

Text by G. Douglas Barrett, 2024

## **Squaring Musical Time: Michel Lorand's *Four by Four***

### *Introduction*

A string quartet readies themselves in an otherwise empty auditorium. At waist level, the camera frames the group just behind the cellist who sits before a music stand opposite one of the violinists. The two other string players, to the cellist's left and right respectively, similarly face one another: the huddled symmetry of a plus sign, a variation on the more familiar audience-facing crescent. Again, there is no audience, yet the camera is far from lifeless. Instead, it begins to gradually cycle around the ensemble—clockwise—as they slowly bow their instruments. With little coordination, aside from an initial smartphone stopwatch app synchronization, each performer plays a series of breath-length tones, all relatively quiet and without vibrato or expressive embellishments. Many of these whole notes are separated by pauses, although only rarely do more than one or two performers drop out of the texture. The result is hard to place harmonically: a muted dissonance weaves throughout; triads and seventh chords, often inverted, arise occasionally yet seemingly only by accident. A couple of minutes into this texture, with the camera roughly halfway around the ensemble, the cellist nods for a coordinated entry—almost a downbeat—after which the free-floating notes return. By the five-minute mark, when the camera has wound its way back to the cellist, its ambling viewpoint finally comes to a rest. Meanwhile, the quartet decays into silence, taps their stopwatch apps in unison, and takes a collective breath. Surprisingly, in a flourish, the camera dollies once again, this time counterclockwise and much quicker, circling the whole ensemble in a matter of seconds. A kind of reset at once perspectival and temporal: the winding up of a clock.

This is a description of the first section of Belgian artist Michel Lorand's *Four by Four* (2021). The contemporary artwork consists of a filmic depiction of four versions of John Cage's *Four*, a string quartet the American composer created in 1989 and dedicated to the Arditti Quartet. The musicians featured in Lorand's work are known as Quatuor MP4, a Belgium-based chamber ensemble with a repertoire spanning from the Romantic era to twentieth-century experimental and European avant-garde traditions. Here their role is double: tasked with producing multiple realizations of Cage's composition, they also figure as subjects of Lorand's film. For Lorand, *Four by Four* is

part of a larger body of work based on this kind of intersection between music and cinema. But rather than music serving as a soundtrack to the moving image, as in conventional narrative film, Lorand's works apply cinematic codes to the capturing of musical performance, effectively reframing, remediating works of experimental music. Here he focuses on the 360 dolly shot, a technique in which the camera rig sits atop a cart the cinematographer wheels around a set of tracks that encircle a scene. Ordinarily, such circular shots aim to immerse the viewer in the action, not to draw attention to the technique itself. Yet *Four by Four* doesn't hide evidence of the dolly apparatus, its gently curving tracks visible just behind the ensemble. In a Brechtian *Verfremdungseffekt*, that is, Lorand's roving camera becomes a part of the very ensemble it captures: a conductor whose perspectival time-keeping mirrors the fluid movement of a watch's seconds hand. We know, of course, that these musicians follow the inaudible ticking of seconds displayed on their respective smartphones, in coordination with Cage's score, and at times each other. Nevertheless, the camera's full rotation effortlessly syncs to the five minutes of the quartet's first version of *Four*, musically squaring this audiovisual circle.

For Lorand, this kind of synaesthetic slippage between music, visuality, and time is programmatic. The title of this catalogue, and the exhibition of works it represents, is *La musique comme image du temps*, or *Music as the Image of Time*. In another work, *Unfading* (2023), for example, Lorand films the soprano Sarah Defrise performing Morton Feldman and Samuel Beckett's opera *Neither* (1977) on a soundstage against a white backdrop without orchestral accompaniment. Over the course of fifty-five minutes, the camera gradually dollies away from its ever-shrinking subject, producing a slow zoom-out effect lasting the length of Feldman's composition. As with *Four by Four*, *Unfading* isolates a cinematographic technique in a manner recalling precedents in experimental cinema. Yet whereas Michael Snow's 1967 film *Wavelength* consists of a forty-five-minute zoom *in* using a telephoto lens, Lorand goes in the opposite direction and opts for the dolly, again—and all the more literally—invoking Brecht's "distancing effect." As the point of view recedes, in this way, more of the studio is revealed—lighting rigs, cables, a microphone, the walls behind the white backdrop—as are, like *Four by Four*, the dolly's own tracks. The camera's backward movement along them, so slow as to be almost unnoticeable at normal playback speed, corresponds to the progression of musical time.

If music is the image of time, furthermore, Lorand's films render such temporal images in digital, organic, and mechanical forms. When the camera perspective in *Unfading* allows it, for instance, we see on the soundstage floor a glass next to a bottle of water—whose gradual consumption by Defrise mirrors the emptying of an hourglass—and, as we saw in *Four by Four*, a smartphone to keep time. Mechanically, the presence of the tracks in both works harkens back perhaps to cinema's industrial-

era origins—including the Lumière brothers' 1896 *L'arrivée d'un train en gare de La Ciotat*—reminding us that the steam engine and film shutter shared not only automated cyclical action but also precise metrical timing. Shifting forward to the so-called information age, in 1989, Cage's *Four* employed stopwatches, along with a system of algorithmically generated time windows, paradoxically, to avoid the regularity of metrical time.

In this essay, I want to argue that Lorand's remediation of Cage in *Four by Four* not only renders visible the temporality of *Four's* performance but also speaks to the shifting technological conditions of its composition. In particular, during the late 1980s and early 1990s Cage collaborated with the software engineer Andrew Culver to codify methods he used at the time to create numerous works like *Four*, collectively known as the "number pieces." An eventual result was a series of computer applications, including a program responsible for generating flexible time brackets known as *TBrack*, that would almost entirely automate his compositional process from start to finish. On the surface, the performance depicted in Lorand's *Four by Four*, with Quatuor MP4's resplendently organic attention to balance, may seem far removed from computers and algorithms; indeed, other than the stopwatch app on their smartphones, the quartet makes no use of electronics. Yet Lorand's framing of musical performance in his moving image contemporary artwork thematizes such ordinarily behind-the-scenes, or poietic, dimensions of the compositional process. Lorand's *Four by Four* accomplishes this by *multiplying* Cage's *Four*, both by applying codes of cinematic representation, in particular the 360 dolly shot, to this experimental composition and, as described below, by departing from its score in subtle yet deliberate ways. In effect, Lorand underscores the temporality of Cage's time-keeping—not only the use of stopwatches but also the time bracket process later formalized in *TBrack*—as artistic content. With this, Lorand's work accords with what I have defined elsewhere as *music in contemporary art*, a phrase that describes artistic practices that use music as site, subject, or form while incorporating contemporary art's postconceptual status: its capacity, owing to 1960s conceptual art and other important developments since the Second World War, to address a range of extra-artistic themes, from geopolitics to history to technology.<sup>1</sup> Specifically, Lorand's rendering of Cage reflects on the computational production of time: the use of computer algorithms, artificial intelligence, and other postwar cybernetic technologies not only to reduce artistic labor time but also to organize temporality itself.<sup>2</sup>

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<sup>1</sup> "Music in contemporary art" is a concept I am presently developing in a work-in-progress project. It draws significantly from my related work on "musical contemporary art." See G Douglas Barrett, "Contemporary Art and the Problem of Music: Towards a Musical Contemporary Art," *Twentieth-Century Music*, vol. 18, issue 2 (June 2021): 223–248.

<sup>2</sup> On experimental music and cybernetics, see G Douglas Barrett, *Experimenting the Human: Art, Music, and the Contemporary Posthuman* (Chicago: University of Chicago Press, 2023). See also, Theodore Gordon, *The Composer's Black Box: Making Music in Cybernetic America* (forthcoming).

For Cage, this organization centered on a compositional invention he called *time brackets*.

### *Bracketing Cage's Time Brackets*

During the last five years of his life, Cage received a stream of commissions so intense as to change the way he composed music.<sup>3</sup> Starting on his seventy-fifth birthday, in 1987, a flood of ensembles and performers from around the world began to request new compositions in celebration of this milestone. The size of these groups varied, ranging from soloists and small chamber ensembles to large orchestras of more than one hundred. The problem he faced, then, was how to fulfill these multifarious commissions, needing a way to quickly compose for soloists and groups of various sizes. His solution was the series of “number pieces” he began composing from 1987 until his death in 1992. The title of each piece was based on the size of the ensemble: *One* was for piano soloist Juan Allende-Blin; *108* for the full Symphonie-Orchester des Süddeutschen Rundfunks. When Cage received a subsequent request for an ensemble of the same size, he used superscript numerals to order them: *One*<sup>2</sup> is the second solo, for example, whereas *Two*<sup>6</sup> is his sixth duo of the series. During this time, he was able to compose a total of forty-seven number pieces, roughly half of which he created in his last year alone: altogether, a staggering output.<sup>4</sup>

Yet the secret to Cage's prolific success in this period lay not in the number pieces' efficient system of titling but in the way he had so thoroughly formalized his compositional process using computer programs and human assistants. For example, in the late morning of March 17, 1992, Paul Sadowski of the American Composers Orchestra faxed Cage the contract for a new commission. In the afternoon of that same day, in only a matter of hours, Sadowski received a fresh copy of Cage's score *Seventy-four* (1992). According to Benedict Weisser, this experience led Cage and Culver to spend the rest of the afternoon reveling in a state of mischievous laughter.<sup>5</sup> What they seem to have gotten away with was not only the successful deployment of a robust, large-scale automated composition process but also its demonstrated ability to meet commissioners' requests with just-in-time efficiency. Comparing Cage to a latter-day Vivaldi composing on-demand *concerti grossi*, the *Los Angeles Times* music critic Mark

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<sup>3</sup> Benedict Weisser, “John Cage: ‘...The Whole Paper Would Potentially Be Sound’: Time-Brackets and the Number Pieces (1981–92),” *Perspectives of New Music*, vol. 41, no. 2 (Summer, 2003): 176–225 (191). Note, however, that this was not Cage's first use of computer algorithms in his compositions. On Cage's and Lejaren Hiller's algorithmically generated work *HPSCHD* of 1969, see Branden W. Joseph, “*HPSCHD*—Ghost or Monster?” in *Mainframe Experimentalism: Early Computing and the Foundations of the Digital Arts*, eds. Hannah B. Higgins and Douglas Kahn (Berkeley, CA: University of California Press, 2012), 147–169.

<sup>4</sup> Weisser, “John Cage,” 192.

<sup>5</sup> Weisser, “John Cage,” 192.

Swed went so far as to conclude that “Cage’s loft [had] turned into something of a number-piece factory.”<sup>6</sup>

While Cage’s number-piece factory did not eliminate the need for human labor—Sadowski also served as his music copyist, engraving Cage’s scores by hand—its use of computers yielded a veritable exponential increase in artistic production. Beyond mere efficiency, indeed, the algorithmic formalization of Cage’s process opened vistas that even seemed to transcend human time frames. “What we accomplish[ed] with a computer,” Culver conjectured, “could readily be accomplished without one in a dozen or so pairs of lifetimes.”<sup>7</sup> If a human lifetime can be understood as a generic durational window, it’s only fitting perhaps that the primary output of Cage’s system was a series of durations known as time brackets. Typically, these spans consist of flexible start and end times with some notated musical tone or sound (or, as we’ll see below, nonmusical action) to be executed within them. For example, the first time bracket in the first section of one of *Four’s* parts begins between 0’00” and 0’22.5” and ends between 0’15” and 0’37.5”. Within that flexible window, one of the string players is to sustain an Ab<sub>3</sub> whole note at pianissimo. Rather than specify first and second violin, viola, and cello, Cage numbers the parts 1–4 and allows them to be distributed freely among the quartet. As a professed anarchist, this was his way of eliminating the implied hierarchy embodied in this traditional ensemble formation. To accommodate this unconventional approach to quartet writing, the pitches notated in each part are limited to the two-octave register shared by the ensemble: G<sub>3</sub> to G<sub>5</sub>.

Each of the three sections of each part of *Four* contains a total of ten time brackets, and within each time bracket Cage notates between one and five whole notes, again their pitches constrained to the quartet’s common range. All but one of these time brackets are flexible; as noted, the performer chooses when to start and end. The effect is a multipart texture that, surprisingly perhaps for a computer-generated composition, seems to float free from coordinated metric time. *Four’s* exception to this free-floating quality is a single time bracket, shared by the quartet, starting at 2’07.5” and ending at 2’22.5”, which is not flexible. This explains the momentary “downbeat” felt in Lorand’s *Four by Four* described in this essay’s introduction. Cage’s generation of time brackets would eventually be formalized, as noted, in Culver’s application *TBrack* or *tb* (1990–1991), developed in the programming language C. Prior to developing that app, Culver modeled a precursor time-bracket generator, *musicfor* (1988) after Cage’s *Music for...* series (1984–1987). To compose *Four*, Cage assigned pitches to the whole notes using a random number generator, known as *ic*—short for one of his favorite divination

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<sup>6</sup> Mark Swed, “Cage and Counting: The Number Pieces,” in *Rolywholyover: A Circus*, ed. John Cage (Los Angeles: Museum of Contemporary Art, 1995); quoted in Weisser, “John Cage,” 192.

<sup>7</sup> Andrew Culver, “A Note and a Table in the Tenth Year,” *Musicworks* 52 (Spring 1992): 26; quoted in Weisser, “John Cage,” 192.

sources, the *I Ching*—along with a variant of *ic* for generating random time values, known as *tic*.<sup>8</sup> Together these apps had effectively automated a slew of musical parameter generation, indeed, virtually the entire compositional process, all formerly done by hand.

If these computer applications significantly reduced compositional labor time, they did nothing to diminish the privileged status time held for Cage more broadly. Four decades before he wrote *Four*, in 1949, Cage laid out his thinking on some core musical terms. While he defined the material of music as sound and silence, the *correct* way of structuring music was not, as the European tradition would have it, harmony, but rather duration. This was because harmonic structure, Cage reasoned, is a feature of sound and not silence, whereas duration is common to both.<sup>9</sup> Here Cage was inspired by the music of Erik Satie and Anton Webern, whom he thought of as relative outsiders, while he was also influenced by his readings of Zen Buddhism. This fixation on time found expression in numerous works throughout his career, especially those beginning in the 1930s that employed what Cage called a square root structure: a kind of macro-microcosmic relation in which shorter phrases contain the same durational proportions as larger ones. Yet these works were not what made Cage a household name. What did was his 1952 work that condenses duration down to its essence, his watershed composition *4'33"*. Although the title suggests a concern with what it *has*, namely, duration expressed in minutes and seconds, Cage's *4'33"* is widely known for what it lacks: intentionally produced sounds. Premiered by the pianist David Tudor in Woodstock, New York, Cage composed *4'33"* using the same kinds of *I Ching* chance operations he would later codify with Culver in the *ic* and *tic* apps. Here manually executed, the indeterminate process produced the respective durations of its three parts—33", 2'40", and 1'20"—which, in the text-only version of the score, Cage indicates can be replaced with any durations.<sup>10</sup> *4'33"* is not typically understood technologically, yet these open windows of time, comparable to his later use of the time brackets, structurally resemble the temporal affordances of the tape recorder.<sup>11</sup> To this we might add: the film camera.

We don't tend to think of Cage as a filmmaker, yet his last major work was a feature-length cinematic production. In fact, this work was also a number piece, titled

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<sup>8</sup> Weisser, "John Cage," 187. See also James Pritchett, James Tenney, Andrew Culver, Frances White, "Cage and the Computer: A Panel Discussion," in *Writings Through John Cage's Music, Poetry, and Art*, eds. David W. Bernstein, Christopher Hatch (Chicago: University of Chicago Press, 2001), 190–209; Culver provides a chart of Cage's computer programs on 194–195.

<sup>9</sup> John Cage, "Forerunners of Modern Music" (1949), in *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961), 62–66 (63)

<sup>10</sup> Liz Kotz notes that another version of Cage's score specifies the durations of 30", 2'23", and 1'40". Liz Kotz, *Words to Be Looked At: Language in 1960s Art* (Cambridge, MA: MIT Press, 2007), 5.

<sup>11</sup> Kotz, *Words to Be Looked At*, 5.

*One*<sup>11</sup>. According to Cage's naming convention, we would expect this work to be his eleventh number piece for solo performer. Here though the "performer" was—not unlike what we see in Lorand's *Four by Four*—a solo cameraperson. Nevertheless, the work required a collaborative effort with the cinematographer Van Theodore Carlson and the director Henning Lohner to create what Cage described as a "film without subject."<sup>12</sup> Rather than a script, however, this film was based on a score. To create it, Cage repurposed the time bracket software he developed with Culver, up to this point used for instrumental and vocal number pieces, to generate an extensive series of chance-derived camera angles, durations, and instructions for 168 lights.<sup>13</sup> The result was a ninety-minute work of cinematic abstraction that consisted of 24,000 lighting changes divided into seventeen scenes with 1,200 cues of approximately twenty light changes each.<sup>14</sup>

While this shift to the moving image may seem abrupt for a composer who had defined music's materials as sound and silence, we can understand Cage's work leading up to this moment as a rigorous exploration of the consequences of framing music's essence as temporal and *not* necessarily sonic.<sup>15</sup> This trajectory not only had profound consequences for experimental music, but it also affected the way mediums figured in postwar art more broadly. Of course, Cage never abandoned sound, and even *4'33"* can be argued to foreground the aural if only through its absence. Yet Cage's decentering of sound—and, by extension, of medium—was highly influential in contemporary art's turn to a radically heterogeneous, open-ended embrace of materials and forms both artistic and non-artistic. Furthered by the post-1960s currents of conceptual art, Fluxus, and Happenings, and experimental music, this kind of postmedium porosity often flowed both ways between art and the performing arts.<sup>16</sup> Not only could virtually anything—including music—be used in art, but also more and more non-musical materials were being accepted in, and as, music, especially via experimentalism. Yet if Lorand's moving image works can be said to embody this expanded view of artistic medium, what does it mean for them also to take shape as performances of experimental music?

### *Squaring Cage's Four*

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<sup>12</sup> Kenneth Silverman, *Begin Again: A Biography of John Cage* (New York: Knopf Doubleday Publishing Group, 2010), 315. See also Richard H. Brown, *Through the Looking Glass: John Cage and Avant-Garde Film* (New York: Oxford University Press, 2019), 176.

<sup>13</sup> Silverman, *Begin Again*, 314.

<sup>14</sup> Brown, *Through the Looking Glass*, 177.

<sup>15</sup> See G Douglas Barrett, *After Sound: Toward a Critical Music* (New York: Bloomsbury, 2016).

<sup>16</sup> See Barrett, "Contemporary Art and the Problem of Music"; and Barrett, *After Sound*. On the postmedium condition, see Rosalind Krauss, *A Voyage on the North Sea: Art in the Age of the Post-Medium Condition* (New York: Thames & Hudson, 2000).

Lorand's moving image works can be understood at once as authentic realizations of experimental music and contemporary artworks that appropriate such music as artistic material. Practices of appropriating non-art objects as art are widely discussed, often linked back to Marcel Duchamp's notion of the readymade and his notorious 1917 work *Fountain*: a pissoir. Less discussed perhaps is the opposite gesture, appropriating artworks as non-art, seen in the same artist's tongue-in-cheek suggestion to use a Rembrandt as an ironing board. Still, in another permutation, the practice of reframing or remediating existing works of art, found in Lorand's treatment of Cage in *Four by Four*, is often traced to the Metropolitan Museum of Art's Pictures Generation exhibition (1974–1984). Among many others, that show included the artist known for rephotographing Walker Evans's Great Depression portraits, Sherrie Levine, who also reproduced Duchamp's *Fountain* in solid gold. Cage, a close collaborator of Duchamp's and a mutual influence, appropriated the work of numerous artists and composers, for example, titling his 1969 work *Cheap Imitation* with a mildly self-deprecating nod to its origins in the piano music of Satie.<sup>17</sup> Today, it's taken for granted that contemporary artists freely reuse not only cultural objects of all sorts but also existing artworks.

The particular use of art music in contemporary art invokes some interesting questions, however, especially when it involves scores. At what point, for instance, does the interpretation of a musical work go so far against the presumed intentions of the composer that it becomes something else? Is it a dutiful realization in line with the composer's intent or an act of appropriation? Such questions that press on intentionality become even more charged in the context of an experimental music tradition founded, at least in Cage's case, on indeterminacy: the intentional undermining of artistic intentionality.<sup>18</sup> Throughout his career, that is, Cage went to great lengths to remove his expressive will and musical tastes from the artistic process, evidenced as we've seen in the number pieces through his wholesale computer automation of chance procedures. At the same time, Cage was not without discomfort when he saw performers going a step further to undermine or subvert the instructions presented in the resulting scores—even when such scores seem to invite a range of acceptable readings. Take, for example, his explosive reaction, in 1975, to composer Julius Eastman's homoerotic

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<sup>17</sup> See David W. Bernstein, "Techniques of Appropriation in Music of John Cage," *Contemporary Music Review*, no. 20, vol. 4 (August, 2009): 71-90.

<sup>18</sup> On the tensions between appropriation, *Werktreue*, and indeterminacy in experimentalism and contemporary art, see G Douglas Barrett, "The Limits of Performing Cage: Ultra-red's *SILENTLISTEN*," *Postmodern Culture* vol. 23, no. 2 (2014).



interpretation of his 1970 work *Song Books*. Arguably, Eastman was not outside the bounds of Cage's instruction to "perform a disciplined action."<sup>19</sup>

Lorand's *Four by Four* also follows Cage's score, if not to the letter then at least in spirit. Whereas his choice in *Unfading* to forego the entire orchestral accompaniment to Feldman and Beckett's mercurial operatic work to focus on the soprano registers perhaps as bold, Lorand's interventions in *Four by Four* feel somewhat subtler. For example, the first line in the instruction page of Cage's score to *Four* refers to the string quartet members: "The players sit in a conventional relation to one another." Here "conventional" would presumably indicate the standard string quartet arrangement of a slightly curving horizontal line of performers facing the audience—from left to right: first violin, second violin, viola, and cello—in play from as early as an eighteenth-century Joseph Haydn. Instead, Lorand has the members of Quatuor MP4 face one another head-on, as noted, in a kind of symmetrical plus-sign formation. Does Lorand's liberty-taking with Cage's instruction render his realization as somehow unacceptable, illegitimate? If a performance is deemed acceptable only by strictly following the score's instructions to the letter, then perhaps so.

However, if we take a step back to situate this convention of score interpretation historically, a different stance may emerge. Indeed, it's only been since the nineteenth century that the "work concept" governing the relationship between composition and performance has been in place. This notion, referred to by continental musicologists as the so-called *Werktreue* ideal and in the Anglo-American tradition as "historical authenticity," stipulated a kind of duty binding the performer to the letter of the composition.<sup>20</sup> Unlike the promiscuous use of scores that reigned throughout the Renaissance, this *Werktreue* regime mandated the performer's strict allegiance to the composition's instructions—whether indicating pitches and rhythms or prescribing the geometry of an ensemble's stage formation. It's hard to overstate the staying power of this convention. Remarkably, despite the radical upheavals in art and music that occurred throughout the twentieth century, it remains practically unperturbed in art music circles today. At the same time, this hasn't diminished the ever-complex task of interpreting scores.

If Cage's number pieces sought to fully automate the work of composition, indeed, the labor of interpretation remains integral to their performance. Cage's 1991

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<sup>19</sup> The full instruction is "In a situation with maximum amplification... perform a disciplined action." This was Cage's paraphrasing of *0'00" or 4'33" No. 2* (1962), one of the several smaller works that together composed *Song Books*. See G Barrett, "The Limits of Performing Cage."

<sup>20</sup> Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (New York: Oxford University Press, 1994), 115, 231. On the differences and commonalities between the British-American and European sides of this debate, see Dorottya Fabian, "The Meaning of Authenticity and the Early Music Movement: A Historical Review," *International Review of the Aesthetics and Sociology of Music* no. 32, vol. 2 (2001): 153–167.

work *Four*<sup>4</sup>, for example, presents each of four percussionists with a series of time brackets each containing, rather than a pitched whole note as in its string quartet predecessor, a number that corresponds to one of a set of sounds chosen by each percussionist. Considering the virtually limitless possibilities of what might count as percussion, which Cage himself was fond of expanding, such choices can dramatically affect the outcome. Yet rather than the contents of individual sounds, the score to *Four* stipulates flexibility—or in Cagean terms, indeterminacy—around the sequential structure of its three sections. Cage letters these sections A, B, and C. Each lasts five minutes. His score allows three different possibilities for arranging the sections, each configuration being an equally legitimate, complete version of *Four*: one that lasts ten minutes in which the quartet plays the B section twice, with an intervening pause during which two performers exchange parts; another that lasts twenty minutes, in which they play A and C back-to-back, switch parts, then repeat; and, finally, a thirty-minute version of a repeated ABC sequence, also with part exchanges between reps. In a departure from Cage's instructions, however, Lorand adds a fourth variation: a single five-minute performance of B, described in this essay's introduction. *Four by Four* demarcates the completion of this version of *Four* with its flitting counterclockwise 360 spin of the dolly shot. After this moment, the ensemble proceeds to perform the three versions described in Cage's score, in order from shortest to longest: BB then ACAC, then ABCABC for a total of roughly seventy minutes. The effect is a kind of squaring of Cage's *Four*, multiplying the work's internally indeterminate form by adding another variation of Lorand's devising. Not exactly Duchamp's *Mona Lisa* moustache, but an artistic intervention nonetheless.

Yet not entirely unlike the French artist's 1919 *L.H.O.O.Q.*, Lorand exhibits a taste for wordplay, albeit again with perhaps a demonstrably lighter touch. The "by" in *Four by Four* ostensibly refers to multiplication, as in four versions of Cage's composition *Four*. This mathematical interpretation further squares with Lorand's geometrical arrangement of the quartet: after all, a plus sign can be made by rearranging the sides of a square. Moreover, Lorand's multiple squares complement his visual intervention of the 360 dolly shot, which as suggested invokes the circular movement of a clock. Rather than undermining Cage's focus on temporality, then, these measures transpose it into another medial register. At the same time, Lorand's work highlights the corporeal labor of musical performance in its vivid depictions of inter-ensemble communication—head nods, breaths, and stopwatch setting and resetting—as well as the raw physicality of tone production, the quartet's lack of vibrato making pitch accuracy all the more paramount. Another connotation of *Four by Four*'s title concerns the manual work of construction, as in the four-inch by four-inch size of a piece of lumber commonly used in foundations and floors. Such an interpretation leads us to the architectural space of performance, in particular, the lightly scuffed hardwood

floors seen at all points of the camera's circular orbit in *Four by Four*. Recalling the attention to art's material, social, and economic support systems of post-1960s institutional critique, a viewer sees these results of four-by-four laying—the floor—as perhaps no less an integral form of music's material support.<sup>21</sup>

### *Conclusion*

In sum, Lorand's *Four by Four* represents a significant intersection of experimental music and contemporary art that reflects not only on temporality but also its material production. By making visible some of the inner workings of musical performance, Lorand draws attention to the layers of labor inherent to realizing experimental music, even as Cage's number piece series exhibited the capacity to dramatically reduce the work required to compose it. The circular movement of the camera, echoing the cyclical nature of a clock's hand, externalizes Cage's temporal framework, while it reminds us that like other workers Quatuor MP4 are also *on* the clock. Similarly, Lorand's quietly purposeful deviations from Cage's original instructions, such as the spatial reconfiguration of the quartet and the addition of a fourth variation, draw out a kind of musical temporality at once material, physical, and social. Through his interpretation informed by the spirit of Cage's composition rather than a strict adherence to its letter, that is, Lorand's interventions walk a delicate line between faithful interpretation and artistic appropriation, suggesting that these categories need not be mutually exclusive. The very indeterminacy that Cage championed, in this way, creates space for novel artistic possibilities that add to, even multiply, his ideas about temporality. Moreover, Lorand's focus on the material conditions of artistic production—from the dolly tracks to the physicality of the performers to the wooden floor beneath them—connects *Four by Four* to important art-historical developments such as institutional critique that expand the musical and cinematic frame to encompass its social dimensions.

One of those dimensions, as we've seen, concerns artistic labor and its automation. Through its filmic remediation of Cage, Lorand's *Four by Four* illuminates the complex interplay between automated processes and human work in experimental music. While Cage's collaboration with Culver to develop computer programs like *TBrack* represented a significant step toward automating his compositional process, Lorand's work makes visible various human elements of musical production. The delicate coordination among Quatuor MP4's members, their physical engagement with

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<sup>21</sup> For a survey of writing on institutional critique, see Alexander Alberro and Blake Stimson, *Institutional Critique: An Anthology of Artists' Writings* (Cambridge, MA: MIT Press, 2009). For a recent volume on music and institutional critique, see Christian Grüny and Brandon Farnsworth, eds. *New Music and Institutional Critique* (New York: Springer, 2023), <https://link.springer.com/book/10.1007/978-3-662-67131-3>.

their instruments, and their measured use of Cage's indeterminate time brackets suggest aspects of performance that remain distinct from computational processes. The resulting tension between automation and human agency further parallels broader conversations in contemporary culture about artificial intelligence and creative work. Just as Cage's "number-piece factory" demonstrated how computation could dramatically accelerate artistic production while still requiring human interpretation, today's AI tools offer similar ways to augment creative tasks. Yet the very presence of mechanical apparatus and human performers in *Four by Four* suggests a more complicated reality: rather than seamlessly integrating, automation and artistic work often exist in parallel, each highlighting the boundaries and limitations of the other. By making visible both the dolly tracks and the quartet's organic interactions, Lorand's work reveals the persistent friction between mechanical efficiency and embodied artistic practice, even as both become increasingly entangled in contemporary cultural production.

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