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TENDING TO SURFACES: MATERIAL EMPATHY, BACTERIAL CELLULOSE, AND THE CORPUS OF THE CONVERTITE

ABSTRACT: Over the last two decades, a rethinking of how we engage with materials has worked to disrupt hylomorphic habits of thought; the assumption that matter is passive and mute, worth little without the active shaping capacity of form. This essay enters that conversation through a concept we call “surface empathy,” a “feeling with” rather than a “feeling for” that arises through sustained contact with material surfaces that carry their own logic, their own temporality, and in the case of an experiment presented here, their own capacity to exceed what is intended to contain them. Such empathy does not originate in a subject, nor is it grounded in an object. It is produced on the surface itself. We develop this concept across three material substrates brought into conversation over a five-century span: Eva Hesse’s 1969 sculpture *Contingent*, which for our purposes functions as a heuristic point of departure; the printed books of the penitent nuns of the Convertite in sixteenth-century Venice; and, inspired by the material labour of these nuns, the contemporary cultivation of bacterial cellulose as a fleshy printing substrate. Thinking through making rather than making through thinking, and following the material where it leads, we read these cases alongside a new materialist orientation influenced by the legacy of philosophers Deleuze and Guattari, specifically their accounts of expressive matter-flows, percept, and affect. In doing so, we relocate empathy onto the surface, contributing to critical bibliography, book history, and creative practice-led research.

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KEYWORDS: Surface empathy, new materialism, critical bibliography, book history, bacterial cellulose, women printers (the Convertite, early modern Venice), practice-led research, Deleuze and Guattari (affect and percept), embodiment, Eva Hesse, feminist materialism, container technologies

“Matter is pitiful; form is terrible; in the sculptural work, negation is luminous and contingent.”¹ So opens the poet Lisa Robertson’s “7.5 Minute Talk for Eva Hesse (Sans II).” Hesse was acutely aware of the contingent nature of her works, even naming one after this sense of provisionality—*Contingent* (1968–1969). This title substantiates Hesse’s self-awareness concerning her process of submitting the work’s very being to chance by following the expressive capacities of the materials themselves. *Contingent* is made from cheesecloth, fibreglass, and latex, a sculptural composition that is almost entirely surface. Suspended as seven oversized bandage-like strips, once separated materials comeingle as fleshy sheaths into one decaying substance. On the repetition of elements, Hesse remarks: “If something is absurd, it’s much more exaggerated, more absurd if it’s repeated.”² In the installation, eight flaccid, elongated sheets are suspended by meathooks, strung one after another like flayed animal skins. They sag limply like fleshy echoes of once living bodies, scraped, stretched, and hung to dry. They are reminiscent, we argue, of the medieval ritual of parchment preparation, which will become relevant in what follows. Hesse’s work *Contingent* has the appearance of surfaces in the process of becoming pages prepared for writing. We learn with her approach to the contingent encounter of materials on the surfaces she has prepared.

Hesse was a sculptor whose material preferences—latex, fibreglass, and rope—have few things in common. If any sense of commonality persists between these mixed media, it lies in their refusal to hold, in perpetuity, the forms that have been coaxed out of them by their maker. Their “negation is luminous,”³ as Robertson remarks, and this luminosity is not fixed but contingent, dependent on circumstance and on the specific material decisions made on the way to their becoming sculptures.

¹ L. Robertson, *Nilling: Prose Essays on Noise, Pornography, the Codex, Melancholy, Lucretius, Folds, Cities and Related Aporias*, Book*hug, Toronto, 2012, p. 43.

² L. R. Lippard, *Eva Hesse*, New York University Press, New York, 1976, p. 209.

³ Robertson, *Nilling*, p. 43.



Figure 1. Eva Hesse, *Contingent*, 1969, cheesecloth, latex, fiberglass, overall 350.0 h × 630.0 w × 109.0 d cm, each panel 30 kg. National Gallery of Australia, Canberra, purchased 1973 (accession no. 74.395.A-H). © The Estate of Eva Hesse. Courtesy Hauser & Wirth.

These materials carry the weight of themselves on their surfaces; they sag and hang and show the viewer exactly what they have been subjected to following Hesse's manipulations. As a substratum, the composed materials are subject to the pull of gravity and the weight of time. To say that negation is contingent is to say that opposing forces are not predetermined or inevitable but processual and open-ended.

We want to hold Robertson's idea of matter being pitiful and stretch and mould it into something else. This essay attends to pitiful matter in a different register, bringing three distinct works into conversation. In addition to our encounter with Hesse, this thought experiment gathers books printed by penitent nuns in sixteenth-century Venice alongside a contemporary practice of cultivating bacterial cellulose for use as a fleshy printing surface to reproduce a thirteenth-century text, *Liber gratiae*,⁴ by medieval visionary Mechthild of Hackeborn.⁵ While the Convertite books and the bacterial cellulose constitute our two cases, Hesse's *Contingent* functions heuristically rather than as a case study, that is to say, we learn with her material experimentation.

Contingent permits the interdependence of seemingly antithetical materials, rigid fibreglass and pliable latex. Hesse engages directly with negation, describing her desire for the work to be "non-work." She continues, "It is the unknown quantity from which and where I want to go. As a thing, an object, it accedes to its own non-logical self. It is something it is nothing."⁶ Hesse's material synthesis, and articulation of her intentions, provides us with a model of making that rewards indeterminacy, impermanence, and attention to materials.

In what follows, all of these substrates—Hesse's *Contingent*, the convertite's books and the bacterial cellulose—are interleaved under consideration of an emergent collaboration with materials in the act of making. These instances were selected in support of a case for what we call "surface empathy." This is a term we use to describe a "feeling with" as opposed to a "feeling for" or "feeling into" that arises throughout the

⁴ Translation: "The book of spiritual grace," M. von Hackeborn, *Liber gratiae spiritualis visionum et reuelationum beatae Mectbildis virginis deuotissimae, ad fidelium instructionem*, Tipografia del Monastero delle Convertite; al segno della Speranza, Venetiis, 1558.

⁵ This article focuses specifically on the bacterial cellulose surfaces as a printing substrate, but this is one phase of a larger project. The second phase involves the reproduction of the text itself and the remaking of the typeface used by the Convertite to print *Liber gratiae spiritualis* in 1558. This is a collaborative project and involves type designer, Alice Savoie, who is designing a digital reinterpretation of this typeface for use in the project.

⁶ L. R. Lippard, *Eva Hesse*, p. 131.

process of material collaboration. Material empathy, we argue, is an event encountered not only in but *across* the surface. We acknowledge here a history of ideas pertaining to empathy, *Einfühlung*, or “feeling into.” From the German philosopher Robert Vischer who coins *Einfühlung* to describe the imaginative projection of human feelings onto the natural world; to Theodor Lipps, a German philosopher of aesthetics who discusses the human subject’s projection of feeling onto the object of perception; to the British writer Vernon Lee’s critical empathy, where empathy is moved by subconscious bodily responses resulting in how the human subject feels themselves into observed forms.⁷ Lipps also acknowledges how the world intrudes or imposes itself on human perception. Yet, allowing for philosophical variations and subtleties, in each instance, the human perceptual apparatus takes precedence, and empathy moves in one direction, toward the object observed. What we are after is less a feeling-into than a feeling-with that is more reciprocal, where matter is not a mute surface accepting our perceptual projections but speaks back.

As such, the surfaces we are considering here come together with the shared idea of refusal. They show the time of their making and their resistance to human intention. At the same time, they also carry on their surfaces the history of the bodies that made them and, in the case of the nuns, the institutions that enclosed them. They produce, in whoever holds or tends to them, a form of encounter that is not predetermined and cannot be fully controlled. This open-ended encounter can be understood as a kind of surface empathy experienced in intimate contact with material admixtures. It is not the empathy of projection, of a subject who throws their feeling against a passive object in the hope of finding a version of themselves reflected back. It is something that happens on the surface itself, in the contact zone between a body and a material that operates according to its own logic, its own temporality, and its own affective capacity to exceed whatever container attempts to hold and constrain it.

The Convertite’s books and the experiments with bacterial cellulose in a vat, which is a form of holding container; a “container technology,” constitute our two cases. Between them, across five centuries, they describe approaches concerned with tending to surfaces. By which we mean

⁷ V. Lee, *The Beautiful: An Introduction to Psychological Aesthetics*, Cambridge University Press, Cambridge, 1913; R. Curtis, R. G. Elliott, “An Introduction to *Einfühlung*,” *Art in Translation*, 6, 4, 2014, pp. 353–376.

how we care for and tend to surfaces by paying attention to their capacities for expression. These surfaces are not tended to in isolation but held in close relation to one another.

While there is formal resonance between the two cases we discuss and Hesse's materials, we do not want to draw comparisons based merely on superficial connections. Hesse's material collaborations model the kind of material attention our argument requires. We learn with her and transfer this learning into a material consideration of the works we introduce here. That is to say, Hesse's work is used as the connective tissue that holds our idea of "surface empathy" together. To tend to pitiful matter is to follow what a surface is already doing rather than to impose an *a priori* idea upon it. It is this quality of tending, of sustained responsiveness to a material's own logic and temporality, that is carried across these otherwise disparate cases.

SURFACE EMPATHY AGAINST HYLOMORPHISM

A seemingly novel approach to how we think with materials has been erupting over the last twenty years or so, and interestingly one of the first voices championing this rethinking emerges in architecture. In 2006, some years before subsequent collections dedicated to "new materialism" emerge, the architectural scholar Katie Lloyd Thomas argues that: "In a typical account of 'hylomorphism' such as Aristotle's, matter, or 'hyle', is given shape by form, or 'morphe'. Matter in itself is inert and undifferentiated; it is the servant of form and gives it presence. It does not determine form."⁸ She further remarks that the habitual ascription of architect as "mythic form giver" means that the collective labour of those who gather to construct an edifice is obscured and devalued. From political theorist Jane Bennett's vibrant matter⁹ to theoretical physicist Karen Barad's agential intra-actions; in edited collections on feminist materialisms by Stacy Alaimo and Susan Hekman,¹⁰ as well as discussions under the rubric of new materialisms by Diana Coole and Samantha Frost,¹¹

⁸ K. Lloyd Thomas (ed.), *Material Matters: Architecture and Material Practice*, Routledge, Oxon, 2006, p. 3.

⁹ J. Bennett, *Vibrant Matter: A Political Ecology of Things*, Duke University Press, Durham, 2010.

¹⁰ S. Alaimo, S. Hekman (eds.), *Material Feminisms*, Indiana University Press, Bloomington, 2008.

¹¹ D. H. Coole, S. Frost (eds.), *New Materialisms: Ontology, Agency, and Politics*, Duke University Press, Durham, 2010.

material matters have been changing form. To follow this flow, “new cartographies,” such as those mapped by Iris van der Tuin and Rick Dolphijn track a material turn back to thinkers like Rosi Braidotti and Manuel DeLanda, both influenced by the philosophers Gilles Deleuze and Félix Guattari. These reorientations together aim to disrupt hylomorphic habits of thought which assume that matter is passive and mute, and worth nothing much without the active shaping capacity of form and idea (*eidos*).

To counter this old assumption, one recalcitrantly embedded in the form/matter binary, an anti-hylomorphic orientation seeks to revalue the liveliness of matter-flows. An anti-hylomorphic drift follows a long undercurrent back to philosophical precursors such as Dutch seventeenth-century philosopher Spinoza and the Hellenistic Roman poet and philosopher Lucretius, while an ethos of “following the material” can be attributed to the collaborative work of Deleuze and Guattari, who introduce a late twentieth-century audience to a processual philosophy of expressive matter-flows. They ask: “So how are we to define this matter-movement, this matter-energy, this matter-flow, this matter in variation that enters assemblages and leaves them?”¹² They suggest that matter-flows are expressive, event-like, transformative, processual; that forms are not fixed, and that matter is not homogenous. They recommend that we surrender to the matter-flows and follow where they lead. At much the same time, feminist philosopher of science Donna Haraway introduces her concept of “material-semiotics,” suggesting that matter is not meaningless, but in its lively relationality part and parcel of making meaning. She writes: “Self-knowledge requires a semiotic-material technology to link meanings and bodies.”¹³ Especially relevant to our discussion she also argues that: “Feminist embodiment, then, is not about fixed location in a reified body, female or otherwise, but about nodes in fields, inflections in orientations, and responsibility for difference in material-semiotic fields of meaning.”¹⁴

We follow these thinkers, which means we follow the material of our case studies in a way that acknowledges the complex relation that constitutes material processes of formation over time. Formation, rather than

¹² G. Deleuze, F. Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, University of Minnesota Press, Minneapolis, 1987, p. 407.

¹³ D. Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies*, 14, 3, 1988, p. 585.

¹⁴ *Ibid.*, p. 588.

the imposition of stable form, materialisation, rather than the passivity of mute matter: these are our conceptual-material, or “semiotic-material” emphases and we argue that their zone of contact is on the surface.

In this context, the poet Robertson’s description of pitiful matter with which we opened can be read as an indictment of the hylomorphic gaze rather than a description of matter’s actual condition. Matter only appears pitiful when you’ve already decided it needs form to rescue it. Much as Deleuze scholar Daniel W. Smith writes, the question moves away from a form/matter binary to explore the relationship of “materials and forces—making these forces visible through their effects on the flesh.”¹⁵ We will return to this consideration of flesh in what follows.

For now, we see how Hesse’s triangulation of these three ideas of process, content, and materiality seem to pre-empt the contemporary debates on matter-flows raised above. Her triangle suggests a dynamism between the three constituent parts, how they maintain their distinction, yet necessarily hang together. Materiality in process transforms an idea of content that itself processually transforms over time in contact with material experimentation.

THE CORPUS OF THE CONVERTITE

We now move between two specific sites, one historical and one experimental. The first, a historical account, develops a research project dedicated to the printed output of the convent of Santa Maria Maddalena alla Giudecca, known as the Convertite, in sixteenth-century Venice. The Convertite, translating to “the converted,” was a penitential community of women who were classified under the term *meretrice*—women deemed sexually deviant by the Venetian state. They were former sex workers or those who had sex outside of marriage, consensual or as a result of sexual violence.¹⁶

Between the years 1557 and 1561 the convent of the Convertite housed a printing press that was operated by the nuns who lived there. During this brief five-year period, these women produced at least twenty-five printed

¹⁵ D. W. Smith, “Author’s Preface to the English Edition,” in G. Deleuze, *Francis Bacon: The Logic of Sensation*, Continuum, London / New York, 2003, p. xi.

¹⁶ *Meretrice* is frequently translated as prostitute, a term which conflates the varied lived experiences of these women. This is a reductive and inadequate translation and as such I will retain the Italian *Meretrice* rather than “prostitute”. L. J. McGough, *Gender, Sexuality, and Syphilis in Early Modern Venice: The Disease That Came to Stay*, Palgrave Macmillan, Basingstoke, 2010, p. 28.

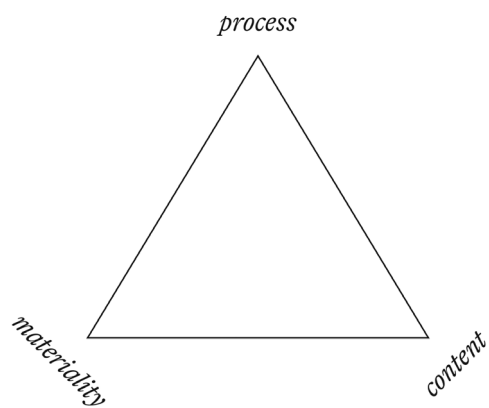


Figure 2. Ela Egidy, diagram for Eva Hesse, after a 1968 notebook in which Hesse reflected on *Sans II*. Lippard, *Eva Hesse*, p. 129.

works in both Latin and the vernacular. This collective of nuns was one among a handful other women engaged in printing in Italy at the time prior to 1560.¹⁷ Unlike some of their female contemporaries, they did not operate the press as widows following a husband's death but worked collectively as a part of a religious community; they ran the sole female-operated printing press in Italy at this time. Despite the fact that the women of the Convertite were among some of the earliest female printers in Italy, their printed works have remained largely overlooked.

The second, experimental site pertains to the material practice undertaken by one of the authors of this article cultivating bacterial cellulose as a substrate for reprinting fragments of a text the Convertite nuns printed in 1558. Taken together across a five-century span, these sites express what we, the authors, call surface empathy; a responsiveness that develops through sustained contact with material surfaces that carry their own logic, their own temporality, and their own capacity to exceed whatever containers produced them.

Importantly, the bacterial cellulose laboratory was installed¹⁸ in order to think and feel with the material labour practices of women from nearly 500 years ago, cordoned off in the gendered enclosure of a convent. It is challenging to imagine the embodied experience of this collective of women, and the research that pertains to the broader project has struggled to employ contemporary feminist theories of the body and embodiment to make comment on the nuns' collective labour. Recognising the limits of making comment on their experience in another historical moment, and in another cultural milieu, the bacterial cellulose laboratory became a space in which to attempt to extend an empathetic feeling-with of a contemporary twenty-first-century researcher, Ela Egidy, toward these sixteenth-century nuns, whose feelings and thoughts remain otherwise inaccessible, or lost to history, except for those historical documents that speak about them, rather than with them, to represent their voice and situated knowledges. The overarching research project is concerned not only with detailing a critical bibliographic history of their

¹⁷ The other female printers working in Italy at this time, all of whom were widows of printers, are as follows, with dates of attributable works: Catarina de Silvestro (1518–1525), Naples; Girolama Cartolari (1543–1559), Rome; Antonina, listed by first name only as widow of Enrico di Colonia (1505), Siena; Elisabetta, listed by first name only as widow of Giorgio Rusconi (1525–1527), Venice. A. Erdmann, *My Gracious Silence: Women in the Mirror of 16th Century Printing in Western Europe*, Gilhofer & Ranschburg, Luzern, 1999.

¹⁸ This laboratory was installed in a disused storage space within the Faculty of Fine Arts and Music, Southbank Campus, University of Melbourne.



Figure 3. Bacterial cellulose grow lab, showing bacterial cellulose sheets strung up to dry, Faculty of Fine Arts and Music, Southbank Campus, The University of Melbourne. Image by Ela Egidy.

output but also with how the women themselves figure in the making of these books through their penitential typographic labour.¹⁹

“Body” figures in this research in a number of ways, and for the purposes of this essay, the focus is on the corporeal registers of the book in contact with the bodies of the penitent nuns. Books themselves are bodily objects; indeed, the nomenclature of their constituent parts borrows directly from anatomical language. Books have a head and a foot, as well as a spine; books wear jackets, they are a *corpus*,²⁰ and the core content of a book itself is referred to as its “body”, that is, the text. The word manuscript comes from the Latin, meaning written (*script*) by hand (*manus*). Although the authorial trace of handwriting, as in a manuscript, is absent from a printed work, the very description of the work undertaken in this period highlights the body’s role in the production, the “hand-press”. In the hand-press period (1450–1800) it is through the hand that the comingling of text and body occurs, and while there is a repetition of forms—through the use of mechanical type—the hand of the compositor and printer is no less present.²¹ It is evident in its very terminology that the setting of type and printing of works in this period was understood as a very bodily process.

A correlation between the book and the body is made explicit in a number of their works. For instance, on the title page under their imprint appears the words “*In coenobio sanctae Mariae Magdalenae per monialium poenitentium manus*” (In the convent of Saint Mary Magdalen by the hands of the penitent nuns). These books are hand composed, and this role of the hand of the nun who sets the manuscript was clearly of significance to the makers as well as the buyers of these works. In addition to this line on the title page, the body of the maker is also made legible through a chance encounter during archival research, the discovery of a stray hair that has been imprinted alongside the text into pages of the books made by the nuns. This tracing of a printed hair appears across at least four copies of Peter Lombard’s *Summa theologiae* (1559).²²

¹⁹ E. Egidy, “Bodies and surfaces: Prototypographic practices of the nuns of the Conventite” (PhD thesis in progress, University of Melbourne). This research is supported by the Commonwealth through an Australian Government Research Training Program Scholarship.

²⁰ B. Cummings, *Bibliophobia: The End and the Beginning of the Book*, Oxford University Press, Oxford, 2022, p. 275.

²¹ *Ibid.*, p. 273.

²² The case of this printed hair and hair and the role of the body is discussed in significant detail in a chapter of a forthcoming publication, Routledge Critical Companion to Body

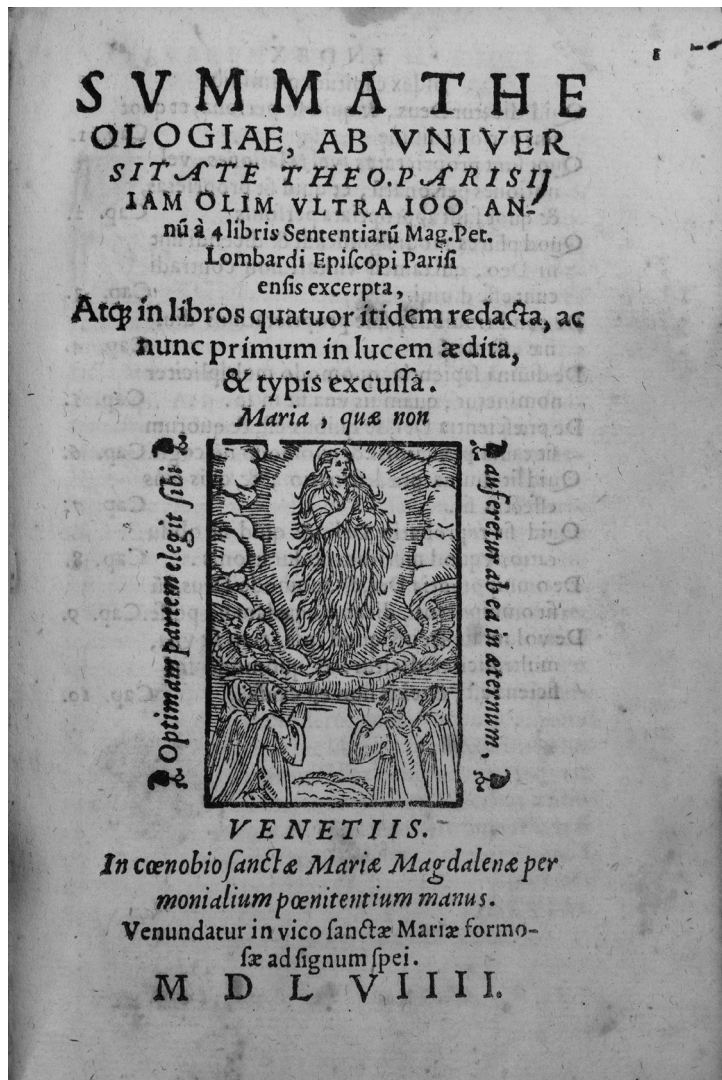


Figure 4. Petrus Lombardus, *Summa theologiae*,
ab uniuersitate theo., title page, Tipografia del Monastero
 delle Convertite, 1559, EDIT16 CNCE 33230.
 Biblioteca Diocesana Luciano Monari, Brescia.
 Image by Ela Egidy.

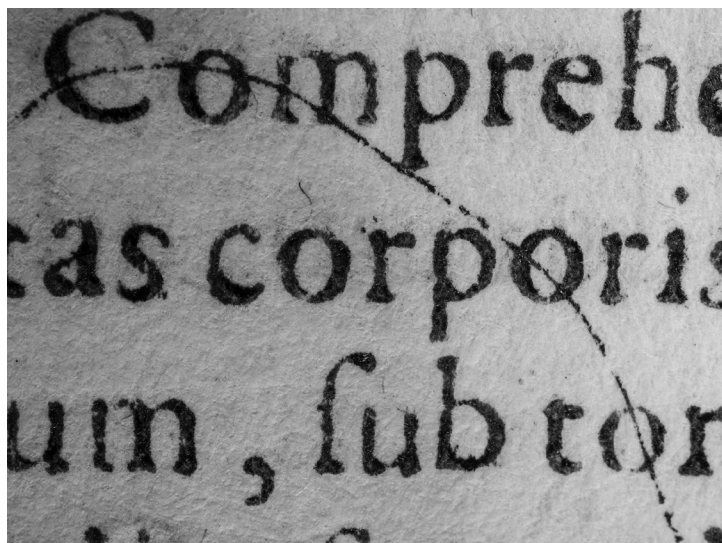


Figure 5. Printed hair strand found at folio 23r, Petrus Lombardus, *Summa theologiae, ab vniuersitate theo.*, Tipografia del Monastero delle Convertite, 1559, EDIT16 CNCE 33230. Biblioteca Vallicelliana, Rome. Image by Ela Egidy.

This relationship between the book and the body is long established. Books are for touching—their very format is designed to be held in the hands of their readers. Within Catholicism, *corpus* is understood both in terms of transubstantiation and as a collection of an author's works.²³ The approach to reading these books as bodily, with an emphasis on understanding the labour of their makers through the lens of embodiment, emerges from a feminist theoretical tradition that places the nuns within an early modern historical context, read in consideration of sexual difference, labour, and their penitential surroundings.

It is within critical bibliography, broadly understood as the study of books informed by critical theory, that this kind of embodied, theoretically committed reading finds its scholarly grounding. A growing body of researchers is actively pushing the field of book studies toward refusing objective standpoints in the study of texts.²⁴ J. D. Sargan's work on "Trans Codicology" is a compelling instance of important scholarship. Writing that "books are records of people and as such they present a contact point between our own experiences and those of our premodern counterparts," Sargan treats the book as a relational object through which trans presence, obscured by the "enforced cis heterosexuality of the historical record" can be detected, felt, and recovered.²⁵

Even though Brian Cummings does not take a critical theoretical approach to his study of the history of the book, he does alert us to the connection between the book and questions of embodiment. He identifies what he calls a "deeper question," one that sits beneath familiar debates about faith and the printed word, and that is "the commensurability of the history of the book with the history of human embodiment and identity."²⁶ The case of the nun printers of the Convertite is an interesting one in which to think these ideas through, explicitly in the relationship between faith and the printed word. The body is present in their printed outputs in recondite ways.

Matters in Architecture, Routledge, 2027. *P. Lombardus, Summa theologiae, ab vniuersitate theo. Parisi. iam olim ultra 100 annum a 4 libris sententiarum mag. Pet. Lombardi episcopi Parisiensis excerpta, atque in libros quatuor itidem redacta, ac nunc primum in lucem aedita, & typis excussa*, Tipografia del Monastero delle Convertite; al segno della Speranza, Venetiis, 1559, 23r.

²³ B. Cummings, *Bibliophobia*, p. 266.

²⁴ See *Criticism*, 64, 3 (2022) "New Approaches to Critical Bibliography and the Material Text" for a number of profound contributions to the field.

²⁵ J. D. Sargan, "What Could a Trans Book History Look Like? Toward Trans Codicology," *Criticism*, 64, 3, 2022, p. 571.

²⁶ B. Cummings, *Bibliophobia*, p. 273.

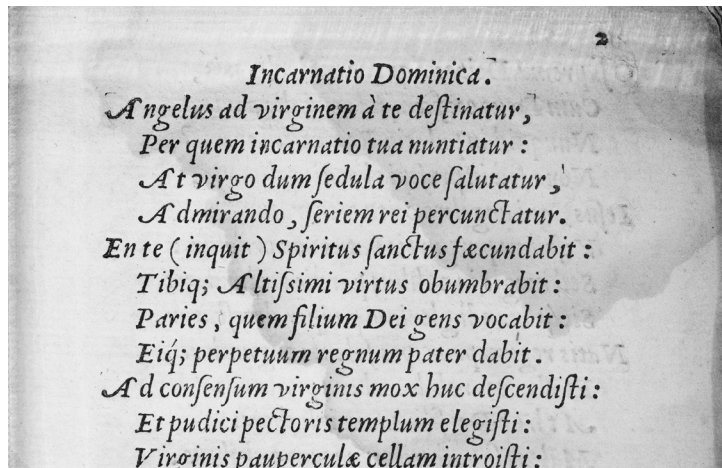


Figure 6. Folio 2r, Saint Anselmus, *Iesu Christi Dei*,
 Tipografia del Monastero delle Convertite, 1558,
 EDIT16 CNCE 34358. Biblioteca Antica del Seminario
 Vescovile di Padova. Image by Ela Egidy.

Given the institutional context in which these sixteenth-century women undertook their labour, inside a penitential convent, their works must be read in relation to their spiritual redemptive practice which is substantiated by the importance placed on the body within Catholicism, and Christianity more broadly. This is further amplified with the explicit association in the late medieval and early modern period of women with the body, contrary to men who are equated with the spirit, and subsequently the equation follows that spirit is elevated over matter.²⁷

Following Italian feminist activist Silvia Federici, we can understand the female body as historically shaped by regimes of labour and enclosure, particularly within institutions like the convent, where women's productive and reproductive capacities were regulated.²⁸ For the Convertite nuns, typographic labour was an embodied process in both senses. It was a repetitive, manual, penitent task embedded within a system of discipline and confinement. And it was a situated practice through which their religious and social identities were materially constituted. Their daily acts of setting type, inking formes and operating the press, to produce texts constituted a corporeal ritual, one that reflected institutional control while also enacting a form of self-making. Their printed books, bearing traces of their bodily presence, whether a strand of hair, their name on the title page, or the slight irregularities of hand production, are material remnants of their embodied devotional labour.

The books produced by the Convertite convent are particularly interesting because the hands that made them are ever present. Printing at this time was always a manual task, but in their works, parts of the body are explicitly named; they do not remain hidden in the mechanics of the reproduction, as is the intention of printing. The labour of women, cast out as *meretrices* but remade as penitents, is foregrounded into the very opening of almost every printed text they made. Each page carries the evidence of this labour. Printing is impression, pressure of inked type into paper. It is touch made visible on the surface of the page. In the Convertite's books, the marks of contact are everywhere. We are reminded of their hands in the over-inked headings that bleed into the page, in the fragile cast letters damaged by much use, and in a stray fallen strand of hair. These irregularities are not documentary evidence of poor

²⁷ D. Elliott, "Flesh and Spirit: The Female Body," in A. Minnis, R. Voaden (eds.), *Medieval Holy Women in the Christian Tradition c. 1100–c.1500*, Brepols, Turnhout, 2010, p. 13.

²⁸ S. Federici, *Caliban and the Witch*, Autonomedia, New York, 2004.

presswork, but the traces of specific bodies at work. Books hold on their surfaces the vestiges of the hands that made them and it is with these surfaces and their material expression, between nun-body and book-body, that a surface empathy is aroused. These sixteenth-century objects are early modern records of female bodies, penitence, and the material practice of making.

The bacterial cellulose experiments that follow in the next part of this essay, become a prosthetic, an empathetic gesture tending toward the material practice of the nuns by way of a form of remaking. This component of the research is undertaken through creative practice and is akin to what Tim Ingold calls “the art of enquiry.”²⁹ Such practice recognises the knowledge unique to creative practitioners who think “through making” rather than make “through thinking.” These material experiments generate the surface through which the empathetic encounter occurs.

BATCH 22: MATERIAL ABJECTION

Acrid smell.

The smell was not designed in. When I tend to the bacterial cellulose growing in the studio, the smell that the culture produces is sweet, sickly, and pungent; it seeps through cracks. It seeps under doors and into adjoining rooms. It is overwhelming. It cannot be contained by the architecture that houses it, by the studio walls, by closed windows, by any of the ordinary technologies we use to separate inside from outside. This is not a minor inconvenience of the process. It is the material’s most insistent assertion of its own logic, a logic that exceeds whatever container I have built to hold it. Zoë Sofia (Sofoulis) has argued that container technologies are generative rather than passive, that they shape what they hold and condition the development of the materials so contained.³⁰ But what my practice with the bacterial cellulose has forced me to understand is that the container’s logic is always being exceeded by the material it is supposed to hold. The pellicle conforms to the shape of its containment as it grows, and yet it produces something, this smell, this uncontainable atmospheric presence, that the container was never designed to hold.

Batch 22: Thirty grams of black tea, three litres of water, three hundred and fifty-five grams of sugar, one and a half litres of kombucha

²⁹ T. Ingold, *Making: Anthropology, Archaeology, Art and Architecture*, Routledge, London, 2013, p. 6.

³⁰ Z. Sofia, “Container Technologies,” *Hypatia*, 15, 2, 2000, pp. 181–201.

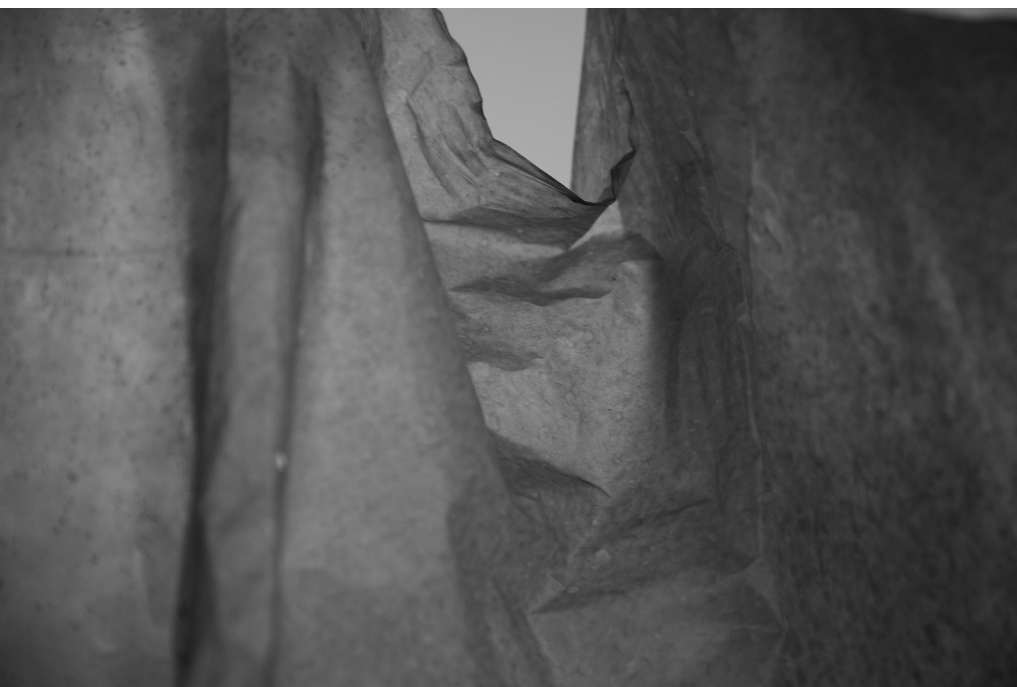


Figure 7. A sheet of bacterial cellulose strung up to dry, cultivated by Ela Egidy. Image by Ingrid Rhule.

starter. Mix together one part *camellia sinensis*, more commonly known as black tea, twelve parts sucrose, one hundred parts naturally filtered water, and fifty parts *Komagatacibacter xylinus* starter culture. Leave this to sit for an undetermined period of time. The time changes based on the temperature of the room. I have time. And this time I give to tending these vats. Like other living things, *K. xylinus* needs warmth to thrive. The larger the container used to hold the mixture, the harder it is to anticipate the surface consistency and thickness of what will eventually form. Stretching the growth time out or speeding it up does not seem to make much of a difference. You cannot really bend it to your will, especially when growing this in a makeshift studio environment as opposed to pristine lab conditions. Adjusting the strength or type of the tea makes very little difference. The pellicle forms on the surface where oxygen touches the liquid. It grows and thickens over time. It is almost entirely water. The solid portion of the pellicle accounts for roughly one percent of its total weight. This material constitution is not incidental to its character. It is its character, and this characteristic is not so different to our own aqueous constitution. Astrida Neimanis writes that “As embodied beings, we are, primarily, bodies of water in a watery world.”³¹ The bacterial cellulose and me, both of us, are bodies of water.

When the pellicle has reached an optimum thickness, stretch it out onto a silicone mat. It loses so much of its weight as it dries that it shrinks itself, clinging to whatever surface it is attached to. You have to grow it to a certain thickness in anticipation of what will be lost, to ensure that enough substance remains. Wash it gently first. Let the water run over it. This takes away some of the yeast culture still attached to its underside. Thousands of little umbilical threads tethered there. They cling as I rip the pellicle from its liquid maker. I rinse it for a long time under cold running water, using a gentle neutral cleanser, trying to rid it of the smell. This never fully works. The smell is sweet and sick and pungent and uncontainable. It seeps out of the studio and into whatever is adjacent to it. It limits how long you can comfortably spend in an enclosed space with it. You cannot design this smell out of the process.

The pellicle is slippery. It is hard to hold. When you grip it tighter, it moves further out of your grasp. It is very strong, and it can heal itself, and yet it is also fragile in ways that are difficult to predict. I thought that

³¹ A. Neimanis, *Bodies of Water: Posthuman Feminist Phenomenology*, Bloomsbury Academic, London, 2019, p. 65.



Figure 8. Bacterial cellulose in the process of being washed. Image by Ingrid Rhule.

over time, as I got to know it, I would become better at adjusting and controlling it. But there are so many variables in a studio environment, as opposed to laboratory conditions, that each batch becomes its own thing. It was almost impossible to produce two sheets that were the same. Each one became a very different object. I was drawn to this surface because it held a formal resonance with vellum or parchment, that same quality of skin that has been separated from its living source by a forceful act of removal. It is also object in ways I had not anticipated. Slippery, reeking, and resistant to being held. I tried dyeing it during the growing process to produce a whiter sheet, but this did not work. I began bleaching it in a dilute water bath instead. This helped to lighten its colour and dry it out, though sometimes it made the surface brittle. Humidity and moisture changed its material behaviour continuously.

I could speed the growth up only so much. The material moved on its own time, and I had to move with it. As I tended to it, mixing it, checking on it, adjusting the conditions of its container, the lapping of the water at the edges of the tubs reminded me of the lapping of the Venetian lagoon. I think of the nuns of the Convertite when I tend these surfaces. I work to the material's time. I tried to control it, but in the end, it controlled me. Because it takes so long to cultivate, losing any of it is sad, especially when you spend so much time in its presence.

Tending these bacterial cellulose sheets is like tending to a garden, a garden that emits an overwhelming repugnant smell. It is very uncomfortable to sit in the bacterial cellulose laboratory for any period of time. The discomfort I feel in its presence is familiar. It reminds me of how I feel when I spend time in monastic libraries holding the Convertite's works. This is always an unsettling encounter, not only because of the long history of institutional abuse endemic to the Catholic Church,³² but also because of my awareness of the abuse the women of the Convertite suffered.

On 10 November 1561, the rector of the Convertite, Zuan Piero Leoni da Valcamonica, was found guilty of sexually abusing more than 20 nuns at the convent. He was tried by Venice's most powerful branch of government, the Council of Ten, and was executed for his many crimes. Reading about the countless women who suffered historical abuse at the

³² J. King, "Cardinal George Pell, Australia's most powerful Catholic, who was dogged by scandal – obituary," *The Guardian*, 11 January 2023, <https://www.theguardian.com/australia-news/2023/jan/11/cardinal-george-pell-australias-most-powerful-catholic-who-was-dogged-by-scandal-obituary>, (accessed 29 June 2026).



Figure 9. Bacterial cellulose in the process of being washed. Image by Ingrid Rhule.

hands of their keeper is an uncanny experience. The narratives of institutional abuse are familiar, but still hard to stomach. His death coincided with the cessation of the Convertite's printing practices and the immediate exodus of 90 to 100 nuns.

The smell becomes a pungent metaphor. The containers in this laboratory represent the convent itself, the spatial architecture that confined these nuns. The pellicle, their books. The things that were made in a controlled environment, designed to leave the convent's walls. The smell is everything else, the reeking excess that the container could not account for, the lived experience of the community of women that were locked inside with their abuser.

I am a typographer, a graphic designer with a proclivity towards the material representation of language. I have experience with letterpress printing and the implicit slowness this mode of practice entails. I engage with this history from below through the ways of knowing I have as a designer, as a person who makes things. The process of making facilitates a kind of "thinking with your hands." I come to these works not as a reader of their content but as someone who understands the conditions of their making, and it is through that understanding that a different kind of relationship becomes possible, one underpinned with this idea of material or what we are calling surface empathy. The resonance that exists between this bacterial cellulose and the works of the Convertite vibrates through the nature of the labour itself, an embodied, slow, and uncontrollable making that produces something despite, and also because of, the abject conditions of its growth.

TENDING TOWARD THE PAGE

What Egidy has encountered in working with the printed books of the Convertite nuns of sixteenth-century Venice and in cultivating bacterial cellulose as a contemporary printing substrate, reconfigures what can be understood by empathy, shifting it toward a delicate art of tending and feeling-with. Empathy, here, does not originate in a subject, nor is it grounded in an object. It is not something that is brought to the surface of a Convertite book nor embodied in a growing pellicle in a makeshift studio laboratory. It is produced at the surface itself, shimmering in the encounter, and it moves in unplanned directions that cannot always be controlled. As such, we must make the best of what happens to us in this sensory and conceptual encounter.

What we mean here can be supported by Deleuze and Guattari's discussion of percept and affect in their late, collaborative work *What is Philosophy?* This discussion expands their earlier introduction of matter-flows in *A Thousand Plateaus*. In the later work, matter-flows shift toward the potentialisation of matter, whereby the sensory becoming is figured as "otherness caught in a matter of expression."³³ Where does this potentialisation of matter occur, if not in the encounter on the surface of things? An encounter with the ragged pages that the nuns' hands have managed, an encounter with bacterial cellulose ventured with the aim of more closely approaching the nun's embodied experiences and labour.

Matter-flows, refigured as the "expression of matter," are run through with affect, which is emergent in the encounter of affecting and being affected. All the while, modes of life and environment-worlds are taken up in a great complex arrangement on a plane of composition, to use Deleuze and Guattari's lexicon. What circulates are compounds of sensation, and the aim, as Deleuze and Guattari stress, is to "wrest the percept from perceptions of objects and the states of a perceiving subject, to wrest the affect from affections as the transition from one state to another."³⁴ Percept and affect belong neither to a perceiving nor an affected subject, nor are they embedded in the perceived or affected object. Subject and object relations, which catch us up in unhelpful, even pitiful, binaries, are all too staid, as well as deceptively suggesting a stability of material relations. Instead, we are talking of a great and dynamic composition, a melodic symphony, as Australian feminist philosopher Elizabeth Grosz describes it, where: "Each living thing, including the human, is a melodic line of development, a movement of counterpoint, in a symphony composed of larger and more complex movements provided by its objects, the qualities that its world illuminates or sounds off for it."³⁵ In this context, empathy can be reconceptualised as an open-ended relationship between an unfolding subjectivity and a lively environment-world.

To explain this "expression of matter," Grosz directs our attention to the work of art, and here we can think with Hesse again: "Art works through and as materiality, but it is the event of sensation and its autonomous life that transforms a random material composition into a work

³³ G. Deleuze, F. Guattari, *What Is Philosophy?*, Columbia University Press, New York, 1994, p. 177.

³⁴ *Ibid.*, p. 167.

³⁵ E. Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth*, Columbia University Press, New York, 2008, p. 43.

of art, even though there can be no work of art without the particular materialities it has utilized.”³⁶ Matter is not always so vibrant, it needs sufficient support to hold its own, and as we witnessed in the opening paragraphs, matter can also be pitiful. A minor shift in this attitude, which suggests inadequacy and even contempt, could render the pitiful pitiable, and this is where empathy—situated as the dynamic encounter, affected and affecting, at the surface of sense—floods back in again. When Deleuze dedicates his logic of sensation to the British artist Francis Bacon, he writes of Bacon’s approach to the spasmodic flesh of the body as one of pity: “If there is feeling in Bacon it is not a taste for horror, it is pity, and intense pity: pity for the flesh, including the flesh of dead animals.”³⁷ This pity is not one of contempt, but one of profound feeling-with, that is to say, “the action by which something or someone is ceaselessly becoming-other (while continuing to be what they are).”³⁸ Such a concept of material empathy vibrates through each stratum discussed here. Through Hesse’s limpid fleshy sheathes, through the page to hand relation that the nuns have gifted us, in the encounter with the unruly vibrant expression of bacterial cellulose overwhelming its containment. It is toward and with this modality of surface empathy that we move.

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³⁶ *Ibid.*, p. 60.

³⁷ G. Deleuze, *Francis Bacon*, p. x.

³⁸ G. Deleuze, F. Guattari, *What Is Philosophy?*, p. 177.

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