pentameter couplets.

Over the course of this section, I have examined how Cavendish's poetics materialise in interactive relation to her natural philosophical sense of the mind's figurative motions, her metaphysical and political interpretations of liberty, and seventeenth-century poetic theorisations of the couplet. In so doing, I have demonstrated the seemingly reciprocal influence between Cavendish's poetics and her natural philosophy, as well as uncovering the prosodic style Cavendish most admires and seems to revise to for the 1664 *Poems and Fancies.* I now turn to the wider consequences of Cavendish's prosodic fancy for the overall structure of *Poems and Fancies*.

Breathless Fancy and the Rhythm of *Poems and Fancies*

Cavendish's conception of fancy as rhythm manifests not only within the poetic line, but across the five-part structure of *Poems and Fancies* as a whole. In the first clasp poem of *Poems and Fancies,* Cavendish depicts the exhausting process of composing the book. The clasps act as intermediaries between the book's various parts and genres. But it is significant that the book's first clasp—the poem where the reader learns what the clasps do—does not obviously reflect on the previous atom

[91] Cavendish, *The Philosophical and Physical Opinions* (1655)*,* sig. a2r.

poetry or the following moral discourses. Instead, Cavendish uses this poem to self-mythologise the creation and structure of *Poems and Fancies*:

> When I did write this *Booke,* I took great paines,
> For I did walke, and thinke, and breake my Braines.
> My *Thoughts* run out of *Breath,* then down would lye,
> And panting with short wind, like those that dye.
> When *Time* had given *Ease,* and lent them *strength,*
> Then up would get, and run another *length*.
> Sometimes I kept my *Thoughts* with a *strict dyet*,
> And made them *Faste* with *[E]ase,* and *Rest,* and *Quiet*;
> That *they* might run agen with swifter speed,
> And by this course *new Fancies* they could breed.
> But I doe feare *they're* not so *Good* to please,
> But now *they're* out, my *Braine* is more at [e]ase.
> (G4r)

Siegfried observes that the central conceit of this poem is the comparison between running thoughts and the aristocratic recreation of greyhound coursing that puns on the sense of a clasp as "the special-collar chain that holds back a racing hound before the start of a race".[92] This differs from the usual definitions of clasp invoked to explain these sections in *Poems and Fancies*, where emphasis is placed on the grasping together of two physical objects, whether the "the metal closure used to fasten the covers of a book" or the links in a chain.[93] In comparison, the "special-collar chain" is designed not only to hold together, but to hold back and, by implication, eventually release.

Constraint, therefore, is once again posed as the necessary counterpart to freedom. Cavendish does not restrain her thoughts with a chain, but with a "*strict dyet*" and moments of "*[E]ase,* and *Rest,* and *Quiet*" that Siegfried identifies as "common training practices for greyhounds".[94] However, Cavendish's short autobiography "A True Relation of My Birth, Breeding and Life", first published in *Natures Pictures* (1656), complicates a purely metaphorical reading of the poem:

> I do often fast, out of an opinion that if I should eate much, and exercise little, which I do, onely walking a slow pace in my chamber, whilest my thoughts run apace in my brain, so that the motions of my minde hinders the active exercises of my body: for should I Dance or Run, or Walk apace, I should Dance my Thoughts out of Measure, Run my Fancies out of Breath, and Tread out the Feet of my Numbers,[95]

[92] Siegfried, *Poems and Fancies,* 133n357 and 359.
[93] Siegfried, *Poems and Fancies,* 133n357; Blake, "Reading Poems (and Fancies)".
[94] Siegfried, *Poems and Fancies*, 133n360.
[95] Margaret Cavendish, *Natures Pictvres Drawn by Fancies Pencil to the Life* (London: Printed for J. Martin and J. Allestrye, 1656), sig. 3D1r.

In this odd image, the motions of the body and mind compete. Cavendish attempts to harmonise these external and internal motions, regulating her diet and exercise so that she does not negatively impact her motile mind; she walks so her thoughts can run. Although "The Claspe" could suggest that it is her greyhound-thoughts that are made to keep a strict diet, it could just as easily be Cavendish herself engaging in the "*strict dyet*". Indeed, when Cavendish claims to make her thoughts "*Faste* with *[E]ase,* and *Rest,* and *Quiet*", she puns on "*Faste*" as both "quick" and the restriction of food.

Cavendish's autobiographical description also returns us to the dancing and running metaphors that bridge her poetics and natural philosophy. When she claims, "should I Dance or Run, or Walk apace, I should Dance my Thoughts out of Measure, Run my Fancies out of Breath, and Tread out the Feet of my Numbers", Cavendish once again draws on the common metaphor that associates physical feet—whether walking, running or dancing—with metrical feet. Cavendish uses this metaphor elsewhere in *Poems and Fancies,* such as in "The *Purchase* of *Poets*" where a group of poets including Homer, Ovid and Virgil dance with the muses. Earlier in this poem these poets are depicted journeying up Parnassus hill, some with "nimbler feet" and "their breath more strong" (H4r). Cavendish clarifies the metaphor with a marginal note that explains by "feet" she means "Numbers" (or metre), and by "breath" that she intends "Fancy" (H4r). The definition is unexpected. Given its proximity to a comment on "Number", we might assume "breath" would reference caesura; Puttenham, for example, discusses the need for caesura because "the breath asketh to be now and then relieved with some pause or stay more or less", also evoking breath in his discussion of Latin quantitative verse that "proceeds unequally, sometimes swift, sometimes slow, as his breath or forces serve him".[96] While surprising, Cavendish's alignment of "breath" with "fancy" does correspond with her autobiographical concern that specifically her "Fancies" would be run out of "Breath".

By aligning "breath" with "Fancy", Cavendish continues to blur the distinction between verse form and fancy as one behaves rather like the other. This also occurs in "The Claspe", where Cavendish uses metre to enact the presence of her motile thoughts, establishing the mind's prosodic rhythms as a formal principle of her poetry:

> My *Thoughts* run out of *Breath*, then downe would lye,
> And panting with short wind, like those that dye.

This couplet's syntax is awkward, the gerund "panting" leaving the sentence feeling appropriately unfinished as Cavendish evokes the breathy presence of her thoughts, suggesting that we are

[96] Puttenham, *The Art of English Poesy,* 163, 159.

experiencing them as they running out of steam, "panting…like those that dye". The fact that the sentence is grammatically incomplete captures the lying down of the thoughts before the idea reaches completion. As such, the concluding full stop is highly ironic if we interpret them, as Puttenham does, as "a resting place and perfection of so much former speech as had been uttered".[97] Cavendish's thoughts may have reached their "resting place" at the end of the verse line, but they have certainly not reached "perfection" or finality of sense. Here sentence and line become desynchronised to express the motions of her thoughts.

Elsewhere in the poem, Cavendish uses a regular and forceful iambic beat to effectively enact the sound of feet. Her polysyndeton conveys the regular, repetitive rhythm of feet in the second and eighth lines: "For I did walke, and thinke, and breake my Braines" and "And made them *Faste* with *[E]ase,* and *Rest,* and *Quiet*". This is particularly enhanced in the second line by the repeated "k" sound. Notably, Puttenham classes both this technique (homoioteleuton) and polysyndeton as figures that "serve chiefly to make the meters tunable and melodious".[98] Throughout the poem, Cavendish uses conjunctions such as "and" and "then" to deemphasise unstressed syllables and maintain the poem's rhythm. In this poem, Cavendish materialises her running thoughts in metrical feet that run across the page. When she claims that her thoughts "run another length", we are encouraged to imagine her thoughts running another length or line of verse.

Running ever onward is both an affordance and a danger of the couplet. William Davenant claims to have chosen stanzas for his epic, *Gondibert,* precisely because he "believ'd it would be more pleasant to the Reader, in a Work of length, to give this respite or pause…than to run him out of breath with continu'd *Couplets*".[99] While not commenting on couplets directly, Sprat observes that Cowley's "Fancy flow'd with great speed, and therefore it was very fortunate to him, that his Judgment was equal to manage it. He never runs his Reader nor his Argument out of Breath".[100] For Sprat, Cowley had mastered the "hardest Secret of good Writing": "to know when he has done enough" and yet appear that "it was in his Power to have said much more".[101]

Cavendish was by no means a minimalist, and a better characterisation of her approach might be to write much and appear as though she could still write more. As Lara Dodds observes, especially in the "Fancies" Cavendish's method is "simply additive… after the first couplet, each couplet (and sometimes each line) contributes a new version of the poem's central conceit, but the

[97] Puttenham, *The Art of English Poesy,* 164.
[98] Puttenham, *The Art of English Poesy,* 257.
[99] Davenant, *A Discourse upon Gondibert,* sig. B12r.
[100] Sprat, "An Account of the Life and Writings of Mr Abraham Cowley", sig. b2r.
[101] Sprat, "An Account of the Life and Writings of Mr Abraham Cowley", sig. b2r.

poem does not suggest that these particular instances represent a unified or ideal expression of the poem's thought".[102] In *Poems and Fancies,* "couplets pile up", poems varying hugely in length and rarely building towards a conclusion.[103] For example, "Similizing the Head of Man to the World", presents an anatomising list of similes that moves between the head's physical features ("The *Fore*-head, *Nose,* like *Hills* that do rise high"; "The *Haire,* as *Trees,* which long in length do grow"; "The *Eyes,* are like the *Sun,* do give in light") and the mind's inner workings: "*Wit*, like to severall *Creatures,* wildly runs"; "As twinckling *Stars* shew in dark *Clouds,* that's cleare, / So *Fancies* quick do in the *Braine* appeare" (U2v). This poem begins with the simile "the *Head* of Man is like the *World* made round" and ends with the metaphor "*Nature* did make the *Head* a *World* to bee" (U2v–U3r). Although the blatantly comparative simile solidifies into the more vehement metaphor, the more certain tone disguises the fact that little progress has been made over the course of the poem's many comparisons.

Cavendish's additive poetic structure is apparent not only within individual poems, but also across the whole volume.[104] In her later *Philosophical Letters* (1664), Cavendish takes issue with Hobbes' concept of the "TRAYNE of Thoughts" or "*Mentall Discourse*" which in the *Leviathan* (1651) he explains as "When a man thinketh on any thing whatsoever, His next Thought after, is not altogether so casuall as it seems to be".[105] In Hobbes' mechanist system one thought causes the next one in a chain reaction. Cavendish, with her vitalist system where matter is capable of voluntary self-motion, disagrees:

> And as for his *Train of Thoughts,* I must confess, that Thoughts for the most part are made orderly, but yet they do not follow each other like Geese, for surely, man has sometimes very different thoughts; as for Example, a man sometime is very sad for the death of his Friend, and thinks of his own death, and immediately thinks of a wanton Mistress, which later thought, surely, the thought of Death did not draw in; wherefore, though some thought may be the Ring-leader of others, yet many are made without leaders.[106]

Against Hobbes' deterministic conception of a "*Train of Thoughts*", Cavendish responds with a *mostly* "orderly" sequence of thought where some do act as "Ring-leader[s]" to the ones that follow, while

[102] Dodds, "Bawds and Housewives", 54–55.
[103] Dodds, "Bawds and Housewives", 51.
[104] Blake, too, argues that Cavendish's poems need to be read in sequence and connection with each other, focusing on the atom poems in the book's first part. Blake, "Margaret Cavendish's Forms", 46–51.
[105] Thomas Hobbes, *Leviathan, or, The Matter, Forme and Power of a Commonwealth Ecclesiasticall and Civil* (London: Printed for Andrew Crooke, 1651), sig. B3v.
[106] Margaret Cavendish, *Philosophical Letters: or, Modest Reflections upon some Opinions in Natural Philosophy* (London, 1664), sig. I2r–v.

others can voluntarily and freely arise "without leaders". This is not an utter anarchy of thought, but Cavendish's characteristic balance of necessity and liberty, constraint and freedom.

Cavendish's transformation of Hobbes' "*Train of Thoughts*" is captured by the tangential logic of the "Fancies" section of *Poems and Fancies,* where lines of thought run on obliquely. The poem following "Similizing the Head of Man to the World" is "Similizing the *Head* of *Man* to a *Hive* of *Bees*" and the certainty of Cavendish's previous concluding metaphor ("*Nature* did make the *Head* a *World* to bee") jars against the following opening simile: "The *Head* of *Man* just like a *Hive* is made" (U3r). By paralleling the syntax of the poem's titles and first lines, Cavendish playfully highlights the "breed[ing]" of "*new Fancies*" that "run agen" in "another *length*", to quote "The Claspe". Furthermore, the concluding verb "bee" seems echoed in the titular noun "*Bees*", the springboard to further similizing in which the constellations of "twinckling stars" become "great round heapes" of swarming bees (U3r). The next poem, "The *Prey* of *Thoughts*", begins with a similar wink and nod towards the previous poem: "If *Thoughts* be the *Minds Creatures*, as some say, / Like other *Creatures* they on each do *Prey*" (U3v). The ironic interjection, "as some say", deliberately alludes to the previous poem in which Cavendish asserts just this fact in her comparison between thoughts and bees. This tangential line of thought culminates in the following poem, "Similizing *Fancy* to a *Gnat*", where fancies are "like small *Gnats*" that "buz in the *Braine*" (U4r). Across this mostly "orderly" sequence of "Fancies", various metaphorical explorations of the head and mind are juxtaposed, granting the impression of the sheer speed and ephemerality of fancy, as discussed in the first part of this chapter, where fancies appear and then disappear to be replaced with another almost instantaneously. After this sequence, Cavendish's thoughts zig into the poem "Of the *Spider*" (U4r) that compares spiders to housewives, and then zag into "A *Comparison* between *Gold,* and the *Sun*" (U4r–v) poems that seem to arise "without leaders" in the previous poems. The tangential, zigzag quality of Cavendish's fancies vibrate with a barely contained energy that captures both fancy's speed and its free inventiveness.

Cavendish's concluding statement in *Philosophicall Fancies* gestures towards at least one consequence of this vision of free running fancy: "*But* Fancy, *which is the effect of* Motion, *is as infinite as* Motion; *which made me despaire of finall Conclusion of my* Booke; *which make my* Booke *imperfect, and my Fancies unsettled*" (G7r). Cavendish, once again, enacts a slippage between fancy as a mental faculty and fancy as a literary product. As fancy is the effect of the mind's potentially infinite motions it simply cannot be contained in one finite form. As if to prove her point, this statement comes after an extensive six-page list of all the topics Cavendish wishes she could have included in the book, a list which itself cannot capture Cavendish's running thoughts and hence ends

simply “And many more” (G4v–G7r). The artificial constraints of form rear their head, neither book nor list (the ultimate additive form) can capture the true freedom and variety of nature’s motions.

In *Poems and Fancies,* Cavendish establishes fancy as the rhythmic form of the book as a whole. After all, in “The Claspe” poem, it is the “*Booke*” Cavendish is writing, not just an individual poem. Like metre, the poem is as much about moments of rest as of movement, the couplets alternating between descriptions of ease and of rapid movement. It is not a coincidence that “*[e]ase*” is the poem’s final word and its final resting place. Applied to the “*Booke*” as a whole, these moments of rest point to the end of one part, before fancy runs on with “swifter speed” in another “length” of thought in the next section of the volume. In the 1664 edition, the book’s different sections are clearly labelled at their beginnings, while this structure is made even more explicit in 1668 where running headers appear at the top of each page, making it possible to know at a glance which section of the book you are currently reading.[107] This is not the case in 1653 where the running headings simply read “POEMS” throughout. In 1653, the most obvious sign of transition between sections would have been the clasps, each of which is marked by the large title “THE CLASPE”.[108] Perhaps, then, in this first “Claspe” Cavendish suggests a reading strategy for *Poems and Fancies,* the clasps acting as resting places intended to hold us back, like greyhounds at the beginning of a race, to give us a moment of ease to renew our mind to keep up with Cavendish’s swift thoughts in the next sequence of poems. Indeed, as mentioned previously, a clasp is also the object that holds together the covers of a book specifically when it is *closed*. These closures are not endings or unattainable “*finall Conclusion*[s]” but are nonetheless moments of ease vital to the continued running of fancy. Even in a poem that celebrates the breathless momentum of fancy, Cavendish instates a necessary resistance to fancy’s freedom.

In *Philosophical and Physical Opinions* (1663), Cavendish claims emphatically that

> The Rules of Art cannot be the Rules of Nature, nor the Measures of Art the Measures of Nature, neither can the Numbers of Art be the Numbers of Nature, for though Art proceeds from Nature, yet Nature doth not proceed from Art, for the Cause cannot proceed from the Effect, although the Effect proceeds from the Cause.[109]

Against Cavendish’s claims in this passage, I have argued that *Poems and Fancies* presents a much more complicated picture of natural philosophical and poetic interaction underpinned by Cavendish’s political concerns. Cavendish does ontologically ground her poetics, particularly her theory of fancy,

[107] For example, Cavendish, *Poems, and Phancies,* sig. B1r, I3r, V2v; Margaret Cavendish, *Poems, or, Severall Fancies* (London: Printed by A. Maxwell, 1668), sig. B2r, L3r, 2B1r.
[108] Semler also identifies the clasps as the “most noticeable feature of general structure”. Semler, “Nation, Nature, and Poetics”, 21.
[109] Margaret Cavendish, *Philosophical and Physical Opinions* (London: Printed by William Wilson, 1663), sig. d2r.

in her physics and metaphysics. But, when tracing the development of Cavendish's thought, seventeenth-century poetic theory exerts its own transformational influence. Her sense of figure as a dynamic, material pattern of movement is, at least partially, a manifestation of the rhythms of verse form. Indeed, throughout *Poems and Fancies,* fancy is frequently found running and dancing on feet tantalisingly and suspiciously like those of verse, Cavendish appropriating the terms and images of poetic theory to characterise fancy. By focusing on Cavendish's prosody, I have run the "dual risk" of all formalist analyses of Cavendish's poetry of "portraying her as boringly conventional or incompetently unmetrical", to borrow Scott-Baumann's words.[110] Yet in recovering fancy's rhythm I hope to have enlarged and renewed our understanding of Cavendish's early prosody and its role in her natural philosophical thought.

I have also traced how Cavendish's evocations of nature, freedom and infinite motion also raise their necessary opposites: artifice, constraint and rest. This interplay is why an understanding of fancy as rhythm is particularly powerful. It accounts for Cavendish's circularity of thought: her tendency to collapse matter, motion and figure into each other such that motion does some of form's actualising work and her indiscriminate similizing that makes matter, mind and verse all dance and run. But it also maintains the presence of counter currents in Cavendish's thought. Rhythm cannot exist in undifferentiated motion; its patterns of repetition require difference and fluctuation. For Cavendish, artifice and constraint are ultimately the necessary grounds from which freedom—metaphysical, political, poetic—can emerge.

[110] Scott-Baumann, *Forms of Engagement,* 12.

Chapter 4: Ontological Acoustics: Breath and Inanimated Matter in Hester Pulter's Manuscript Verse

> the voices of Men and Living Creatures, pass through the Throat, which penneth the breath.
>
> It is euident, and it is one of the strangest Secrets in *Sounds*; that the *whole Sound* is not in the *whole Aire* onely; But the *whole Sound* is also in euery small *Part* of the *Aire*.
> —Francis Bacon, *Sylva Sylvarum*[1]

What does it mean to resign form? This is the question Hester Pulter raises in "The Revolution", rejecting utter annihilation in favour of formlessness:

> Should all annihilated be,
> Which is as easy unto thee;
> Oh what would then become of me?
>
> Nay, rather all to dust calcine;
> I gladly will my form resign,
> It will my carnal heart refine.
>
> My tears my dust shall rarefy
> To air, which circularly
> Thy blesséd name shall magnify.[2]

Addressing God, Pulter faces both epistemological and ontological uncertainty when imagining annihilation. Annihilation in its technical sense is the opposite of creation *ex nihilo,* the transformation of something into nothing available only to God.[3] Pulter resolutely rejects annihilation, "Nay" representing a retreat from the inconceivable (*what* would then become of me?) and personally threatening (what would then become of *me*?) nature of nothing.[4] Instead, Pulter prefers formlessness: "form" here seemingly denotes the corporeal body, referencing Genesis where God "formed man of the dust of the ground".[5]

---

[1] Francis Bacon, *Sylua Syluarum: Or A Naturall Historie. In Ten Centuries* (London: Printed by J.H., 1626), §116, sig. F3v; §192, sig. H2v. All further references are to this edition and referenced parenthetically by section and page signature.

[2] Hester Pulter, "16. The Revolution", in *Poems, Emblems, and The Unfortunate Florinda,* ed., Alice Eardley (Toronto: Iter Press, 2014), l.22–30. All references to Pulter's poems are from this edition unless otherwise stated and hereafter cited parenthetically by line number.

[3] Pulter uses "annihilate" in exactly this sense in "The Circle [1]" (l.19–20) and "The Hope" (l.11–12), where in both cases she evokes God's power to "annihilate" and "create" or "recreate".

[4] For an alternate understanding of annihilation as "emptying the soul so that God can enter" to avoid "decay to nothingness" in Donne's writing see Ross Lerner, "Donne's Annihilation", *Journal of Medieval and Early Modern Studies* 44, no.2 (2014): 409, 407–27.

[5] Genesis 2:7 (*KJV*)

If Pulter "gladly" gives up her form, then she only reluctantly relinquishes her matter. Having been rarefied through "dust", to "tears" and then "air", Pulter imagines her dispersal as a voice in praise of God. Early modern natural philosophers identify air as the primary material medium of voice. They also understood that sound dispersed "circularly", in Pulter's words, and here Pulter blends her acoustic knowledge into the poem's focus on cyclicity and revolution. It was one of sound's central mysteries that dispersal did not disarticulate the voice, its continued unity despite physical scattering essential for its function. Pulter uses this strange fact to imagine her circular diffusion as voice as not only "magnify[ing]" God in the sense of glorifying him, but also granting his "blesséd name" a materially larger presence as the particles of air spread apart.[6]

Pulter initially seems to relinquish her claim over her airy vocal matter, the repeated possessives of "My tears my dust" giving way to unindividuated "air" containing God's name only. Yet, in the next stanza, the speaker asserts their identity with this matter:

> But as my tears in air ascends
> I'll raise no storms to hurt my friends;
> My soul hath far more noble ends.
> (31–33)

Now entirely air, the first-person speaker reemerges, identifying with their airy matter. Air, of course, was not only the medium of voice, but also capable of creating "storms", reminding us of its material nature despite the divine message it carries. The vulnerable materiality of sound threatens to disrupt the reliable transmission of voice. Yet the slippage from "I'll" to "My soul" suggests that this matter is also soulful in some way—her air (or her as air) cannot loiter to cause "storms" because her heavenly "soul" drives her further ascension. That the matter retains some memory of its source is crucial for achieving its "noble ends" and avoiding the harmful creation of "storms". Pulter cannot entirely surrender her matter for the magnification of God because to achieve her heavenly goal, the speaker of this voice needs to remain identifiable. Thrown out into universe, Pulter understands the importance of remaining in possession of her voice.

Although Pulter may have resigned one kind of form, she retains another: her soul. Psychology—the study of the soul—had a central place in scholastic natural philosophy, the key text being Aristotle's *De anima*.[7] Scholastic philosophy understood the rational soul as the body's

[6] *OED*, "magnify (*v.*)", last modified June 2024, https://doi.org/10.1093/OED/3825909654, senses 1 (esp. 1b) and 2.
[7] Katharine Park and Eckhard Kessler, "The Concept of Psychology", in *The Cambridge History of Renaissance Philosophy,* ed. Charles B. Schmitt, Quentin Skinner, Eckhard Kessler and Jill Kraye (Cambridge: Cambridge University Press, 1988), 455; Richard Serjeantson, "The Soul", in *The Oxford Handbook of Philosophy in Early Modern Europe,* ed. Desmond M. Clarke and Catherine Wilson (Oxford: Oxford University Press, 2011), 120.

substantial form, providing cohesion through material growth and change.[8] Despite the widespread renunciation of substantial form in seventeenth-century natural philosophy, dedicated atomists such as Walter Charleton still "exempt the *Rationall Soul of Man*" from his repudiation of "the substantiality of Forms" and Descartes too persists in calling the soul a substantial form despite his very different, mind-centric definition of the soul.[9] In "The Revolution", Pulter's soul remains stubbornly present, sharing in the movements of "dust", "tears" and "air", rather than transcending them. Her shape and material qualities may have changed, but her ensouled matter remains metaphysically stable. Just as Aristotle's assertion that the four elements could transform cyclically into one another raised sticky questions about the existence and nature of a prime matter that underlay all transformation, Pulter's own elemental revolution through "dust", "tears", "air", and finally "fire" (39) highlights that which remains.[10] The persistent substratum of Pulter's elements is *her.* Identity, sedimented into matter, persists through radical and destructive change. Matter does the work of form.

What it means to resign form has also been a preoccupation of Pulter scholarship that has approached her recurrent imagery of dissolution and transformation. Since her manuscript's rediscovery in the University of Leeds Brotherton Library in 1996, Pulter's poetry has attracted considerable attention for its natural philosophical engagements, with critics scrutinising the proliferation of alchemical, astronomical and atomic imagery across her verse.[11] Likely written between the 1640s and 1660s, Pulter's poetry displays cutting-edge knowledge of Copernican and Galilean cosmology, and of contemporary English natural philosophers like Kenelm Digby and Walter

[8] Daniel Garber, "Soul and Mind: Life and Thought in the Seventeenth Century", in *The Cambridge History of Seventeenth-Century Philosophy, Volume 1,* ed. Daniel Garber and Michael Ayers (Cambridge, Cambridge University Press, 2000), 760; Park and Kessler, "The Concept of Psychology", 455. See also Eckhard Kessler, "The Intellective Soul", in *The Cambridge History of Renaissance Philosophy,* 485–534.
[9] Charleton, *Physiologia,* sig. 3H4r; Pasnau, *Metaphysical Themes,* 554, 565–73; Garber, "Soul and Mind", 766.
[10] See the discussion of prime matter in the "Introduction", p.28.
[11] Jayne Archer, "A 'Perfect Circle'? Alchemy in the Poetry of Hester Pulter", *Literature Compass* 2 (2005), 1–14; Kate F. Allan, "Alchemical Poetics in Seventeenth-Century Women's Writing" (PhD Thesis, University of Oxford, 2023), 99–143; Cassandra Gorman, "The Imperfect Circle: Hester Pulter's Alchemical Forms", in *The Poesy of Scientia in Early Modern England,* ed. Subha Mukherji and Elizabeth L. Swann (Cham: Palgrave Macmillan, 2024), 55–80; Sarah Hutton, "Hester Pulter (c.1596–1678). A Woman Poet and the New Astronomy", *Etudes Epistémè* 14 (2008), https://doi.org/10.4000/episteme.729; Louisa Hall, "Hester Pulter's Brave New Worlds", in *Immortality and the Body in the Age of Milton,* ed. John Rumrich and Stephen M. Fallon (Cambridge University Press, 2018), 171–186; Victoria E. Burke, "Playing Football with the Stars: Hester Pulter Rethinks the Metaphysical Astronomy Poem", *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 169–191; Lara Dodds, "Hester Pulter Observes the Eclipse: Or, the Poetics of the Astronomical Event", *Journal of Early Modern Cultural Studies* 20, no.2 (2020): 144–68; Blake, "Hester Pulter's Particle Physics", 71–98; Gorman, *The Atom in Seventeenth-Century Poetry*, 127–49.

Charleton.[12] As many of these analyses have identified, Pulter frequently uses her natural philosophical awareness for devotional or spiritual ends.[13] Furthermore, critics have argued that Pulter's natural philosophical concerns impinge on her poetics: her circle motifs and formal cyclicity—her tendency to return to and transform certain themes, images and vocabulary—have been explained in terms of her spiritual alchemy and astronomy, as well as atomic scattering and dispersal.[14] I build on this compelling work that has emphasised the interconnections between Pulter's scientific shrewdness and her poetics, but extend this into another field of early modern natural philosophical inquiry: theories of sound.

In this chapter, I reexamine Pulter's commitment to dissolution and scattering through the lens of early modern acoustics. As in "The Revolution", the metaphysical and physical acrobatics natural philosophers perform to account for sound's strange, ephemeral nature provide an apt model for Pulter's supple handling of matter and form whereby scattering leads to magnification rather than corruption. One of the titles given to the first group of lyric, devotional and occasional verse in Pulter's manuscript is "Poems Breathed forth by the Nobel Hadassas", and a hand, usually identified as Pulter's, likewise names the emblem poems in the manuscript's second half "The sighs of a sad soule Emblimatically breath'd forth by the noble Hadassah".[15] To some extent, Pulter's titular invocation of breath has been overlooked—often commented on but not fully explored.[16] Yet the manuscripts' titles suggest a breathy poetics that animates Pulter's verse. Elizabeth Scott-Baumann has convincingly argued that Pulter's "metaphors of forms" whether "circles, stairs, urns" can help with "thinking about what form meant to Pulter and her peers".[17] "Breathed forth" is one of these "metaphors of form" in the sense that it suggests a process of composition or forming, a metaphor for form as a verb rather than a noun. But crucially, it also unavoidably evokes breath as the underlying matter of voice, yoking matter and form.[18] Early modern natural philosophers of diverse creeds agreed that breath was the material medium of the voice. In his posthumously published and best-selling *Sylva Sylvarum* (1626), Francis Bacon claims that "all Speech, (which is one of the

[12] Hutton, "A Women Poet and the New Astronomy", esp. paragraphs 5–12; Hall, "Hester Pulter's Brave New Worlds", esp. 176–86; Eardley, "Hester Pulter's 'Indivisibles'", 125–27, 130–31; Gorman, *The Atom in Seventeenth-Century Poetry,* 135–6; Gorman, "The Imperfect Circle", 64–70.
[13] For example, Hutton, "A Woman Poet and the New Astronomy", para.4; Allan, "Alchemical Poetics", 99; Dodds, "Hester Pulter Observes the Eclipse", 150.
[14] Archer, "A 'Perfect Circle'?", 9. Hall, "Hester Pulter's Brave New Worlds", 179–80; Blake, "Hester Pulter's Particle Physics", 73–74; Gorman, *The Atom in Seventeenth-Century Poetry,* 127–49.
[15] Hester Pulter, *Lady Hester Pulter's Poems,* MS Lt q 32, Brotherton Library, University of Leeds, fols. 0r, 90r.
[16] For engagement with Pulter's titular metaphor see Ross, *Women, Poetry, and Politics,* 166–67; Karen Britland, "Conspiring with 'friends': Hester Pulter's Poetry and the Stanley Family at Cumberlow Green", *The Review of English Studies* 69, no. 292 (2018): 849–53.
[17] Scott-Baumann, "Hester Pulter's Well-Wrought Urns", 122.
[18] For the proximity of matter and form in breath see Katherine Larson, *The Matter of Song in Early Modern England: Texts in and of the Air* (Oxford: Oxford University Press, 2019), 42–48.

gentlest *Motions* of *Aire,*) is with *Expulsion* of a little *Breath*" (§125, sig. F4v).[19] Breath's diffuse and ephemeral materiality is simultaneously essential for sound's scattering to multiple auditors, but also threateningly fragile, capable of petering out or being blown off course; in David Macauley's provocative formulation, breath is "an oxymoronic nothing strutting along the razor edge separating it from an incipient something".[20] In scriptural and devotional contexts, breath is also unavoidably connected to the immortal soul. In characterising her poems as "Breathed forth", Pulter embraces this instability and activates the latent paradoxes of breath—its ephemeral materiality and yet spiritual immortality, its role in facilitating speech and sustaining life, its not-quite-nothingness. I argue that Pulter uses scriptural references, early modern acoustics and physiology, and devotional poetics to imagine her breathy soul and breathy voice, blending these together to scatter and magnify her soulful utterances, whilst maintaining a cohesive and stable authorial identity.

In turning to the soul, I turn to perhaps the most elusive of seventeenth-century forms. Form as soul or essence, the principle of unity, is form at its most metaphysical. It therefore rests uneasily alongside a critical return to form that has challenged the New Critical tendency to identify form with the unity of a text. New formalist critics have found in Pulter's dissolving forms a more positive and liberated formalism. Her frequent allusions to and reimaginings of Donne tantalisingly suggest an alternative, potentially feminist, lyric model from Cleanth Brooks' archetypical and much criticised *Well Wrought Urn*. Scott-Baumann and Marshelle Woodward have convincingly argued that Pulter's urn images comment metapoetically on her verse, but in ways that resist masculine self-containment and preservation. For Scott-Baumann, Pulter's urns are not conducive to "immortality", functioning instead as "at best a temporary stopping place that is otherwise rejected in favour of female autonomy and authorship"; for Woodward, Pulter's obliviating urns offer "a fertile ground from which to envision a tradition of formalist thought unco-opted by masculine fantasies of permanence, autonomy, and self-enclosure".[21] Both highlight that Pulter's urns are primarily associated with transformation and dissolution rather than permanence and immortality.

Understanding "breath" as an alternative metaphor for both matter and form in Pulter's poetry, I contend that Pulter constructs a poetic identity where the specificities of material form (and the containment of the urn) are subordinated to a retention and scattering of matter that

[19] Whether the *Sylva Sylvarum* was ever intended for publication is a matter of debate. Nevertheless, it was Bacon's most popular work, going through more than nine seventeenth-century English editions. See Diona-Cristina Rusu and Christoph Lüthy, "Extracts from a Paper Laboratory: the Nature of Francis Bacon's *Sylva Sylvarum*", *Intellectual History Review* 27, no.2 (2017): 171–202.
[20] Macauley, *Elemental Philosophy,* 31.
[21] Scott-Baumann, "Hester Pulter's Well-Wrought Urns", 138; Marshelle Woodward, "Formalism Dispossessed: Pulter, Donne, and the Obliviated Urn", in *Feminist Formalism and Early Modern Women's Writing,* 168.

nonetheless remains metaphysically stable. In doing so, I build on the work of critics such as Hall and Gorman who have identified the metaphysical core of Pulter's material commitments. Hall analyses Pulter's commitment to Copernican astronomy as evoking a material, sociable afterlife that liberates a combined body and soul, while Gorman zooms in on Pulter's indivisible "atoms" as anchors of selfhood that facilitate divine resurrection.[22] What emerges from both arguments is Pulter's absolute trust in both matter and God, a reciprocal relationship where knowledge of one reinforces faith in the other, and vice versa. Consequently, although much of Pulter's poetry seems to maintain a dualist view of body and soul, other poems shade, as "The Revolution" does, towards a materialism that implicates the soul, imagining a kind of ensouled matter that sometimes verges on mortalism.[23] Her breathy imagery encompasses these extremes, simultaneously working as God's breath infused into man, soulful sighs returning to God and the matter of voice.

Pulter's (meta)physics of breath is created in and through her lyric form. As suggested in "The Revolution", the persistence of Pulter's poetic speakers that cling to matter despite its transformations creates a cohesion between scattered parts that counteracts the self-destructive strain in Pulter's thought. The ever-present lyric 'I' imposes form, identity and soul on Pulter's matter. Jonathan Culler argues that "sound is what happens in lyric: sound becoming patterned, even when lyrics are entirely written".[24] And, in a particularly allusive turn of phrase, Bacon writes that "the voices of Men and Living Creatures, pass through the Throat, which penneth the breath" (§116, F3v). Bacon is presumably using "penneth" in the sense of "to enclose, shut in, confine, or trap", alluding to the compression of the breath in the throat to make sound.[25] But "penneth" can also mean "to write".[26] The breath becomes the ink to the throat's pen, combining to bring forth voice. Bacon further observes "wee finde in Roules of Parchment, or Trunckes, the Mouth being laid to the one end of the Rowle of Parchment or Truncke, and the *Eare* to the other, the *Sound* is heard much further, than in the *Open Aire*" (§129, G1r). Containing the voice by speaking through a tube of parchment preserves and elongates its duration. While Bacon offers the "Rowls of Parchment" as only one means of containment among others, combined with "penneth", it is suggestive of a potentially even more long-lasting form of voice: manuscript verse, particularly lyric. This is a

[22] Hall, "Hester Pulter's Brave New Worlds", 171–186; Gorman, *The Atom in Seventeenth-Century Poetry,* esp. 127–49.
[23] For the mortalist strain in Pulter's thought see Gorman, *The Atom in Seventeenth-Century Poetry,*143–45. For Pulter's tendency to trouble a dualist conception of body and soul see "Hester Pulter's Brave New Worlds", 182–84; Ruth Connolly, "Hester Pulter's Childbirth Poetics", *Women's Writing* 26, no.3 (2019): 297–98; Nikolina Hatton, "'My Soul, What Art Thou Full of Trouble': Hester Pulter's Apostrophe to the Soul", *Poetica* 54, no.3/4 (2024): 282–300.
[24] Jonathan Culler, *Theory of Lyric* (Cambridge, MA: Harvard University Press, 2015), 137.
[25] *OED,* "pen (*v.1*), sense 1.a", last modified June 2024, https://doi.org/10.1093/OED/5943235866.
[26] *OED*, "pen (*v.2*)", last modified June 2024, https://doi.org/10.1093/OED/8637102736.

connection made in a quote attributed to Seneca in Francis Meres' commonplace book *Palladis Tamia* (1598): "As our breath doth make a shiller sound being sent through the narrow channell of a Trumpet, then if it be diffused abroad into the open aire: so the well knitte and succinct combination of a Poem, dooth make our meaning better knowen and discerned, then if it were deliuered at random in prose".[27] The constraints of verse form are reimagined positively as a premodern method of recording and preserving voice.

Pulter's poetry also functions explicitly as a corpus or collection. As Heather Dubrow argues, lyric poems are "neither solitary nor unitary, they variously and sometimes simultaneously establish and resist links with other texts around them, while similarly binding and loosening subdivided units within themselves".[28] Pulter's poems are not well-wrought urns on whose containment immortality can rest, but neither are they entirely committed to dissolution and scattering. The existence of a single, fair copy manuscript of Pulter's works indicates a desire for gathering and survival. Pulter's poetry was not scattered and circulated—words that chime with her circle motifs and fantasies of dissolution—but was gathered and grouped into a cohesive whole. As Dubrow argues, "groupings of poems… allow a more powerful assertion of authorship" than is typically recognised.[29] Pulter's ephemeral metaphors of breath and sighs recognise the permeable and dissolving boundaries of individual poems, whilst also suggesting a kind of diffuse cohesion and stability. Pulter's lyrics function as smaller parts and wholes, while their grouping in her manuscript resists utter fragmentation into oblivion.

Natural philosophy and theology were entangled throughout the early modern period. However, the appropriate extent and nature of this relationship was a matter of debate.[30] Bacon notably warns against the vanity of those who "have tried to build natural philosophy on the first chapter of Genesis, the book of *Job* and other sacred writings".[31] Yet this is to some extent exactly what Pulter does with her philosophy of breath, drawing on passages from Genesis and the Psalms, amongst others, and blending this with a physiological understanding of the passions, and physical and metaphysical accounts of voice. As I observed in the "Introduction", Sarah C.E. Ross, amongst others, has emphasised how women's political engagements are often mediated through the devotional forms they read and wrote.[32] In arguing that Pulter's devotional poetry reveals a subtle

[27] Francis Meres, *Palladis Tamia. Wits Treasvury Being the Second part of Wits Commonwealth* (London: Printed by P. Short, for Cuthbert Burbie, 1598), sig. 2N4r.
[28] Heather Dubrow, *The Challenges of Orpheus: Lyric Poetry and Early Modern England* (Baltimore: John Hopkins University Press, 2008), 156.
[29] Dubrow, *The Challenges of Orpheus,* 157.
[30] See Harrison, "Physico-Theology and the Mixed Sciences", 165–84.
[31] Bacon, *Novum Organum,* 103.
[32] Ross, *Women, Poetry, and Politics,* 11–19.

but sophisticated understanding of early modern acoustics, I show how Pulter's natural philosophical concerns are refracted through her faith. A focus on the capacious associations of breath allows for an exploration of Pulter's thoroughly blended approach to natural philosophy, theology and poetics.

This chapter proceeds in two parts. In the first, I examine Pulter's breathy imagery across her poems. I argue that Pulter combines scripture and acoustics to forge an understanding of her vocal matter as inherently soulful and hence authentic. This characterisation relies on Pulter's inanimation of matter—her blending of body and soul, matter and form—that incorporates the soul into voice's fragile materiality but also allows Pulter to imagine her voice and soul projected and scattered across the universe. In the second section, I turn to Pulter's breathy poetics that suffuse the form of individual poems and the material form of the manuscript as a whole. Breath's diffuse materiality is essential for the distribution of voice to multiple listeners who all hear the same sound, and natural philosophers rely on a concept of form to ensure this unity despite physical scattering. Pulter's echoing of key vocabulary throughout the manuscript—dust, sighs, tears, diffusion, involution—enacts this dual movement that allows her poems to cohere even as they come apart.

Soulful Sighs and Inanimated Matter

Breath is not only the central metaphor in Pulter's manuscript titles but also operates within her verse. In "The Weeping Wish, January 1665" Pulter imagines her sighs as airy envoys that communicate her melancholy to God in the hope that her earthly suffering will be rewarded:

> Oh that the sighs that breathe from my sad soul
> Might fly above the highest star or pole
> Unto that God that views my dismal story,
> Even he that crowns my dying hopes with glory.
> (5–8)

This is one of a few poems in the manuscript written in Pulter's hand, and the fifth line echoes the titular characterisation of the poems as "breath'd forth". Given this similarity, as well as the reoccurrence of Pulter's poetic pseudonym Hadassah in line 11, this poem has understandably been read as Pulter's "poetic manifesto".[33] As such, it is not only a divine audience that this poem imagines but a terrestrial one of (perhaps Royalist) "friends" (19, 24) for whom Pulter's poem-tears will act as "cordial" (19) in their turbulent political times.

Although Pulter is addressing God, she is also fundamentally reaching out to a potential reader of her manuscript. Naya Tsentourou and Francesca Cioni argue that for devotional poets such

[33] Sarah C.E. Ross, "Tears, Bezoars and Blazing Comets: Gender and Politics in Hester Putler's Civil War Lyrics", *Literature Compass* 2, no.1 (2005): 7.

as George Herbert, for whom the relationship between authentic and fashioned expression was particularly fraught, the contrivances and constraints of poetic form become the testing ground for questions around the appropriate matter, form and manner of prayer, and vice versa.[34] Moreover, they observe that these questions around the authenticity, appropriateness and, ultimately, the possibility of communication with God are refracted through early modern natural philosophy, particularly the physiology of the passions and acoustics.[35]

In this section, I build on their insights, as well as those of Gina Bloom, identifying the natural philosophical and scriptural strains of Pulter's breathy poetics where matter and form conspire.[36] In "The Weeping Wish", Pulter does not place undue confidence in her sighs' ability to reach their intended audience: this is a "Wish" rather than a certainty, the modal verb "Might" embedding doubt into the lines. Underlying Pulter's characterisation of her poetry is an acknowledgement that breath and sighs are essentially unstable and ephemeral material forms that threaten to diffuse entirely. This understanding suffuses early modern devotional poetry that grapples with the precarity of the praying voice that attempts to transcend materiality to reach God. It also permeates seventeenth-century acoustics as natural philosophers attempt to characterise sound's peculiar nature. Theories of sound do strange things to matter and form such that one often comes to seem rather like the other, matter frequently doing the work of form. Combining scripture with natural philosophy allows Pulter to blend an understanding of breath as the underlying matter of voice with an understanding of breath as the soul. Doing so inanimates Pulter's vocal matter, enacting a displacement of self in the soulful voice that is projected across verse and universe.

Early modern acoustics draws heavily on Aristotelian natural philosophy. In *De Anima,* Aristotle famously states that "Voice is the sound produced by a creature possessing a soul".[37] For Aristotle, "soul" indicates a living being, and hence he grants some animals voice (although denying it to aquatic animals, such as fish, that do not "admit the air").[38] Therefore, "voice consists in the impact of the inspired air upon what is called the windpipe under the agency of the soul in those parts".[39] Aristotle's final stipulation that voice must "use some imagination; for the voice is a sound which means something, and is not merely indicative of air inhaled, as a cough is", seems to exclude

[34] Naya Tsentourou, "Sighs and Groans: Attending to the Passions in Early Modern Prayer", *Literature Compass* 12, no.6 (2015): 269–70; Francesca Cioni, *Materiality and Devotion in the Poetry of George Herbert* (Oxford: Oxford University Press, 2024), esp. 49, 57–68.
[35] Tsentourou, "Sighs and Groans", 262–73; Cioni, *Materiality and Devotion,* 47–68.
[36] Gina Bloom, *Voice in Motion: Staging Gender, Shaping Sound in Early Modern England* (Philadelphia: University of Pennsylvania Press, 2007), 66–110.
[37] Aristotle, *On the Soul. Parva Naturalia. On Breath,* trans. W.S. Hett, Loeb Classical Library 288 (Cambridge, MA: Harvard University Press, 1957), 420b5–8.
[38] Aristotle, *On the Soul,* 420b5–22.
[39] Aristotle, *On the Soul,* 420b28–30.

not only coughing but other breathy sounds such as sighing and the sound of breathing itself as effectively meaningless and hence not vocal.[40] In Aristotelian natural philosophy, then, voice is granted a special, elevated status over other sounds, requiring air, soul and purposefulness or meaningfulness.

Pulter adapts an Aristotelian conception of voice in her poetry. Her sense of her immortal, Christian soul is, of course, different from Aristotle's, but she nonetheless draws on the associations between breath and soul to characterise her voice. Yet, unlike Aristotle, she views her "sighs" as meaningfully *vocal* breathy sounds. In both "The Weeping Wish" and the title given for Pulter's emblem poems, it is significant that "sighs" are breathed from the "soul". The poem chimes with Tsentourou's observation that, in devotional contexts, early modern writers "transform [sighs and groans] from passive signifiers of an emotional state to active agents that can be trusted to communicate effectively with the divine".[41] She therefore argues that devotional breath is both authentic and contrived, the inarticulate rendered meaningful as the "petitioner is imagined as fashioning prayer while embodying it".[42] In "The Weeping Wish", the passive construction of the line occludes the speaker: the "sighs" themselves "breathe" from the "sad soul", suggesting both the speaker's lack of control and hence the sighs' authenticity, as well as the active communicative agency of the "sighs".

Such communicative power is facilitated by the blurring of body and soul in early modern discussions of the passions. In his *Natural History of the Passions* (1674), for example, Charleton theorises "Passions *Metaphysical*" as those aroused when the "*Rational* Soul" contemplates "the excellency and immortality of her nature" and "aspires by sublime speculations towards her supreme felicity, the contemplation and love of her creator".[43] However, the soul does not act alone. When man contemplates God, his

> blood is more and more arrested and detained within his breast… his heart seems to swell, his lunges to be opprest, and he is forced frequently to interrupt his oraisions with profound sighs for attraction of fresh aer: as if the reasonable Soul not content to devote herself alone, and pour forth her holy desires to God, laboured to make a libation also of the vital blood, for a propitiatory oblation.[44]

The sigh is produced by the body's sudden, reactive inhalation of "fresh aer" to relieve the stress on the blood, heart, and lungs. In "The Lark" Pulter refers to "bleeding sighs" (21), in "The Pismire" sighs

[40] Aristotle, *On the Soul,* 420b–30–421a6.
[41] Naya Tsentourou, "Sighs and Groans", 268.
[42] Tsentourou, "Sighs and Groans", 270.
[43] Walter Charleton, *Natural History of the Passions* (London: Printed by T.N. for James Magnes, 1674), sig. F7r.
[44] Charleton, *Natural History of the Passions,* sig. F8v.

"fill her heart" (16) and in "The Invocation of the Elements", Air is encouraged to accept "this sigh then for thy part / For such another breaks my heart" (45–46). These are not only melancholic metaphors but also literal descriptions of an early modern understanding of the physiology of sighs.[45] Pulter's devotional sighs are both heartfelt and soulful, authenticating them and rendering them meaningful.

Pulter's breath is soulful in essence as well as origin. Critics and editors have noted the frequency with which Pulter alludes to Genesis 2:7 to construct her dusty view of the body.[46] However, this verse also suggests the complementary breathiness of the soul: "And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a liuing soule".[47] In "Poem 50", Pulter exhorts God in exactly these terms, expanding Genesis to include her own creation by God:

> My God, I thee (and only thee) adore,
> Which didst my outward fabric make of earth,
> Inanimated with celestial breath;
> (1–3)

"Inanimated", in the sense of "to infuse life into", was a relatively uncommon word in the seventeenth century in comparison to its more concise synonym "animate" and "inanimate" in the more common adjectival sense of "lifeless".[48] Helen Smith observes that in the manuscript "Inanimated" flickers between these senses, the lack of punctuation at the end of the second line suggesting an enjambment that briefly connects it backwards to the lifelessness of the earthy body before stabilising into God's infusing of Adam with soul.[49] "Inanimated" is also a potently scriptural choice, echoing the Vulgate's "factus est homo *in animam* viventem" [man was made *into* a living *soul*] (my emphasis).[50] Pulter's knowledge of Latin is uncertain, but she was certainly familiar with John Donne's works. Donne seems to have coined "inanimate" in the sense Pulter uses it in the *Pseudo-Martyr* (1610) where "God inanimates euery State with one power, as euery man with one

---

[45] For the physiological, literal origins of early modern metaphors see Cioni, *Materiality and Devotion,* 52; Richard Sugg, *The Smoke of the Soul: Medicine, Physiology and Religion in Early Modern England* (Basingstoke: Palgrave Macmillan, 2013), 21–27.
[46] In the Elemental Editions edited by Leah Knight and Wendy Wall on *The Pulter Project,* "dust" is frequently glossed with reference to Genesis 2:7, for example in the "Universal Dissolution", "The Circle [1]" and "The Desire"; Elizabeth Scott-Baumann, "Dust" (Curation, Poem 17), in *The Pulter Project: Poet in the Making,* ed. Leah Knight and Wendy Wall (2018), http://pulterproject.northwestern.edu; Gorman, *The Atom in Seventeenth-Century Poetry,* 132n35. For Cavendish's earthy poetics see Frances E. Dolan, "Hester Pulter's Dunghill Poetics", *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 16–42.
[47] Genesis 2:7 (*KJV*).
[48] *OED*, "inanimate (v.1), sense 1", last modified September 2023, https://doi.org/10.1093/OED/2795603854.
[49] Helen Smith, ed., "My God I thee (and only thee) Adore", by Pulter, in *The Pulter Project,* l.3n "Celestiall Breath".
[50] Genesis 2:7 (*Vulgate*).

soule". But he also reuses the word across his sermons, prose and poetry in a variety of contexts: "The soule is that which inanimates the body, and enables the organs of the senses to see and heare"; after death "God onely can recollect those grains of dust, and re-compact them into a body, and re-inanimate them into a man"; and in "The First Anniversary", Elizabeth Drury "did inanimate and fill / The world".[51] Pulter returns the verb to its scriptural context to precisely denote God's breathing of soul *into* an otherwise lifeless body, suggesting an incipient dualism between the "outward fabric" of the body and "Inanimated" soul.

Pulter no sooner establishes this dualism than undercuts it. God's "breath" is not explicitly material. Indeed, "celestial" may be modifying it to avoid this implication. Yet the etymological slippage inherent in "Inanimated", deriving from the Latin "anima" that can mean air, breath, spirit, or soul, muddies the distinction between the material and immaterial.[52] Where Genesis indicates a kinship between God's "breath of life" and Adam's "living soul", Pulter resists clarification and instead relies on "celestial breath" to stand in for the soul. Furthermore, while Adam's creation seems to proceed in stages (first God forms the body and then breathes into Adam's "nostrils"), Pulter's enjambed participle "Inanimated" could modify the constructed "outward fabric" (the body) or the underlying "earth". In other words, is the body made and then infused with soul, or is the matter from which it is constructed fundamentally ensouled? As Donne speculates in a Christmas sermon, "We are not sure that stones have not life; stones may have life; neither (to speak humanely) is it unreasonably thought by them, that thought the whole world to be inanimated by one soule, and to be one entire living creature".[53] Pulter's further allusions to Genesis 2:7 engage in a similar ambivalence. In "The Revolution" she evokes Genesis 2:7 to expansively describe the inanimation of "All":

> When thou sendest forth th'all quick'ning breath,
> All that exists begins their birth;
> When thou drawst back, they turn to earth.
> (16–18)

In the seventeenth century, "exists" could have the more restricted meaning of only living things, as well as the still current sense of all real things.[54] How expansively "All that exists" is read could

[51] John Donne, *Psevdo-Martyr* (London: Printed by W. Stansby for Walter Burre, 1610), sig. 2C4v; John Donne, *LXXX Sermons Preached by that Learned and Reverend Divine, Iohn Donne* (London: Printed for Richard Royston and Richard Marriot, 1640), sig. GG1r, sig. T5r; Donne, "The First Anniversary: An Anatomy of the World", 68–69 and 68n. See also *OED,* "inanimate (*v.1*), sense 1". For Donne's preference for the Vulgate Bible see Emma Rhatigan, "Donne's Biblical Encounters", in *The Oxford Handbook of the Bible in Early Modern England, c.1530–1700,* ed. Kevin Killeen, Helen Smith and Rachel Willie (Oxford: Oxford University Press, 2015), esp. 573–76.
[52] *OED*, "animate (*v.*)", last modified December 2024, https://doi.org/10.1093/OED/3788402399.
[53] Donne, *LXXX Sermons,* sig. G6r.
[54] *OED*, "exist (*v.*)", last modified July 2023, https://doi.org/10.1093/OED/9434325697, esp. senses 1a and 2.

implicate not only humans, but also animals and plants as well as potentially all real things (such as Donne's "stones") in this ensouling process. In this reading, God's breath would function as something like an immaterial Neoplatonic world-soul (as Donne ventures) or the material Stoic *pneuma* that binds and invigorates the cosmos.[55]

In "The Revolution", Pulter's language of "breath" inanimates the line with a recalcitrant materialism that reaches all the way to God. Pulter layers a further allusion to Psalm 104 into her lines: "thou takest away their breath, they die: and returne to their dust. Thou sendest forth thy spirit, they are created".[56] Combining her scriptural references allows Pulter to transform "their breath" in Psalm 104:29 into God's "all-quick'ning breath" and merge it into the "spirit" in verse 30 from which she borrows her verb phrase "sendest forth". Although, as in "Poem 50", Pulter qualifies God's "breath" with the appropriately immense "all-quick'ning", she once again chooses a more ambiguously material language over the concretely immaterial "soul" of Genesis or ambiguously material "spirit" of the Psalm. Even the spiritually and scripturally rich "Inanimated" is replaced with a more mundane, embodied language suggesting exhaling and inhaling. The "sendest forth" of Psalm 104 evokes a kind of divine emanation, but Pulter's use of the same phrase with "drawest back" (as opposed to the psalmic "takest away"), combined with the anaphoric refrain "When thou" creates the impression of a cyclical, repetitive act of breathing, making God's initial act of creation rhythmically constant. Breathing may be another of the many cycles with which "The Revolution" is concerned. God's (re)inhaling of "breath" reflects the belief that the soul will return to God upon death, as stated in Ecclesiastes, a biblical book obsessed with cycles: "Then shall the dust returne to the earth as it was: and the spirit shall returne vnto God who gaue it".[57] Pulter's "turn" carries the force of "return", infusing the cycle of life and death with the rhythmic repetition of breathing. Pulter's God seems curiously corporeal, heaving breath in and out with each new creation or destruction.

Pulter's breathy language also creates a slippage between the infusion of soul and creation *ex nihilo*. In "The Center", she further evokes God as he "Whose word creates, whose breath do all dissolve" (30), aligning God's breath with the opening of the Gospel of John.[58] However, her specific pairing of "word" and "breath" also suggests a psalmic intertext, specifically to Psalm 33 where God's creation is praised in breathy terms: "By the word of the Lord were the heavens made; and all the

[55] For the quasi-stoicism of Pulter's breathy imagery see Britland, "Conspiring with 'friends'", 849–53.
[56] Psalms 104: 29–30 (*KJV*).
[57] Ecclesiastes 12:7 (*KJV*).
[58] John 1:1–3 (*KJV*)

host of them by the breath of his mouth".[59] The movement in Psalm 33 and in "The Center" from word to breath suggests a physiological understanding of breath as the material medium of voice. This is how Lambert Daneau interprets the psalm in his natural theological dialogue *Physica Christiana* (1576), translated into English by Thomas Twyne as *The Wonderful Workmanship of the World* (1578): "these things were made by the woorde of God, for true exposition sake it is added: *& by the spirite of his mouth*. For a voice is made by breathing foorth of air, which is doone by the mouth".[60] The different translation of "*spirite*" instead of the "breath" found in the *KJV* and in "The Center" enacts a similar etymological slippage as "anima". Spirit comes into English from the Latin verb "spirare" meaning "to breathe", and in the Vulgate the related verb "inspirarvit" [breathed into] is used to describe God's inanimation of Adam.[61] As Bloom observes, "as the concept of *spirit* was developed by Christian theologians, it became understood as a divine force—or divine in*spir*ation—that inhabits the bodies and voices of earthly believers, an idea that is codified theologically through the entity of the Holy Spirit. Breath's connection to voice, notably, is central to Christian definitions of the Holy Spirit".[62] For Daneau, the spirit (or breath) of Psalm 33 is not so much a biblical reference to Adam's creation as a pseudo-material reference to the medium and mechanism of the divine word.

Pulter's layered scriptural references and repeated language of breath inanimates her vocal matter much more directly. Returning to her titular metaphor, to "breath forth" poetry aligns divine and poetic utterance, and hence creation, in a way that is reminiscent of Sidney's claim in *The Defence of Poesy* that "the heavenly Maker of that maker [the poet], who having made man to His own likeness, set him beyond and over all works of that second nature: which in nothing he showeth so much as in poetry, when with *the force of a divine breath* he bringeth things forth surpassing all her doings".[63] Pulter's "breath" draws together inanimation, and divine and poetic utterance.

The soulful nature of Pulter's breath also reflects sound's murky ontological status. Although the cause of sounds was broadly agreed to be "something striking against something else in a medium", the exact nature of what was generated was more debated.[64] Aristotle identifies air as the most common material medium of sounds, but he does not believe that sound *per se* was material.[65] Rather, he argues that "sense is that which is receptive of the *form* of sensible objects *without the*

[59] Psalm 33:6 (*KJV*). For the influence of the psalms on Pulter's lyrics see Nikolina Hatton, "Hester Pulter's Psalmic Poems", *Renaissance Studies* 37, no.3 (2023): 364–83.
[60] Lambert Daneau, *The Wonderful Workmanship of the World,* trans. Thomas Twyne (London: Printed for Andrew Maunsell, 1578), sig. t3r.
[61] *OED*, "spirit (n.), Etymology", lasted modified December 2024, https://doi.org/10.1093/OED/3695574067.
[62] Bloom, *Voice in Motion,* 80.
[63] Sidney, "A Defence of Poetry", 79.
[64] Aristotle, *On the Soul,* 419b10–15.
[65] Aristotle, *On the Soul,* 419b35–420a2.

matter, just as the wax receives the impression of the signet-ring without the iron or the gold, and receives the impression of the gold or bronze, but not as gold or bronze" (my emphasis).[66] Later scholastic interpretations of Aristotle develop the concept of "species", a possible Latin word for "form", to account for these impressions or forms without matter. Objects were thought to generate species that were like the sensible qualities in the object. These species were passed on in a chain-reaction through the medium (usually the air) with each species generating the one that followed until they reach the sensory organ.[67] In this account, although these species are passed through the material air (and so have some kind of material, real existence) hearing primarily relies on the reception of a form.

Bacon makes a similar distinction in the *Sylva Sylvarum,* relying, as with his theory of vision, on the idea of "Species". "[Y]ou must attentiuely distinguish," Bacon claims, "betweene the *Locall Motion* of the *Aire,* (which is but *Vehiculum Caussae, A Carrier of the Sounds,*) and the *Sounds* themselues, Conueighed in the *Aire*" (§125, F4v). The "*Sounds* themselues" are the "*Impression*[s] of the *Sounds*", the "Articulate Figurations of the *Aire*" (§125, F4v), or "*Species* of *Audibles*" (§268, K2v). Toward the end of his "*Inquisition* of *Sounds*", he justifies his extended treatment of the subject because sound "is one of the most Hidden Portions of *Nature*…And because it is a *Vertue* which may be called *Incorporeall,* and *Immateriate*; whereof there be in *Nature* but few" (§290, K4v). Bacon's circumlocutory "which may be called" refuses to settle the issue, but nonetheless identifies sound as something occult, potentially both incorporeal and immaterial (terms that need not be synonymous).[68] Even Charleton whose atomic account holds sound to be a "*Corporeal Ens*" clarifies that when he says that breath is the medium of voice, he does "not mean all the Breath expired from the Lunge… but onely the most *subtle part of the Aer* inspired, and modulated in the Vocal Artery and other organs of speech".[69] While material, sound is particularly "subtle". These accounts of sound rely on a metaphysical distinction between air as the material medium of sound, and sound itself as something more elusive and perhaps more like form.

Yet these same theories constantly teeter on the verge of materiality. Sound complicates scholastic accounts of sensation given that, unlike colour or even taste, sounds do not seem to be in

[66] Aristotle, *On the Soul,* 424a18–23.
[67] For scholastic species see Alison Simmons, "Explaining Sense Perception: A Scholastic Challenge", *Philosophical Studies* 73, no.2/3 (1994): 257–75; Robert Pasnau, *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997), esp. 11–19; Gary Hatfield, "The Cognitive Faculties", in *The Cambridge History of Seventeenth-Century Philosophy, Volume 2,* ed. Daniel Garber and Michael Ayers (Cambridge: Cambridge University Press, 2000), 955–57.
[68] Pasnau, *Metaphysical Themes,* 9–10, 35–52.
[69] Charleton, *Physiologia,* sig. 2F1v.

an object but rather exist entirely in the material air.[70] Bacon seems keen to avoid the reduction of sound into merely the mechanical movement of the air, as for example Kenelm Digby does in his *Two Treatises* (1644).[71] By identifying sound as a thing ("*Species*") rather than simply an imprint of a thing, Bacon reifies and substantialises it. The incipient materiality of sound is exacerbated by Bacon sometimes referring to audible species as "*Spirituall Species*" (§128, G1r; §205, H4v; §259, K1v). In his matter theory, Bacon distinguishes between tangible and pneumatic matter. Spirits are a variety of pneumatic matter, tenuous but fundamentally corporeal and material.[72] Indeed, Bacon observes that the nature of echo is "a great Argument of the *Spirituall Essence of Sounds*" (§287, K4r).[73] Stephen Clucas argues that Bacon's spirits "take over some of the causative and dynamic functions of Aristotelian form", arguing that the seventeenth-century rejection of substantial form nonetheless continuously led natural philosophers back to "a variety of concepts of form which were not strictly reducible to matter".[74] Although the likeness of Bacon's audible species with spirits materialises sound, this spiritual materiality is also curiously formal.

Seventeenth-century natural philosophers were alert to the instability of voice. Bloom observes that, as essentially "air that interacts with air", voice was liable to "problems of spatial disparity, temporal delay, and environmental disruption".[75] Bacon further entangles his audible species with the material air when he observes that "the *Visible* doth not *mingle* with the *Medium,* but the *Audible* doth" which is evidenced by the ability of multiple sounds to "vtterly confound" each other (§224, I2v). This also means that the audible species are affected by material conditions. He notes that "*Sounds* will be heard further with the *Wind,* than against the *Wind*" (§125, F6v); they are "better heard, and further off, in an *Euening*, or in the *Night*" because "the *Aire* is more Thicke" at night and hence "the *Sound* spendeth and spreadeth abroad lesse" (§143, G2v); and we even "*Heare* better when we *hold our Breath*" because "in all *Expiration*, the Motion is Outwards; And therefore, rather driueth away the voice, than draweth it" (§284, K4r). In his atomic, inherently material, theory of sound, Charleton acknowledges that "Audible Species" (appropriating a scholastic vocabulary for

[70] Robert Pasnau, "Sensible Qualities: The Case of Sound", *Journal of the History of Philosophy* 38, no.1 (2000): 27–40.
[71] Digby claims "the thing which we call sound, is purely motion". Kenelm Digby, *Two Treatises in the one of which, The Nature of Bodies; in the other, The Nature of Mans Solve; Is Looked Into: In Way of Discovery, of the Immortality of Reasonable Sovles* (Paris: Printed by Gilles Blaizot, 1644)*,* sig.2Ir.
[72] For Bacon's matter theory see Rees, "Matter Theory: A Unifying Factor in Bacon's Natural Philosophy?", 110–25.
[73] For the affinity of spirits and sound in Bacon see Penelope Gouk, "Music in Francis Bacon's Natural Philosophy", in *Number to Sound: The Musical Way to the Scientific Revolution,* ed. Paolo Gozza (Dordrecht: Kluwer Academic Publishers, 2000), esp. 140–143.
[74] Clucas, "'The Infinite Variety of Formes and Magnitudes'", 258.
[75] Bloom, *Voice in Motion,* 67, 74.

atomic simulacra) are "easily injured and perturbed by Winds".[76] Bloom argues that ancient and early modern acoustic theories rely on immaterial "soul, form, image or species" to attempt a theoretical retreat from materiality (that can never be absolute) to increase the reliability of voice.[77] When Pulter "breathe[s]" her "sighs" directly from her "soul" then she could be read as not only suggesting their authenticity but attempting to guarantee their communicative ability, their formal nature shielding them from material disruption. However, while Pulter exploits the connections between sighs, breath and the soul throughout her poetry, her imagery frequently moves in a materialising direction while, in Clucas' words, never quite being simply "reducible to matter". Like Bacon's spirits, Pulter's breath is material, but it also does the work of form in its connection to the soul, giving it an extra-material, metaphysical substantiality.

If the human inability to communicate with the divine is only a lingering anxiety in "The Weeping Wish", then it is the catalyst of "The Circle [1]". "The Circle [1]" combines both threads of breathy imagery I have been examining, combining voice and soul in a poem in which Pulter confronts the consequences of her materialistic language:

> In sighs and tears there is no end,
> My soul, on heaven alone depend.
> Sighs like the air doth clouds condense,
> Which tears from our sad eyes dispense.
> Trust me, in sighs there is no ease;
> No more than wind doth calm the seas.
> And tears (ah me) descend in vain;
> To sighs they rarefy again.
> In this sad circle I run round,
> Till, giddily, I tumble down.
> But should poor I suspire to air,
> I know the sad fruits of despair,
> Or should I into tears dissolve
> What horror would my soul involve?
> (1–14)

The poem's meteorological cycle of grief has been linked to the Petrarchan conceit of lovers' sighs and tears hyperbolically disrupting the weather.[78] But Pulter is also directly responding to George Herbert's poem "Longing":

---

[76] Charleton, *Physiologia,* sig.2E3r, sig.2E1v. For how Charleton sometimes "saves Aristotle's forms" see Eric Lewis, "Walter Charleton and Early Modern Eclecticism", *Journal of the History of Ideas* 62, no.4 (2001): 662–63.
[77] Bloom, *Voice in Motion,* 83–84.
[78] Scott-Baumann, "Sighs and Tears" (Curation, Poem 17), in *The Pulter Project*.

With sick and famisht eyes,
With doubling knees and weary bones,
To thee my cries,
To thee my groans,
To thee my sighs, my tears ascend:
No end?

My throat, my soul is hoarse;
My heart is wither'd like a ground
Which thou dost curse.
My thoughts turn round,
And make me giddy; Lord, I fall,
Yet, call.[79]

Herbert's "cries", "grones", "sighs" and "tears" are the embodied outpourings of the grief-filled speaker. But they are also cacophonous entreaties directed towards God, Herbert's insistent "To thee" directing his misery towards divine ears. Indeed, Herbert's focus on the transcendence of his misery is single-minded: "ascend" is the only verb in the first stanza and does not appear until the fifth line. "Longing" is littered with imperatives that God "hear" the speaker's complaint, even questioning "*Shall he that made the ear / Not hear?*" (35–36). Crucially, Herbert also suggests that prayers are threatened by their fragile materiality:

Bowels of pity, hear!
Lord of my soul, love of my mind,
Bow down thine ear!
Let not the wind
Scatter my words, and in the same
Thy name!
(19–24)

"Scatter[ing]" is here imagined as profoundly destructive of the coherence of voice, words becoming inarticulate as they are disarticulated. The "wind" threatens to break apart God's "name". This vocal disintegration also manifests in Herbert's image of his "heart, / Which hath been broken now so long, / That ev'ry part / Hath got a tongue!" (73–76), each "tongue" confounding the voice of the other. Far from Herbert's assertion in "Prayer (I)" that prayer is "God's breath in man returning to his birth, / The soul in paraphrase, heart in pilgrimage" (2–3), in "Longing" Herbert produces only an inarticulate, empty cacophony of noise. As such, Herbert's desperate question, "No end?", asks both when his suffering will end and what the purpose of such suffering might be if not perceived by God.

[79] George Herbert, "Longing", in *The Works of George Herbert,* ed. F.E. Hutchinson (Oxford: Oxford University Press, 1941), l.1–12. All further references are to this edition and are referenced parenthetically by line number.

In “The Circle [1]”, Pulter answers these two questions in a confident, materialist strain: “In sighs and tears there is no end”. Caught in a water cycle of grief where sigh-clouds become tear-rain, neither sighs nor tears can ascend to God and become meaningfully communicative. Herbert’s gravity-defying tears that “ascend” to God are undercut by Pulter’s that can only “descend in vain”. Thoroughly embroiled in the material world and hence subject to environmental disruption, Pulter’s sighs and tears are rendered futile and meaningless.

Pulter’s sighs and tears are not only transmitters of voice, but of self. Bloom identifies that “the unpredictable flow of breath exposes tensions in early modern thought about the agency of voice”, including “when breath leaves the speaker’s body, does it still belong to its producer?”.[80] Pulter’s considered answer to this question appears to be “yes”. As in “The Revolution”, Pulter’s speaker not only asserts ownership of her sighs and tears, but identity with them, the poem imagining the futility of her attempts at communication as a personal crisis: “In this sad circle *I* run around, / Till, giddily, *I* tumble down” (my emphasis). Here, too, Pulter adapts her image from Herbert. Herbert’s whirling “thoughts” that make him “giddie” and “fall” are ultimately disconnected from the upward striving of his sighs and tears. His “fall” gestures towards the Fall and the speaker’s inherited sinfulness. However, Herbert’s “call[s]”, directed firmly upward, pull against his descent, the persistent act of praying bringing hope of redemption and ascent to Heaven even in the apparent absence of divine perception. In other words, the motion of voice is disconnected from the motions of the speaker’s mind and their “fall” such that one can counteract the other. In “The Circle [1]”, in contrast, Pulter’s speaker is completely immersed in the movements of their voice. This even manifests in Pulter’s choice of verb, “tumble” denoting a turning or rolling that indicates a spiralling descent.

Pulter’s inanimation of her vocal matter means that it is not only her voice that may be threatened with disruption, but her soul. Cioni convincingly argues that “subjective and physical dislocation” characterises the experience and depiction of early modern Protestant prayer.[81] The supplicant is “simultaneously constrained by the humbling awareness of their own sinfulness and frail human nature, yet projecting upwards to heaven; and at the same time both conscientiously devoted to the prayer itself, yet also scrutinizing their own prayer as an external viewer”, as well as being “uncertain *where* exactly a prayer may be located as being effective: whether within the heart… or as being ‘expressed’ and ‘delivered’ to God in heaven”.[82] Pulter explores the consequences of this dislocation by imagining her total transformation into vocal matter. She transitions from the

[80] Bloom, *Voice in Motion,* 67.
[81] Cioni, *Materiality and Devotion,* 58–59.
[82] Cioni, *Materiality and Devotion,* 58–59.

embodied image of crying and sighing into an imagery of material transformation; from "sighs and tears" to "suspir[ing] to air" or "dissolv[ing]" into "tears" that draw the soul outward and threaten to "involve" it in "horror". Involving or involution is a key concept in Pulter's poetry and can signal entanglement, spiralling or assimilation.[83] Here, all three senses converge: material entanglement causing spiralling that threatens to become a dangerous assimilation that would render the soul totally indistinguishable from air, caught in its blustering and tumbling, and hence unable to return to God.

Pulter uses the second half of "The Circle [1]" to resolve this crisis. To do so, she submits to her trust and faith in God:

> Then, gracious God, in thee I'll trust,
> Although thou crumble me to dust.
> No grief shall so emergent be
> To separate my soul from thee.
> Of nothing you didst me create,
> And shouldst thou now annihilate,
> Abrupt, or consummate, my story
> Oh let it be unto thy glory.
> (15–22)

"Then" indicates Pulter pivoting to answer the question of line 14: "What horror would my soul involve?" Surprisingly, her answer does not reassert the soul's immateriality but returns to a material image of pulverisation, the language of "dust" evoking the earthy nature of the Christian body: "for dust thou art, and unto dust shalt thou returne".[84] Yet, given that these lines are framed by references to the soul, it is not at all clear that "crumble me to dust" refers to the body alone. Pulter's loosely connecting closed couplets mark no transition between the soul (13–14), body (15–16) and back to the soul (17–18). There seems no reason to distinguish the various I's and "my soul". Indeed, to extricate the "soul" from either the airy or watery imagery of this poem by insisting on its unchallenged and incorruptible immateriality would be to miss the central crisis of the poem where the speaker, body and soul, becomes embroiled in materiality. Crumbled, Pulter chooses to trust dust's security as a constant, material first principle in combination with God's goodness and omnipotence. When matter and God work in tandem, the results are not horrifying but glorifying.

Pulter's blending of scripture, early modern acoustics and physiology, and allusions to Herbert allows her to construct a philosophy of breath that embraces both its material and soulful dimensions as she throws voice and self across the universe. In the next section, I turn to Pulter's

[83] Blake, "Hester Pulter's Particle Physics", 71.
[84] Genesis 3:19 (*KJV*).

redemption of matter. She deploys breath's materiality as an enabling, rather than disrupting feature of voice that ensures its transmission.

Tota in toto and Pulter's Poetic Corpus

In "The Circle [1]", voice's breathy materiality renders it an unstable and unreliable means of communication that threatens to turn entirely to empty air. However, in this section, I argue that Pulter exploits this aspect of voice—its capacity to diffuse and scatter—to amplify and stabilise her voice and hence her authorial identity. Sound's strange ability to cohere and perhaps even multiply as it spreads because of its formal unity provides Pulter with a powerful model for her poetic voice. If the soul's airiness is potentially endangering, then Pulter transforms voice's soulfulness, its formal unity, into a guarantee of its cohesion.

One of the central problems that vexed early modern accounts of sound was the seemingly multiple nature of a singular sound. In Charleton's words,

> hence is it a clear, though perhaps new and very paradoxical, truth *That the same numerical voyce of an Orator, is not heard by any two of his Auditors, nay not by the 2 ears of any one; but every man, and every Eare is affected with a distinct voyce.* And yet he incurs no Contradiction, that affirms the whole Auditory to receive the same voyce.[85]

The apparent paradox is that although the same numerically distinct parcel of sound cannot enter more than one particular ear, the "whole Auditory" (audience or auditorium) does nonetheless receive essentially the "same voyce".[86] Margaret Cavendish notes the same phenomenon in her *Philosophical and Physical Opinions* (1655), calling it "strange" that "one word should strike so many several ears, and so to be heard perfectly, by every particular ear".[87] For Cavendish, it cannot be that a sound is "a single word that runs about from ear to ear, for then all would not hear at once, for if there were a multitude, the last ear might not hear a week after, or at least a day after it had been spoken".[88]

This was not only a paradox for those whole held sound to be totally material. Bacon, too, observes this paradox. "It is euident, and it is one of the strangest Secrets in *Sounds*;" he claims, "that the *whole Sound* is not in the *whole Aire* onely; But the *whole Sound* is also in euery small *Part* of the *Aire*" (§192, H2v). His evidence differs from that offered by Charleton and Cavendish who both appeal to the simultaneity of hearing amongst multiple auditors. Rather, Bacon notes "that all the

[85] Charleton, *Physiologia,* sig. 2F1v.
[86] *OED,* "auditory (*n.*)", last modified September 2024, https://doi.org/10.1093/OED/1143493358.
[87] Cavendish, *Philosophical and Physical Opinions,* sig. S1r.
[88] Cavendish, *Philosophical and Physical Opinions,* sig. S1r.

curious Diuersity of *Articulate Sounds*, of the Voice of Man, or Birds, will enter at a small Cranny, Inconfused" (§192, H2v–H3r).[89] Additionally, although wind affects the distance sound is transmitted, Bacon claims that it cannot "confound the *Articulation* of them at all" (§193, H3r). Against Herbert's powerful evocation of the wind scattering and dismembering his words, and hence God's name, Bacon denies the possibility of this kind of disarticulation because each "small *Part* of the *Aire*" contains the "*whole Sound*", rather than the total sound being split across multiple parts. Indeed, we might read Pulter's image in "The Revolution" of God's "blesséd name" being "magnif[ied]" when spread "circularly" through the air as another subtle rejoinder to Herbert that also demonstrates her own knowledge of sound's strangest secret.

In its wording and its logic Bacon's strange secret of sound echoes the widespread scholastic formula that the rational soul resides in the body *tota in toto, et tota in qualibet parte,* the whole in the whole and the whole in each part. In Thomas Aquinas' interpretation, this epigrammatic doctrine claimed that as the soul is the substantial form of the body, "it perfects not only the whole, but each part of the whole" and hence "must be in the whole body, and in each part thereof".[90] However, the principle goes further, claiming that the soul is not only in each part, but is *wholly* in each part. Aquinas explains that this is not a whole of quantity (because "the soul has not quantitative totality") but is instead a "whole which is divided into logical and essential parts: as a thing defined is divided into the parts of a definition, and a composite into matter and form".[91] Although the soul is not quantitively whole in each part—even if the soul could be quantified it would be a paradox to claim each part had the same numerical amount of soul as the whole body does—the whole soul "is in each part of the body, by *totality of perfection and of essence*" (my emphasis).[92] The logical definition of any given part of the body requires reference to the soul as its substantial form, and hence the soul can be said to be essentially whole in every part of the body. When Bacon claims "the *whole Sound* is not in the *whole Aire* onely; But the *whole Sound* is also in euery small *Part* of the *Aire*" he is making a quasi-scholastic metaphysical and logical appeal that fundamentally relies on the concept of substantial form or essence. Like the relationship between body and soul, the "*whole Aire*" and each "small *Part*" is essentially in possession of the "*whole Sound*" or audible species. Bacon grants sound a cohesion and stability across disparate parts by conferring any given sound with a singular, unifying form.

[89] Bacon reiterates the same point in §256, sig. K1v.
[90] Thomas Aquinas, *Summa Theologiae,* trans. English Dominican Fathers (London: Burns, Oates, and Washburne, 1912–36; repri. New York: Christian Classics, 1981), I.76.8.co.
[91] Aquinas, *Summa Theologiae,* I.76.8.co.
[92] Aquinas, *Summa Theologiae,* I.76.8.co.

Cavendish and Charleton confront this mystery in more materialistic terms, but both nonetheless rely on form or figure as a unifying concept. Cavendish evokes the familiar image of stamping as well as her characteristic language of matter or words "run[ing] in lines", to explain that "the mouth, tongue, and breath *formes* not onely a single word, but millions in one lump… as for example, take a sheet of paper, or the like, and fold it into many folds, in a small compass, and stamp a print thereon, every fold shall have the like print with one stamp… thus millions of words run about in lines of air" (my emphasis).[93] Charleton concurs, but in atomic terms: "a Sound seems to be nought but the Aer, at least the subtler or more aethereal part of aer, extrite and *formed* into many small (*Moleculae*) masses, or innumerable minute Contextures, *exactly consimilar in Figure*, and capable of affecting the Organ of Hearing in one and the same manner" (my emphasis).[94] A singular "Sound" suddenly multiplies into "innumerable" parts that nonetheless are "exactly consimilar in Figure", a tautological phrase given that the primary meaning for "consimilar" in the seventeenth century is "exactly similar".[95] Consimilar also has the older, slightly different meaning of "homogenous", primarily found in physiological contexts.[96] Charleton was a physician, and he uses consimilar in this sense in his translation of Jan Baptist van Helmont's *A Ternary of Paradoxes* (1650) to describe the "circumferential steam of invisible Atomes, homogeneous and consimilar, that is of the same identical nature with it self" emitted by "unctuous Composition[s]".[97] In the tension between a particulate notion of distinct "Contextures" exactly similar in "Figure" and a plenum homogenous in "Figure", Charleton struggles to account for sound's unity in solely atomic terms, veering into an essentialising language.

The formal unity of sound provides a powerful model for imagining stability and coherence in the face of material dispersal. Bloom identifies that Charleton's theory specifically operates according to a "synecdochal relationship between dispersed particles of sound and their source" that "ensures that each particle has the power to carry the essence of a message intact".[98] For Bloom, this is a particular affordance of materialist theories of sound that "underscore that matter is always apprehended through figure".[99] I agree wholeheartedly with Bloom's stress on the importance of

[93] Cavendish, *Philosophical and Physical Opinions,* sig. S1r–v.
[94] Charleton, *Physiologia,* sig. 2E3r.
[95] *OED*, "consimilar (*adj.*), sense 2", last modified December 2024, https://doi.org/10.1093/OED/6038194283.
[96] *OED*, "consimilar (*adj.*), sense 1", last modified December 2024, https://doi.org/10.1093/OED/1186690431.
[97] Walter Charleton, *A Ternary of Paradoxes of the Magnetick Cure of Wounds. Nativity of Tartar in Wine. Image of God in Man. The second Impression, more reformed, and enlarged with some Marginal Additions* (London: Printed by James Flesher for William Lee, 1650), sig. D4v.
[98] Bloom, *Voice in Motion,* 98.
[99] Bloom, *Voice in Motion,* 100.

figure, or form, for this relationship, but whether thought of as figured matter or substantial form, a concept of form as metaphysically unifying operates across the full spectrum of acoustic theories.

The same synedochal relationship manifests in Pulter's poetry of dissolution and dispersal. In "Poem 58", Pulter enacts a paradoxically unifying vision of atomic scattering to characterise liberty:

> For I no liberty expect to see
> Until to atoms I disperséd be.
> Then being enfranchised, free as my verse,
> I shall surround this spacious universe,
> Until by other atoms thrust and hurled
> We give a being to another world.
> (1–6)

As both Hall and Gorman have noted, these lines play with multiplicity and unity.[100] The initial "I" splits into plural "atoms" in a manoeuvre that is simultaneously dividing and enlarging such that the magnified "I" of line 4 can encompass the entire "universe". The speaker atomises in the final line, the "I" becoming a "we" that settles into the singular "being" of "another world". Unlike the windy disruption that threatened Pulter's communication with and ascension to God in "The Circle [1]", in this poem the potentially violent movements of "other atoms" are enriching because identity remains unthreatened in the face of dispersal. In Gorman's evocative words, the poem explores a "loosening" rather than a losing of "former identity".[101] This is at once a centripetal and centrifugal vision that allows Pulter to remain whole whilst coming apart. As with the scholastic theories of soul and seventeenth-century acoustic theories, the whole "I" is present in each of their "atoms".

"Poem 58" connects this material scattering to the freedom of Pulter's "verse", suggesting that this synecdochal relationship is key for Pulter's conception of her poetic forms. The major editors of Pulter's poetry disagree about the status of "Poem 58". Eardley, in the edition from which I quote, includes it as a separate poem, but on *The Pulter Project* these lines are included in both the Elemental and Amplified editions as the conclusion to the previous poem, that begins "Why must I thus forever be confined" (1).[102] In the manuscript, "Poem 57" seems to conclude with a triplet enclosed by a curved bracket, indicating both formal finality and visual confinement in a poem otherwise written in iambic pentameter couplets:

[100] Gorman, *The Atom in Seventeenth-Century Poetry,* 142–45; Hall, "Hester Pulter's Brave New Worlds", 182.
[101] Gorman, *The Atom in Seventeenth-Century Poetry,* 142.
[102] Pulter, "Why Must I Thus Forever Be Confined" (Poem 57, Elemental Edition), ed. Knight and Wall, in *The Pulter Project*; Pulter, "Why must I thus forever bee confin'd" (Poem 57, Amplified Edition), ed. Victoria E. Burke, in *The Pulter Project,* ed. Knight and Wall.

Or wert for debt I soon could pay that score
But tis, Oh my Sad Soul, I'le Say noe more
To God alone my Suffrings Il'e deplore.[103]

Pulter interrupts herself with an interjected sigh ("Oh") that seems, once again, to originate from her "Sad Soul". In a metapoetic moment, the speaker resolves to "Say noe more" to the poem's reader or auditor, narrowing her audience to "God alone" and thus ending the poem. Following this triplet, there is a strangely extended gap in the manuscript (enough room for three or four more lines of verse) before the sestet (or poem) beginning with "For I no liberty expect to see" appears. If understood as the final lines of a longer poem, the "For" feels like a continuation after a pregnant silence, the speaker changing their mind and saying "more". The sense that these lines are a continuation rather than a separate poem is magnified by "Poem 57" containing the very similar lines "But I no liberty expect to have / Until I find my freedom in my grave" (78–79). This "dispersed" sestet, a "liberated vision of liberation" to borrow Knight and Wall's words, drifts down the page, simultaneously a part of the previous poem and a whole unto itself.[104] The poem(s) cohere even as they are pulled apart.

"Poem 57" also has a third potential ending. Although largely written in couplets, the poem also contains another triplet:

But I, that am more constant than this dove,
Unto my first, and last, and only love,
Cannot from this sad place (ay me) remove.
(69–71)

It was not unusual for otherwise couplet poems to end in triplets, as this poem does and as Pulter does elsewhere in her corpus.[105] This triplet, internal to the poem, seems to aurally signal conclusion, something further emphasised as, in the manuscript, the poem's first full stop appears after "remove".[106] Eardley argues that manuscript punctuation in early modern verse is relatively rare because sophisticated early modern readers could largely intuit moments of rest through "line ends and stanza forms".[107] She suggests that "punctuation that *was* worth the author's attention was that involved in the demarcation of rhythm, particularly at points when that rhythm becomes especially dramatic or unusual".[108] Whether included by Pulter or by the manuscript's scribe who intuited its

[103] Pulter, *Lady Hester Pulter's Poems,* p.157.
[104] Knight and Wall, ed., "Why Must I Thus Forever Be Confined", by Pulter, in *The Pulter Project*.
[105] See, for example, Pulter, "65. The Hope, January 1665".
[106] Pulter, *Lady Hester Pulter's Poems,* p.155.
[107] Alice Eardley, "'I Haue Not Time to Point Yr Booke… Which I Desire You Yourself to Doe': Editing the Form of Early Modern Manuscript Verse", in *The Work of Form,*175.
[108] Eardley, "'I Haue Not Time to Point Yr Booke'", 176.

need from the disruptive triplet, the full stop indicates a moment of rest that just avoids becoming the poem's premature end. Furthermore, like line 99 where a sigh ("oh my sad soul") interrupts the speaker, this false end also features a breathy intermission: "(ay me)". Although this breathing space is much subtler than the extended empty space on the page that physically divides the poem, the triplet, full stop and breathy sigh nonetheless pull the poem apart even as it remains unified.

This drive to coherence and unity occurs across the manuscript. Pulter's poetry is characterised, above all, by an almost liturgical repetition of vocabulary both within and between poems. This is evident in Pulter's vocabulary of sighs, tears, breath, dissolution and revolution. Liza Blake argues that Pulter's echoing of vocabulary across her poetic corpus is invested in exactly the process of dissolution, scattering and involution that her poetry describes, asking what it might mean to "think about the central unit of a body of poetry not as an individual poem, but as a concept, as an idea or repeated term that appears in radically different poet contexts?".[109] For Blake, Pulter's interest in "dissolved forms" makes her poems into "windows to one another; the manuscript is a self-involving universe unto itself".[110] Of the poets addressed in this thesis, Pulter is the most formally diverse, the same vocabulary appearing in very different verse forms and genres across the manuscript. Yet, as a key index of her style, these "repeated term[s]" also bolster and stabilise her status as a distinctive, individual poet as the barriers between individual poems begin to break down. In an "Exploration" on *The Pulter Project* titled "How To Tell If You're in a Hester Pulter Poem", Lara Dodds lists ten qualities that individuate Pulter as a writer, including "You know what 'calcining' is and can use it as a metaphor for your spiritual condition"; "You refuse to be confined against the noble freedom of your mind"; "You apostrophize Death"; "You wish to be dissolved into dust and atoms" and "Almost anything provides occasion for philosophical reflection".[111] While the list is, by design, not entirely serious, and while some elements are not unique to Pulter's lyrics, it does emblematise the distinctive texture of Pulter's verse, both in its acknowledgement of her verse's formal impulse for reiteration ("calcining", "dissolved", "dust", "atoms") and overall thematic content. These repeated words act as material units of Pulter's breathy voice that scatter and inanimate the manuscript, conferring the manuscript with a high degree of formal cohesion. As in the above poem(s), this feature of Pulter's verse makes the boundaries between different poems more indistinct, but it also allows us to say that we are "in a Hester Pulter Poem".

[109] Blake, "Hester Pulter's Particle Physics", 73–74.
[110] Blake, "Hester Pulter's Particle Physics", 92.
[111] Lara Dodds, "How To Tell If You're in a Hester Pulter Poem" (Exploration), in *The Pulter Project.*

The unifying quality of Pulter's consimilar vocabulary becomes particularly apparent in "Poem 63", a devotional verse addressed to God that dwells on the certainty of divine resurrection despite material dissolution and scattering:

Dear God from thy high Throne look down
And lett my suff'rings haue their Crown
I thee Implore
Tho' greif calcine my Flesh to Dust
Yett in thy Mercy still I Trust
and thee Adore
Should I to Tears dissolved be
Yett will I Still depend on thee
for Evermore
Or should I sigh away to Air
Tho Rarify'd, I'd not Despair
but in thee trust
Tho' I to Atoms am dispers'd
I in their dances am unvers'd,
Yett Shall no Dust
of my old Carcase E're be lost
tho' in a thousand Figures tost
for thou art Just.
What Mortal can or dares to look
Into thy Glorious Blessed Book,
Where written be
of mee, poor wretched mee, each part
E'en all my soul my thoughts My Heart.
Thou plain may'st see.
that I my Gracious God do love
A thousand thousand worlds above,
and still praise thee.[112]

Like "The Revolution", the poem begins with an address to God and then imagines a series of hypothetical, elemental transformations and dissolutions. The crux of the poem's dilemma becomes apparent in the fifth and sixth stanzas. Although the progression of calcining, dissolving and rarefying after being "sigh[ed] away to air" divides a whole into parts, it is the potentially threatening dispersal of these parts that prompts theological speculation, and ultimately faith in God's mercy. The "Yett" (15) signals that Pulter is moving away from atomisation and into an account of cohesion. Like

[112] Pulter, *Lady Hester Pulter's Poems,* fol. 86r.

Cavendish, Pulter uses dance as metaphor to choreograph atomic motion into order.[113] But, unlike Cavendish who uses the dancing of atoms into "Figures" to imagine the generation of beings, Pulter imagines these dances as a form of "dispers[al]" in which she is "unvers'd" or inexperienced. These "Figures", seemingly universal in scale, act as a cohering principle to ensure that not a speck of Pulter's "Dust" will be lost.

The appearance of "unvers'd" in a poem that also evokes God's "Glorious Blessed Book, / Where written be / of mee" as well as the rhetorical and poetic term "Figures" also suggests that Pulter could be punning on un-versing as a verb for her poetic project. J. Paul Hunter argues that printed poetry luxuriates in the blank, white space of the page, suggesting that this is particularly apparent in genres like the ode where "their often indented and truncated lines and fancy, unpredictable line lengths, call conscious attention to the way they waste expensive paper and lilt loftily along, often creating a sense that the words float almost free and seem barely anchored to the page at all".[114] Jonathan Sawday similarly observes that "poetic white space may be understood as a deliberate *insertion* of space into the text".[115] Pulter's poem is not an ode, nor has it appeared in print until recently, but Hunter's and Sawday's observations are apt for this manuscript poem. Each tercet begins with rhymed tetrameter couplet and concludes with a dimeter line that is indented and adrift from the couplets. The open space of the page is more pronounced because the surrounding two poems in the manuscript are written in dense heroic couplets that almost completely fill the pages.

The poem's material looseness is echoed in its syntax. Each of the opening three stanzas is relatively self-contained and their dimeters share the same tail-rhyme that also ties the three of them together into a compound. In the second set of three stanzas, this structure begins to loosen. Immediately after Pulter alludes to un-versing, she enjambs the dimeter "Yett Shall no Dust" into the following line, "of my old Carase E're be lost". From here the poem further fragments in its final group of three stanzas: "where written be / of mee" is also enjambed between dimeter and tetrameter. The following dimeter, "Thou plain may'st see", is curiously isolated in the poem, preceded and concluded with a full stop despite the following line beginning with a lowercase letter indicative of enjambment. Read with the previous verse, the line seems to refer to God's ability to see the speaker's soul, thoughts and heart written in his "Glorious Book"; read with the subsequent

[113] Blake and Victoria E. Burke have suggested that these lines may be a reference to Cavendish's poetry. Blake, "Hester Pulter's Particle Physics", 84–87; Victoria E. Burke, "Margaret Cavendish's Dancing Atoms" (Curation, Poem 63), in *The Pulter Project,* ed. Knight and Wall.
[114] J. Paul Hunter, "Poetry on the Page: Visual Signalling and the Mind's Ear", in *The Work of Form,* 181.
[115] Jonathan Sawday, *Blanks, Print, Space, and Void in English Renaissance Literature: An Archaeology of Absence* (Oxford: Oxford University Press, 2023), 353.

stanza, it begins the assertion that "Thou", potentially addressed to the poem's readers, can "plain[ly]" see how much love the speaker has for God.[116] The double punctuation facilitates both readings while confirming neither, parts and wholes continually forming and dissolving as Pulter exploits the potential of devotional verse to address both God and earthly reader.

Yet, as with her dancing "Figures", Pulter's unversing speaks not only to dispersal but to her manuscript's coherence. This poem curiously anticipates its own fate. It was not originally part of the manuscript: it is written onto a thicker type of paper and glued into the manuscript after it was bound.[117] Its spatial isolation and material detachment is emphasised as the previous poem ends only four lines into the preceding page, meaning much of the facing page is entirely blank, and the entire verso of the tipped in page is also empty. Moreover, the poem has been written in a different hand from either the main scribe's or that usually attributed to Pulter. This hand has been identified as Angel Chauncy's, an eighteenth-century rector based near Broadfield Manor, the Pulter family home.[118] These facts might make the poem authorially uncertain, some of its features, including the punctuation, potentially more indebted to Chauncy than Pulter. We may never know how and in what state Chauncy found this poem. Yet, just as the poem claims that no material of the speaker's "old carcass" shall be "lost", he ensures the poem finds its way back into Pulter's *poetic corpus* despite being initially "dispers'd". Pulter's characteristic inanimated poetic voice—her consimilar diction of calcining, rarefying, dissolving to tears and sighing away to air—provide a stabilising and cohering pull against material scattering.

Whereas in chapter 1, Bradstreet's elemental philosophy was theologically unsettling, in this chapter I have shown how Pulter's natural philosophy and theology are mutually constitutive, her faith in God and in matter affirming one another. Focusing on Pulter's breathy poetics highlights how her physical and metaphysical concerns are thoroughly mediated by her devotional forms, her sophisticated knowledge of early modern acoustics and physiology emerging from her anxieties about the possibility of communication with God. Indeed, in her careful rejoinders to Herbert, Pulter uses her understanding of sound's diffuse material stability to nuance and amend his concerns about the successful transmission of prayer. This chapter, therefore, demonstrates the importance of devotional poetry as a form for women poets' engagements with natural philosophy.

In her analysis of Shakespeare's plays, Bloom argues that "breath's volatile attributes" could be particularly empowering for female characters who already lack vocal authority, allowing them to

[116] Blake similarly notes the ambiguity of Pulter's "Thou". Blake, "Hester Pulter's Particle Physics", 83.
[117] Wall, "What Else is in the Manuscript? Or, Where Did Pulter's Poems Live?" (Exploration), in *The Pulter Project,* esp. "About the Book".
[118] Eardley, "Introduction", in *Poems, Emblems, and The Unfortunate Florinda,* ed. Eardley, 34.

"practice a subtle but robust form of vocal agency".[119] In Pulter's poetry we can see her appropriation of breath's diffuse materiality to reimagine the physical and poetic freedom of dissolution and dispersal as amplification rather than disarticulation. Pulter's poems are not self-contained well-wrought urns but rather rely on their collective power to articulate a cohesive authorial identity. To this end, Pulter's inanimated poetic matter does the traditional identity sustaining and unifying work of form, particularly of the soul. Until recently, Pulter's manuscript seems to have been little read outside her family circle. Yet attending to Pulter's breathy poetics suggests her "subtle but robust" vocal agency in exercising her acoustic knowledge, particularly when poetically responding to Herbert. Breath also acts as an appropriate metaphor for the material form of early modern women's manuscript poetry that allows their voices—albeit quietly in Putler's case—to persist.

[119] Bloom, *Voice in Motion,* 68.

Conclusion

I began this thesis by claiming that Anne Southwell "asserts the radical identity between the matter and form of the world and of poetry". In the intervening chapters, I have demonstrated the more complicated dynamics at play in seventeenth-century women's poetics of matter and form where verse and natural philosophy sometimes coalesce and sometimes reroute each other. Having begun with the four elements in Southwell's letter, it feels apt to close with the four elements. *The Sacred Historie* (1669–70) is a manuscript biblical verse paraphrase attributed to Mary Roper. Roper's poetics of matter and form tie together many of the arguments from the chapters across this thesis. She begins her retelling of Genesis in familiar Ovidian, Bartasian strain with an elemental chaos in need of order:

> In the Beginning God the Heauens Made
> And the foundations of the Earth hee laid
> God then Came downe Beholding of the Masse
> And Caos of Confused Nothingnesse
> There the foure Elements were Myxt together
> No forme no Comlinesse appear.d in Either
> Each did Agree to hinder others birth
> But Euery one Combine against the Earth
> Then God who the Oppressed doeth Relieue
> Resolues Deliuerance to the Earth to Giue
> Will Make her flourish and she shall possesse
> For Servants those that did her sore Oppresse
> …
> Then he those Noble Elements did Diuide
> Each in its Principalitis shall Reside
> Deuoring Fire Encircle shall his Thone
> Aier in the Earth shall spread.s pauilion
> Part of the Water to the Clouds he.l take
> And there Reseru.t the Earth fertile to Make
> Earths Massie bodie Like a Mightie Ball
> Hangs vpon nothing yet it Cannot fall[1]

The oxymoronic "Each did Agree to hinder others birth" captures the paradoxical state of this "Caos" where the elements pre-exist their own birth, mixed together in a formless, yet strangely material "Nothingnesse". Despite this mutually antagonistic agreement—this *discordia concors*—Fire, Air and Water agree to "Combine against the Earth", prompting God's intervention to relieve earth's

[1] Mary Roper, *The Sacred Historie Conteined in the First Boocke of Moses Called Genesis,* MS Lt q 2, Brotherton Library, University of Leeds, 4–5. Images of the manuscript are available via *Perdita Manuscripts,* https://www.perditamanuscripts.amdigital.co.uk/.

oppression and thus create the universe. For Roper, God's division of the elements into their traditional, hierarchical arrangement is primarily an ethical act, borne out of benevolence towards the Earth rather than resulting from any material properties (such as weight) the elements may possess. Similarly, the other three elements' "Principalitis" are doled out as retribution, a physically elevating debasement that makes them "Servants" of the Earth. As with Hester Pulter's devotional poetry that refracts early modern acoustics through the lens of prayer and communication with God, Roper's portrayal of God's cosmopoiesis is mediated by her choice of form. This section of the poem is titled "Meditations on Gods Wonderful Works of Creation" and Roper's meditative form affords spiritual and moral reflection.[2] As such, the elements' conflict and subsequent division become a prompt for contemplating God's goodness. Whereas Anne Bradstreet makes antithesis and personification the physical laws of her irregular elemental world, Roper's orderly universe is entirely the consequence of God's moral responsibility towards the Earth.

At this point in her meditation, Roper digresses into her own mini-elemental quaternion. Peter Auger identifies the influence of Du Bartas on *The Sacred Historie,* but it is also tempting to see the influence of Bradstreet's quaternion manifesting in Roper's fourfold form. Roper's quaternion unfolds in traditional elemental order, beginning with a short poem titled "The Royall Element of Fire", and then progressing through "The Princly Element of Aier", "The Liquid Element of Water" and "The Solid Element of Earth".[3] As Auger observes, Roper's poem absorbs from Du Bartas "the intellectual scheme of how a divine monarchy has always held dominion over the earth", and her manuscript is explicitly royalist in its audience (addressed to Charles II's wife, Queen Catherine of Braganza) and content.[4] While Bradstreet uses her dialogue form to deconstruct the cosmological and social hierarchies that elemental philosophy bolsters, imagining a more unpredictable yet equal world, Roper shows no such inclination. Fire, Air and Water may be "Servants" to the Earth but as the titles of the individual poems show, Fire and Air are "Royall" and "Princly" while Water and Earth are (rather tautologically) only "Liquid" and "Solid" respectively. Roper also does not demonstrate Bradstreet's levelling of the human and nonhuman. Although her quaternion displays the elements' power—Fire can be "Mans Enemie"; Air cruelly makes the "Meanest Beggars… quake with Cold"; and "proud" Water "threatens Death" when it breaks its bounds—Roper ultimately reinstates their servitude.[5] God "binde[s]" Fire to be "Mans Seruant" and "Subdue[s]" it to earn "high praises";

[2] Roper, *The Sacred Historie,* 4. For the importance of meditation as a genre for early modern women writers see Ross, *Women, Poetry, and Politics,* 190–206, esp. 200–05 for Roper.
[3] Roper, *The Sacred Historie,* 5–7.
[4] Peter Auger, "Du Bartas' Pattern for English Scriptural Poets", in *Ronsard and Du Bartas in Early Modern Europe,* ed. Anne-Pascale Pouey-Mounou and Paul J. Smith (Leiden: Brill, 2021), 323.
[5] Roper, *The Sacred Historie,* 5–6.

Water, "A useful servant t.is to all that Liue / Therefore Let.s thanks vnto the Donor Giue"; while Earth's rich store "for Mans use she affords / To satisfie his Scences and Delight".[6] The meditative, praise giving function of Roper's verse, as well as her royalist sympathies, lead her again and again to a geocentric, anthropocentric and teleological view of the elements that is enacted by the form of her mini-quaternion.

Yet Roper's poetic matter resists utter absorption into the natural philosophical, theological and political order she favours. Strikingly, in "The Princly Element of Aier", she claims that "Aier.s the fourth Monosylable that's here / In this Low region and doeth Great appeare".[7] Andrea Crow observes Roper's manuscript displays a particular "interest in the manipulability of symbols".[8] This fascination is apparent in this image that draws on the common association of elements with letters. Her choice of "Monosylable" specifically evokes the smallest *poetic* unit—reminiscent of Hutchinson "numbr[ing] the sillables" of her *De rerum natura*—as opposed to letters as a basic unit of language. Like Southwell, Roper imagines the Book of Nature as a book of verse rather than prose. On the one hand, Roper's choice of "Monosylable" over letter suggests her sensitivity to the material context of her symbolic language in a poem. On the other hand, however, the recalcitrant materiality of her *verba* refuses to be reduced to elemental *res.* It is difficult to see how air is, specifically, the "fourth" monosyllable. Within the verse line, "Aier.s" is the first syllable, while within the form of Roper's mini-quaternion, Air comes second, between Fire and Water as it would in the Aristotelian elemental sublunar cosmos. Expanding beyond Air, all of the elements are not "Monosylable[s]": "Water" is disyllabic and Roper uses it as such in her couplets. In striving towards the same kind of metapoetic metaphor that animates *De rerum natura*'s atomic poetics, Roper identifies an irresolvable tension between the elements' symbolic function as a basic underlying unit within the universe and their textual, linguistic materiality.

Roper exploits this tension, luxuriating in the ironic expansiveness of the word "Monosylable" itself that takes up half the syllables in her pentameter line. As a heterological word—a word that does not possess the property it denotes—"Monosylable" provides an apt analogue for air's "Great appear[ance]".[9] A large proportion of "The Princly Element of Aier" is concerned with Air's vast ever-presence that "Leaues No Emptinesse in Natures Seate".[10] Roper's line could be read as a plenist response to seventeenth-century debates about the existence of vacuum, although "in

[6] Roper, *The Sacred Historie,* 5–7.
[7] Roper, *The Sacred Historie,* 6.
[8] Andrea Crow, "'She… the Choisest out of them Doth Finde': Multi-Material Collage and the Poetics of Restoration in *The Sacred Historie*", *Early Modern Women: An Interdisciplinary Journal* 7 (2012): 104.
[9] *OED,* "heterological (*adj.*)", last modified December 2024, https://doi.org/10.1093/OED/8830550390.
[10] Roper, *The Sacred Historie,* 6.

Natures Seate" (my emphasis) leaves open the possibility of an artful or experimentally produced vacuum.[11] "What is the place where Aier can be kept out", Roper asks, noting that it "Doth Encircle Euery Princes Throne" and infiltrates "The Clossest Prison".[12] The discrepancy between air as monosyllabic "Aier" and air as a materially larger "Monosylable" facilitates the diffuse plenitude she describes. Roper's elements thus function abstractly, as symbols for divine and monarchical hierarchical order, *and* they resist total absorption into both this scheme and any straightforward metapoetic conceit. Her "Monosylable" reminds us of poetry's creative and transformative capacity.

In this thesis, I have argued that mid-seventeenth-century women's poetry is invigorated by the generative friction engendered by matter and form's significatory flexibility. Both bridging and careening wildly between physics, metaphysics, logic, rhetoric, poetics, theology and politics, early modern matter and form only ever signify contingently. The poetics of matter and form that I trace in this thesis are kaleidoscopic and multiple, manifesting differently in the verse of the four poets considered. Early modern matter and form cannot be confined to neat definitional boxes or to individual disciplines, and their generative potency emerges as much from the disagreements and debates about their nature as the consensus. Yet Bradstreet, Hutchinson, Cavendish and Pulter are all committed to matter and form in all their bewildering variety. Elizabeth Swann argues that "to be at cross purposes is, necessarily, to intersect" and that consequently, the tensions between early modern natural philosophy and poesy can lead "to productive moments of cross-fertilisation and transformation in the methods and self-identities of these realms".[13] In the poetry I analyse, natural philosophical and poetic matter and form are rarely in outright antagonistic relation, but they also rarely become totally superimposed. This is especially the case in my first two chapters. Bradstreet's skill with the debate form allows her to deconstruct the same kind of hierarchies (natural philosophical, social and, perhaps, theological) that Roper is invested in sustaining. Here the "cross-fertilisation" of natural philosophy and poetry reveals the constructed nature of these hierarchies, rather than their naturalness. Similarly, Lucretius' theory of atomic-poetic form provides Hutchinson with a liberating theory of translation that allows her to assert her authority to alter Lucretius' meaning. Hutchinson ultimately partially divorces her atomic poetics from Lucretian atomism, turning *De rerum natura*'s poetics back on its physics and metaphysics to interrogate alternate theories of form.

[11] See Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985), esp. 40–49.
[12] Roper, *The Sacred Historie,* 6.
[13] Elizabeth L. Swann, "Introduction, Poesy and Scientia: Matters of Fancy", in *The Poesy of Scientia in Early Modern England,* ed. Subha Mukherji and Elizabeth L. Swann (Cham: Palgrave Macmillan, 2024), 8–9.

Throughout, I have argued that recovering early modern form (and matter) as a "literary-philosophical problem" requires attending to the reciprocally informing relationship between natural philosophy and poetry.[14] As such, I have covered a variety of natural philosophical matter and form theories—the four elements (Aristotelian and Empedoclean), hylomorphism, atomism (Lucretian and Cavendishian), panpsychism, vitalism, scholastic and Baconian species, the Christian soul—demonstrating how Bradstreet, Hutchinson, Cavendish and Pulter's poetics are informed by the sophistication of their philosophical knowledge. I have also examined a variety of literary theories and forms, demonstrating Bradstreet's recognition of elemental philosophy's ancient rhetorical, logical and poetic forms and how Cavendish's theory of fancy's agile motility is, at least partially, indebted to a royalist poetics of naturalness, easiness and smoothness that emerges from artifice and constraint. Above all, I have shown the impact of *verse form*'s volatile work—whether stanza order and arrangement, enjambment, metrical regularity and irregularity, rhyme, heroic couplets, line indentation, or the lyric 'I'—on natural philosophy. In so doing, I have pointed to new avenues of exploration for why so many seventeenth-century writers—men as well as women—turned to poetry (as opposed to literature more broadly) as a scientifically potent form.

This thesis also suggests that the fundamental hybridity of early modern intellectual culture necessitates looking at a wide range of sources and forms to fully account for early modern women's engagements with natural philosophy. Critics have done much to establish the connections between natural philosophy and literature, and following through on the wider implications of this research necessitates acknowledging that poetry itself can act as a conduit of natural philosophical knowledge. Bradstreet, Hutchinson, Cavendish and Pulter were influenced by figures such as Aristotle, Francis Bacon and Walter Charleton, but their natural philosophical encounters are also fundamentally shaped by their responses to other poets. Bradstreet's and Hutchinson's poetry has long been read in conversation with Du Bartas—particularly when critics draw out the theological and political aspects of their work—but in chapter 1 and chapter 2, I show how Sylvester's translation of the *Divine Weeks and Works* acts specifically as a natural philosophical prompt for these writers. Likewise, the influence of John Donne and George Herbert on Pulter's poetry is also frequently noted. But, in chapter 4 I show how Pulter adapts Donne's vocabulary of inanimation in her breathy poetics and, crucially, how Pulter's responses to Herbert suggest that she was reading his devotional poetry with a detailed understanding of early modern acoustics and physiology in mind. Perhaps most surprisingly, in chapter 3 I suggested how seventeenth-century theories of the heroic

[14] Mann and Sarkar, "Introduction", 2.

couplet's smoothness and easiness, gleaned from the poetry of Edmund Waller and John Denham, infiltrated and influenced Cavendish's sense of matter's figurative motions.

My focus throughout has been the reciprocal, although not always harmonious, interactions of seventeenth-century natural philosophy and poetry, but I have remained attentive to the political and theological dimensions of these encounters. At times these concerns coalesce, as when Pulter's philosophy of breath cannot be meaningfully detached from her faith, while at other times natural philosophy reveals its ever-present capacity to unsettle divinely revealed truth. In chapter 1, for example, Bradstreet's deconstruction of elemental philosophy reveals a penetrating political savviness that tends towards a radical dismantling of hierarchies and that potentially displaces and evacuates God himself from her system. More work remains to be done in exploring the intertwined natural philosophical, political and theological threads of early modern women's writing. Pulter's vehement royalism is well-known, for example, but how these political concerns impinge upon her natural philosophical interests, or vice versa, has been less well-trod. Likewise, I concluded chapter 2 by gesturing towards Hutchinson's continuing use of an atomic, recombinatorial poetics in her multiple draft epitaphs for her husband that raises both political and theological questions about continuity and change. How these same poetics might manifest in her scathing line-by-line rewriting of Waller's "Panegyric to my Lord Protector" is another avenue that remains to be explored.

Reading for matter and form has not only been my subject but my methodology. Close reading early modern women's poetry unlocks their poetic and natural philosophical sophistication, allowing us to move beyond the identification of contexts and sources, and revealing how women *used* their knowledge. To this end, I have, to borrow Gillian Wright's words, been interested in these writers "both as *women* poets and as women *poets*", focusing on the distinctive texture of their poetry.[15] Dympna Callaghan characterises early modern women as paradoxically "excluded participants", a phrase that simultaneously captures the institutional and systematic discrimination that they faced, as well as how many women did work within these systems.[16] Women as "excluded participants" is an apt description of their place within early modern natural philosophy. Indeed, Cavendish's 1667 visits to the Royal Society is much celebrated as the first time a woman was invited to view its experiments, but it was also, for a long time, the last time.[17] Reading for form, as Elizabeth Scott-Baumann argues, allows us to recover early modern women's *poetic* participation in an intellectual culture that they might otherwise have been excluded from.[18]

[15] Wright, *Producing Women's Poetry,* 20.
[16] Dympna Callaghan, "Introduction", in *The Impact of Feminism in English Renaissance Studies,* 7.
[17] For an account of Cavendish's visit see Sarasohn, *The Natural Philosophy of Margaret Cavendish,* 25–33.
[18] Scott-Baumann, *Forms of Engagement,* 2–3.

Ultimately, putting “wittye Ladyes[s]”, in Southwell’s words, back into poetic-natural philosophical history allows us to better understand the unpredictable and intricate operations of early modern matter and form. Hutchinson’s use of translation for natural philosophical enquiry demonstrates the wider importance of translation as a process of investigation, while Cavendish’s rhythmic fancy offers a different conception of the iambic pentameter couplets from the strong, balanced lines that later writers like John Dryden, Alexander Pope and Samuel Johnson valorise. It also nuances and invigorates our understanding of seventeenth-century natural philosophy, revealing poetic form to be a compelling and important site of physical and metaphysical investigation. By attending to the vibrancy of women’s poetic voices—angry, exacting, irreverent, playful and pious—I reanimate the urgency, oddity and eclecticism of seventeenth-century natural philosophy.

Bibliography

Manuscripts

Anonymous prose translation of Lucretius *De rerum* natura, MS Rawlinson D.314, Bodleian Library, Oxford.

Lucy Hutchinson's translation of *De rerum natura*, Additional MS 19333, British Library, London.

Pulter, Hester. *Lady Hester Pulter's Poems.* MS Lt q 32, Brotherton Library, University of Leeds.

Roper, Mary. *The Sacred Historie Conteined in the First Boocke of Moses Called Genesis.* MS Lt q 2, Brotherton Library, University of Leeds.

Primary

Aetius. *Placita.* Edited and translated by Jaap Manseld and David T. Runia. Cambridge, MA: Harvard University Press, 2023.

Aquinas, Thomas. *Summa Theologiae.* Translated by English Dominican Fathers. London: Burns, Oates, and Washburne, 1912–36. Reprint, New York: Christian Classics, 1981.

Aristotle. *Metaphysics, Volume I: Books 1–9.* Translated by Hugh Tredennick. Cambridge, MA: Harvard University Press, 1933.

Aristotle. *On Sophistical Refutations. On Coming-to-be and Passing Away. On the Cosmos.* Translated by E.S. Forster and D.J. Furley. Cambridge, MA: Harvard University Press, 1955.

Aristotle. *On the Heavens.* Translated by W.K.C. Guthrie. Cambridge, MA: Harvard University Press, 1955.

Aristotle. *On the Soul. Parva Naturalia. On Breath.* Translated by W.S. Hett. Cambridge, MA: Harvard University Press, 1957.

Aristotle. *Physics, Volume I: Books 1–4.* Translated by P.H. Wicksteed and F.M. Cornford. Cambridge, MA: Harvard University Press, 1957.

Bacon, Francis. *Sylua Syluarum: Or A Naturall Historie. In Ten Centuries.* London: Printed by J.H., 1626.

Bacon, Francis. *The Oxford Francis Bacon, Volume 11: The Instauratio Magna Part II: Novum Organum and Associated Texts.* Edited by Graham Rees and Maria Wakely. Oxford: Oxford University Press, 2004.

Bacon, Francis. *The Oxford Francis Bacon, Volume 4: The Advancement of Learning.* Edited by Michael Kiernan. Oxford: Oxford University Press, 2000.

Behn, Aphra. "To the Unknown Daphnis on his Excellent Translation of *Lucretius*". In *T. Lucretius Carus, the Epicurean Philosopher, His Six Books De Natura Rerum Done into English Verse, With Notes,* by Thomas Creech, sig. d3r–e2r. Oxford: Printed by L. Lichfield for Anthony Stephens, 1683.

Boyle, Robert. *The Works of Robert Boyle, Volume 5: The Origin of Forms and Qualities and Other Publications of 1665–7.* Edited by Michael Hunter and Edward B. Davis. Oxford: Pickering & Chatto, 1999.

Bradstreet, Anne. *Poems and Meditations.* Edited by Margaret Olofson Thickstun. Toronto: Iter Press, 2019.

Bradstreet, Anne. *Several Poems Compiled with great variety of Wit and Learning.* Boston: Printed by John Foster, 1678.

Bradstreet, Anne. *The Tenth Muse Lately sprung up in America. Or Severall Poems, compiled with a great variety of Wit and Learning, full of delight.* London: For Stephen Bowtell, 1650.

Burton, Robert. *Anatomy of Melancholy, Volume 1: Text.* Edited by Thomas C. Faulkner, Nicholas K. Kiessling, Rhonda L. Blair, commentary by J.B. Bamborough and Martin Dodsworth. Oxford: Oxford University Press, 1989.

Campion, Thomas. *Observations in the Art of English Poesie.* London: Printed by Richard Field for Andrew Wise, 1602.

Carew, Thomas. *Poems.* London: Printed by I.D. for Thomas Walkley, 1640.

Cavendish, Margaret. *CCXI Sociable Letters.* London: Printed by William Wilson, 1664.

Cavendish, Margaret. *Margaret Cavendish's Poems and Fancies: A Digital Critical Edition.* Edited by Liza Blake. Website published May 2019. https://library2.utm.utoronto.ca/poemsandfancies/.

Cavendish, Margaret. *Natures Pictvres Drawn by Fancies Pencil to the Life.* London: Printed for J. Martin and J. Allestrye, 1656.

Cavendish, Margaret. *Philosophical and Physical Opinions.* London: Printed by William Wilson, 1663.

Cavendish, Margaret. *Philosophical Letters: or, Modest Reflections upon some Opinions in Natural Philosophy.* London, 1664.

Cavendish, Margaret. *Philosophicall Fancies.* London: Printed by Tho: Roycroft, for J. Martin and J. Allestrye, 1653.

Cavendish, Margaret. *Poems, and Fancies.* London: Printed by T.R. for J. Martin, and J. Allestrye, 1653.

Cavendish, Margaret. *Poems, and Phancies.* London: Printed by William Wilson, 1664.

Cavendish, Margaret. *Poems, or, Several Fancies in Verse: with the Animal Parliament in Prose.* London: Printed by A. Maxwell, 1668.

Cavendish, Margaret. *The Blazing World and Other Writings.* Edited by Kate Lilley. London: Penguin, 2004.

Cavendish, Margaret. *The Philosophical and Physical Opinions.* London: Printed for J. Martin and J. Allestrye, 1655.

Cavendish, Margaret. *The Worlds Olio.* London: Printed for J. Martin and J. Allestrye, 1655.

Cavendish, Margaret. *The Worlds Olio.* London: Printed by A. Maxwell, 1671.

Charleton, Walter. *A Ternary of Paradoxes of the Magnetick Cure of Wounds. Nativity of Tartar in Wine. Image of God in Man. The second Impression, more reformed, and enlarged with some Marginal Additions.* London: Printed by James Flesher for William Lee, 1650.

Charleton, Walter. *Natural History of the Passions.* London: Printed by T.N. for James Magnes, 1674.

Charleton, Walter. *Physiologia Epicuro-Gassendo-Charltoniana, or, A Fabrick of Science Natural, Upon the Hypothesis of Atoms, Founded by Epicurus, Repaired [by] Petrus Gassendus, Augmented [by] Walter Charleton*. London: Printed by Tho. Newcomb for Thomas Heath, 1654.

Charleton, Walter. *The Darknes of Atheism Dispelled by the Light of Nature. A Physico-Theologicall Treatise.* London: Printed by J.F. for William Lee, 1652.

Cowley, Abraham. *A Proposition for the Advancement of Experimental Philosophy.* London: Printed by J.M. for Henry Herringman, 1661.

Cowley, Abraham. *Poems.* London: Printed for Humphrey Moseley, 1656.

Cowley, Abraham. "To the *Royal Society*". In *The History of the Royal-Society of London, For the Improving of Natural Knowledge,* by Thomas Sprat, sig. B1r–B3v. London: Printed by T.R. for J. Martyn and J. Allestry, 1667.

Creech, Thomas. *T. Lucretius Carus the Epicurean Philosopher, His Six Books De Natura Rerum, Done into English Verse, with Notes.* Oxford: Printed by L. Lichfield for Anthony Stephens, 1682.

Daneau, Lambert. *The Wonderful Workmanship of the World.* Translated by Thomas Twyne. London: Printed for Andrew Maunsell, 1578.

Davenant, William. *A Discourse upon Gondibert. An Heroick Poems.* Paris: Matthiev Gvillemot, 1650.

Denham, John. *Coopers Hill.* London: Printed for Humphrey Moseley, 1650.

Denham, John. *Coopers Hill.* London: Printed for Humphrey Moseley, 1655.

Denham, John. *The Destruction of Troy, An Essay Upon the Second Book of Virgil Æneis. Written in the year, 1636.* London: Printed for Humphrey Moseley, 1656.

Digby, Kenelm. *Observations on the 22. stanza in the 9th. Canto of the 2d. book of Spencers Faery Queen.* London: Printed for Daniel Frere, 1643.

Digby, Kenelm. *Two Treatises in the one of which, The Nature of Bodies; in the other, The Nature of Mans Solve; Is Looked Into: In Way of Discovery, of the Immortality of Reasonable Sovles*. Paris: Printed by Gilles Blaizot, 1644.

Diogenes Laertius. *Lives of Eminent Philosophers, Volume II: Books 6–10.* Translated by R.D. Hicks. Cambridge, MA: Harvard University Press, 1925.

Donne, John. *LXXX Sermons Preached by that Learned and Reverend Divine, Iohn Donne, Dr in Divinity.* London: Printed for Richard Royston and Richard Marriot, 1640.

Donne, John. *Psevdo-Martyr.* London: Printed by W. Stansby for Walter Burre, 1610.

Donne, John. *The Complete Poems of John Donne.* Edited by Robin Robbins. Revised edition. London: Routledge, 2013.

Dryden, John. *Ovid's Epistles, Translated by Several Hands.* London: Printed for Jacob Tonson, 1680.

Dryden, John. *Sylvæ, or, The Second Part of Poetical Miscellanies.* London: Printed for Jacob Tonson, 1685.

Du Bartas, Guillaume de Salluste. *The Divine Weeks and Works of Guillaume de Saluste, Sieur du Bartas, Volume 1.* Translated by Joshua Sylvester, edited by Susan Snyder. Oxford: Oxford University Press, 1979.

Du Bartas, Guillaume de Salluste. *The Divine Weeks and Works of Guillaume de Saluste, Sieur du Bartas, Volume 2.* Translated by Joshua Sylvester, edited by Susan Snyder. Oxford: Oxford University Press 1979.

Evelyn, John. *An Essay on the First Book of T. Lucretius Carus De Rerum Natura. Interpreted and Made English Verse by J. Evelyn Esq;.* London: Printed for Gabriel Bedle, and Thomas Collins, 1656.

Evelyn, John. *John Evelyn's Translation of Titus Lucretius Carus* 'De Rerum Natura'*: An Old-Spelling Critical Edition.* Edited by Michael M. Repetzki. Frankfurt am Main: Peter Lang, 2000.

Fane, Mildmay. *The Poetry of Mildmay Fane, Second Earl of Westmorland from the Fulbeck, Harvard and Westmorland Manuscripts.* Edited by Thomas Cain. Manchester: Manchester University Press, 2001.

Fanshawe, Richard. "For my Honored FRIEND and KINSMAN JOHN EVELYN Esq;". In *John Evelyn's Translation of Titus Lucretius Carus* 'De Rerum Natura': *An Old-Spelling Critical Edition,* edited by Michael M. Repetzki, 19–20. Frankfurt am Main: Peterlang, 2000.

Herbert, George. *The Works of George Herbert.* Edited by F.E. Hutchinson. Oxford: Oxford University Press, 1941.

Hobbes, Thomas. *Leviathan, or the Matter, Forme, and Power of a Common-wealth Ecclesaisticall and Civill.* London: Printed for Andrew Crooke, 1651.

Hobbes, Thomas. "The Answer of Mr Hobbs to Sr. William D'Avenant's Preface before Gondibert". In *A Discourse upon Gondibert. An Heroick Poems,* by William Davenant, F3r–G5r. Paris: Matthiev Gvillemot, 1650.

Holland, Philemon. *The Historie of the World. Commonly called, The Natural Historie of C. Plinius Secundus. Translated into English [by] Philemon Holland Doctor in Physicke.* London: Adam Islip, 1601.

Holland, Philemon. *The Philosophie, commonlie called, The Morals Written By the learned Philosopher Plutarch of Chaeronea. Translated out of Greeke into English and conferred with the Latine translations and the French, by Philemon Holland of Coventrie, Doctor in Physicke.* London: Printed by Arnold Hatfield, 1603.

Horace. *Satires. Epistles. The Art of Poetry.* Translated by H. Rushton Fairclough. Cambridge, MA: Harvard University Press, 1926.

Hutchinson, Lucy. “Lucy Hutchinson’s *Elegies* and the Situation of Republican Woman Writer (with text)”, by David Norbrook. *English Literary Renaissance* 27, no.3 (1997): 468–521.

Hutchinson, Lucy. *Memoirs of the Life of Colonel Hutchinson, with a fragment of autobiography.* Edited by N.H. Keeble. London: Orion, 1995.

Hutchinson, Lucy. *Order and Disorder.* Edited by David Norbrook. Oxford: Blackwell, 2001.

Hutchinson, Lucy. *The Works of Lucy Hutchinson, Volume 1: Translation of Lucretius: Part 1, Introduction and Text*. Edited by Reid Barbour, David Norbrook and Maria Christina Zerbino. Oxford: Oxford University Press, 2012.

Hutchinson, Lucy. *The Works of Lucy Hutchinson, Volume 1: The Translation of Lucretius: Part 2, Commentary, Bibliography, and Index.* Edited by Reid Barbour, David Norbrook and Maria Cristina Zerbino. Oxford University Press, 2012.

Hutchinson, Lucy. *The Works of Lucy Hutchinson, Volume 2: Theological Writings and Translations, Part 1: Introductions and Texts.* Edited by Elizabeth Clarke, David Norbrook and Jane Stevenson. Oxford: Oxford University Press, 2018.

Hutchinson, Lucy. “To Mr: Waller vpon his Panegirique to the Lord Protector”. In David Norbrook, “Lucy Hutchinson versus Edmund Waller: An Unpublished Reply to Waller’s *A Panegyrick to My Lord Protector*”. *The Seventeenth Century* 11, no.1 (1996): 61–86.

Johnson, Samuel. *The Lives of the Most Eminent English Poets: With Critical Observations on Their Works, Volume 1*. Edited by Roger Lonsdale. Oxford: Oxford University Press, 2006.

Johnson, Samuel. *The Lives of the Most Eminent English Poets: With Critical Observations on Their Works, Volume 2.* Edited by Roger Lonsdale. Oxford: Oxford University Press, 2006.

Jonson, Ben. “Discoveries (printed 1641)”, edited by Lorna Hutson. In *The Cambridge Edition of Ben Jonson Online,* edited by Martin Butler, David Bevington and Ian Donaldson. Cambridge University Press, 2014. https://universitypublishingonline.org/cambridge/benjonson/.

Jonson, Ben. “Informations to William Drummond of Hawthornden”. Edited by Ian Donaldson. In *The Cambridge Edition of the Works of Ben Jonson Online,* edited by Martin Butler, David Bevington and Ian Donaldson. Cambridge University Press, 2014. https://universitypublishingonline.org/cambridge/benjonson/.

London, William. *A Catalogue of the Most Vendible Books in England, Orderly and Alphabetically Digested.* London, 1658.

Lucretius. *On the Nature of Things.* Translated by W.H.D Rouse, revised by Martin F. Smith. Cambridge, MA: Harvard University Press, 1924.

Lucretius. *Titi Lucretti Cari philosophi & poëtæ antiquissimi De rerum natura libri sex.* Edited by Daniel Pareus. Frankfurt: Wolfgang Hofmannus, 1631.

Makin, Bathsua. *An Essay to Revive the Antient Education of Gentlewomen.* London: Printed by J.D., 1673.

Meres, Francis. *Palladis Tamia. Wits Treasvury Being the Second part of Wits Commonwealth.* London: Printed by P. Short, for Cuthbert Burbie, 1598.

Milton, John. *The Complete Poems.* Edited by John Leonard. London: Penguin, 1998.

More, Henry. *Democritus Platonissans, or, An Essay Upon the Infinity of World out of Platonick Principles.* Cambridge: Printed by Roger Daniel, 1646.

Plato. *Republic, Volume II: Books 6–10.* Edited and translated by Christopher Emlyn-Jones and William Preddy. Cambridge, MA: Harvard University Press, 2013.

Pliny. *The Historie of the World. Commonly called, the Natvrall Historie of C. Plinivs Secvundvs.* Translated by Philemon Holland. London: Printed by Adam Islip, 1601.

Pope, Alexander. *An Essay on Criticism.* London: Printed for W. Lewis, 1711.

Pulter, Hester. *Poems, Emblems, and The Unfortunate Florinda.* Edited by Alice Eardley. Toronto: Iter Press, 2014.

Pulter, Hester. *The Pulter Project: Poet in the Making.* Edited by Leah Knight and Wendy Wall. 2018. http://pulterproject.northwestern.edu.

Puttenham, George. *The Art of English Poesy: A Critical Edition.* Edited by Frank Whigham and Wayne A. Rebhorn. Ithaca, NY: Cornell University Press, 2007.

S[andys], G[eorge]. *Ovid's Metamophosis Englished.* London: [By William Stansby], 1626.

Sidney, Philip. "A Defence of Poetry". In *Miscellaneous Prose of Sir Philip Sidney,* edited by Katherine Duncan-Jones and Jan van Dorsten, 73–121. Oxford: Oxford University Press, 1973.

Southwell, Anne. *The Southwell-Sibthorpe Commonplace Book, Folger MS V.b.198*. Edited by Jean Klene. Tempe: Medieval and Renaissance Texts and Studies, 1997.

Sprat, Thomas. "An Account of the Life and Writings of Mr Abraham Cowley". In *The Works of Mr Abraham Cowley,* sig. A1r–e2v. London: Printed by J.M. for Henry Herringman, 1668.

Sprat, Thomas. *The History of the Royal-Society of London, For the Improving of Natural Knowledge.* London: Printed by T.R. for J. Martyn and J. Allestry, 1667.

The Holy Bible conteyning the Old Testament, and the New, newly translated out of the originall tongues, and with the former translations diligently compared and reuised, by His Maiesties special comandement; appointed to be read in churches. London: by Robert Barker, 1611.

Topsell, Edward. *The Historie of Serpents, or, the second booke of liuing creatures*. London: Printed by William Jaggard, 1608.

Secondary

Adriaenssen, Han Thomas and Sander de Boer. "Between Atoms and Forms: Natural Philosophy and Metaphysics in Kenelm Digby", *Journal in the History of Philosophy* 57, no.1 (2019): 57–80.

Ainsworth, Thomas. “Form vs. Matter”. *The Stanford Encyclopedia of Philosophy,* edited by Edward N. Zalta and Uri Nodelman. Article published February 8, 2016; last modified 27 June, 2024. https://plato.stanford.edu/archives/fall2024/entries/form-matter/.

Aït-Touati, Frédérique. *Fictions of the Cosmos: Science and Literature in the Seventeenth Century.* Translated by Susan Emanuel. Chicago: University of Chicago Press, 2011.

Alexander, Gavin. “Prosopopoeia: the speaking figure”. In *Renaissance Figures of Speech,* edited by Sylvia Adamson, Gavin Alexander and Katrin Ettenhuber, 95–112. Cambridge: Cambridge University Press, 2007.

Allan, Kate F. “Alchemical Poetics in Seventeenth-Century Women’s Writing”. PhD Thesis, University of Oxford, 2023.

Anstey, Peter R. and John. A Schuster. “Introduction”. In *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy,* edited by Peter R. Anstey and John A. Schuster, 1–7. Dordrecht: Springer, 2005.

Anstey, Peter R. and John. A Schuster, ed. *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy.* Dordrecht: Springer, 2005.

Archer, Jayne. “A ‘Perfect Circle’? Alchemy in the Poetry of Hester Pulter”. *Literature Compass* 2 (2005): 1–14.

Ariew, Roger and Marjorie Grene. “The Cartesian Destiny of Form and Matter”. *Early Science and Medicine* 2, no.3 (1997): 300–25.

Arsić, Branka. “Brain-Ache: Anne Bradstreet on Sensing”. *English Literature History* 80, no.4 (2013): 1009–43.

Attridge, Derek. *Moving Words: Forms of English Poetry.* Oxford: Oxford University Press, 2013.

Auerbach, Erich. *Scenes from the Drama of European Literature.* Minneapolis: University of Minnesota Press, 1984. First published Meridian, 1959.

Auger, Peter. *Du Bartas’ Legacy in England and Scotland.* Oxford: Oxford University Press, 2019.

Auger, Peter. “Du Bartas’ Pattern for English Scriptural Poets”. In *Ronsard and Du Bartas in Early Modern Europe,* edited by Anne-Pascale Pouey-Mounou and Paul J. Smith, 302–31. Leiden: Brill, 2021.

Auger, Peter. “Old England and New in Anne Bradstreet’s Poetry”. In *The Oxford Handbook of Early Modern Women’s Writing in English, 1540–1700,* edited by Elizabeth Scott-Baumann, Danielle Clarke, and Sarah C.E. Ross, 437–49. Oxford: Oxford University Press, 2023.

Barbour, Reid. “Between Atoms and Spirit: Lucy Hutchinson’s Translation of Lucretius”. In *Ashgate Critical Essays on Women Writers in England, 1550–1700: Volume 5: Anne Clifford and Lucy Hutchinson,* edited by Mihoko Suzuki, 333–48. London: Routledge, 2016.

Barbour, Reid. *English Epicures and Stoics: Ancient Legacies in Early Stuart Culture.* Amherst: University of Massachusetts Press, 1998.

Barbour, Reid. “Lucy Hutchinson, Atomism and the Atheist Dog”. In *Women, Science and Medicine 1500–1700,* edited by Lynette Hunter and Sarah Hutton, 122–37. Stroud: Sutton Publishing, 1997.

Bartlett, Joshua. “Anne Bradstreet’s Ecological Thought”. *Women’s Studies* 43, no.3 (2014): 290–304.

Begley, Justin. “Margaret Cavendish Reads Josuah Sylvester: Epicurus, Atheism, and Atomic Skepticism in *Poems, and Fancies*”. *English Literary Renaissance* 53, no.3 (2023): 376–400.

Bennett, Jane*. Vibrant Matter: A Political Ecology of Things.* Durham, NC: Duke University Press, 2010.

Bercovitch, Sacvan. “Empedocles in the English Renaissance”. *Studies in Philology* 65, no.1 (1968): 67–80.

Berryman, John. “Homage to Mistress Bradstreet”. In *Collected Poems 1937-1971,* edited by Charles Thornbury, 133–48. London: Faber and Faber, 1990.

Blake, Liza. “After Life in Margaret Cavendish’s Vitalist Posthumanism”. *Criticism* 62, no.3 (2020): 433–56.

Blake, Liza. “Hester Pulter’s Particle Physics and the Poetics of Involution”. *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 71–98.

Blake, Liza. “Margaret Cavendish’s Forms: Literary Formalism and the Figures of Cavendish’s Atom Poems”. In *Feminist Formalism and Early Modern Women’s Writing: Readings, Conversations, Pedagogies,* edited by Lara Dodds and Michelle Dowd, 38–55. Lincoln, NE: University of Nebraska Press, 2022.

Blake, Liza. “Margaret Cavendish’s Sammelbände: Bound-Together Volumes and Joined Texts in Cavendish’s Corpus”. *Early Modern Women: An Interdisciplinary Journal* 19, no.1 (2024): 30–63.

Blake, Liza. “Non-Atomic Atomisms and Atomic Epistemologies in the Poetry of Margaret Cavendish and Lucy Hutchinson”. *English Literary Renaissance* 53, no.3 (2023): 401–24.

Blake, Liza. “Reading Poems (and Fancies): An Introduction to Margaret Cavendish’s *Poems and Fancies*”. In *Margaret Cavendish’s Poems and Fancies: A Digital Critical Edition.* Edited by Liza Blake. Website published May 2019. https://library2.utm.utoronto.ca/poemsandfancies/.

Blake, Liza. “Textual and Editorial Introduction”. In *Margaret Cavendish’s Poems and Fancies: A Digital Critical Edition.* Edited by Liza Blake. Website published May 2019. https://library2.utm.utoronto.ca/poemsandfancies/.

Blake, Liza. “The Physics of Poetic Form in Arthur Golding’s Translation of Ovid’s *Metamorphoses*”. *English Literary Renaissance* 51, no.3 (2021): 331–55.

Bloom, Gina. *Voice in Motion: Staging Gender, Shaping Sound in Early Modern England.* Philadelphia: University of Pennsylvania Press, 2007.

Boris, Kenneth. *Visionary Spenser and the Poetics of Early Modern Platonism*. Oxford: Oxford University Press, 2017.

Bostock, David. *Space, Time, Matter, and Form: Essays on Aristotle's 'Physics'.* Oxford: Oxford University Press, 2006.

Bowerbank, Sylvia. "The Spider's Delight: Margaret Cavendish and the 'Female' Imagination". *English Literary Renaissance* 14, no.3 (1984): 392–408.

Boyle, Deborah*. The Well-Ordered Universe: The Philosophy of Margaret Cavendish.* New York: Oxford University Press, 2017.

Britland, Karen. "Conspiring with 'friends': Hester Pulter's Poetry and the Stanley Family at Cumberlow Green". *The Review of English Studies* 69, no. 292 (2018): 832–54.

Brooks, Cleanth. *The Well Wrought Urn: Studies in the Structure of Poetry.* New York: Reynal and Hitchcock, 1947. Reprint, London: Dennis Dobson, 1960.

Brown, Hilary. *Women and Early Modern Cultures of Translation: Beyond the Female Tradition.* Oxford: Oxford University Press, 2022.

Bruster, Douglas. "The Materiality of Shakespearean Form". In *Shakespeare and Historical Formalism,* edited by Stephen Cohen, 31–48. Aldershot: Ashgate, 2007.

Burke, Victoria E. "Margaret Cavendish's Dancing Atoms" (Curation, Poem 63). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018.

Burke, Victoria E. "Playing Football with the Stars: Hester Pulter Rethinks the Metaphysical Astronomy Poem". *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 169–91.

Callaghan, Dympna. "Introduction". In *The Impact of Feminism in English Renaissance Studies,* edited by Dympna Callaghan, 1–29. Basingstoke: Palgrave Macmillan, 2007.

Calloway, Katherine. *Literature and Natural Theology in Early Modern England.* Cambridge: Cambridge University Press, 2023.

Carson, Anne Elizabeth. "The Hunted Stag and the Beheaded King". *Studies in English Literature, 1500–1900* 45, no.3 (2005): 537–56.

Cascardi, Anthony J. *The Cambridge Introduction to Literature and Philosophy.* Cambridge: Cambridge University Press, 2014.

Cave, Terence. "Epilogue". In *The Culture of Translation in Early Modern England and France*, edited by Tania Demetriou and Rowan Tomlinson, 191–200*.* Basingstoke: Palgrave Macmillan, 2015.

Chalmers, Hero. "'Flattering Division': Margaret Cavendish's Poetics of Variety". In *Authorial Conquests: Essays on Genre in the Writings of Margaret Cavendish,* edited by Line Cottegnies and Nancy Weitz, 123–44. Madison: Fairleigh Dickinson University Press, 2003.

Chedgzoy, Kate. *Women's Writing in the British Atlantic World: Memory, Place and History, 1550–1770*. Cambridge: Cambridge University Press, 2007.

Chico, Tita. *The Experimental Imagination: Literary Knowledge and Science in the British Enlightenment.* Stanford: Stanford University Press, 2018.

Cioni, Francesca. *Materiality and Devotion in the Poetry of George Herbert.* Oxford: Oxford University Press, 2024.

Clarke, Danielle. *The Politics of Early Modern Women's Writing.* 2001. Reprint, London: Routledge, 2013.

Clarke, Danielle. "Translation". In *The Cambridge Companion to Early Modern Women's Writing*, edited by Laura Lunger Knoppers, 167–80. Cambridge: Cambridge University Press, 2009.

Clarke, Danielle and Marie-Louise Coolahan. "Gender, Reception, and Form: Early Modern Women and the Making of Verse". In *The Work of Form: Poetics and Materiality in Early Modern Culture,* edited by Elizabeth Scott-Baumann and Ben Burton, 144–61. Oxford: Oxford University Press, 2014.

Clericuzio, Antonio. *Elements, Principles and Corpuscles: A Study of Atomism and Chemistry in the Seventeenth Century*. Dordrecht: Kluwer Academic Publishers, 2000.

Clucas, Stephen. "Astrology, Natural Magic, and the Scientific Revolution". In *The Cambridge History of Philosophy of the Scientific Revolution*, edited by David Marshall Miller and Dana Jalobeanu, 167–83. Cambridge: Cambridge University Press, 2022.

Clucas, Stephen. "The Atomism of the Cavendish Circle: A Reappraisal". *The Seventeenth Century* 9, no.2 (1994): 247–73.

Clucas, Stephen. "'The Infinite Variety of Formes and Magnitudes': 16th- and 17th-Century English Corpuscular Philosophy and Aristotelian Theories of Matter and Form". *Early Science and Medicine* 2, no.3 (1997): 251–71.

Clucas, Stephen. "Variation, Irregularity and Probabilism: Margaret Cavendish and Natural Philosophy as Rhetoric". In *A Princely Brave Woman: Essays on Margaret Cavendish, Duchess of Newcastle*, edited by Stephen Clucas, 199–209. Ashgate, 2003. Reissued, London: Routledge, 2018.

Cohen, H. Floris. "The Onset of the Scientific Revolution: Three Near-Simultaneous Transformations". In *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy,* edited by Peter R. Anstey and John A. Schuster, 9–33. Dordrecht: Springer, 2005.

Cohen, Jeffrey Jerome and Lowell Duckert. "Introduction: Eleven Principles of the Elements". In *Elemental Ecocriticism: Thinking with Earth, Air, Water, and Fire,* edited by Jeffrey Jerome Cohen and Lowell Ducket, 1–26. Minneapolis: University of Minnesota Press, 2015.

Cohen, Stephen. "Between Form and Culture: New Historicism and the Promise of a Historical Formalism". In *Renaissance Literature and its Formal Engagements,* edited by Mark David Rasmussen, 17–41. New York: Palgrave, 2002.

Cohen, Stephen. "Introduction". In *Shakespeare and Historical Formalism,* edited by Stephen Cohen, 1–27. Aldershot: Ashgate, 2007.

Cohen, Stephen, ed. *Shakespeare and Historical Formalism.* Aldershot: Ashgate, 2007.

Coldiron, A.E.B. "Translation and Transformission; or, Early Modernity in Motion". *Canadian Review of Comparative Literature* 46, no.2 (2019): 205–16.

Coldiron, A.E.B. “Visibility Now: Historicizing Foreign Presences in Translation”. *Translation Studies* 5, no.2 (2012): 189–200.

Connolly, Ruth. “Hester Pulter’s Childbirth Poetics”. *Women’s Writing* 26, no.3 (2019): 282–303.

Coole, Diana and Samantha Frost. “Introducing the New Materialisms”. In *New Materialisms: Ontology, Agency, and Politics,* edited by Diana Coole and Samantha Frost, 1–43. Durham, NC: Duke University Press, 2010.

Cottegnies, Line. “Michel de Marolles’ 1650 French Translation of Lucretius and its Reception in England”. In *Lucretius and the Early Modern,* edited by David Norbrook, Stephen Harrison, and Philip Hardie, 161–90. Oxford: Oxford University Press, 2016.

Cox, Virginia. *The Renaissance Dialogue: Literary Dialogue in its Social and Political Contexts, Castiglione to Galileo.* Cambridge: Cambridge University Press, 1992.

Crane, Mary Thomas. *Losing Touch with Nature: Literature and the New Science in Sixteenth Century England.* Baltimore: John Hopkins University Press, 2014.

Crawford, Benjamin. “The World after Eden: Spiritual Engagement and Environmental Awareness in Bradstreet”. *Early Modern Women* 18, no.1 (2023): 133–41.

Crow, Andrea. “‘She… the Choisest out of them Doth Finde’: Multi-Material Collage and the Poetics of Restoration in *The Sacred Historie*”, *Early Modern Women: An Interdisciplinary Journal* 7 (2012): 101–26.

Culler, Jonathan. *Theory of Lyric.* Cambridge, MA: Harvard University Press, 2015.

Cunning, David. *Cavendish.* London: Routledge, 2016.

Cunning, David. “Margaret Lucas Cavendish”. In *The Stanford Encyclopedia of Philosophy,* edited by Edward N. Zalta and Uri Nodelman. Article published 16 Oct. 2009; last modified 8 Dec. 2022, https://plato.stanford.edu/archives/win2022/entries/margaret-cavendish/.

Cunning, David. “Margaret Cavendish on the Metaphysics of Imagination and the Dramatic Force of the Imaginary World”. In *Early Modern Women on Metaphysics,* edited by Emily Thomas, 188–210. Cambridge: Cambridge University Press, 2018.

Daniel, Drew. “The Empedoclean Renaissance”. In *The Return of Theory in Early Modern English Studies, Volume II,* edited by Paul Cefalu, Gary Kuchar and Bryan Reynolds, 277–300. Basingstoke: Palgrave Macmillan, 2014.

De Groot, Jerome. “John Denham and Lucy Hutchinson’s Commonplace Book”. *Studies in English Literature, 1500-1900* 48, no.1 (2008): 147–63.

Dear, Peter. *Revolutionizing the Sciences: European Knowledge and Its Ambitions, 1500–1700,* 2nd ed. Princeton: Princeton University Press, 2009.

Delbourgo, James and Nicholas Dew. “Introduction: The Far Side of the Ocean”. In *Science and Empire in the Atlantic World,* edited by James Delbourgo and Nicholas Dew, 1–28. New York: Routledge, 2008.

Demetriou, Tania and Rowan Tomlinson. “Introduction: ‘Abroad in Mens Hands’: The Culture of Translation in Early Modern England and France”. In *The Culture of Translation in Early Modern England and France,* edited by Tania Demetriou and Rowan Tomlinson, 1–21. Basingstoke: Palgrave Macmillan, 2015.

Detlefsen, Karen. “Atomism, Monism, and Causation in the Natural Philosophy of Margaret Cavendish”. In *Oxford Studies in Early Modern Philosophy Volume 3,* edited Daniel Garber and Steven Nadler, 199–244. Oxford: Oxford University Press, 2006.

Detlefsen, Karen. “The Rise of a Public Science? Women and Natural Philosophy in the Early Modern Period”. In *The Cambridge History of Philosophy of the Scientific Revolution,* edited by David Marshall Miller and Dana Jalobeanu, 128–46. Cambridge: Cambridge University Press, 2022.

Deutermann Allison K. and András Kiséry, ed. *Formal Matters: Reading the Materials of English Renaissance Literature.* Manchester: Manchester University Press, 2013.

Dodds, Lara. “Bawds and Housewives: Margaret Cavendish and the Work of ‘Bad Writing’”. *Early Modern Studies Journal* 6 (2014): 29–65.

Dodds, Lara. “Form, Formalism, and Literary Studies: The Case of Margaret Cavendish”. In *World-Making Renaissance Women: Rethinking Early Modern Women’s Place in Literature and Culture,* edited by Pamela S. Hammons and Brandie R. Siegfried, 136–50. Cambridge: Cambridge University Press, 2021.

Dodds, Lara. “Hester Pulter Observes the Eclipse: Or, the Poetics of the Astronomical Event”. *Journal of Early Modern Cultural Studies* 20, no.2 (2020): 144–68.

Dodds, Lara. “How To Tell If You’re in a Hester Pulter Poem” (Exploration). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. http://pulterproject.northwestern.edu.

Dodds, Lara. *The Literary Invention of Margaret Cavendish.* Pittsburgh: Duquesne University Press, 2014.

Dodds, Lara and Michelle Dowd, eds. *Feminist Formalism and Early Modern Women’s Writing: Readings, Conversations, and Pedagogies.* Lincoln, NE: University of Nebraska Press, 2022.

Dodds, Lara and Michelle Dowd. “Happy Accidents: Critical Belatedness, Feminist Formalism, and Early Modern Women’s Writing”. *Criticism* 62, no.2 (2020): 169–93.

Dodds, Lara and Michelle Dowd. “The Case for a Feminist Return to Form”. *Early Modern Women* 13, no.1 (2018): 82–91.

Dolan, Frances E. “Hester Pulter’s Dunghill Poetics”. *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 16–42.

Dubrow, Heather. *The Challenges of Orpheus: Lyric Poetry and Early Modern England.* Baltimore: John Hopkins University Press, 2008.

Eardley, Alice. “Hester Pulter’s ‘Indivisibles’ and the Challenges of Annotating Early Modern Women’s Poetry”. *Studies in English Literature, 1500–1900* 52, no.1 (2012): 117–41.

Eardley, Alice. "'I Haue Not Time to Point Yr Booke… Which I Desire You Yourself to Doe': Editing the Form of Early Modern Manuscript Verse". In *The Work of Form: Poetics and Materiality in Early Modern Culture,* edited by Elizabeth Scott-Baumann and Ben Burton, 162–78. Oxford: Oxford University Press, 2014.

Eberwein, Jane Donahue. "'No Rhet'ric We Expect': Argumentation in Bradstreet's 'The Prologue'". *Early American Literature* 16, no.1 (1981): 19–26.

Eberwein, Jane Donahue. "The 'Unrefined-Ore' of Anne Bradstreet's Quaternions". *Early American Literature* 9, no.1 (1974): 19–26.

Edgecombe, Rodney Stenning. "John Denham, Robert Burton, and the River Exemplum in 'Coopers Hill'". *Notes and Queries* 56, no.2 (2009): 205.

Eliot, T.S. "Reflections on *Vers Libre*". In *The Complete Prose of T.S. Eliot: The Critical Edition. Volume 1: Apprentice Years, 1905–1918,* edited by Jewel Spears Brooker and Ronald Schuchard, 511–18. Baltimore: John Hopkins University Press, 2014.

Emerton, Norma E. *The Scientific Reinterpretation of Form.* Ithaca, NY: Cornell University Press, 1984.

Ezell, Margaret. "The Laughing Tortoise: Speculations on Manuscript Sources and Women's Book History". *English Literary Renaissance* 38, no.2 (2008): 331–55.

Ezell, Margaret. *Writing Women's Literary History.* Baltimore: John Hopkins University Press, 1996.

Fahnestock, Jeanne. *Rhetorical Figures in Science.* New York: Oxford University Press, 1999.

Fallon, Samuel. "Lately Sprung up in America: Anne Bradstreet's Untimely Worldmaking". *Journal for Early Modern Cultural Studies* 18, no.4 (2018): 100–23.

Fallon, Stephen M. *Milton among the Philosophers: Poetry and Materialism in Seventeenth-Century England*. Ithaca, NY: Cornell University Press, 1991.

Fara, Patricia. *Pandora's Breeches: Women, Science and Power in the Enlightenment.* London: Pimlico, 2004.

Fitzmaurice, James. "Margaret Cavendish and the Cultural Milieu of Antwerp". In *A Companion to the Cavendishes,* edited by Lisa Hopkins and Tom Rutter, 161–80. Leeds: Arc Humanities Press, 2020.

Fletcher, Angus. *Allegory: The Theory of a Symbolic Mode.* Revised Edition. Princeton: Princeton University Press, 2012.

Forshaw, Peter J. and Kevin Killeen. "Introduction: The Word and the World". In *The Word and the World: Biblical Exegesis and Early Modern Science,* edited by Kevin Killeen and Peter J. Forshaw, 1–22. Basingstoke: Palgrave Macmillan, 2007.

Fransen, Sietske. "Introduction: Translators and Translations of Early Modern Science". In *Translating Early Modern Science,* edited by Sietske Fransen, Niall Hodson, Karl A.E. Enenkel ,1–14. Leiden: Brill, 2017.

Fung, Megan J. "Art, Authority, and Domesticity in Margaret Cavendish's *Poems and Fancies*". *Early Modern* 10, no.1 (2015): 27–47.

Garber, Daniel. “Soul and Mind: Life and Thought in the Seventeenth Century”. In *The Cambridge History of Seventeenth-Century Philosophy, Volume 1,* edited by Daniel Garber and Michael Ayers, 757–95. Cambridge, Cambridge University Press, 2000.

Garey, Wesley. “Rewriting Epic and Redefining Glory in Lucy Hutchinson’s *Order and Disorder*”. *Christianity and Literature* 69, no.3 (2020): 399–417.

Gaukroger, Stephen. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity 1210–1685.* Oxford: Oxford University Press, 2006.

Gelbart, Nina Rattner. “Adjusting the Lens: Locating Early Modern Women of Science”. *Early Modern Women: An Interdisciplinary Journal* 11, no.1 (2016): 116–27.

Gillespie, Katharine. *Women Writing the English Republic 1623–1681.* Cambridge: Cambridge University Press, 2017.

Goldberg, Jonathan. *The Seeds of Things: Theorizing Sexuality and Materiality in Renaissance Representations.* New York: Fordham University Press, 2009.

Goldstein, Amanda Jo. *Sweet Science: Romantic Materialism and the New Logics of Life.* Chicago: University of Chicago Press, 2017.

Gorman, Cassandra. “Allegorical Analogies: Henry More’s Poetical Cosmology”. *Studies in Philology* 114, no.1 (2017): 148–70.

Gorman, Cassandra. “Lucy Hutchinson, Lucretius and Soteriological Materialism”. *The Seventeenth Century* 28, no.3 (2013): 293–309.

Gorman, Cassandra. “Poetry and Atomism in the Civil War and Restoration”. *Literature Compass* 13, no.9 (2016). https://doi.org/10.1111/lic3.12335.

Gorman, Cassandra. *The Atom in Seventeenth-Century Poetry.* Cambridge: D.S. Brewer, 2021.

Gorman, Cassandra. “The Imperfect Circle: Hester Pulter’s Alchemical Forms”. In *The Poesy of Scientia in Early Modern England,* edited by Subha Mukherji and Elizabeth L. Swann, 55–80. Cham: Palgrave Macmillan, 2024.

Gorman, Cassandra. “Universal Verse: The Cosmological Poetics of Anne Southwell”. *Parergon* 40, no.2 (2023): 87–107.

Gouk, Penelope. “Music in Francis Bacon’s Natural Philosophy”. In *Number to Sound: The Musical Way to the Scientific Revolution,* edited by Paolo Gozza, 135–52. Dordrecht: Kluwer Academic Publishers, 2000.

Gouk, Penelope*. Music, Science, and Natural Magic in Seventeenth-Century England.* New Haven: Yale University Press, 1999.

Grafton, Anthony (with April Shelford and Nancy Siraisi). *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery.* Cambridge, MA: The Belknap Press of Harvard University Press, 1995.

Gray, Catharine. *Women Writers and Public Debate in 17th-Century Britain*. New York: Palgrave Macmillan, 2007.

Gray, Kathryn Napier. "Curiosities of the New World and John Winthrop, Jr.'s, Epistolary Visits to the Royal Society". In *Transatlantic Traffic and (Mis)Translations,* edited by Robin Peel and Daniel Maudlin, 23–43. Durham, NH: University of New Hampshire Press, 2013.

Hall, Louisa. "Hester Pulter's Brave New Worlds". In *Immortality and the Body in the Age of Milton,* edited by John Rumrich and Stephen M. Fallon, 171–86. Cambridge: Cambridge University Press, 2018.

Hall, Louisa. "The Influence of Anne Bradstreet's Innovative Errors". *Early American Literature* 48, no.1 (2013): 1–27.

Hannay, Margaret P. "'How I these Studies Prize': The Countess and Pembroke and Elizabethan Science". In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 108–21. Stroud: Sutton Publishing, 1997.

Hardy, Lucas. "No Cure: Anne Bradstreet's Frenzied Brain". *Women's Studies* 43, no.3 (2014): 318–31.

Hardy, Nicholas. "Is the *De rerum natura* a Work of Natural Theology? Some Ancient, Modern, and Early Modern Perspectives". In *Lucretius and the Early Modern,* edited by David Norbrook, Stephen Harrison and Philip Hardie, 201–22. Oxford: Oxford University Press, 2016.

Harris, Francis. "Living in the Neighbourhood of Science: Mary Evelyn, Margaret Cavendish and the Greshamites". In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 198–217. Stroud: Sutton Publishing, 1997.

Harrison, Peter. "Physico-Theology and the Mixed Sciences: The Role of Theology in Early Modern Natural Philosophy". In *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy*, edited by Peter R. Anstey and John A. Schuster, 165–83. Dordrecht: Springer, 2005.

Harrison, Peter. *The Bible, Protestantism, and the Rise of Natural Science.* Cambridge: Cambridge University Press, 1998.

Harrison, Peter. *The Fall of Man and the Foundations of Science*. Cambridge: Cambridge University Press, 2007.

Harvey, Tamara. "'Now Sisters… Impart Your Usefulnesse, and Force': Anne Bradstreet's Feminist Functionalism in *The Tenth Muse* (1650)". *Early American Literature* 35, no.1 (2000): 5–28.

Haskell, Yasmin. "Renaissance Latin Didactic Poetry on the Stars: Wonder, Myth, and Science". *Renaissance Studies* 12, no.4 (1998): 495–522.

Hatfield, Gary. "The Cognitive Faculties". In *The Cambridge History of Seventeenth-Century Philosophy, Volume 2,* edited by Daniel Garber and Michael Ayers, 951–1002. Cambridge: Cambridge University Press, 2000.

Hatton, Nikolina. "'My Soul, What Art Thou Full of Trouble': Hester Pulter's Apostrophe to the Soul". *Poetica* 54, no.3/4 (2024): 282–300.

Hatton, Nikolina. “Hester Pulter’s Psalmic Poems”. *Renaissance Studies* 37, no.3 (2023): 364–83.

Hehir, Brendan O. “‘Lost,’ ‘Authorized,’ and ‘Pirated’ Editions of John Denham’s *Cooper’s Hill*”. *PMLA* 79, no.3 (1964): 242–53.

Heninger, S.K. *The Subtext of Form in the English Renaissance: Proportion Poetical.* Pennsylvania: Pennsylvania State University Press, 1994.

Heninger, S.K. *Touches of Sweet Harmony: Pythagorean Cosmology and Renaissance Poetics.* San Marino, CA: Kingsport Press, 1974.

Henton, Alice. “‘Once Masculine… Now Feminines Awhile’: Gendered Imagery and the Significance of Anne Bradstreet’s *The Tenth Muse*”. *The New England Quarterly* 85, no.2 (2012): 302–25.

Hetherington, Michael. “Places of Form in Early Modern Poetics: Art, Mind, and Voice”. In *The Places of Early Modern Criticism,* edited by Gavin Alexander, Emma Gilby, and Alexander Marr, 112–24. Oxford: Oxford University Press, 2021.

Hillier, Russell M. “Cain Furens: Imitations of Virgil and Ovid in Canto Six of Lucy Hutchinson’s *Order and Disorder*”. *Literature and Theology* 37, no.2 (2023): 91–118.

Hock, Jessie. “‘transeant Things’: Materialism and Mortality in the Lyrics of Lucy Hutchinson and Margaret Cavendish”. *English Literary Renaissance* 53, no.3 (2023): 425–49.

Hock, Jessie. *The Erotics of Materialism: Lucretius and Early Modern Poetics.* Philadelphia: University of Pennsylvania Press, 2021.

Holmes, Brooke and W.H. Shearin, ed. *Dynamic Reading: Studies in the Reception of Epicureanism.* Oxford: Oxford University Press, 2012.

Hopkins, David. “The English Voices of Lucretius from Lucy Hutchinson to John Mason Good”. In *The Cambridge Companion to Lucretius,* edited by Stuart Gillespie and Philip Hardie, 254–73. Cambridge: Cambridge University Press, 2007.

Hunter, J. Paul. “Couplets”. In *The Oxford Handbook of British Poetry 1660–1800,* edited by Jack Lynch, 373–85. Oxford: Oxford University Press, 2016.

Hunter, J. Paul. “Formalism and History: Binarism and the Anglophone Couplet”. *Modern Language Quarterly* 61, no.1 (2000): 109–29.

Hunter, J. Paul. “Poetry on the Page: Visual Signalling and the Mind’s Ear”. In *The Work of Form: Poetics and Materiality in Early Modern Culture,* edited by Elizabeth Scott-Baumann and Ben Burton, 179–96. Oxford: Oxford University Press, 2014.

Hunter, Lynette. “Women and Domestic Medicine: Lady Experimenters, 1570–1620”. In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 89–107. Stroud: Sutton Publishing, 1997.

Hunter, Lynette and Sarah Hutton. “Introduction”. In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 1–6. Stroud: Sutton Publishing, 1997.

Hunter, Lynette and Sarah Hutton, ed. *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society.* Stroud: Sutton Publishing, 1997.

Hutton, Sarah. "Anne Conway, Margaret Cavendish and Seventeenth-Century Scientific Thought". In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 218–34. Stroud: Sutton Publishing, 1997.

Hutton, Sarah. "Hester Pulter (c.1596–1678). A Woman Poet and the New Astronomy". *Etudes Epistémè* 14 (2008). https://doi.org/10.4000/episteme.729.

Hutton, Sarah. "In Dialogue with Thomas Hobbes: Margaret Cavendish's Natural Philosophy". *Women's Writing: the Elizabethan to the Victorian Period* 4, no.3 (1997): 421–32.

Hyman, Wendy Beth. *Impossible Desire and the Limits of Knowledge in Renaissance Poetry.* Oxford: Oxford University Press, 2019.

Ingram, Randall. "First Words and Second Thoughts: Margaret Cavendish, Humphrey Moseley, and 'the Book'". *Journal of Medieval and Early Modern Studies* 30, no.1 (2000): 101–24.

James, Susan. *Passion and Action: The Emotions in Seventeenth-Century Philosophy.* Oxford: Oxford University Press, 1997.

Jameson, Fredric*. Marxism and Form: Twentieth-Century Dialectical Theories of Literature.* Princeton: Princeton University Press, 1971.

Johnson, Barbara. *Persons and Things.* Cambridge, MA: Harvard University Press, 2008.

Kaminski, Thomas. "Edmund Waller's 'Easy' Style and the Heroic Couplet". *Studies in English Literature, 1500–1700* 55, no.1 (2015): 95–123.

Kenney, E.J. "Lucretian Texture: Style, Metre and Rhetoric in the *De rerum natura*". In *The Cambridge Companion to Lucretius,* edited by Stuart Gillespie and Philip Hardie, 92–110. Cambridge: Cambridge University Press, 2007.

Kessler, Eckhard. "The Intellective Soul". In *The Cambridge History of Renaissance Philosophy,* edited by Charles B. Schmitt, Quentin Skinner, Eckhard Kessler and Jill Kraye, 485–534. Cambridge: Cambridge University Press, 1988.

Killeen, Kevin. *The Unknowable in Early Modern Thought: Natural Philosophy and the Poetics of the Ineffable*. Stanford: Stanford University Press, 2023.

Knapp, James A. *Immateriality and Early Modern English Literature: Shakespeare, Donne, Herbert*. Edinburgh: Edinburgh University Press, 2020.

Knickerbocker, Scott. *Ecopoetics: The Language of Nature, the Nature of Language.* Amherst: University of Massachusetts Press, 2012.

Knight, Leah and Wendy Wall, gen. ed. *The Pulter Project: Poet in the Making.* 2018. http://pulterproject.northwestern.edu.

Kolkovich, Elizabeth. "Raccoon or Beaver?" (Curation, Poem 86). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. http://pulterproject.northwestern.edu.

Korenjak, Martin. “Explaining Natural Science in Hexameters. Scientific Didactic Epic in the Early Modern Era”. *Humanistica Lovaniensia* 68, no.1 (2019): 135–75.

Larson, Katherine. *The Matter of Song in Early Modern England: Texts in and of the Air.* Oxford: Oxford University Press, 2019.

Lascano, Marcy P. *The Metaphysics of Margaret Cavendish and Anne Conway: Monism, Vitalism, and Self-Motion.* New York: Oxford University Press, 2023.

Laughlin, Rosemary. “Anne Bradstreet: Poet in Search of Form”. *American Literature* 42, no.1 (1970): 1–17.

Leighton, Angela. “The Work of Form: Some Afterwords”. In *The Work of Form: Poetics and Materiality in Early Modern Culture,* edited by Elizabeth Scott-Baumann and Ben Burton, 197–204. Oxford: Oxford University Press, 2014.

Leijenhorst, Cees, Christoph Lüthy and Johannes M.M.H. Thijssen, “The Tradition of Aristotelian Natural Philosophy. Two Theses and Seventeen Answers”. In *The Dynamics of Aristotelian Natural Philosophy from Antiquity to the Seventeenth Century*, edited by Cees Leijenhorst, Christoph Lüthy and Johannes M.M.H. Thijssen, 1–29. Leiden: Brill, 2002.

Lerner, Ross. “Donne’s Annihilation”. *Journal of Medieval and Early Modern Studies* 44, no.2 (2014): 407–27.

Levine, Caroline. *Forms: Whole, Rhythm, Hierarchy, Network.* Princeton: Princeton University Press, 2015.

Levine, Naomi. *The Burden of Rhyme: Victorian Poetry, Formalism, and the Feeling of Literary History.* Chicago: University of Chicago Press, 2024.

Levinson, Marjorie. “What is New Formalism?”. *PMLA* 122, no.2 (2007): 558–69.

Levitin, Dmitri. *Ancient Wisdom in the Age of the New Science: Histories of Philosophy in England c.1640–1700.* Cambridge: Cambridge University Press, 2015.

Levitin, Dmitri. *The Kingdom of Darkness: Bayle, Newton, and the Emancipation of the European Mind from Philosophy.* Cambridge: Cambridge University Press, 2022.

Lewis, Eric. “Walter Charleton and Early Modern Eclecticism”. *Journal of the History of Ideas* 62, no.4 (2001): 651–64.

Lezra, Jacques. *Unspeakable Subjects: The Genealogy of the Event in Early Modern Europe*. Stanford: Stanford University Press, 1997.

Lezra, Jacques and Liza Blake, ed. *Lucretius and Modernity: Epicurean Encounters Across Time and Disciplines.* New York: Palgrave Macmillan, 2016.

Lloyd Sharon A., and Susanne Sreedhar. “Hobbes’s Moral and Political Philosophy”. In *The Stanford Encyclopedia of Philosophy,* edited by Edward N. Zalta and Uri Nodelman. Article published 12 Feb. 2002; last modified 12 Sep. 2022, https://plato.stanford.edu/archives/fall2022/entries/hobbes-moral/.

Long, A.A. *From Epicurus to Epictetus: Studies in Hellenistic and Roman Philosophy.* Oxford: Oxford University Press, 2006.

Lovejoy, Arthur O. *The Great Chain of Being: A Study of the History of an Idea.* 1936. Reprint, Cambridge, MA: Harvard University Press, 2001.

Lüthy, Christoph. "What to do with Seventeenth-Century Natural Philosophy? A Taxonomic Problem". *Perspectives on Science* 8, no.2 (2000): 164–95.

Lüthy, Christoph and William R. Newman. "'Matter' and 'Form': By Way of a Preface". *Early Science and Medicine* 2, no.3 (1997): 215–26.

Lüthy, Christoph, John E. Murdoch and William R. Newman, eds. *Late Medieval and Early Modern Corpuscular Matter Theories.* Leiden: Brill, 2001.

Macauley, David. *Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas.* Albany: State University of New York Press, 2010.

Mack, Michael. *Sidney's Poetics: Imitating Creation.* Washington DC: Catholic University of America Press, 2005.

Mann, Jenny C. and Debapriya Sarkar. "Introduction: 'Capturing Proteus'". *Philological Quarterly* 98, no.1/2 (2019): 1–22.

Manning, Gideon, ed. *Matter and Form in Early Modern Science and Philosophy.* Leiden: Brill, 2012.

Manning, Gideon. "Three Biased Reminders about Hylomorphism in Early Modern Science and Philosophy". In *Matter and Form in Early Modern Science and Philosophy,* edited by Gideon Manning, 1–31. Leiden: Brill, 2012.

Manzo, Silvia A. "Francis Bacon and Atomism: A Reappraisal". In *Late Medieval and Early Modern Corpuscular Matter Theories,* edited by Christoph Lüthy, John E. Murdoch and William R. Newman, 209–43. Leiden: Brill, 2001.

Marchitello, Howard and Evelyn Tribble. "Introduction". In *The Palgrave Handbook of Early Modern Literature and Science,* edited by Howard Marchitello and Evelyn Tribble, xxv–xlvi. London: Palgrave Macmillan, 2017.

McColley, Diane Kelsey. *Poetry and Ecology in the Age of Milton and Marvell.* Aldershot: Ashgate, 2007.

Mentz, Steve. *Shipwreck Modernity: Ecologies of Globalization, 1550–1719.* Minneapolis: University of Minnesota Press, 2015.

Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution.* San Francisco: Harper Collins, 1990.

Miller, Timothy Earl. "Gold for Secrets: The Hartlib Circle and the Early English Empire, 1630–1660". PhD Thesis, University of Oxford, 2020.

Morini, Massimiliano. *Tudor Translation in Theory and Practice.* Aldershot: Ashgate, 2006.

Munro, Hugh. “Mrs Lucie Hutchinson’s Translation of Lucretius”. *The Journal of Classical and Sacred Philology* 4 (1858): 121–39.

Newcombe, Charlotte. “Moose: Fact and Fiction” (Curation, Poem 92). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. http://pulterproject.northwestern.edu.

[Newcombe, Charlotte]. “Poetic Science: Reading Natural Philosophy as Form in Seventeenth Century Women’s Poetry”. MA Dissertation, University of York, 2020.

Newman, Karen and Jane Tylus. “Introduction”. In *Early Modern Cultures of Translation,* edited by Karen Newman and Jane Tylus, 1–24. Philadelphia: University of Pennsylvania Press, 2015.

Nicolson, Marjorie Hope. *The Breaking of the Circle: Studies in the Effect of the ‘New Science’ Upon Seventeenth Century Poetry*. Evanston: Northwestern University Press, 1950.

Nightingale, Andrea Wilson. *Genres in Dialogue: Plato and the Construct of Philosophy.* Cambridge: Cambridge University Press, 1995.

Nixon, Scott. “‘Aske me no more’ and the Manuscript Verse Miscellany”, *English Literary Renaissance* 29, no.1 (1999): 97–130.

Norbrook, David. “Atheists and Republicans: Interpreting Lucretius in Revolutionary England”. In *Lucretius and the Early Modern,* edited by David Norbrook, Stephen Harrison and Philip Hardie, 223–58. Oxford: Oxford University Press, 2016.

Norbrook, David. “Lucy Hutchinson versus Edmund Waller: An Unpublished Reply to Waller’s *A Panegyrick to My Lord Protector*”. *The Seventeenth Century* 11, no.1 (1996): 61–86.

Norbrook, David. “Lucy Hutchinson’s *Elegies* and the Situation of Republican Woman Writer (with text)”. *English Literary Renaissance* 27, no.3 (1997): 468–521.

Norbrook, David. “Margaret Cavendish and Lucy Hutchinson: Identity, Ideology and Politics”. *In-between: Essays and Studies in Literary Criticism* 9, no.1&2 (2000): 179–203.

Norbrook, David, Stephen Harrison, and Philip Hardie, ed. *Lucretius and the Early Modern.* Oxford: Oxford University Press, 2016.

Oakley-Brown, Liz. *Ovid and the Cultural Politics of Translation in Early Modern England.* Aldershot: Ashgate, 2006.

Paleit, Edward. “Women’s Poetry and Classical Authors: Lucy Hutchinson and the Classicisation of Scripture”. In *Early Modern Women and the Poem,* edited by Susan Wiseman, 21–41. Manchester: Manchester University Press, 2013.

Palmer, Ada. *Reading Lucretius in the Renaissance.* Cambridge, MA: Harvard University Press, 2014.

Parageau, Sandrine. “The Function of Analogy in the Scientific Theories of Margaret Cavendish (1623-1673) and Anne Conway (1631-1679)”. *Etudes Epistémè* 14 (2008). https://doi.org/10.4000/episteme.731.

Park, Katharine, and Eckhard Kessler. “The Concept of Psychology”. In *The Cambridge History of Renaissance Philosophy,* edited by Charles B. Schmitt, Quentin Skinner, Eckhard Kessler and Jill Kraye, 453–63. Cambridge: Cambridge University Press, 1988.

Pasnau, Robert. *Metaphysical Themes 1274–1671.* Oxford: Oxford University Press, 2011.

Pasnau, Robert. “Sensible Qualities: The Case of Sound”. *Journal of the History of Philosophy* 38, no.1 (2000): 27–40.

Pasnau, Robert. *Theories of Cognition in the Later Middle Ages.* Cambridge: Cambridge University Press, 1997.

Passannante, Gerard. *Catastrophizing: Materialism and the Making of Disaster.* Chicago: University of Chicago Press, 2019.

Passannante, Gerard. *The Lucretian Renaissance: Philology and the Afterlife of Tradition.* London: University of Chicago Press, 2011.

Paster, Gail Kern. *Humoring the Body: Emotions and the Shakespearean Stage.* Chicago: University of Chicago Press, 2004.

Pender, Patricia. “Disciplining the Imperial Mother: Anne Bradstreet’s *A Dialogue Between Old England and New*”. In *Women Writing 1550–1750,* edited by Jo Wallwark and Paul Salzman, 115–31. Melbourne: Meridian, 2001.

Pender, Patricia. *Early Modern Women’s Writing and the Rhetoric of Modesty.* Basingstoke: Palgrave Macmillan, 2012.

Pender, Patricia. “The Critical Fortunes of the Tenth Muse: Canonicity and Its Discontents”. In *A History of Early Modern Women’s Writing,* edited by Patricia Phillippy, 66–82. Cambridge: Cambridge University Press, 2018.

Phillippy, Patricia. “Anne Bradstreet’s Family Plots: Puritanism, Humanism, Posthumanism”. *Criticism* 62, no.1 (2020): 29–68.

Picciotto, Joanna. *Labors of Innocence in Early Modern England.* Cambridge, MA: Harvard University Press, 2010.

Preston, Claire. “‘Meer nomenclature’ and the Description of Order in *The Garden of Cyrus*”. *Renaissance Studies* 28, no.2 (2014): 298–316.

Preston, Claire. *The Poetics of Scientific Investigation in Seventeenth-Century England.* Oxford: Oxford University Press, 2015.

Pyle, Andrew. *Atomism and its Critics: Problem Areas Associated with the Development of the Atomic Theory of Matter from Democritus to Newton.* Bristol: Thoemmes Press, 1995.

Quehen, Hugh de. “Ease and Flow in Lucy Hutchinson’s Lucretius”. *Studies in Philology* 93, no.3 (1996): 288–303.

Quitslund, Jon A. *Spenser’s Supreme Fiction: Platonic Natural Philosophy and “The Faerie Queene”*. Toronto: University of Toronto Press, 2001.

Ramachandran, Ayesha. *The Worldmakers: Global Imagining in Early Modern Europe.* Chicago: University of Chicago Press, 2015.

Rao, Namratha. "Ground-plots of Invention: Poetics of the Material and Difficult Thinking in *The Faerie Queene*". *English Literary Renaissance* 53, no.2 (2023): 218–49.

Raylor, Timothy. "The Hunting of the Stag: Denham, Davenant, and a Royalist Dispute over Poetry". In *Sir John Denham (1614/15–1669) Reassessed: The State's Poet,* edited by Philip Major, 143–60. London: Routledge, 2016.

Rees, Emma L.E. *Margaret Cavendish: Gender, Genre, Exile.* Manchester: Manchester University Press, 2003.

Rees, Graham. "Matter Theory: A Unifying Factor in Bacon's Natural Philosophy?". *Ambix* 24, no.2 (1977): 110–25.

Repetzki, Michael M. *John Evelyn's Translation of Titus Lucretius Carus* 'De Rerum Natura'*: An Old-Spelling Critical Edition,* by John Evelyn. Frankfurt am Main: Peter Lang, 2000.

Requa, Kenneth A. "Anne Bradstreet's Poetic Voices". *Early American Literature* 9, no.1 (1974): 3–18.

Rhatigan, Emma. "Donne's Biblical Encounters". In *The Oxford Handbook of the Bible in Early Modern England, c.1530–1700,* edited by Kevin Killeen, Helen Smith and Rachel Willie, 564–76. Oxford: Oxford University Press, 2015.

Rich, Adrienne. "Anne Bradstreet and Her Poetry". In *The Works of Anne Bradstreet,* edited by Jeannine Hensley, ix–xx. 1967. Reprint, Cambridge, MA: Harvard University Press, 2005.

Rich, Adrienne. "Postscript". In *The Works of Anne Bradstreet,* edited by Jeannine Hensley, xx–xxi. Reprint, Cambridge, MA: Harvard University Press, 2005.

Roberts, Sasha. "Feminist Criticism and the New Formalism: Early Modern Women and Literary Engagement". In *The Impact of Feminism in English Renaissance Studies,* edited by Dympna Callaghan, 67–92. Basingstoke: Palgrave Macmillan, 2007.

Robertson, Kellie. *Nature Speaks: Medieval Literature and Aristotelian Philosophy.* Philadelphia: University of Pennsylvania Press, 2017.

Rogers, John. *The Matter of Revolution: Science, Poetry, and Politics in the Age of Milton*. Ithaca, NY: Cornell University Press, 1996.

Rooney, Ellen. "Form and Contentment". *Modern Language Quarterly* 61, no.1 (2000): 17–40.

Rose, Hilary. "Foreword: From Household to Public Knowledge, to a New Production System of Knowledge". In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society*, edited by Lynette Hunter and Sarah Hutton, xi–xx. Stroud: Sutton Publishing, 1997.

Rosenfeld, Colleen Ruth. *Indecorous Thinking: Figures of Speech in Early Modern Poetics.* New York: Fordham University Press, 2018.

Ross, Sarah C.E. "Tears, Bezoars and Blazing Comets: Gender and Politics in Hester Putler's Civil War Lyrics". *Literature Compass* 2, no.1 (2005): 1–14.

Ross, Sarah C.E. *Women, Poetry, and Politics in Seventeenth-Century Britain.* Oxford: Oxford University Press, 2015.

Ross, Sarah C.E. and Elizabeth Scott-Baumann. "'Corrected by the Author': Women, Poetry, and Seventeenth-Century Print Publication". *Huntington Library Quarterly* 84, no.2 (2021): 353–81.

Rush, Rebecca. *The Fetters of Rhyme: Liberty and Poetic Form in Early Modern England.* Princeton: Princeton University Press, 2021.

Rust, Marion. "Making Emends: Adrienne Rich, Audre Lorde, Anne Bradstreet". *American Literature* 88, no.1 (2016): 93–125.

Rusu, Diona-Cristina, and Christoph Lüthy. "Extracts from a Paper Laboratory: the Nature of Francis Bacon's *Sylva Sylvarum*". *Intellectual History Review* 27, no.2 (2017): 171–202.

Rzepka, Adam. "Discourse *Ex Nihilo*: Epicurus and Lucretius in Sixteenth-Century England". In *Dynamic Reading: Studies in the Reception of Epicureanism,* edited by Brooke Holmes and W.H. Shearin, 113–32. Oxford: Oxford University Press, 2012.

Sarasohn, Lisa T. *The Natural Philosophy of Margaret Cavendish: Reason and Fancy During the Scientific Revolution.* Baltimore: John Hopkins University Press, 2010.

Sarkar, Debapriya. "Dilated Materiality and Formal Restraint in *The Faerie Queene*", *Spenser Studies* 31, no.1 (2018): 137–66.

Sarkar, Debapriya. *Possible Knowledge: The Literary Forms of Early Modern Science.* Philadelphia: University of Pennsylvania Press, 2023.

Sauer, Elizabeth. "Book Passages and the Reconstruction of the Bradstreet's New England Library". In *Women's Bookscapes in Early Modern Britain: Reading, Ownership, Circulation,* edited by Leah Knight, Micheline White and Elizabeth Sauer, 59–76. Ann Arbor: University of Michigan Press, 2018.

Sawday, Jonathan. *Blanks, Print, Space, and Void in English Renaissance Literature: An Archaeology of Absence.* Oxford: Oxford University Press, 2023.

Schiesaro, Alessandro. "The Palingenesis of 'De Rerum Natura'". *Proceedings of the Cambridge Philological Society* 40 (1994): 81–107.

Schuler, Robert M. "English Scientific Poetry 1500–1700: Prolegomena and Preliminary Check List". *The Papers of the Bibliographical Society of America* 69, no.4 (1975): 482–502.

Schuler, Robert M. "Francis Bacon and Scientific Poetry". *Transactions of the American Philosophical Society* 82, no.2 (1992): i–65.

Schuler, Robert M. "Theory and Criticism of the Scientific Poem in Elizabethan England". *English Literary Renaissance* 15, no.1 (1985): 3–41.

Schuler, Robert M. "Three Renaissance Scientific Poems". *Studies in Philology* 75, no.5 (1978): i–152.

Schwartz, Ana. "Anne Bradstreet, Arsonist?". *New Literary History* 52, no.1 (2021): 119–43.

Scott-Baumann, Elizabeth. "'Crittickize uppon the smallest word': Anne Southwell and the Place of Gender in Early Modern Criticism". In *The Places of Early Modern Criticism,* edited by Gavin Alexander, Emma Gilby and Alexander Marr, 143–57. Oxford: Oxford University Press, 2021.

Scott-Baumann, Elizabeth. *Forms of Engagement: Women, Poetry and Culture, 1640–1680.* Oxford: Oxford University Press, 2013.

Scott-Baumann, Elizabeth. "Hester Pulter's Well-Wrought Urns: Early Modern Women, Sonnets, and New Criticism". *Journal for Early Modern Cultural Studies* 20, no.2 (2020): 120–43.

Scott-Baumann, Elizabeth. "Lucy Hutchinson, Gender and Poetic form". *The Seventeenth Century* 30, no. 2 (2015): 265–84.

Scott-Baumann, Elizabeth. "Sighs and Tears" (Curation, Poem 17). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. https://pulterproject.northwestern.edu.

Scott-Baumann, Elizabeth and Ben Burton, ed. *The Work of Form: Poetics and Materiality in Early Modern Culture.* Oxford: Oxford University Press, 2014.

Scott-Baumann, Elizabeth and Ben Burton. "The Work of Form: Poetics and Materiality in Early Modern Culture". In *The Work of Form: Poetics and Materiality in Early Modern Culture,* edited by Elizabeth Scott-Baumann and Ben Burton, 1–22. Oxford: Oxford University Press, 2014.

Selig, Edward I. *The Flourishing Wreath: A Study of Thomas Carew's Poetry.* New Haven: Yale University Press, 1958.

Semler, L.E. "Margaret Cavendish's Early Engagement with Descartes and Hobbes: Philosophical Revisitation and Poetic Selection". *Intellectual History Review* 22, no.3 (2012): 327–53.

Semler, L.E. "Nation, nature, and poetics: transitions and claspes in Denham's 'Coopers Hill' and Cavendish's *Poems and Fancies*". In *Home and Nation in British Literature from the English to the French Revolutions,* edited by A.D. Cousins and Geoffrey Payne, 19–32. Cambridge: Cambridge University Press, 2015.

Serjeantson, Richard. "The Soul". In *The Oxford Handbook of Philosophy in Early Modern Europe,* edited by Desmond M. Clarke and Catherine Wilson, 119–41. Oxford: Oxford University Press, 2011.

Shapin, Steven. *The Scientific Revolution.* Chicago: University of Chicago Press, 1996.

Shapin, Steven and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life.* Princeton: Princeton University Press, 1985.

Shinn, Abigail and Angus Vine. "Introduction: Theorizing Copiousness". *Renaissance Studies* 28, no.2 (2014): 167–82.

Siegfried, Brandie R., ed. *Poems and Fancies with The Animal Parliament,* by Margaret Cavendish. Toronto: Iter Press, 2018.

Siegfried, Brandie R. and Lisa T. Sarasohn, ed. *God and Nature in the Thought of Margaret Cavendish.* London: Routledge, 2016.

Simeone, William E. “A Letter from Sir Richard Fanshawe to John Evelyn”. *Notes and Queries* 196, no.21 (1951): 315–16.

Simmons, Alison. “Explaining Sense Perception: A Scholastic Challenge”. *Philosophical Studies* 73, no.2/3 (1994): 257–75.

Skrbina, David. *Panpsychism in the West (Revised Edition*). Cambridge, MA: The MIT Press, 2017.

Smith, Courtney Weiss. *Empiricist Devotions: Science, Religion, and Poetry in Early Eighteenth-Century England*. Charlottesville: University of Virginia Press, 2016.

Smith, Helen. “Cultures of Correspondence: Women and Natural Philosophy”. In *The Oxford Handbook of Early Modern Women’s Writing in English, 1540–1700,* edited by Elizabeth Scott-Baumann, Danielle Clarke and Sarah C.E. Ross, 97–112. Oxford: Oxford University Press, 2022.

Smith, Helen. *‘Grossly material things’: Women and Book Production in Early Modern England*. Oxford: Oxford University Press, 2012.

Smith, Helen. “Matter in the Margins”. In *Thresholds of Translation: Paratexts, Print, and Cultural in Early Modern Britain (1473–1660),* edited by Marie-Alice Belle and Brenda M. Hosington, 27–50. Cham: Springer, 2018.

Smith, Helen, ed. “My God I thee (and only thee) Adore”, by Hester Pulter (Poem 50, Amplified Edition). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. https://pulterproject.northwestern.edu.

Smith, Nigel. “The Rod and the Canon”. *Women’s Writing* 14, no.2 (2007): 232–45.

Spiller, Elizabeth. *Science, Reading, and Renaissance Literature: The Art of Making Knowledge, 1580–1670.* Cambridge: Cambridge University Press, 2004.

Stanford, Ann. *Anne Bradstreet: The Worldly Puritan. An Introduction to Her Poetry.* New York: Burt Franklin and Co., 1974.

Stevenson, Jay. “Imagining the Mind: Cavendish’s Hobbesian Allegories”. In *A Princely Brave Woman: Essays on Margaret Cavendish, Duchess of Newcastle,* edited by Stephen Clucas, 143–55. Ashgate, 2003. Reissued, London: Routledge, 2018.

Stevenson, Jay. “The Mechanist-Vitalist Soul or Margaret Cavendish”. *Studies in English Literary, 1500–1900* 36, no.3 (1996): 527–43.

Strier, Richard. “Afterword: How Formalism Became a Dirty Word, and Why We Can’t Do Without It”. In *Renaissance Literature and its Formal Engagements,* edited by Mark David Rasmussen, 207–15. New York: Palgrave, 2002.

Strier, Richard. “New Historicism, New Formalism, and Thy Darling in an Urn”. In *A Companion to Renaissance Poetry,* edited by Catherine Bates, 583–94. Chichester: John Wiley & Sons, 2018.

Sugg, Richard. *The Smoke of the Soul: Medicine, Physiology and Religion in Early Modern England.* Basingstoke: Palgrave Macmillan, 2013.

Sugimura, N.K. *"Matter of Glorious Trial": Spiritual and Material Substance in "Paradise Lost"*. New Haven, CT: Yale University Press, 2009.

Sugimura, N.K. "Milton and Matter". *Oxford Handbook Topics in Literature.* Online Edition, Oxford Academic, 16 December 2013. https://doi.org/10.1093/oxfordhb/9780199935338.013.11.

Swann, Elizabeth L. "Introduction, Poesy and Scientia: Matters of Fancy". In *The Poesy of Scientia in Early Modern England,* edited by Subha Mukherji and Elizabeth L. Swann, 1–27. Cham: Palgrave Macmillan, 2024.

Swarbrick, Steven. *The Environmental Unconscious: Ecological Poetics from Spenser to Milton.* Minneapolis: University of Minnesota Press, 2023.

Tebeaux, Elizabeth. "Women and Technical Writing, 1475–1700: Technology, Literacy, and Development of a Genre". In *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society,* edited by Lynette Hunter and Sarah Hutton, 29–62. Stroud: Sutton Publishing, 1997.

Thickstun, Margaret Olofson. "Introduction". In *Poems and Meditations,* by Anne Bradstreet, edited by Margaret Olofson Thickstun. Toronto: Iter Press, 2019.

Thiel, Udo. "Individuation". In *The Cambridge History of Seventeenth-Century Philosophy, Volume 1,* edited by Daniel Garber and Michael Ayers, 212–62. Cambridge: Cambridge University Press, 1998.

Tsentourou, Naya. "Sighs and Groans: Attending to the Passions in Early Modern Prayer". *Literature Compass* 12, no.6 (2015): 262–73.

Turner, Henry S. "Lessons from Literature for the Historian of Science (and Vice Versa): Reflections on 'Form'". *Isis* 101, no.3 (2010): 578–89.

Venuti, Lawrence. "Introduction". In *Rethinking Translation: Discourse, Subjectivity, Ideology,* edited by Lawrence Venuti, 1–17. London: Routledge, 1992.

Venuti, Lawrence. *The Translator's Invisibility: A History of Translation.* Third Edition. London: Routledge, 2017.

Vozar, Thomas Matthew. "The New Science and the Virtuoso Reader in Thomas Creech's Lucretius". *Modern Philology* 120, no.3 (2023): 356–77.

Walker, D.P. "Francis Bacon and *Spiritus*". In *Music, Spirit and Language in the Renaissance,* edited by Penelope Gouk, 121–30. London: Variorum Reprints, 1985.

Wall, Anna. "Articulating Community and Constructing the Church in the Manuscript Writings of Lucy Hutchinson (1620–1681)". PhD Thesis, University of East Anglia, 2021.

Wall, Wendy. "What Else is in the Manuscript? Or, Where Did Pulter's Poems Live?" (Exploration). In *The Pulter Project: Poet in the Making,* edited by Leah Knight and Wendy Wall. 2018. http://pulterproject.northwestern.edu.

Wall, Wendy. *Recipes for Thought: Knowledge and Taste in the Early Modern Kitchen.* Philadelphia: University of Pennsylvania Press, 2016.

Walters, Lisa. “Epicurus and Gender in the British Newcastle Circle: Charleton, Hobbes and Margaret Cavendish”. In *A Companion to the Cavendishes,* edited by Lisa Hopkins and Tom Rutter, 181–98. Leeds: Arc Humanities Press, 2020.

Wanamaker, Melissa C. *Discordia Concors: The Wit of Metaphysical Poetry.* Port Washington, NY: Kennikat Press, 1975.

Whitaker, Virgil K. “Du Bartas’ Use of Lucretius”. *Studies in Philology* 33 (1936): 134–46.

White, Elizabeth Wade. *Anne Bradstreet: “The Tenth Muse*”. New York: Oxford University Press, 1971.

White, Elizabeth Wade. “The Tenth Muse—A Tercentenary Appraisal of Anne Bradstreet”. *The William and Mary Quarterly* 8, no.3 (1951): 355–77.

Whittaker, Katie. *Mad Madge: Margaret Cavendish, Duchess of Newcastle, Royalist, Writer and Romantic.* London: Vintage, 2004.

Williams, Raymond. *Keywords: A Vocabulary of Culture and Society, Revised Edition.* New York: Oxford University Press, 1985.

Wilson, Catherine. *Epicureanism at the Origins of Modernity.* Oxford: Oxford University Press, 2008.

Wilson, Emily. *The Odyssey,* by Homer. New York: W.W. Norton, 2018.

Wiseman, Susan. *Conspiracy and Virtue: Women, Writing, and Politics in Seventeenth-Century England.* Oxford: Oxford University Press, 2006.

Woodward, Marshelle. “Formalism Dispossessed: Pulter, Donne, and the Obliviated Urn”. In *Feminist Formalism and Early Modern Women’s Writing: Readings, Conversations, Pedagogies,* edited Lara Dodds and Michelle M. Dowd. Lincoln, NE: University of Nebraska Press, 2022.

Woolf, Virginia. *The Common Reader.* London: Hogarth Press, 1929.

Wragge-Morley, Alexander. *Aesthetic Science: Representing Nature in the Royal Society of London, 1650–1720*. Chicago: University of Chicago Press, 2020.

Wright, Gillian. *Producing Women’s Poetry, 1600–1730: Text and Paratext, Manuscript and Print.* Cambridge: Cambridge University Press, 2013.