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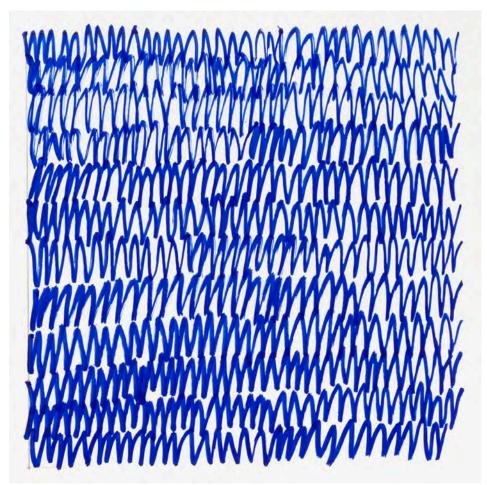
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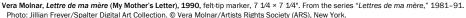
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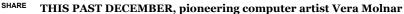
BETWEEN THE LINES

The art of Vera Molnar By Zsofi Valyi-Nagy

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f died at the age of ninety-nine. To celebrate her achievements—

and to mark the opening of a major exhibition of her work at Centre Pompidou, Paris, now on view through August 26—

Artforum invited artist and art historian Zsofi Valyi-Nagy to
 provide an overview of Molnar's oeuvre. Here, Valyi-Nagy examines the artist's work through a novel lens: that of media archaeology, resurrecting a vintage Tektronix microcomputer to "reenact" the process behind one of Molnar's groundbreaking plotter drawings.

HOW DO YOU DRAW a line with a computer? This task has not always been as simple as clicking a mouse or swiping your finger across a screen. When the artist Vera Molnar¹ (1924–2023) decided to try her hand at computer graphics in the late 1960s, she did so decades before the wide



Vera Molnar, *Transformation, 1983,* vinyl on canvas, 59 × 59". © Vera Molnar/Artists Rights Society (ARS), New York.

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availability of software like Paint, with its welcoming and accessible graphical user interface (GUI). She had to give the computer instructions in a language the machine would understand: alphanumeric code.

In her twenty-five years of experimenting with computers in Paris, Molnar learned two programming languages, FORTRAN and BASIC. Neither was designed for programming images (despite its name, BASIC is hardly user-friendly), but both had the capacity to produce vector graphics—shapes built from lines plotted along a Cartesian plane. These shapes could be output to paper via a pen plotter, which used a mechanical arm to "draw" lines along an x and a y axis. Nicknamed a "drawing machine," the plotter displaced the artist's hand, thus becoming an attractive tool for artist-researchers such as Frieder Nake and Manfred Mohr, who were interested in suppressing qualities such as gesture, intuition, and individual authorship. Their aims, aligning with broader tendencies in postwar European art, dovetailed with those of painters such as François Morellet, a close friend of Molnar's, who, in an effort to "demystify art," "programmed" his paintings in advance.²

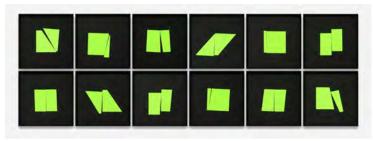


Vera Molnar's Calcomp plotter printing Structure de quadrilatères, 1988, Rennes, France, 1988. Photo: Vera Molnar Archives.

Molnar, for her part, recognized the futility of an objective approach to artmaking. Computers and algorithms were, she observed, ultimately human creations. "It may seem paradoxical," she wrote in 1989, that this "so-called inhuman machine helps to realize what is most subjective, what is most profound in man." At a moment when the computer was threatening to replace the artist, Molnar was testing its limits, investigating aspects of the artistic process that could *not* be automated. These questions are all the more relevant today, as the rise of generative artificial intelligence and text-to-image models such as Midjourney has thrown questions of intention, automation, and artistic subjectivity back into the spotlight.

In fact, even before she had access to an electronic computer, Molnar was already in dialogue with an imaginary one. Around 1960, about the same time she and her husband, François Molnar, cofounded and abruptly exited the Centre de Recherche de l'Art Visuel (CRAV), which later became the opto-kinetic artist collective GRAV, Molnar developed her *machine imaginaire*. More of a method than an actual machine, the *machine imaginaire* was an early example of generative art, or art made using a more or less autonomous system. The artist would execute, in her own words, "algorithms by hand," following step-by-step instructions to create series of drawings and collages that explored variations on geometric forms. ⁴ This approach was part of an effort to minimize subjective decision-making; like

Morellet, Molnar would use strategies like rolling dice or pointing to digits in the telephone book to generate random numbers.



Vera Molnar, Fissions vertes (Green Fissions), 1966, collage on paper, twelve parts, each 15 3/4 × 15 3/4".

© Vera Molnar/Artists Rights Society (ARS), New York.

As indicated by an examination of Molnar's oeuvre—from these early works to her final experiments with desktop PCs in the early 1990s—her relationship with computers was deeply intersubjective, an ongoing conversation between woman and machine. As curator David Familian observed on the occasion of Molnar's first solo exhibition in the United States, in 2022 at the Beall Center for Art and Technology in Irvine, California, even her computer-generated lines maintain a certain handmade quality. It is this tension between the man-made and the machine-made that she spent much of her career testing and teasing out. It was her great ongoing experiment.

Molnar's relationship with computers was deeply intersubjective, an ongoing conversation between woman and machine.

VERA MOLNAR WAS BORN in Hungary in 1924, the only child of businessman Jenő Grünfeld and Erzsébet Pollacsek, middle-class, secular Jews who lived comfortably in the Újlipótváros neighborhood of Budapest. In 1942, young Vera was admitted to the Hungarian Fine Arts Academy, one of only two Jewish students admitted under anti-Semitic legislation. From the start, the art school's atmosphere was deeply unwelcoming to those of her background. At her matriculation ceremony, the rector aligned the institution with the nationalist values bubbling up in interwar Hungary: "True creativity can become a universal human value only together with racial qualities and only through national traditions."

Molnar would never speak openly of her early life—of her surname, which she had to legally change to survive the war, or of the days she spent in hiding as her beloved city was bombed in the winter of 1944–45. She preferred to tell a nicer story, of an uncomplicated Catholic upbringing; she was tired of having Jewishness ascribed to her and feared that making her identity known would endanger her once again. After the war, a painting scholarship took Vera and François Molnar to Rome, from where the couple fled to Paris and stayed on expired student visas. Their classmates Simon Hantaï, Marta Pan, and Judit Reigl would join them soon after. Though art historian Serge Guilbaut famously argued that postwar Paris was no longer the capital of modern art, it remained a mecca for abstraction for artists east of the Iron Curtain.

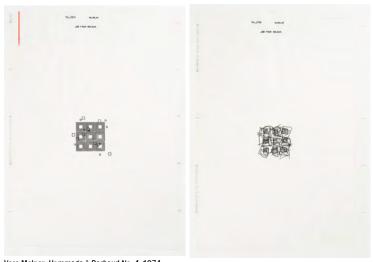


Vera Molnar, 1961. Photo: François Molnar.

For Molnar, Paris offered a fresh start—a rebirth, even. While art informel artists such as Jean Fautrier processed the aftermath of the war with gritty paintings that dripped "like raw wounds," to borrow Guilbaut's words again, Molnar gravitated toward "cold" abstraction, in which lines were drawn with rulers and protractors, devoid of feeling. Though Molnar insisted that her circles, squares, and triangles were apolitical, it is difficult not to read this rational turn as a different response to the atrocities of World War II, perhaps as an attempt to exert a semblance of control in an otherwise disordered world.

Molnar's interest in computers grew out of interdisciplinary conversations in Paris. In 1967 she and her husband (who had retrained as a perceptual psychologist) cofounded another group, Art et Informatique (Art and Computing), through which she met the composer Pierre Barbaud. He was her key to accessing an electronic computer—a mammoth mainframe at the French computer manufacturer Bull—the following year. Throughout the 1970s, she experimented on an IBM mainframe at the Centre Inter-régional de Calcul Éléctronique (CIRCE) in a suburb of Paris, where she generated thousands of plotter drawings.

These works—transmutations of concentric squares and polygons that bend in and out of shape—exhibit a rational, geometric coldness that was popular among her artist peers at the time. The plotter drawings seem to call attention to formal qualities, inviting the viewer to parse or decipher the system. At the same time, these works display a materiality—thin paper with sprocket holes intact, the time stamp at the top of the page reading JOB FROM MOLNAR—that piques our curiosity about how these images came into being. The artist's deceptively simple graphics belie complex systems that one can only uncover by attending to making.

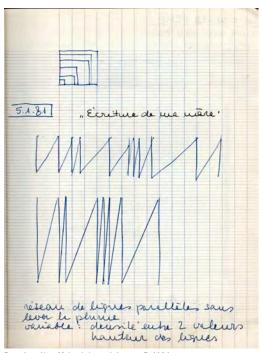


Vera Molnar, Hommage à Barbaud No. 4, 1974, plotter drawing on paper, 23 × 17". From the series "Hommage à Barbaud," 1974.
Photo: Jillian Freyer/Spalter Digital Art Collection. © Vera Molnar/Artists Rights Society (ARS), New York.

Vera Molnar, Hommage à Barbaud No. 8, 1974, plotter drawing on paper, 23 × 17". From the series "Hommage à Barbaud," 1974. Photo: Jillian Freyer/Spalter Digital Art Collection. © Vera Molnar/Artists Rights Society (ARS), New York.

THE HISTORY OF ART tends to focus on the art object, not the process that gave rise to it. The task of uncovering the process behind Molnar's computer graphics might therefore seem outside art history's bounds. But it's precisely in Molnar's process, I argue, that she made her most significant contributions to contemporary art and aesthetics. Art historian Jennifer Roberts calls "the gap between making art and writing about art" "one of the most stubborn blind spots in our discipline." She advocates for the studio as a site of art-historical knowledge, where the "misalignments between the expertise of the art historian and the expertise of the artist" engender productive frictions that she terms "mis-expertise." Roberts suggests that by working in the studio, art historians can develop not only technical knowledge but also a greater observational sensitivity and an awareness of invisible labor.

In many ways, Molnar's work lends itself to this kind of research. Her compositions are already a popular subject of re-creations in creative coding communities, such as the Recode Project, "a community-driven effort to preserve computer art by translating it into a modern programming language (Processing)," referring to the creative programming environment created by Ben Fry and Casey Reas in 2005. Artist Zach Lieberman's poetic computation course Recreating the Past, at MIT, routinely begins with an assignment to reprogram a Molnar. In 2019, I attended a workshop led by z1 studio in conjunction with an inventive Molnar exhibition at the now-defunct Museum of Digital Art in Zurich, where we also reprogrammed the artist's lines in Processing, outputting the results to paper using modern plotters.



Page from Vera Molnar's journal, January 5, 1981.

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Yet these exercises, as insightful as they are, remain unsatisfying. Though they allow us to grasp the dynamic relationship between code and image, they give only limited insight into Molnar's artistic processes. They cannot take into account the phenomenology of working with a specific machine from a particular historical moment: the embodied experience of sitting before a computer the size of another human body, its keys sticking, the low hum of its fan punctuated by the tap-tapping of the plotter pen as its mechanical arm travels up and down, left to right, its motors whirring with each change in direction.

To gain a true appreciation of Molnar's process, I would need to experience it firsthand. In 2022, I traveled to the Media Archaeological Fundus at Humboldt University in Berlin, an institute devoted to fostering the handson study of "old and dead media devices," to borrow a definition of media archaeology from Jussi Parikka and Garnet Hertz. There, I met with Stefan Höltgen, then director of the institute's Signallabor, or signal laboratory, who is an expert in retrocomputing—that is, in hardware and software no longer in wide use. Höltgen generously sourced me a working Tektronix 4052 microcomputer, the very same machine that Molnar used in 1977 as an artist-in-residence at L'Atelier de Recherches Techniques Avancées (ARTA), the computer lab at Paris's Centre Pompidou. No mere artifact, this hulking computer, with its glowing green screen, ambient hum, and clunky keyboard, presented me with an opportunity to search for Molnar not only in the archives, but in the machine, by retracing her steps and reenacting her process.



Vera Molnar, Lettres de ma mère (My Mother's Letters) (detail), 1988, plotter drawing on paper, 11 58" × 13' 8 38". From the series "Lettres de ma mère," 1981–91.

© Vera Molnar/Artists Rights Society (ARS). New York.

As Sven Lütticken has observed, *reenactment* has become a buzzword in recent contemporary art discourse, whether it refers to historical exhibitions or performance art pieces. ¹⁰ I employ the term to refer to my use of a vintage computer to create an approximation of one of Molnar's artworks. My goal is not to reconstruct the exact program Molnar wrote, but to develop an understanding of her approach: the tools she used, the problems or challenges she might have faced, and the temporality and embodied experience of programming computer graphics before the GUI.

The subject of my reenactment was a series Molnar worked on throughout the 1980s called "Lettres de ma mère," 1981–91, which the artist translated as "My Mother's Letters." To create this work, Molnar (with the help of more tech-savvy collaborators) wrote a computer program that would, in her words, "simulate" her late mother's handwriting. Through pages and pages of computer-generated "handwriting" that is entirely asemic (meaning the lines look like writing but have no semantic meaning whatsoever), this workcomplicates authorship while at once interrogating the relationship between drawing and writing, looking and reading, and image and text.

It's precisely in Molnar's process that she made her most significant contributions to contemporary art and aesthetics.

ON JANUARY 5, 1981, her fifty-seventh birthday, Vera Molnar picked up a blue ballpoint pen and drew two zigzagging lines in her sketchbook, each a continuous, dynamic mark. In black ink, she added a title for her sketch—

Ecriture de ma mère (My Mother's Handwriting). Two months later, Molnar returned to her sketchbook. This time, she drew five zigzagging lines, each stacked atop the other so that together they mimic the visual structure of a handwritten letter. This composition was based on the weekly letters that the artist received from her mother, Erzsi, from 1947, when she immigrated to Paris, until the end of Erzsi's life in 1971. Molnar saved a sheaf of this correspondence, including the final notes that arrived in her mailbox after her mother's funeral, like a message from a ghost. Erzsi's distinctive script, in her signature blue pen, was an object of fascination for the artist.

In 1984, Molnar began converting the zigzags into computer code, translating alphanumeric instructions into visual forms that were then output to ink on paper using a plotter. Molnar continued to work on the resulting series, "*Lettres de ma mère*,"into the early '90s, producing dozens of variations on this asemic handwriting. While Molnar gave the title in English as "My Mother's Letters," the French *de* could mean either "from" or "of," introducing more ambiguity in terms of both authorship and temporality. Who were these letters written by? And to whom?



Vera Molnar, Lettres de ma mère (My Mother's Letters) (detail), 1988, plotter drawing on paper, 11 5/8" × 13' 11/2". From the series "Lettres de ma mère," 1981–91.

© Vera Molnar/Artists Rights Society (ARS), New York.

In 1988, the artist made two versions of "*Lettres*," one in black ink and one in blue, on long rolls of plotter paper that unfurl like scrolls. On each scroll we see a series of nine to eleven "letters." "Using an increasingly random process," Molnar wrote in the journal *Leonardo*, "the lines . . . become more and more chaotic as they advance to the right." This entropic progression, from order to disorder—both within each letter and in the series as a whole—was a hallmark of Molnar's abstraction, characterizing many of her earlier series, such as "*Hommage à Barbaud*,"1974, and "Transformations,"1976, as well as the variations on Mont Saint-Victoire that she began in 1987, just a few years after she started the "*Lettres*." Yet the series was also a new tack for Molnar, its real-life subject matter a departure from her usual repertoire of squares and polygons.

This referent—the artist's mother and their relationship as it lives on in their abstract, imagined correspondence—is not only real, it's highly personal, and carries a lot of poetic potential. It also represents the kind of art that Molnar's mathematically oriented, scientistic milieu rejected. Molnar, meanwhile, maintained that the project was purely about pictorial composition. In her writing about the series, she focused only on the lines' formal qualities. Even the "hysteria" she observed in her mother's writing—that nebulous, incurable mental state ascribed to so many women of her generation—is quantified, written into the computer program as random noise. ¹² The artist suggests that reading her mother's correspondence was, above all, a *visual* experience, one that collapsed the distinction between reading and looking. The invocation of her dead mother is purely incidental, she insists. We shouldn't read into it.



Zsofi Valyi-Nagy with a reproduction of Vera Molnar's Lettres de ma mère (My Mother's Letters), 1988, Signallabor, Humboldt University, Berlin, 2022. Photo: Julia Sandor, Artykfilm.

© Vera Molnar/Artists Rights Society (ARS), New York.

TO INVESTIGATE HOW Molnar programmed the lines in "Lettres de ma mère," I had to physically trace them. Sitting in the Signallabor surrounded by circuit boards and the flickering green screens of dozens of vintage computers, I began with an analog image: a reproduction of the first "letter" in Molnar's black-ink scroll from 1988. Armed with a pen, a ruler, and a protractor, I counted the number of lines and peaks and measured the lengths of the line segments, the distances between strokes, and the angles at which the "handwriting" tilted to the right. I began to recognize patterns and build a repertoire: There was an indent on the first line; the angle of inclination in the zigzag varied from twenty-two to forty-one degrees; and each line had between seventy and eighty peaks, the exact number seemingly determined at random, which occasionally caused the peak to invert, appearing below the baseline. (Tracing the marks of the plotter recalled the detective work of nineteenth-century connoisseurs, who saw tracing as a way to access the psychological space of the artist—a space that Molnar, by using a plotter, thwarted.) Once I had this repertoire in mind, I could think about how to translate the visual forms back into alphanumeric instructions.

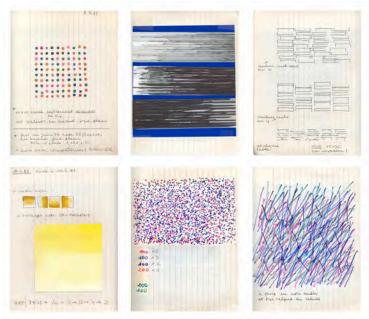
Like Molnar, I could only "draw" with the Tektronix 4052 if I learned its language—BASIC—which I did by poring over old manuals and playing around with an online emulator. The emulator re-creates the experience of coding on this machine down to the keyboard: Where we find the modern "delete" key, there was a button labeled RUB OUT, which covered up my mistakes with an opaque rectangle like the correction tape on a typewriter. Typing on a machine resuscitated from decades of hibernation, I was an amateur programmer just like Molnar, banging my head against the wall trying to generate a simple diagonal line.

Even the "hysteria" she observed in her mother's writing is quantified, written into the computer program as random noise.

After a week of trying, and failing, to instruct the clunky machine to draw a line along the computer screen's x and y axes using my spotty recall of high school geometry, I was kindly nudged in the right direction by Höltgen, who pointed out the built-in "draw" function, which allowed me to generate a continuous, zigzagging line that traveled across the screen like the tail of a lime-green comet. On the Tektronix's cathode ray tube (CRT) screen, the graphics appear like flashes of lightning—first almost blindingly bright, then

dimming. Even after the screen is "cleared," physical traces of these lines remain, like lines on a chalkboard or an Etch A Sketch.

Taking a hands-on, media-archaeological approach to "Lettres de ma mère," and to Molnar's work more broadly, one uncovers connections between her process and the form her work takes that might otherwise go unnoticed. Just as the letters' meanings are open-ended, Molnar's programs were not deterministic. Rather, they were exploratory, experimental, and generative. Moreover, reenacting Molnar's process emphasizes two key aspects: collaboration and trial and error.

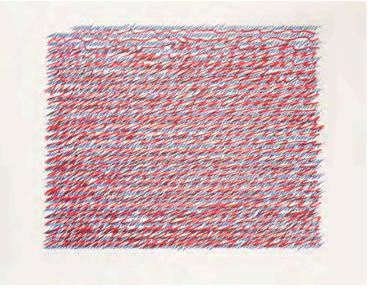


Six pages from Vera Molnar's 1976-82 journal. © Vera Molnar/Artists Rights Society (ARS), New York.

Like me, Molnar had interlocutors who helped her write and troubleshoot her programs, giving her feedback on the technical aspects as well as the aesthetic. ¹³ Does this make her any less of a computer art pioneer? In the history of computer art, Molnar's credentials as such are sometimes questioned by critics who say she did not write her own code: This gendered criticism is not only false but also presumes solitary authorship, which is simply unrealistic given the collaborative nature of most scientific research. Media archaeology draws attention to the invisible labor that goes into computational artworks.

Whether she was working in a laboratory with a mammoth mainframe or a personal computer in her own home, Molnar's computer graphics were made in a back-and-forth with the machine. In a 1975 text for *Leonardo*, the artist emphasized what set her approach apart from that of her fellow digital-art pioneers: "Whereas they begin with an initial set of rules (a grammar) specifying the way parameters are to be varied, I try to elaborate the rules as a work develops." Rarely did she set out with a preconceived plan for a drawing; rather, she tinkered with the program or its parameters until she reached a desired outcome. This reassertion of her own subjective choices was a necessary part of her process; there were certain artistic decisions the computer simply could not make. My reenactment offered a deeper understanding of her interventionist approach. For Molnar, the idea is not merely that "the machine that makes the art," to quote Sol LeWitt's famous formulation for Conceptual art, which has often been transposed onto early digital art. Then and now, the computer is a conversation partner

—one that consistently offers surprising results we cannot imagine on our own.



Vera Molnar, Lettres de ma mère main et machine (My Mother's Letters Hand and Machine), 1990, plotter drawing and felt-tip marker on paper, 12 $1/2 \times 16 1/2''$.

Photo: Jillian Freyer/Spalter Digital Art Collection. © Vera Molnar/Artists Rights Society (ARS), New York.

MOLNAR CREATED "Lettres de ma mère" by translating her mother's handwriting into the visual language of geometric abstraction. What might these computer-generated letters say, if we could only read them? As much as the artist wants us to believe it's merely a coincidence that she produced this work on the threshold of the *Rendszerváltás* or the end of Communist rule in Hungary, this historical context cannot be ignored. For a quartercentury, this mother-daughter relationship was strained by geopolitical circumstances, kept alive only through these messages—which, due to practices of censorship, could not say much at all. We cannot help but wonder what was left unsaid. Such a reading might seem sentimental, but I raise these questions precisely because Molnar did not.

In her many decades of correspondence with her mother, Molnar felt—like many adult children—guilty that she did not write often enough. Erzsi wrote weekly; Vera wrote back only once every ten days, at best. While Molnar's letters to her mother are lost to history, we see a response of sorts in what she calls the *contre-écritures*, which she produced parallel to the "*Lettres*." With a dark-blue pen, Molnar overlays the computer-generated "simulation" of her mother's handwriting with her own freehand, zigzagging marks. Sometimes the two blues, the two modes of mark-making, are indistinguishable. Sometimes the hand-drawn line overpowers its computer-drawn counterpart, as the two entangle into entropic chaos.

There were certain artistic decisions the computer simply could not make.

Here, Molnar picks up a conversation that she began at least a decade earlier —a conversation between the plotter's robotic arm and her own hand. *Which line is which?* Is one inherently better than the other, more interesting, more aesthetically valuable? Molnar suggests it doesn't matter. Her pseudo-

cursive is both recursive and discursive. It's a conversation with her mother, but it's also a conversation between Molnar the artist and Molnar the programmer.

It is in the misalignment of these approaches that Molnar's own misexpertise emerges. By simultaneously learning coding and teaching drawing, Molnar maintains an open-ended and experimental approach to programming abstraction. Without saying anything at all, Molnar's asemic writing makes porous those boundaries that artificially separate art from science, writing from drawing, reading from looking, and Eastern Europe from Western Europe. Perhaps for her, the series was merely a formal exercise, but reenacting this historical work—bringing it into the present by retracing those marks and rewriting those lines of code—opens up a multitude of new meanings, of ways to relate to the work and to the artist who made it.



Four works from Vera Molnar's "Etude sur sable" (Drawing on Sand) series, 2009, C-prints, each 7 1/8 × 10". © Vera Molnar/Artists Rights Society (ARS), New York.

NOTES

- 1. While *Véra* is typically spelled with an accent in French and *Molnár* is spelled with an accent in Hungarian, I follow the artist's request to use a diasporic spelling with no diacritics.
- 2. François Morellet, "The Case for Programmed Experimental Painting" (1962), in *A Little Known Story About a Movement, a Magazine and the Computer's Arrival in Art: New Tendencies and Bit International, 1961–1973*, ed. Margit Rosen (Karlsruhe, Germany: ZKM|Center for Art and Media, 2011), 92.
- 3. Vera Molnar, "Léonard de Vinci s'il Eût Eu Un Ordinateur," +-*o* (*Plus-Moins-Zéro*) 52 (February 1989).
- 4. Michael Tilson, ed., 1975 Canadian Computer Show Art Exhibition (Toronto, 1975). Due to the experimental and ephemeral nature of these works, few survive from this period. For more on the *machine imaginaire*, see Vincent Baby's essay in *Vera Molnar: Pas froid aux yeux*, ed. Baby and Francesca Franco (Paris: Bernard Chauveau Editeur, 2021). The name *machine imaginaire* came from Molnar's friend Michel Philippot (1925–1996), a composer who was exploring a serial approach to music.
- 5. "Vera Molnar: Variations," April 2—August 27, 2022, Beall Center for Art and Technology, Irvine, California.

- 6. "Rektori Jelvényeket Kapott a Szépművészeti Főiskola: A Kultuszminiszter a Főiskola Hivatásáról," *Nemzeti Újság*, October 27, 1942, Metropolitan Ervin Szabó Library, Budapest Collection. My translation from Hungarian. While the anti-Semitic *numerus clausus* laws, which limited university admissions for Jewish students, did not extend to art schools, they were enforced there unofficially.
- 7. Molnar and I discussed this topic in the years before her passing, and she ultimately granted me permission to state the facts of her life so long as I didn't interpret her work through a strictly biographical lens. I discuss this in more detail in my book manuscript, as well as in my essay "Herstory or Mine? Writing Feminist Histories of Art with Self-Mythologies in Mind" in the anthology *Theorising the Artist Interview*, ed. Lucia Farinati and Jennifer Thatcher (London: Routledge, forthcoming).
- 8. Jennifer L. Roberts, "On Mis-Expertise: The Art Historian in the Studio" (CAA Annual Conference, Los Angeles, 2018).
- 9. Garnet Hertz and Jussi Parikka, "Zombie Media: Circuit Bending Media Archaeology into an Art Method," *Leonardo* 45, no. 5 (2012): 425.
- 10. Sven Lütticken, "From Re- to Pre- and Back Again," in *Over and Over and Over Again: Reenactment Strategies in Contemporary Arts and Theory*, ed. Cristina Baldacci, Clio Nicastro, and Arianna Sforzini, Cultural Inquiry 21 (Berlin: ICI Berlin Press, 2022), 1–16.
- 11. Vera Molnar, "My Mother's Letters': Simulation by Computer," *Leonardo* 28, no. 3 (1995): 169.
- 12. Molnar, "My Mother's Letters," 167.
- 13. She often cited her husband, the experimental psychologist François Molnar, as the cocreator of her computer programs, which has led to the gendered assumption that he was the ghostwriter of her algorithms, when in fact François relied on computer-savvy assistants just as heavily as she did.
- 14. Vera Molnar, "Toward Aesthetic Guidelines for Paintings with the Aid of a Computer," *Leonardo* 8, no. 3 (1975): 188.

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