

The Studio as a Venue for Production and Performance: Cage's Early Tape Music

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I

When John Cage produced his *Imaginary Landscape No. 5*, probably the first piece of American tape music, in January 1952, he had been researching means of electronic sound production for at least twelve years. The main layer of his text *The Future of Music: Credo*, falsely dated 1937 in Cage's collected lectures and writings *Silence*, but probably written between 1938 and 1940,¹ places sound production by means of electrical instruments at the end of a development which increases the use of noise to make music, which would extend the variety of sounds available for musical purposes. The influence of Luigi Russolo's *L'arte dei rumori* of 1913 is obvious, a manifesto that appeared in print in English translation for the first time in Nicolas Slonimsky's *Music since 1900* in 1937² and that Cage must have been aware of in 1938, when he stated in the program notes of a *Percussion Concert* presented by his ensemble in Seattle on December 9, that »percussion music really is the art of noise and that's what it should be called.«³

In 1939, Cage created *Imaginary Landscape No. 1* utilizing test-tone records played at variable speeds at the radio studio of the Cornish School in Seattle. The score, engraved and published by C. F. Peters in the early 1960s, specifies the Victor Frequency Records being used and indicates the resulting frequencies when played at 33 1/3 or 78 rpm. Victor Frequency Record 84522A, however, is mentioned without any description of its content. A contemporary catalog of Victor Technical Purpose Records⁴ reveals that the record,

1 Cf. Leta E. Miller, »The art of noise: John Cage, Lou Harrison, and the west coast percussion ensemble«, in: Michael Saffle (ed.), *Perspectives on American Music, 1900–1950*, New York, London: Garland, 2000, pp. 215–263, 230, footnote 79; also Leta E. Miller, »Cultural Intersections: John Cage in Seattle (1938–1940)«, in: David W. Patterson (ed.), *John Cage. Music, Philosophy, and Intention, 1933–1950*, New York, London: Routledge, 2002, pp. 47–82, 54–56.

2 Nicolas Slonimsky, *Music since 1900*. New York: W. W. Norton, 1937, pp. 536–542, translation from the Italian by Stephen Somervell.

3 Cf. Branden W. Joseph, »A Therapeutic Value for City Dwellers: The Development of John Cage's Early Avant-Garde Aesthetic Position«, in: David W. Patterson (ed.), *John Cage*, 2002, pp. 135–175, 140, footnote 16 (see fn. 1).

4 *Victor Technical Purpose Records*, Camden, NJ: RCA Manufacturing Company, Inc., not dated. A double-sided mimeograph copy of the seven page typescript was examined by the author in April 1995 at the Getty Research Institute, Los Angeles, as part of the then so called David Tudor Archive (Cage, box 5: Miscellaneous papers, envelop #2). Since the collection got processed (The David Tudor Papers, accession no. 980039), the item could not be located anymore.

played at 78 rpm, contains a steady glissando from 10 kHz down to 30 Hz over the course of 6 ½ minutes, with buzzer signals marking certain frequencies.⁵

While the sounds produced by the other constant frequency records can be calculated and synthesized by other means following the information given in the score⁶, Cage did not properly describe the sound of Victor Frequency Record 84522A. What looks like carelessness on the part of the composer results in a challenge for music historians and media archeologists, rather emphasizing the question of the very nature of the composition *Imaginary Landscape No. 1*. The instructions state »the performance may [...] be broadcast and/or recorded«, and indeed a recording was made in 1939 by John and Xenia Cage, Doris Dennison and Margaret Jansen in the radio studio of the Cornish School in Seattle, that was not only used in dance performances by Bonnie Bird (1940) and Marian van Tuyl (1941), but was also played in concert performances at the Cornish Theater in Seattle 1939 and at the 25 year anniversary concert at Town Hall, New York, in 1958.⁷ That Cage in this case valued the playing of a record no less than a live performance, perhaps even favored it over the latter, is for my understanding evident from the publication history of the score. When the score was put in print some 20 years after its composition, the required records were not easily accessible anymore, and if Cage had been more interested in repeated live performances of *Imaginary Landscape No. 1*, he would have provided his publisher with a set of those records to be included in its rental library.

The recording of the Town Hall concert of 1958 represents the playing of the record of Cage's own realization of his *Imaginary Landscape No. 1* of 1939.⁸ However, on comparing this recording with the score, we notice not only differences in respect to repetition and duration of the sounds produced by player 2, also some cymbal rolls and glissandi on the string piano are either missing or too soft to be noticeable.

5 »Buzzer signals have been put on the record at various frequencies in order to facilitate the use of the record for overall audio curves. These buzzer signals occur at 10,000, 9,000, 8,000, 5,000, 4,000, 2,000, 1,000, 500, 200, 100, 50. The record ends at 30 cycles and no buzzer signal occurs at this point.« *Victor Technical Purpose Records*, p. 7 (see fn. 4).

6 The published score (John Cage, *Imaginary Landscape No. 1*, New York: Henmar Press / C. F. Peters, EP 6716, 1960) erroneously calls for 435 Hz for Victor Frequency Record 84522 B at 33 1/3 rpm, while Cage's manuscript, like the *Victor Technical Purpose Records* catalogue, states 433 Hz (cf. John Cage Music Manuscript Collection at New York Public Library, JPB 94-24 Folder 46).

7 Cf. Robert Dunn (ed.), *John Cage* [catalogue], New York: Edition Peters, 1962, p. 36.

8 *The 25-Year Retrospective Concert of the Music of John Cage* [1958], 3 CDs, Mainz: Wergo, WER 62472, 1994.

The image displays three staves of musical notation. The top staff, labeled 'Score', shows a constant frequency note over six measures, with an instruction $\text{♩} = 60$. The second staff, labeled 'Recording', shows a glissando from 433 Hz to 1000 Hz over the same six measures, with 'x' marks indicating clutch shifts. The third staff, labeled 'Rec.', shows a transcription of the 1939 realization, which includes six measures of glissando followed by six measures of eighth-note patterns. Measure numbers 6, 7, and 13 are indicated above the staves.

Fig. 1: John Cage, *Imaginary Landscape No. 1* (reduction), beginning. The 1st voice (player 1) is of constant frequency (433 Hz and 1000 Hz), while the 2nd voice (player 2) presents the slowly decreasing glissando of Victor Frequency Record 84522A. x indicates, where the clutch is shifted. The speed decreases there abruptly to 33 1/3 rpm, before it evenly increases to 78 rpm within ca. 5'. The upper stave is a reduction of the published score, the lower stave a transcription of the 1939 realization. MSS. 7, 12, and 13 of the latter are a little longer than notated.

It is remarkable, that the recording's deviations from the score intersect with the work's structure of »[f]our 15-measure sections divided into three equal parts [that] alternate with three interludes and a coda«.⁹ In the recording, the first two parts of the first section are six instead of five measures each, thereby creating a 17-measure section with its last part one measure shorter than the other two. However, since the second section follows the same rules, this deviation appears to be less the result of an erroneous performance than an intended adjustment of the work's structure.

⁹ John Cage, »Notes on Compositions I«, in: idem, *Writer. Previously uncollected pieces*, ed. by Richard Kostelanetz, New York: Limelight Editions, 1993, pp. 5–13, 7.

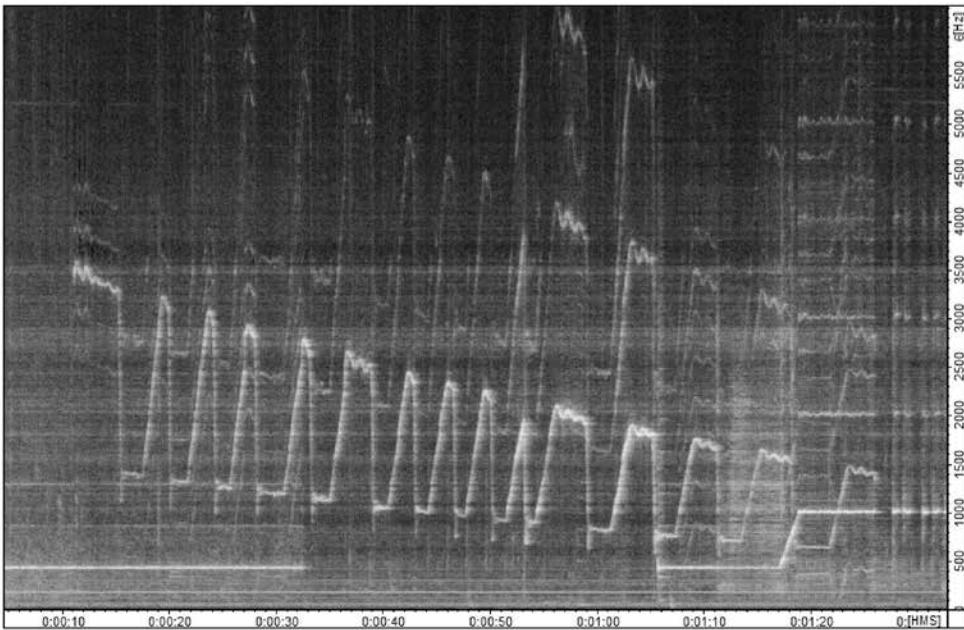


Fig. 2: John Cage, *Imaginary Landscape No. 1*, sonogram of the beginning.

A sonogram reveals the decrease of frequency in the peaks created by player 2 whenever the turntable reaches 78 rpm after the clutch had been shifted, just as one might expect from the decreasing glissando on the record used to perform this part. However, we don't hear the buzzer signals mentioned in the Victor catalogue which should be prominent on record 84522A. Also, in 1939 the performer did not begin his or her part with 33 1/3 rpm as indicated in the score but with 78 rpm, and the needle was certainly not lowered at the beginning of the groove of the record, since this realization of *Imaginary Landscape No. 1* begins with 3,500 Hz and not with 10,000 Hz.

These observations address the work concept of music for fixed media between an artistic object that conceals its genesis, and a recorded realization with all its implications of score, interpretation and performance. It looks like Cage deliberately questioned his highly formalized score while working in the studio and introduced considerable changes. One of the original players might have recorded those changes: A score manuscript carries pencil annotations in a hand different from Cage's that mostly serve as an explanation of musical notation for an untrained musician. At the beginning of the 2nd player's part it reads »start on 9 (move on to notes 6 / 10 / 10 / 6 / 6 / 10 / 6 / 6 / 4 / 30[])«.¹⁰ The first entrance of this part is one beat after the 9th from the very beginning. The following nine numbers ranging from four to ten might refer to the nine instances the player needs to operate the clutch (according to the score, not the recorded realization). Their variation might be re-

¹⁰ John Cage Music Manuscript Collection at New York Public Library, JPB 94-24 Folder 46.

lated to the varying time between those operations in the recording. The closing number 30 finally is the number of beats in each five-measure part of the opening section.

II

After fruitless attempts to establish a center for experimental music in the early 1940s – the published version of *The Future of Music: Credo* needs to be understood as a product of Cage's grant-writing efforts at this time – Cage returned to electronic music production in late 1951. At the Artists' Club in New York, Cage had met Louis and Bebe Barron, who were running a recording studio at 9 West 8th Street. The Barrons published recordings of Anaës Nin, Henry Miller, Tennessee Williams, and Aldous Huxley on their own label *Sound Portraits*, and Louis Barron was experimenting with electronic sound production by means of circuitry. Influenced by Norbert Wiener's concept of cybernetics, Barron referred to his circuits as creatures whose reactions to his live manipulations were recorded on tape. These recordings were later altered by changing speed, filtering, or creating loops.

In January 1952, Cage hired the Barrons for the production of his *Imaginary Landscape No. 5*. The score »for making a recording on tape, using as material any 42 phonograph records« is notated on graph paper, indicating up to eight layers of pre-recorded sound to be superimposed. The instructions continue: »Each graph unit equals three inches of tape (15 inch per second), equals 1/5 second. The numbers below outlined areas refer to amplitude: soft (1) to loud (8) [...]. A dot indicates change of record. [...] The record, used in performance, may be tape or disc.«

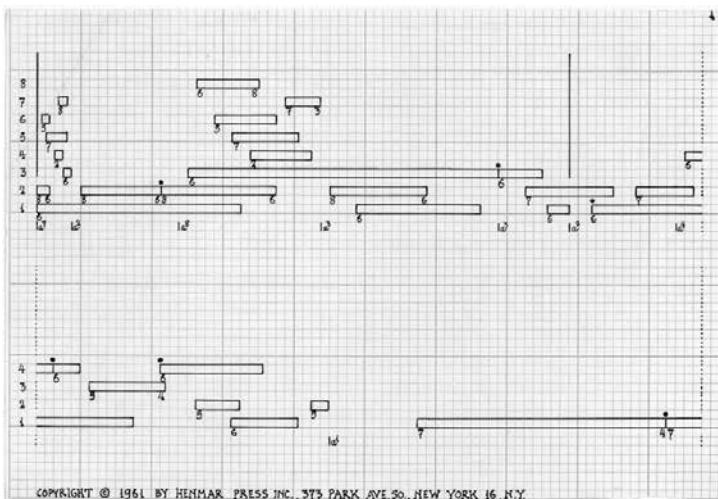


Fig. 3: John Cage, *Imaginary Landscape No. 5*, first page. New York Public Library, John Cage Music Manuscript Collection, JPB 94-24 Folder 173

In a letter to Pierre Boulez, Cage claimed

»the phonograph piece was done in 18 hrs. because it was needed for a dance program [by Jean Erdman]. And since it is on tape it brought about my present connection with Louis and Bebe Barron who are sound engineers. David Tudor helped make this first piece and so enjoyed the work that he said he would prefer to do such work to teaching, as far as making a living was concerned.«.¹¹

In a 1995 interview, David Tudor described to me the production of *Imaginary Landscape No. 5*.

»The score was actually performed in the studio. I'm sure there was no manipulation of the tape. It was simply assembled. [...] I was at a console. If the numbers were from one to eight, it had to deal with a specific piece of the Barron's equipment. So that must have been an indication one to eight. [...] It wasn't prerecorded and then the amplitude arranged [...]. It was done live in the studio.«¹²

Tudor remembered also two turntables being used. Somebody would switch back and forth between the two when a change of record occurred in one layer. For a section of silence, Tudor would adjust the volume dial to zero. Afterwards, the separately recorded layers were superimposed. Tudor »[didn't] remember a tape operation, in order to realize this piece. You would have to cut sections of tape, and splice them together. That was not done«.¹³



Fig. 4: Louis and Bebe Barron at their New York studio, 1956. Photo by Walter Daran.
© Getty Images/W. Daran/TIME & Life Images.

11 Pierre Boulez and John Cage, *The Boulez-Cage Correspondence*, ed. by Jean-Jacques Nattiez, trans. by Robert Samuels, Cambridge, New York: Cambridge University Press, 1993, p. 130 (letter 38, summer 1952).

12 David Tudor, interview with the author, Stony Point, NY, August 3, 1995.

13 Ibid.

Despite Tudor's poor health at the time of the interview and the long interval of more than 50 years between event and report, Tudor's recollections were very precise. Given the fact that the piece was produced in just 18 hours, it is very likely that time-consuming operations like transferring records on tape, adjusting dynamics, cutting tape, assembling and splicing tape were avoided. With *Imaginary Landscape No. 1*, Cage had become familiar with turning a live performance into a piece for fixed media. In the case of *Imaginary Landscape No. 5*, however, the three-minute piece had to be performed eight times, layer by layer, to create material to be superimposed.

The tape of *Imaginary Landscape No. 5* had been considered lost since Jean Erdman left her New York apartment for Hawaii in 1995.¹⁴ I was able to locate a tape labeled *Cage – Jazz* in the Barron Electronic Music Archive, that, for reasons of preservation, we are hesitant to play. However, the David Tudor Papers also house a tape labeled »Jazz« in Louis Barron's hand that I was able to identify as Cage's *Imaginary Landscape No. 5*.¹⁵

The tape of *Imaginary Landscape No. 5* is now susceptible to aural analysis. It becomes evident that during silences in a given layer, the respective record keeps playing, if unheard. Here there are no samples being stopped and restarted, but a continuous recording is either being amplified or muted. This anticipates the structure of pieces like *Cartridge Music* (1960), where, when used as a live-electronic addition to *Atlas Eclipticalis* (1961/62), an instrumental performance is observed and amplified at certain times, regardless whether the musician is producing sound or not.

The tape of *Imaginary Landscape No. 5* also helps to gain a better understanding of the choreography *Portrait of a Lady* by Jean Erdman for which the music had been commissioned. Erdman prepared a list of 27 situations or emotions to be expressed in the course of the piece of only three minutes duration,¹⁶ thereby, according to a review of the premiere, »portraying a not too respectable lady of an ancient profession«.¹⁷ To inspire the creation of the dance, Jean Erdman had been using jazz records:

»In the studio, I had found myself repeating certain movements in both dynamics and directions in space. Exactly how they followed each other I purposely never »set«, but rather allowed the ›present moment‹ to take charge. [...] John had often expressed his dislike of Jazz music, but when I asked him if he would consider composing a piece for a new dance I was inventing by strictly maintaining improvisation throughout the work, he said, ›just let me have all those 78speed records to work with‹ ... [...] The first performance at Hunter Playhouse on my Dance Concert required special,

14 The John Cage Trust keeps an audio copy of an interview that William Fetterman conducted with Jean Erdman during which Erdman played her copy of the tape to a microphone. The sound quality of this document does not qualify for concert performance. Cf. William Fetterman, *John Cage's Theatre Pieces. Notations and Performances*, Amsterdam: Hardwood, 1996.

15 Getty Research Institute, The David Tudor Papers, accession no. 980039, Series X. Audio recordings, R313. The tape is now available on rental from C. F. Peters, New York.

16 Cf. Jean Erdman papers, 1925–2001, New York Public Library, (S) *MGZMD 170, Box 15, Folder 7.

17 L[ouis] H[orst], »Jean Erdman and Dance Company. Hunter Playhouse, January 18, 1952«, in: *Dance Observer*, vol. 19 (1952), p. 40.

giant loudspeakers in order to encompass the huge range of loud and soft sound that John had recorded.¹⁸

III

After having produced *Imaginary Landscape No. 5*, Cage tried again to raise funds for an institutional structure to foster electronic and experimental music. A proposal located at the Barron Electronic Music Archive describes the focus as »the making of music directly upon a recording medium, eliminating the necessity of a musical score and its interpretation by a performer«. Considering the performative aspects obvious in the creation of *Imaginary Landscape Nos. 1 and 5*, the desire to eliminate the performer from the production of fixed media works is quite a change of perspective. If Cage had actually aimed for music created without mediating performance and interpretation directly on, for and with recording media, he never would have been able to reach this goal. The first piece realized during the course of *Project: Music for magnetic tape*, eventually funded by Paul Williams, was Christian Wolff's *For Magnetic Tape* (1952), which Christian Wolff scored while studying in Boston. He would send sections of the piece together with increasingly extensive lists of sounds to Cage for realization at the Barron studio.

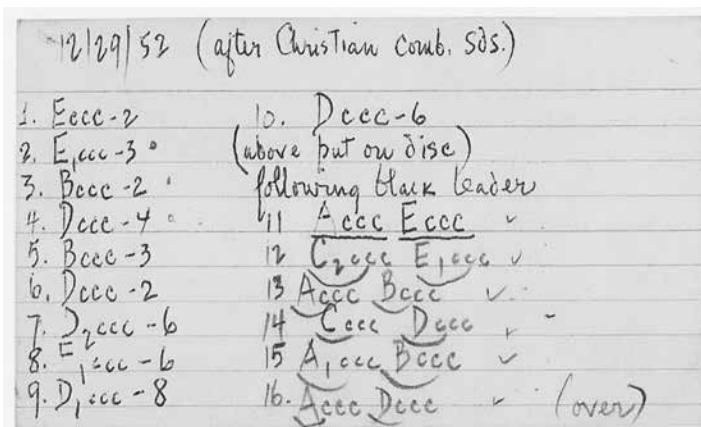


Fig. 5: John Cage, Index card with description of the source sounds of *Williams Mix*, December 12, 1952. Barron Electronic Music Archive.

Cage's own *Williams Mix* finally was composed in such a complex manner, that the preparation of a score was a necessary part of the creation process. The more than 350 sounds requested by Cage were created, which is recorded according to categories, mixed, and/or

¹⁸ Jean Erdman, letter to Volker Straebel, November 17, 1995.

transformed by the Barrons in their studio, while John Cage, David Tudor, Earle Brown and various assistants were assembling the eight single-track tapes by cutting and splicing. Therefore, not only the composition, but also the realization of *Williams Mix* by several people at different locations fulfilling different tasks at the same time depended on the existence of the score.

Soon after preparing the proposal for *Project: Music for magnetic tape*, Cage adjusted his attitude towards the realization of electronic music compositions. He discovered that the eight mono tape-machines required for the eight-channel pieces created in the *Project* would never run in sync, and even starting them simultaneously – four performers pressed two start keys each – turned out to be impossible:

»It has been impossible with the playing of several separate tapes at once to achieve perfect synchronization. This fact has led some towards the manufacture of multiple-track tapes and machines with a corresponding number of heads; while others – those who have accepted the sounds they do not intend – now realize that the score, the requiring that many parts be played in a particular togetherness, is not an accurate representation of how things are. These now compose parts but not scores, and the parts may be combined in any unthought ways. This means that each performance of such a piece of music is unique, as interesting to its composer as to other listeners.«¹⁹

One year after this was written, in 1958, John Cage composed his next work involving magnetic tape: *Fontana Mix*. The score provides a »musical tool« to create a new tape piece or to alter or perform existing material created by Cage, and »is not limited to tape music but may be used freely for instrumental, vocal or theatrical purposes«.²⁰ With this, Cage not only accepted the performative aspects of electronic music production in the studio, but radically extended his changed approach to the situation of the performance of music for fixed media.

19 John Cage, »Experimental Music« [1957], in: idem, *Silence. Lectures and Writings*, Hanover, NH: Wesleyan University Press, 1961, pp. 7–12, 11.

20 John Cage, *Fontana Mix* [1958], New York: Henmar Press / C. F. Peters, EP 6712, 1960.

Cage & Consequences

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