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Silence Reconstructed: John Cage's 4'33"

ABSTRACT

Background

Cage's 4'33'' was first performed by David Tudor in 1952. The score was lost by Cage immediately after the premiere and remains lost to this day. Later publications are based on a reconstruction of the original score made by Tudor in 1989. This reconstruction has somewhat untraditional vertical lines just right of the clefs, as well as horizontal arrows above the first staff of each movement indicating a proportional notation of 2½ centimeters for the quarternote. Since the metronome number is sixty for the quarter, the 2½ centimeters have a duration of one second. Together, the vertical lines, the two arrows and the tempo indication represent one of Cage's first scores in which he makes use of a timeline.

Every staff has two 4/4 measures with a tempo of sixty beats per minute. This analysis proposes to consider this unit to be the original timeblock with a duration of eight seconds. The timeblock is composed with the even numbers two, four and eight because eight quarters are divided into two measures of four beats each. We may probably assume that Tudor's reconstruction was correct in that Cage used standard twelve-staff notepaper. We may also logically assume that Cage consistently notated the whole composition in the same way as he wrote out its first page with four staffs per page. That means that he must have used nine pages in total.

The foreword to the first printed edition states that the three movements have durations of 33'', 2'40'' and 1'20''. Since the first movement lasts 33 seconds, it occupies five two-measure staffs where the fifth staff has not all eight but just one quarter beat. With a duration of two minutes and forty seconds or 160 seconds movement two occupies twenty staffs of eight seconds each. Finally, the third movement lasts one minute twenty seconds or 80 seconds. It occupies ten staffs. A total of (5+20+10 =) thirty-five staffs are used. If Cage did indeed write four staffs per page, it took nine pages to completely write out the composition because thirty-five divided into four equals nine. Staff number thirty-six on page nine was not used because he needed only thirty-five time blocks or staffs to arrive at the 4'33'' that he wanted.

This is as far as we can go in a litteral analysis of the reconstructed and printed score. One more observation is appropriate concerning measure nine on staff number five, the last measure of the first movement. If no timeline had been used, this very short one-beat measure would easily have fit on staff number four. Yet now it has just one quarter beat and may be interpreted as a complete, two-bar staff just as the rest of the piece, from which seven beats are lacking. Because of the timeline, the numbers five and seven are found not only in the total organisation of the composition but also in measure nine on staff number five at the end of the first movement.

By attempting to explain how, and in which order, Cage may have settled on the parameters of our approach, we may perhaps render his analysis transparent as well as interesting.The original eight-beat timeblock was multiplied by seven. Those seven were divided into three as the sum of one plus four plus two blocks. The piece now lasts fifty-six seconds. Next, the three timeblocks were each multiplied by five to yield 5+20+10 or thirty-five blocks. At this point, the three movements together last seven times five times eight seconds which equals 280 seconds, or 4'40''. After writing those out on conventional music paper the outcome was three different movements written on nine pages. The last operation may have been to erase the seven-beat section from staff number five.

The erased seven beats provide a miniature or mirror image in a numerical sense of the composition as a whole. As such, those seven absent beats confirm rather than contradict the analysis as proposed. This confirmation is found in the sheer numbers and in the notation of measures, and that of the timeline. In fact, this confirmation is only found because of the way the timeline was notated.

Two more decisions remain to be explained. First, there is the tempo of sixty for the quarter. One may argue that with the tempo of sixty he introduced not just two, four and eight as even digits for the original timeblock, but also six. However, sixty is not six, but, two times five times six and the odd number five was to have a different role. Therefore, this particular argument of sixty for the tempo must be rejected as inconsistent. Rather, with sixty for the quarter, Cage just chose the most neutral and objective tempo available in our culture where time is measured with sixty minutes per hour and sixty seconds per minute.

Next, we may wonder why the division of seven into three lead him to come up with 1+4+2 timeblocks, rather than with any other combination. Disregarding the order of the three numbers, the only possible ways to divide seven into three are as 2+2+3, as 3+3+1, as 1+1+5 and as 1+2+4. The combination 1, 2 and 4 is the only division that has three digits whithout a repetition of one of them. Therefore, we may conclude that the priority for Cage was to have three movements with three different durations.

Then there is the order one – four – two. The decision to put the one in first position may have been inspired by the fact that the first movement was going to be written on five staffs which made the erasion of the seven beats in bar nine at the end of the first movement possible. This may mean that the erasure was already included at an early stage of the process. It sealed the whole numerical construction. To put the four in the middle of the three digits may have been a choice for basic symmetry. The outer movements are short, the central second movement is long. Again, the choice was for the most evident solution.

If this analysis is right, Cage's taste for abstractions and visualisations as described by others may have been at the root of this short masterpiece. Because for all its simplicity and economy, its time construction is a work of extraordinary beauty. To let it happen in complete silence is a most remarkable decision and even more proof of Cage's genius. It is no wonder that toward the end of his life Cage would still say: "More than anything, it is the source of

my enjoyment of life…'' and: "I always think of it before I write the next piece''.

In conclusion we propose that in the first place, the exact notation of the score is crucial for our understanding of the time construction. The vertical lines next to the clefs and the little arrows with the precise timing per centimeter make an analysis as given here possible. Cage's desire to manipulate even and odd numbers in the way that he did, and to express that clearly in a written score, inspired him to invent the timeline as the tool with which he could accomplish that. First, there were the numbers and then, the invention of the timeline. This score forms a bridge as it were, between conventional notation and modern ones.

Moreover, Cage's use of series of numbers for time echoes Schönberg's use of series of pitches. This reveals Cage as a student of his great and admired teacher of the thirties. Schönberg had passed away in 1951, one year before the premiere of the piece, and 4'33'' may be interpreted as an obituary to Schönberg's technique. However, whether the inspiration for this piece was Eastern philosophy and a desire to construct silence, or indeed Schönberg, these interpretations do not answer the question of why Cage lost the original score right after the premiere without making a new copy right away. According to his own frequently uttered words the piece meant a lot to him. Moreover, why would he come out with so many different versions? There was the one of 1953, a birthday gift to his friend, the artist Irwin Kremen. It is written on an actual timeline as he would use in later works, but the durations are different from the original. Another version is a typewritten score that gives the three movements with Roman numerals and the word "tacet" or "silent" below them. In a note Cage states that "the work may be performed by (any) instrumentalist or combination of instrumentalists and last any length of time." Next, ten years later in 1962, Cage wrote a 4'33" No. 2, also titled 0'00", "to be performed in any way by anyone".

In the decade after the creation and first performance of the piece, the composer remained occupied with the composition while distancing himself more and more from the original score as presented and analyzed here. Why would any composer drive a wedge between his original, inherently beautiful manuscript and its performance? This is a tantalizing question that, nevertheless, we propose to leave unanswered.

Aims and repertoire studied

Over the decades, the exact way in which Cage composed this work remained opaque and neglected. Instead, much of the discourse on the piece was on silence and Zen philosophy. This talk first offers an analysis of the original score even though it appears that Cage in his explanations moved away from it; it then discusses the various versions of *4'33"* to have subsequently emerged.

Methods

In 1989 Tudor made a reconstruction of the original score from which he played the premiere. The score published by Henmar Press in 2014 is based on it. It forms the basis of a reconstruction of the piece and by implication, of Cage's creative process as offered in this talk.

Implications

A timeblock of 8 quarters, divided into two 4/4 measures and written on one staff, was multiplied by 7; the seven staffs were divided into 3 that were then multiplied by 5. The implication is that the exact notation is crucial for our understanding of the time construction; that a different role was given to even and odd numbers (as in the I Ching), and, that Cage took action to obliterate the very source of the piece. An implication is, that, if we are interested in formal procedures, rather than taking the utterances of composers as the main basis of our analysis, we need to go back to the very source of the scores under investigation.

Keywords

Mathematics and Formalisation; Structure; Musical Time.

REFERENCES

Cage, John, 1971. 'Composition as Process', in John Cage, Silence, Cambridge, Massachusetts, and London: M.I.T. Press: 18-57.

Cage, John, 1990. The Charles Eliot Norton Lectures, in I-VI, Cambridge: Harvard: 13-15.

Emmerik, Paul van, 1996. Thema's en Variaties, Systematische Tendensen in de Compositietechnieken van John Cage. Amsterdam: Academische Pers B.V.: 79.

Schädler, Stefan, 1990. Transformationen des Zeitbegriffs in John Cages Music of Changes, in Heinz-Klaus Metzger und Rainer Riehn (ed.), Musik-Konzepte Sonderband John Cage II. München: 185-236.