ORPHEUS MANIFESTOS

Making a Case for Materially Entangled Performance

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O/I
Orpheus Instituut
Advanced studies and research in music

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Engaging with
Beethoven's things
goes a long way toward
performing him



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Making a Case for Materially Entangled Performance

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VIENNA 1820, ON A WEDNESDAY AFTERNOON

In the afternoon of 26 April 1820, Nannette Streicher ran into Ludwig van Beethoven at a local restaurant. Their conversation is recorded in one of Beethoven's conversation books. These are the designated notebooks that the deaf composer started carrying with him in February 1818. "I'd like to ask you," Ms. Streicher writes, "about a couple of places in your Grand Sonata, whether I tackle them correctly" (*Kh* 2:93).[1] Beethoven's reaction is not recorded since he would have responded orally.

Nannette Streicher is the famed piano builder, one year the senior of Beethoven, himself then forty-nine. To my knowledge, this is unique: a piano builder, as well as a highly accomplished pianist, turning to a composer for advice on how to perform a recently published piece of music. Undoubtedly the sonata in question was Beethoven's *Grosse Sonate für das Hammerklavier*, op. 106, which had been published by Artaria in mid-September 1819. Streicher must have been among the first to start practising the piece, as on 30 November 1819 we find another entry in the conversation books, this time by Joseph Czerny (not to be confused with Carl), telling Beethoven, "Frau Streicher has already studied your last Sonata for 3 months and still she cannot play the first part

1 Citations abbreviated *Kh* are to *Ludwig van Beethovens Konversationshefte* (Köhler et al., 1972–93). All translations in this essay are mine.

[i.e., the exposition of the first movement]. She complains mostly about the beginning: $\begin{smallmatrix} & 8 & \\ & 3 & \\ \text{b} & \text{b} & \text{– –} \end{smallmatrix}$" (*Kh* 1:109).[2] From this figured-bass notation, we recognise the recklessly bold jump at the outset of opus 106: a B♭ chord to be played in two stages by a single left hand.

Joseph Czerny was a respected piano teacher who counted Beethoven's nephew among his pupils. One imagines him and the composer chuckling over the idea of Ms. Streicher tripping over the beginning of a new Beethoven piano sonata, and not getting further than a few pages into it, especially as Czerny—himself in his early thirties—one week earlier reported "having played your [entire] Sonata [op. 106] several times already" (*Kh* 1:92) for their mutual friend, the then bedridden Nikolaus Zmeskall. Among men, no advice had been needed, and if any difficulty was perceived, it definitely wasn't talked about.[3]

These highly gendered conversations (to be expected in 1820s Vienna) nonetheless confront us with die-hard assumptions around canonised masterworks, especially one with a widely resonating nickname like "Hammerklavier." We may be surprised that someone like Nannette Streicher even attempted to play a sonata now deemed so difficult that it is best left to the professional, and even then, only the few chosen ones. But why wouldn't she? As a maker of state-of-the-art pianos, she may have considered it her responsibility to try out Beethoven's latest composition at one of her instruments. And she's not backing down; on the contrary, the way Streicher phrases her question implies that she expects useful answers. Rather than projecting awe or fear, her wording implies confidence in requesting a sit-down session with Beethoven at

2 The German B stands for B♭.

3 My "among men" is inspired by Beethoven's well-known letter to Zmeskall in November 1802, asking him to approach Anton Walter about making a piano with *una corda*; Beethoven closes by stating that at lunch there "would be no need to put on your black jacket because we will be among men" (underlining his) (Brandenburg 1996–98, 1:137).

the piano, where answers could be easily and pragmatically provided, allowing her to proceed well beyond that problematic first part.[4]

In light of Streicher's show of vulnerability as a performing musician, the continuation of the conversation is particularly revealing, because it shifts the focus from his sonata to her workshop, or from his professional environment to hers: "Visit us, though, when you pass by, to try the 4-stringed pianos. / They don't vibrate as strongly, but please do try it out" (*Kh* 2:93). A quadruple-strung piano, that is, one with four strings per key rather than the conventional three, is the kind of instrument that Conrad Graf would lend Beethoven five and a half years later (see figure 1 [p. 10, bottom]), but apparently the Streicher firm had started experimenting with them too, and something may have told Nannette that these instruments, designed to project in bigger halls, could prove useful for Beethoven too. Nephew Karl would recall on 2 April 1826 that "Graf was the first to build a piano that made an impression in the *großer Redoutensaal* thanks to its quadruple stringing" (*Kh* 9:147). Almost certainly, Karl was reporting what he had heard others say, possibly in reference to a memorable concerto performance in Vienna's largest concert room (seating an audience of up to three thousand) on 25 December 1819 by the "prince of pianists," Ignaz Moscheles.[5]

Before Streicher's impromptu invitation, on the one hand, had Beethoven elaborated on his new relationship with his English Broadwood, praising in particular its vibrating quality? On the other, had Beethoven broached his frustrations with Viennese pianos, as a backhanded excuse perhaps for no longer using one by Streicher? The Broadwood had arrived from London as a gift less than one year before, and upon its arrival in May 1818 (after a long journey over sea and land) it had been thoroughly checked

4 At a different occasion in 1822, Franz Lachner reported that Beethoven ever so briefly sat down beside Streicher at the piano, showing her how to play the opening figure of the finale of the "Archduke" Trio, op. 97 (see Ladenburger 1999, 39).

5 The epithet is by Lea Mendelssohn-Bartholdy, mother of Felix (see F. Moscheles 1888, 2).

at the Streicher workshop. English pianos indeed "vibrated" more—most probably meaning that these vibrations could be felt by the player through their hands and feet. That's because they're built as a single wooden case that also holds the soundboard, in Flemish harpsichord style. A Viennese piano, on the other hand, followed the Italian tradition of containing the soundboard in an inner case, which is then solidified by an outer one, allowing for maximum internal vibration, but not much transfer to the human body at all. On a Viennese piano, this makes one's performing more self-consciously intentional, whether to create that perfect *sforzando* or to shape that perfect slur (as one is guided by fingers and ears), rather than going with the vibrational flow, as it is perceived through our bones (no wonder that the English preferred a default legato style rather than their Viennese counterparts' focus on articulation). One can easily appreciate Beethoven's dilemma. Clinically deaf, he would have liked the bodily feedback he received from his Broadwood, but his internally adopted musical language would still have been essentially Viennese.

Frau Streicher seems to understand all this, and her suggestion that Beethoven try a quadruple-strung piano—Viennese, just as Beethoven has always known his pianos—shows empathy with the deaf composer: it's worth a shot, we hear her think, and the fact that, just like Graf, "Streicher now makes quadruple-strung ones," if not tactilely more vibrational, then certainly audibly louder, may help her friend once again find pleasure in his work, especially now that he has just accepted a long-term commission from Berlin to write three more piano sonatas, which would become his opuses 109, 110, and 111.

Streicher's question of how to play a recently published sonata triggered doubts and concerns on Beethoven's part as to how to continue creating at all. More than reflecting a common interest between friends, the exchange thus provides a fundamentally technological context for creating and performing. In itself, this is not saying anything new: Beethoven depended on keyboard technology just as much as W. A. Mozart and C. P. E. Bach had done, or Ignaz Moscheles and Johann Nepomuk Hummel did.

But Beethoven's doubts came after he had abandoned an active career as a pianist (a moment usually dated 11 April 1814, with a performance of his "Archduke" Trio, op. 97) and thus had to forego the feedback he used to receive from friends or the public (even if his initial stance had always been defensive). In hindsight, this moment proved to be myth-making. Hector Berlioz, for example, proclaimed opus 106 "unperformable," until he heard Franz Liszt play it in 1836 on an Erard double escapement piano. From this grew the perception that Beethoven had somehow envisioned such future double-escapement pianos (read, "the modern piano") or that he had even prophesied that pianists would only be able to play the piece "fifty years hence."[6] No evidence exists, however, that he ever expressed these words, and how could he have anticipated the technology Sébastien Erard happened to start developing in the 1820s and perfected by the 1830s only?[7] Beethoven's exchange with Streicher does not suggest any intent to bypass technology or to write for the future; on the contrary, concerns were expressed and possible short-term solutions entertained.

For more than two centuries of scholarship and performance, Beethoven's deafness has been quite the elephant in the room. Almost in misplaced celebration of his disability, the overwhelming tendency has been to interpret his late music as transcending materiality altogether. But there's no denying: the more Beethoven's bodily functions diminished, the more he would have depended on materiality—his conversation books being a great case in point, as they solidified previous more casual methods such as lip-reading, the use of ear trumpets, or writing on erasable tablets or loose leaflets. I suggest we learn from cultural disability studies to sensitise us to the positive corollaries of such increased dependence, as alternative ways of interpreting the music of a disabled and aging composer.

6 On this and other myths, see Beghin (2014b).

7 Upon trying out the new invention in 1821, Ignaz Moscheles (young and technologically savvy) found "this quicker action of the hammer . . . so important that I prophesy a new era in the manufacture of pianofortes," but he still complained of heaviness in the touch (C. Moscheles 1873, 1:59).

This means engaging with historical pianos with far more knowledge and commitment than performance practice has typically advocated. Rather than seeing them as generic tools for expression, conveniently matching musical instruments with repertoires, geographies, or certain periods ("a Mozart piano," "an early-nineteenth-century fortepiano," "an English piano"), we must dare to think *specifically*. That is, we should not only consider the many types of pianos Beethoven had known throughout his career (mostly Viennese, but significantly one French and one English), but also then examine the role of their constituent parts, each to be engaged with in their own right: escapement levers, hoppers, the presence or absence of after-touch (there's a felt strip on the key-bed of a Broadwood, providing additional tactility to the fingers: think, for example, of the throbbing triplet accompaniment in the Arioso dolente of Sonata op. 110), or having the proper frame of reference to understand and speak in materiality-inspired metaphors, as in making a hammer-attack sound more "leathery" or "woody" (in reference to its coverings or its core, respectively: one experimental design by Streicher in 1816, shown in figure 1 [p. 10, top], defies such a binary, and understanding her rationale is part of the knowledge I advocate; by integrating leather into the core itself, Streicher literally sets the tone for the player). I believe that such technological consciousness—as something he felt, rationalised, and "heard"—not only grew with the aging Beethoven, but that this reinforced dependence on technology also resulted in new and increasingly multisensorial definitions of sound that included the tactile, visual, and spatial. The more detailed our knowledge and playfulness in applying it, the more we can also appreciate a multiplicity or even hybridity of meanings and features in the bodymind of a deaf musician.

As we reconstruct Beethoven's built environment (to borrow another term widely used in disability studies), two more objects become essential. A horn-shaped *Gehörmaschine* (hearing machine) was customised in zinc by André Stein (brother of Nannette) in March–September 1820 for the Broadwood (see figure 1 [p. 11]), and five years later Conrad Graf constructed a *Schallmaschine* (resonance machine) for his instrument

too, "like a prompter's box [*Souffleurkasten*], made in the shape of a bent sound board of thin wood" (Breuning 1874, 58–59). More than prostheses between piano and the performing human, they are two more objects in their own right—visually strikingly present—for us to play and interact with.

So, here's my thesis: *Engaging with Beethoven's things goes a long way toward performing him*. Just as I do not make a meaningful distinction between a "(dis)abled him" and "his music," I do not find it useful to distinguish between creating (or the act of composing) and performing. I call this materiality-driven approach to performing *materially entangled performance*—or MEP. Inspired by the case study of a deaf composer who played a monumental role in the formation of nineteenth- and twentieth-century ideologies of music, MEP constitutes a long-overdue corrective to HIP—or historically informed performance. Just as the humanities at large, in Tobin Siebers's words (2008, 4), may learn from disability studies to change "not only the culture of the discussion but also the nature of the arguments used in the discussion," MEP—via the myth-making case of Late Beethoven—introduces a whole new set of parameters (on the side both of the "thing" and of the "human") that have the potential to significantly change our discourse of musical analysis, criticism, and performance.

GHENT 2026, ON A THURSDAY MORNING

This afternoon (I'm writing this on 11 June 2026), my research team and I will have an important Zoom meeting with piano builder Chris Maene on the stringing of a new replica of Beethoven's Conrad Graf piano (see figure 2 [left]).[8] I here mean the piano that Graf brought to Beethoven's

8 Present at the meeting will be the organologist Katharina Preller, doctoral researcher Blake Proehl, maker of historical strings Stephen Birkett, CAD engineer Gregoir Basyn, master builder Chris Maene, and me as the artist-researcher and PI of the project.




L.VANBEETHOFEN.



Figure 1. *Previous page, top,* experimental hammer in a replica of Nannette Streicher (1816) by Chris Maene (2020). Photo by Mark Boone. *Previous page, bottom,* quadruple stringing in Beethoven's Conrad Graf (1825). Photo by author. *This page,* replica of Beethoven's John Broadwood & Sons (1817) by Chris Maene (2013), with reconstruction of hearing machine (2020). Photo by Michiel Devijver.

apartment on 24 January 1826, after his Broadwood, the instrument that for many years had functioned as his daily workhorse, was taken to Graf's workshop for a repair "so long-lasting that you will not get it back very soon" (*Kh* 8:288). In 1889, also its first year of existence, the Beethoven-Haus Bonn acquired this "Beethoven relic" (as it was advertised) through the brothers Hug in Zurich from then-owner Josef Viktor Widmann, son of Charlotte Widmann-Wimmer, whose father had the opportunity to buy the instrument for her from Graf in 1841. At two points in its history, the piano underwent a major overhaul—once at the Graf workshop, in 1842, at the hands of foreman Franz Rausch, before the piano was shipped to the Widmanns' new address in Switzerland, and once again in 1963, when the piano was restored by the firm Neupert in Nuremberg, at the hands of Bernhard Rochow. Yet another restoration was contemplated in the 1990s, which is why the piano's dossier at the Beethoven-Haus includes various measurements of string lengths, diameters, and gauges by experts.[9] Previously, we had carefully studied all these, but then had to acknowledge that the current strings and their placement on the renewed wrestplank are not original anyway—so, taking into account the evidence from other extant Graf pianos of the same period, while at the same time succeeding in dating Beethoven's instrument within Graf's corpus (namely to 1825, and *hence almost certainly specifically for Beethoven*), we must now come to a consensus about what stringing plan to follow.

Just as quadruple instead of conventional triple stringing was a hot topic in Beethoven's inner circle, along with the question of why newer Berlin wire was better than the old Nuremberg kind, our meeting will address where and how to use iron, brass, or wound copper on an iron core (these are the options from top to bottom), and then with which gauge and length. Central to the discussion will be the question of how much tension we anticipate will be put on the already constructed case (see figure 2 [right]). Adding a fourth string means adding one third more tension

9 We thank Julia Ronge from the Beethoven-Haus Bonn for making available to us all in-house archival documents pertaining to the Graf.

(imagine ||| plus |) and potentially results in structural warping of the piano, which has clearly been an issue with the original (even though it already adopted smaller gauges), which for a new instrument must be avoided at all costs.[10]

Why does all this matter? Why do I, as an artistic researcher interested in playing pieces like Beethoven's opuses 106, 111, or 120, insist on taking part in such detailed technical discussions? And why did I even decide to gamble my entire research fund on the construction of such an instrument? *Because to be a "historically informed performer" is to also be a "materially entangled performer."* Rather than focusing on post-score performance, MEP revels in the materiality-bound processes of creation, and aims to integrate these—that is, recognising and enacting them—in performances that do away with notions of "pre" or "post": the score thus unfolds *as if being created in the here and now of performance*, in reaction to the materiality at hand—this reaction itself shaped by one's embodied memory of past materialities. So far, as a field, we have only scratched the surface and I believe we have quite some catching up to do: for decades we have learned to appreciate the significance of dots, slurs, or dynamic marks on the printed page, but still are not sufficiently invested in probing—or indeed "reading"—the material triggers behind them.

A TWO-INSTRUMENT SONATA

There's something I haven't yet disclosed about opus 106. While often admired as epoch-making on stylistic and structural grounds, this work also encapsulates Beethoven's changing entanglements with piano technologies with remarkable transparency. Before the arrival of his Broadwood in May 1818, Beethoven had largely completed the first three movements, making the composition of the finale (the big fugue)

10 Chris Maene explains this issue of warping in a film we made on 13 May 2026; see https://vimeo.com/1203357132/b0c92cdfc2?share=copy&fl=sv&fe=ci.

the first on his Broadwood. While the first three movements adhere to a typical six-octave Viennese compass from FF to f^4, just like the Streicher he may have used at this time (Rampe 2019, 397), the fourth movement drops down to the six-octave range of his new English piano, from CC to c^4, so not just expanding the bass but also limiting the treble. *Beethoven adhered to the six-octave Broadwood range for all his subsequent solo piano works*. "You don't write above c^4," André Stein astutely observed on 12 March 1820, at a time when plans were made to construct a hearing machine to go on top of the Broadwood. For Beethoven, constructing such a machine meant committing to *mein Englisches*, including living with its limitation. By ample compensation, however, *the Broadwood vibrated more than Viennese pianos*. In hindsight, this makes opus 106 not some hybrid or forward-looking composition (as a "six-and-a-half-octave" piece), but one concretely embedded in two distinctly different pianos: a Streicher-like six-octave Viennese piano for the first three movements and a six-octave Broadwood for the fourth movement (Skowroneck 2012; Beghin 2012).[11]

Video clip no. 1 shows me re-calibrating my position at the keyboard, adjusting from "middle F" (for the Viennese instrument) to "middle C" (for the Broadwood) in between movements three and four. Example 1 (featuring the first bars of the transitional Largo) shows how alternating pairs of octaves work their way up the keyboard, until there's no "up" anymore (we're seated at the new English instrument) but only "down." Rather than on f^4 (the highest key on a Viennese keyboard), we land on a low octave instead—except that on the new piano this "bottom FF" is no longer the lowest key either: there is a whole deeper register to explore, and Beethoven will do so very soon, but only after devoting a whole improvisation to his discombobulated impression. Well into the fugue, then (also reproduced in example 1 and in video clip no. 2), we witness history: *Beethoven for the first time writing a low CC*.

11 Many still (wrongly) consider Beethoven's opus 106 his first "six-and-a-half-octave" grand sonata.

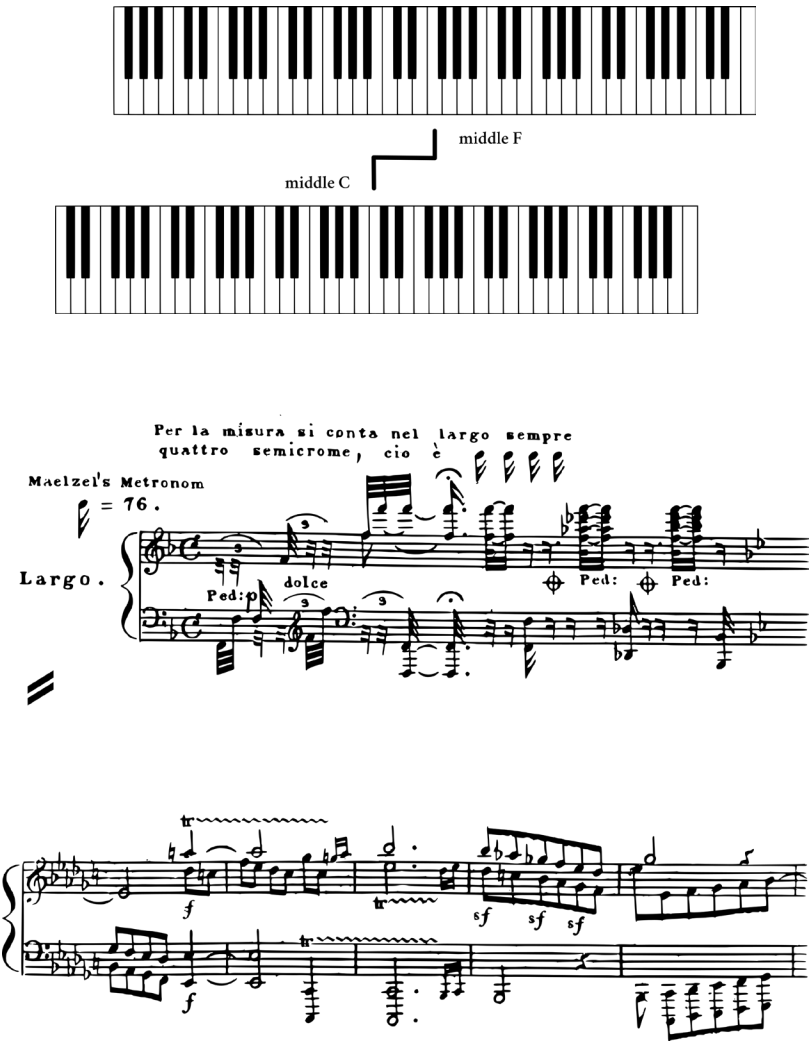
Enacting such material entanglement through composition had consequences for publication, which Beethoven was keenly aware of. Publisher Artaria in Vienna would print the sonata exactly as Beethoven wrote it (even if many customers, like the author himself, would not yet have owned a six-and-a-half-octave instrument), but when sending his manuscript to Ferdinand Ries for publication in London, Beethoven sounded suspiciously casual: "If the sonata is not right for London, then I could send you another," he wrote, leaving his old pupil to scramble for solutions.[12] In the English publication, Ries indeed rewrote passages in the first movement that go above the English piano's high c^4 (leaving Beethoven's versions as "ossias"), along the way swapping the order of the Scherzo and the Adagio and publishing the Introduction and Fugue (the only "truly Broadwood" production) as a separate piece altogether.

Just as Beethoven in his personal life formalised the use of conversation books for communication, it was the Broadwood that became his go-to instrument for all matters musical. His pianistic output during this last chapter of his life may all be linked to that highly consequential arrival of an English piano, and this includes (starting with the fourth movement of opus 106) the three last sonatas, opuses 109, 110, and 111 (1820–22), the eleven Bagatelles op. 119 (esp. nos. 6–11, 1821–22), the six Bagatelles op. 126 (1824), the thirty-three "Diabelli" Variations, op. 120 (1819/1823), and a dozen smaller pieces (waltzes, ecossaises, *Klavierstücke*; post-1818)—quite a "repertoire" indeed.

ENTANGLEMENT

I live with historical instruments: I acquire them, find room for them, transport them, tune them, maintain them, repair them, wonder about how to improve them, and constantly worry about them. In my research cluster at Orpheus we try to do most of these tasks ourselves,

12 Letter of 19 March 1819 (Brandenburg 1996–98, 4:262).



Example 1. *Top*, Viennese versus English six-octave keyboard range; *middle and bottom*, Beethoven, Sonata in B♭ Major, op. 106 ("Hammerklavier"), fourth movement, m. 1 and mm. 111–15, first edition (Vienna: Artaria, 1819).

but sometimes we need the professionals, and here it helps that we are only twenty kilometres from a world-leading historical keyboard workshop under the directorship of Chris Maene—my go-to person regarding pianos. And while I feel blessed with such vicinity, I also constantly feel on the frontline of things, needing my instruments to work properly *on a daily basis*. (What I project here admittedly has a slightly obsessive side, which is still nothing compared to the insecurities of the old Beethoven. Terrified that Viennese technicians might talk him into revisions or adjustments to his Broadwood—precisely as had happened to his Erard back in 1805–9, with disastrous results—he reportedly retorted, however irrationally, "They [all] would like to tune it . . ., but they shall not touch it" [Thayer 1967, 2:695]; on the other hand, the knowledge that Graf sent him a technician-tuner every two weeks to look after the borrowed instrument during the last fourteen months of his life must have given him comfort and peace of mind.)

I've come to think about my counterparts of the past—that is, those who had the privilege of living a life as a professional musician like I do now—as being as equally entangled with things as I am. Taking to heart this kinship, while constantly contemplating its consequences for performance, is a modus operandi very different to what is conventionally understood under "performance practice," which, as I see it, applies a traditionally interpretive and mostly receptive approach to scores from the past. Take, for example, the notion of "pedalling," which has been a spectacularly popular topic of inquiry among pianists and HIP researchers. When in 1777 the twenty-one-year-old Mozart marvels about "the machine with the knee" in describing a Stein fortepiano (while visiting the renowned workshop of Nannette's father in Augsburg, Germany),[13] he improvises a name for a damper-lifting device that only much later became an essential component of the piano, now widely referred to as "the pedal." Beethoven, for his part, was witness to a transition from knee levers to foot pedals, which still came in

13 Letter of Mozart to his father of 17 October 1777 (Bauer and Deutsch 1962, 69).

many forms, serving different purposes. To look for cues in Mozart's or Beethoven's scores for "pedalling," however, as many have done (with various degrees of nuance and sophistication), is to apply a modern practice to earlier times and is therefore fraught with anachronism. This is not to say that Beethoven did not use his knee levers or pedals to great effect, but to read his emerging notational practices as indicative of any consciously applied system—let alone any consistent "art" of pedalling—betrays an approach from a time when pedals stopped asserting their presence as things. Instead, consider the following analysis. By ca. 1850 the mechanism of the damper-lifting pedal became reliable, sturdy, and quiet enough for pianists to keep their right foot constantly rested on the rod-operated metal attachment. No surprise then that it was only around this time that the pedal stopped being the object of experimentation and instead merged into the intellectual practice of interpretation, the activity of pedal*ling* superseding the thing itself. When, on the other hand, we know not only the history of people and their things (recognising, e.g., when Beethoven used una corda for the first time, which happened at the outset of Sonata op. 53 and in the second movement of his Piano Concerto op. 58), but also how these work (Sébastien Erard ingeniously incorporated a two-phased spring in his keyboard-shifting device allowing for directives in Beethoven's scores such as "2 et puis 3 cordes" or "2 et puis 1 corde"), we can revel with Beethoven in the effect of a well-planned and machine-produced swell or fade (Beghin 2022, 86–91).

My understanding of MEP is inspired by the archaeologist Ian Hodder's theory of entanglement (Hodder 2012). Humans *get stuck* with things; they *depend* on things; they *are entangled* with things. Entanglement is "the dialectic of dependence and dependency," "dependence" standing for "productive and enabling" interactions or relationships not only between humans and things, but also between things and things, things and humans, and humans and humans; "dependency" embodying a negative dimension, when those interactions or relationships become "constraining and limiting." "Dependences" are what material culturists

have called "affordances," but Hodder's wordplay (from dependence to dependency) allows him to create a continuum between the positive and negative sides of dependenc(i)es.

Without any doubt, Beethoven's strongest entanglements were with Viennese pianos; from his childhood in Bonn and through his formative years in Vienna his pianism grew firmly embodied in them. Amid these entanglements, however, two foreign pianos started shaking things up: they behaved differently. Feeling, sounding, and looking different, they created conflicts with existing resonances. They each in their own way gave rise to new kinds of fittingness and thus also to new entanglements. This applies not only to Beethoven as an individual, who thrived on being original and different, but also to people around him, as they notice the piano Beethoven liked to use. On the heels of Beethoven's ownership of his Erard, the Streichers, for example, shifted from knee-levers in their pianos to pedals in 1805 (adopting more or less the same set-up as Beethoven's Erard); or because Beethoven owned his Broadwood, Conrad Graf ended up buying one for himself, curious to investigate what the London competition was doing. Entanglement, thus, had a social dimension, especially through such a strong personality as Beethoven.

One spectacular instance of Beethoven responding to thingness is the opening of his "Waldstein" Sonata, op. 53, as the composition that so explicitly inaugurated his 1803 Erard Frères *piano en forme de clavecin*. As you watch video clip no. 3, note in those opening C-major chords how my wrists and hands respond to the bounciness of a French piano action, its keys balancing roughly in the middle of the key, representative of a choice crucially different to a Viennese set-up, where "flipping" a key happens precisely in a non-balanced manner. Note also, toward the end of the fragment, how I execute the effect of a swell, releasing the pedal with my foot from playing one, to two, and three strings—a deliberate three-step operation enabled by Sébastien Erard's meticulous engineering of the keyboard shifting mechanism. Video clip no. 4

affords a closer, inside view: in a specially designed action model, we observe the opening "basketball-like dribble" as entirely inherent to the French mechanism, to the extent that I ask whether it is *me*, by proxy of Beethoven, who's making the keys behave like they do, or whether it is *the piano* that is dictating the physical behaviour of my wrists (Beghin 2022).

This congruence between thing and human has become the very definition of Gibsonian affordance (Gibson 1979; Norman 2013); also in the context of MEP, the question of agency is crucial: who or what does the triggering? Without Erard's idiomatic hammerheads or its back-and-forth rocking keys, there is no "Waldstein," and this realisation goes a long way toward knowing what to do to perform it. I deliberately do not write, "how to perform it," because in MEP, there should ideally be no "how": it is the entangling itself that does the performing or the very interaction with thingness that does the telling. But there are always "buts," and also here, "Waldstein" is a fascinating example, propelling entanglement into higher levels of complexity. By 1805, or the date of publication, Beethoven had embarked on ill-advised "Viennicising" revisions of his Erard; and for the published version of opus 53, which contains some major changes and adjustments from the manuscript, it seems clear that Beethoven had no choice but to face up to the consequences of those rather catastrophic technical revisions. The notion of "revision," which has traditionally been the domain of Beethoven philology, here takes on a materialistic spin, and dependent on one's piano—either a *piano en forme de clavecin* or a Viennese-style fortepiano—we're dealing with two entirely different versions of the "work" (for details, see Beghin 2022, chap. 9).

If for opus 53 we can still analyse the results of Beethoven's entanglements through an idealised focus on sound—in this case, tremolo-like repetitions of sounds serving the French aesthetics of *son continu*—Beethoven's increasing disability in later years forces us to adjust ableist perspectives on music as sound. Rather than trying to document

Beethoven's deafness from a medical point of view (focusing, as many have done, on how much Beethoven might still have been able to hear, which has only confirmed those ableist ideologies), I propose we take our cues from what critical disability studies call "d/Deaf gain," a rhetorical and conceptual inverse of the deficit-oriented "hearing loss" (Bauman and Murray 2014).[14] The nexus between disability studies and entanglement theory, finally, lies in the realisation that as Beethoven's increasing physical constraints made him more dependent on things, these things would have also created new affordances; and here the concept of "*activist* affordances," introduced by Arseli Documacı (2023) as ways for the disabled body to turn material constraints into new opportunities, becomes very useful. If we succeed in recognising Beethoven as a deaf artist who invents new ways of interacting with his pianos, we may also start discovering unsuspected ways of performing and "hearing" the music of a fifty-plus-year-old composer. In this new mode of playing and listening, conventional habits, rules, or principles no longer apply.

EMBODYING PERFORMANCE

In preparation for writing this manifesto, I had a conversation with Joseph Straus, eminent music theorist, whose work on music and disability has been both pioneering and inspiring, and whose "Musicking While Old" podcasts (Straus 2022) have since been turned into a book on old musicians (Straus 2025), which, as he explains, represents a logical continuation of his thinking about "extraordinary" bodyminds (Straus 2011). Telling Joe about my performances in the early 2020s of the Sonata in A♭ Major, op. 110, on our replica of Beethoven's Broadwood-with-hearing-machine, I explained that whenever I played this sonata in front of an audience—an unusual experience because, as at a clavichord

14 One exemplary effort in Beethoven scholarship has been Robin Wallace's *Hearing Beethoven* (2018).

or organ, I would have them behind my back—I would put in earplugs. Rather than an exercise in disability simulation, this habit originated from sheer self-preservation—namely to protect my ears: the noise blasting from the backward-projecting machine was simply too loud. Especially in the final fugue, Beethoven just keeps pushing the envelope—louder and louder, then for two pages soft (*sempre una corda*), but then louder and louder again (*poi a poi tutte le corde*).

For me, the experience of playing with earplugs was intensely embodied: just as I became internally overly conscious of my breathing, I also felt more "inside" the piano than ever before, keenly aware of its mechanics and of sounds happening somewhere in front of me, entirely oblivious of my listeners' presence and of aspects that usually come in extreme focus during a public performance, such as simply hitting the right notes. "Fascinating," Joe interjected, then asking, "Have you recorded yourself during your performances? Did you in fact *sound* differently?"

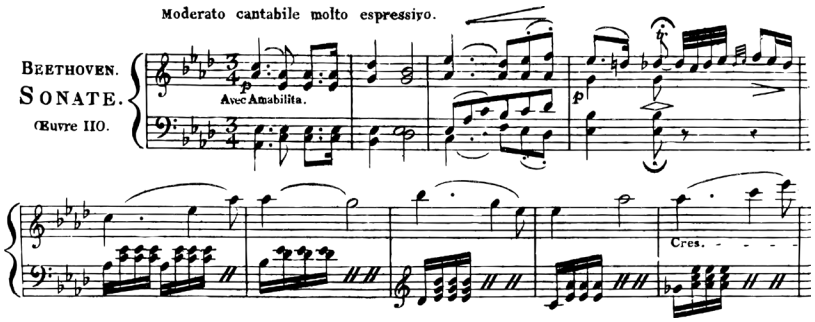
I hadn't—perhaps not wanting to risk an illusion being shattered: my reconstructed built environment had begun to feel quite private and personal. But I since did, and for the first time in years made the effort again of placing the heavy hearing machine on the Broadwood. (This is also entanglement: the large contraption is also a cumbersome thing to be stored, and this practical consideration may well explain why Beethoven's original did not survive: who would think some artistic researcher might one day be interested in it?) Three video clips document this renewed experience and also function as a preview of a large-scale and systematic study to take place in the years to come.[15] The first (video clip no. 5) shows me performing the opening of opus 110 in an ordinary set-up, the piano's lid opened in English concert-style. When in the

15 I produced the clips as examples for the panel session "Beethoven's Vis-à-vis Piano: Prospects and Challenges of Reconstructing Beethoven's Graf," featuring Katharina Preller, Chris Maene, Gregoir Basyn, and me at the 55th Annual Meeting of the American Musical Instrument Society (Vermillion, SD, 30 May 2026).

fourth bar a trill happens under a fermata (see the score in example 2), I approach it matter-of-factly: not too long and not too short. Truth is, I am not quite sure how to interpret it: is it a cadenza that prematurely brings to a halt a fragmentary opening theme that hardly got started, or does the trill bring into memory the end of the Sonata in E Major op. 109 where the idea of oscillating vibration reached transformative levels?[16] With the hearing machine in place, however (as in video clip no. 6), you see me visually and aurally explore to the fullest those oscillations within the metal cave in front of me. When Beethoven started having doubts, André Stein asked: "You do hear better, don't you, when you bring your head under this machine?" (*Kh* 6:276). That is precisely what I do: *I put my head in the machine*, and only after I feel satisfied with every reflection from every corner do I let go of the trill. Video clip no. 7, finally, represents the same set-up, but now with noise-isolating headphones. I am no longer capable of responding to the exuberant resonance the way I did in clip no. 6. Knowing how Viennese-style slurs are supposed to work (this is the embodied-memory part), I reconnect with the faster tempo of clip no. 5. My performance of the trill retains the experience of a three-dimensional space, but as my primary response is no longer to aural impulses, I explore a different sense of materiality: as I perform the swell (see the *messa di voce* in the score), I push the alternating hammers against the strings ever more strongly in an attempt to feel wood through leather. On a different occasion, André Stein wondered whether Beethoven "could hear a piano better that wasn't leathered" (*Kh* 1:324)—that is, whether he'd be better off with wood-only hammers. The idea resonated with Beethoven, who jotted down five years later, "One can give up the Paris piano and have an un-leathered one made [from it]" (*Kh* 7:281).

Finally (my curiosity now truly piqued), I put to the test my performance of the "first part" of "Hammerklavier," op. 106, on our 1816 Streicher replica—in full empathy with its maker-player and her frustrations.

16 This "transformative" quality of trills caught the repeated attention of William Kinderman (see, e.g., Kinderman 2007).



Example 2. Beethoven Sonata in A♭ Major, op. 110, mm. 1–9, first edition (Berlin: Schlesinger, 1822).

I thought I had discovered the source of our problems: there are moments in the first movement where it is impossible for certain keys to be restruck, as one hand takes over from the other. In an earlier publication, I even hypothesised that "chasing the impossible" is the music-rhetorical message of the piece, at the same time believing "perfection" still to be in reach somehow, whether by human practising or by fine-tuning the responsiveness of a Viennese piano (as in making sure each backcheck sits high enough to catch each hammer on their way back as early as possible, or lubricating the beak-leather to take away unnecessary surface friction during escapement) (Beghin 2014a). With noise-isolating headphones, however, I was pleasantly surprised that those hiccups of the non-sounding hammers (I do play the keys, even if their escapement levers can't keep up) do not bother me. I race through the difficulties, and I enjoy the overall filigree of sounds in mm. 47–62, a structural time-out that is stretched after a striking modulation from B♭ major to submediant G major. Beethoven has me play all this *piano*—so, internally poetic rather than outwardly brilliant. If a few non-sounding hammers do not bother me—not during the recording, nor during my listening afterward—then certainly it would not have bothered Beethoven. My empathy now shifts from Ms. Streicher to him, who in the privacy of his built environment was still capable of enacting his inner virtuoso. It

becomes quite touching that on 11 December 1819 Beethoven's friends decided he should give another academy, featuring "a symphony, the Gloria from your Mass, *your new [Piano] Sonata [op. 106], played by you*, and a grand closing chorus; everything by you" (*Kh* 1:313, emphasis mine). Beethoven may have appreciated the thought, but publicly performing a grand solo sonata would no longer have been possible—nor was there much context (not in Vienna, anyway) for bringing a solo piano sonata to the public stage, let alone such a monumental one. On the other hand, it is tempting to assume that his friends' suggestion did not emerge out of thin air: did one of them overhear Beethoven play (portions from) his new sonata?

A NEW PROJECT: BEETHOVEN VIS-À-VIS

I end this manifesto-essay with a confession: "Beethoven's last piano"—the quadruple-strung Conrad Graf he received on 24 January 1826—is a major test for my MEP thinking. The project to build its first-ever replica finishes a trilogy of today's three extant "Beethoven pianos"—the others being his 1803 Erard and 1817 Broadwood, which Chris Maene also reconstructed and to which we have already devoted many years of artistic research.[17] Tilman Skowroneck (2012, 73), an authority on Beethoven's pianos, minimises the Graf's significance, asserting that "this last phase of his ownership of pianos provides no new information about the conception of his last piano works," as all had been written by the time of the Graf's arrival. However, there *is* a piano piece that chronologically may be associated with the Graf: Beethoven's four-hand arrangement of his *Grande Fugue* ("Grosse Fuge," for string quartet) op. 133, with its own opus number 134. It is an arrangement, yes, but it is Beethoven's, and the fact that it adopts the full six-and-a-half-octave range of the Graf, instead of staying within the range of his Broadwood, shows that Beethoven still actively used the instrument, despite the popular

17 See www.BeethovenErard.com and www.InsideTheHearingMachine.com.



Figure 2. *Left*, Beethoven's Conrad Graf (1825) in Beethoven-Haus Bonn. Photo by Mark Boone. *Right*, constructed case of replica of the Beethoven Graf (Pianos Maene, 20 April 2026). Photo by Katharina Preller.

belief that surely someone with his experience and musical knowledge wouldn't need any material help anymore.

But factual evidence only goes so far, and it is precisely the counterfactual value of the Graf that is too fascinating to ignore. *What if* in March 1820 Beethoven had decided not to believe André Stein, "that there's nothing worse than a piano with four strings" (*Kh* 1:325)? *What if* a quadruple-strung Graf had entered his life six years earlier than it eventually did? *What if* he had not committed to his Broadwood as his daily workhorse but to a newly customised Viennese piano instead? Replicas of his Broadwood and Graf standing vis-à-vis each other, just as they did in his living room during the last nine months of his life, will allow us to operate between reality and imagination, between here-and-now thingness and embodied memory, or (as Dokumacı puts it) between the "as is" and the "as if." Last but not least, there *is* one specific thing-related

issue to ponder: why did Graf decide to give Beethoven a four-string instrument? Rather than a wild card, then, a quadruple-strung Graf—both generically, as a top-of-the-art Viennese piano from the mid 1820s, and specifically, having the precise feature that Streicher had already hypothesised might help the deaf composer, gives us yet another piece of entanglement to live with and to perform, as part of the grand puzzle we call Late Beethoven.[18]

CONCLUSION: CELEBRATING THE (IM)POSSIBLE

Reflecting on several decades of history, Nicholas Kenyon (2024, xiii) recently spoke of "an influential shift that early music has fostered," namely to "foreground performance as a valid, vital element in the study of music." In a brilliant evocation of a Parisian salon conversation, Elisabeth Le Guin (2007, 16) has Denis Diderot ask, "How can a sonata ever be better than its performance?" I've proposed here to go further still and to blur the lines between creation and performance, provided—and this is a crucial condition—that we acknowledge the concrete material contexts in which such performative creation took place. This means that the aspirations and frustrations of a deafly creating pianist-composer, mirrored by those of a piano-building friend, become just as fascinating and essential to Beethoven's "work" as the question of, say, how perfectly Joseph Czerny might have managed to play "Hammerklavier" after barely two months, or his namesake Carl after five years (*Kh* 5:133), or Liszt after seventeen, or the generic hard-practising virtuoso after fifty. In our thinking about performing early music, I believe we have largely remained trapped in human-oriented (read, "virtuoso") expectations of performance. We ascribe to the idea that difficulties in performance must be resolved and

18 A description of our new Beethoven Vis-à-vis project may be found at https://orpheusinstituut.be/en/projects/beethoven-vis-a-vis. Once completed, the Graf replica will remain at our disposal in Ghent for five years, before it will move permanently to Bonn, close to its original.

that musical matters must be discussed regardless of their technological entanglement. Always blaming the pianist and never the piano, we have prioritised the abstractions of entanglement, which have moved us away from thinking about the artistic implications of those entanglements themselves, and just as Carl Czerny in his 1846 "On the Proper Performance [*richtigen Vortrag*] of All Beethoven Works for Piano Solo" no longer cared about older technologies, we have stopped wondering about Beethoven's things altogether.[19] The challenge, then, rather than to ascribe to simple questions and answers, is to relive complex, historically contingent, and embodied entanglements.[20] There is no diplomatic way of saying this: playing anachronistic, double-escapement pianos, rather than the single-escapement ones Beethoven knew, whether Viennese or English, precludes such reliving of materiality-engendered paradoxes and problems. The upside, however, is that Late Beethoven, rather than narrowing our choices toward elusively transformative performances, may be more welcoming than we ever imagined, inviting players and listeners to partake in networks of dependenc(i)es, (activist) affordances, and (im)possibilities, yielding an unexpectedly inclusive performative space where non-perfection and sheer humanity may be the point.

19 "Ueber den richtigen Vortrag der sämmtlichen Beethoven'schen Werke für das Piano allein," chapter 3 of Czerny (1846). I am reproducing the well-known English translation of Czerny's title, even if "correct" (instead of "proper") would be more correct (and proper!). The same nuance incidentally applies between Czerny's "richtig" and Streicher's "ob ich's recht nehme" (see the first paragraph of this essay).

20 One such question concerns the much-discussed metronome indications in opus 106, which became a topic only because Ferdinand Ries pressed for such numbers for the planned English edition. Here's an opportunity to think about the impact of a newly invented machine rather than wondering precisely how fast we should play.

REFERENCES

Bauer, Wilhelm A., and Otto Erich Deutsch, eds. 1962. *1777–1779*. Vol. 2 of *Mozart: Briefe und Aufzeichnungen*. Kassel: Bärenreiter, 1962–75.

Bauman, H-Dirksen L., and Joseph J. Murray, eds. 2014. *Deaf Gain: Raising the Stakes for Human Diversity*. Minneapolis: University of Minnesota Press.

Beghin, Tom. 2012. "Beethoven's Broadwood: A Construction Project." Appendix 2 to Skowroneck 2012, 81–82.

Beghin, Tom. 2014a. "Beethoven's 'Hammerklavier' Sonata, Opus 106: Legend, Difficulty, and the Gift of a Broadwood Piano." In Beghin 2014b, 81–121.

Beghin, Tom, ed. 2014b. "Myth and Reality in Beethoven's 'Hammerklavier' Sonata, Opus 106." Special issue, *Keyboard Perspectives: Yearbook of the Westfield Center for Historical Keyboard Studies* 7.

Beghin, Tom. 2022. *Beethoven's French Piano: A Tale of Ambition and Frustration*. Chicago: University of Chicago Press.

Brandenburg, Sieghard, ed. 1996–98. *Ludwig van Beethoven: Briefwechsel Gesamtausgabe*. 8 vols. Munich: G. Henle.

Breuning, Gerhard von. 1874. *Aus dem Schwarzspanierhause: Erinnerungen an L. van Beethoven aus meiner Jugendzeit*. Vienna: L. Kosner.

Czerny, Carl. 1846. *Die Kunst des Vortrags der ältern und neuen Claviercompositionen, oder Die Fortschritte bis zur neuesten Zeit: Supplement (oder 4ter Theil) zur grossen Pianoforte-Schule von Carl Czerny, op. 500*. Vienna: Diabelli.

Dokumacı, Arseli. 2023. *Activist Affordances: How Disabled People Improvise More Habitable Worlds*. Durham, NC: Duke University Press.

Gibson, James J. 1979. *The Ecological Approach to Visual Perception*. Boston, MA: Houghton Mifflin.

Hodder, Ian. 2012. *Entangled: An Archaeology of the Relationships between Humans and Things*. Chichester, UK: Wiley-Blackwell.

Kenyon, Nicholas. 2024. "Foreword: Polarization, Reintegration, and Diversity." In *Early Music in the 21st Century*, edited by Mimi Mitchell, vii–xiv. New York: Oxford University Press.

Kinderman, William. 2007. "Metamorphosis and Transfiguration in Beethoven's Late Piano Works." In *Verwandlungsmusik: Über komponierte Transfigurationen*, edited by Andreas Dorschel, 91–117. Vienna: Universal Edition.

Köhler, Karl-Heinz, Dagmar Beck, and Grita Herre, with Günter Brosche, eds. 1972–93. *Ludwig van Beethovens Konversationshefte*. 10 vols. Leipzig: VEB Deutscher Verlag für Musik.

Ladenburger, Michael. 1999. "Beethoven und die Familie Streicher." In *Beethoven und die Wiener Klavierbauer Nannette und Andreas Streicher*, edited by Uta Goebl-Streicher, Jutta Streicher, and Michael Ladenburger, 33–51. Bonn: Verlag Beethoven-Haus Bonn.

Le Guin, Elisabeth. 2007. "A Visit to the Salon de Parnasse." In *Haydn and the Performance of Rhetoric*, edited by Tom Beghin and Sander M. Goldberg, 14–36. Chicago: University of Chicago Press.

Moscheles, Charlotte. 1873. *Life of Moscheles, with Selections from His Diaries and Correspondence*. Translated by A. D. Coleridge. 2 vols. London: Hurst and Blackett.

Moscheles, Felix, ed. and trans. 1888. *Letters of Felix Mendelssohn to Ignaz and Charlotte Moscheles*. Boston, MA: Ticknor.

Norman, Don. 2013. *The Design of Everyday Things*. Rev. and expanded ed. New York: Basic Books.

Rampe, Siegbert. 2019. "Die Klavierwelt." In *Beethovens Welt*, edited by Siegbert Rampe, 385–438. Lilienthal, Germany: Laaber.

Siebers, Tobin. 2008. *Disability Theory*. Ann Arbor: University of Michigan Press.

Skowroneck, Tilman. 2012. "A Brit in Vienna: Beethoven's Broadwood Piano." *Keyboard Perspectives: Yearbook of the Westfield Center for Historical Keyboard Studies* 5:41–82.

Straus, Joseph N. 2011. *Extraordinary Measures: Disability in Music*. New York: Oxford University Press.

Straus, Joseph N. 2022. *SMT-Pod: The Society for Music Theory Podcast*, season 1, episodes 2, 4, 8, 13, 16, "Musicking While Old," 20 January–28 April 2022. Accessed 6 August 2026. https://smt-pod.org/episodes/season01/.

Straus, Joseph N. 2025. *Cultural Narratives of Old Age in the Lives, Work, and Reception of Old Musicians*. Abingdon, UK: Routledge.

Thayer, Alexander Wheelock. 1967. *Thayer's Life of Beethoven*. Revised and edited by Elliot Forbes. 2 vols. Princeton, NJ: Princeton University Press. First published as *Ludwig van Beethovens Leben*, vols. 1–3 edited by Hermann Deiters (Berlin: F. Schneider, W. Weber, 1866–79, rev. 1910–17 by Hugo Riemann); vols. 4–5 edited by Hugo Riemann (Leipzig: Breitkopf und Härtel, 1907–8). English edition first published 1921 as *The Life of Ludwig van Beethoven*, edited and revised by Henry Edward Krehbiel (New York: Beethoven Association).

Wallace, Robin. 2018. *Hearing Beethoven: A Story of Musical Loss and Discovery*. Chicago: University of Chicago Press.

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Tom Beghin draws on the example of Beethoven's late piano music to make a case for materially entangled performance (MEP). He argues that the music of an aging and deaf composer, while often explained as "transformative," depended more—and not less—on technology. To perform entanglement means to recognise, embody, and enact such dependenc(i)es between artists and things.

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