

# The *Project for Magnetic Tape* (1952/53): Challenging the Idea of a Critical Edition of Historic Music for Recording Media

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Paper at *Music: Notation and Sound*, joint conference of the International Association of Music Libraries (IAML) and the International Musicological Society (IMS), Amsterdam, 10 July 2009

## Introduction

The theory and praxis of editing music almost exclusively focuses on written text. Music philology is closely bound to the concept of music notation, in which a composer records musical thought, and performance, where music is brought to life, thereby inevitably interpreted. In electro-acoustic music for recording media, on the other hand, the notion of an interpretative performance vanishes and the very concept of composition for magnetic tape seems to imply the music's reproducibility, thereby turning the concert performance into a mere repetition or *Vergegenwärtigung*, a re-presentation of the piece.

In spite of this observation, I here want to emphasize the importance of critical editions of music for recording media. I'm encouraged to do so by research that has been undertaken by art historians since the late 1990s in the field of preserving media and installation art (Corzo 1999; Real 2001) and more recent work by fellow musicologists on electro-acoustic music preservation, including interactive and live-electronic pieces (Teruggi 2004; Wetzel 2006). I'm going to illustrate my points with compositions by John Cage and Morton Feldman, created within the course of the *Project for Magnetic Tape*, 1952-53.

## Aesthetic Background

But first, let me briefly explain, how the notion of the unity of work and tape in electro-acoustic music came about. Werner Meyer-Eppler, the early theorist of electronic music and most influential to Herbert Eimert, Karlheinz Stockhausen and the circle of the Cologne electronic music studio, coined the term of *Authentische Musik*, authentic music in 1951 (Meyer-Eppler 1952: 134). With that, he described "music, by the composer bindingly prepared for playback" (Eimert and Humpert 1973: 36). This led Hans Heinz Stuckenschmidt to subsequently postulate a "third epoch" in music, where after the first epoch of vocal music with sound production located inside the human body and the second epoch of instrumental music where men incorporated tools for sound production, finally "men stands exclusively at the beginning of music composition, but is excluded from mediation. 'Dehumanized' music has developed in the domain of pure mind," *des reinen Geistes* (Stuckenschmidt 1955: 19).

It seems to me that – at least in German musicology – this way of thinking, introduced in the early 1950s, still determines our understanding of music for recording media. Little thought is given to two important aspects that are more obvious to other traditions of electro-acoustic music, most notably the American experimental tradition: The aspect of realization and the aspect of performance.

## Realization

The concept of realization assumes a difference between a work of music and its acoustic or, more general: performed, emanation. Thus, the composition itself can't be identified as the stream of sounds stored on recording media. There needs to be a score and the stream of sounds we hear represents only one of many possible realizations.

This idea contradicts the aesthetics of Pierre Schaeffer's *musique concrète* as well as the Cologne studio's understanding of *Elektronische Musik*. Neither group created scores to enable other musicians or technicians to prepare realizations different from the one the composers carried out themselves. Even after having published a visual study-score of his *Studie II* of 1954 (Stockhausen 1956), Karlheinz Stockhausen claimed in 1959, "nobody will seriously believe, that in the future, under technical circumstances completely different from today, anybody will devote himself to realizing an electronic composition from these years again, utilizing the working notes available" (Stockhausen 1963: 186).

Even though worlds apart in their artistic approach, Otto Luening and Vladimir Ussachevsky, founders of the *Electronic Music Center* at Columbia University, New York, shared with the European composers the aesthetic conception of unity of work and tape. The score of Ussachevsky's *Sonic Contours* of 1952, like the scores of Luening's *Low Speed* and *Fantasy in Space*, both of 1952 as well, were traditionally notated after the pieces completion for legal reasons: The American authorities wouldn't consider a recording worth copyrighting (Ussachevsky and Luening 1977). The composers did not think of these notations as scores in the sense of instructions for realization or performance. They are posterior transcriptions of the flute and piano sounds in use, today valuable documents of the procedures of production.

The five works created during the course the *Project for Magnetic Tape*, on the other hand, are all scored to be realized by musicians and technicians other than the composers themselves. After fruitless attempts to set up a Center for Experimental Music that should have provided access to means of recording, sound synthesis and editing in 1942, John Cage was able to convince the architect Paul Williams in 1951 to donate \$5000 to the production of music for magnetic tape. The work was carried out in the private recording studio of Louis and Bebe Barron in New York, as well as, when no sophisticated machinery was needed, in Cage's apartment and at Merce Cunningham's kitchen table. The pieces produced were, in the order of completion, *Imaginary Landscape No.5* by John Cage, *For Magnet Tape* by Christian Wolff, commissioned for the *Dance Suite by Chance* by Merce Cunningham, *Williams Mix* by John Cage, *Octet* (later titled *Octet I*) by Earle Brown, and *Intersection for Magnetic Tape* by Morton Feldman. While the Barrons provided a library of recorded sounds, the infinitesimal work of cutting and splicing was carried out by Cage, Brown, and pianist David Tudor.

The division of labor required the use of scores prepared beforehand. For example, when his *For Magnet Tape* was produced, Christian Wolff stayed at Harvard University, studying classics. He would send the four movements of his score, one by one, together with updated lists of sound material, to New York. The complex structure of Cage's eight channel *Williams Mix*, also required a score. It looks like a dress maker's pattern, representing the shapes according to which the tapes need to be arranged.

Even though the score has still not been published, Cage repeatedly mentioned *Williams Mix* could be realized again. Keeping in mind it took a team of at least three devoted enthusiasts almost nine

months to complete, it comes at no surprise it took more than 40 years and the advent of advanced digital audio technology before a brave composer, Larry Austin, took up the challenge in the late 1990s (Austin 2004).

### **Performance**

While the preparation of a score like *Williams Mix* for publication add nothing essentially new to the field of editing 20<sup>th</sup> century music, the publication of the tape parts does. Besides the question of sound quality which leads to the discussion of filtering and noise cancellation algorithms, quite elementary problems arise in terms of musical form.

The eight channels of *Williams Mix* are scored in fixed relation. But since at the time of their creation eight-channel tape systems were not available, they were produced on eight single-track tapes. On examining the master tapes, however, one discovers remarkable differences in duration. For example, according to the score, track 1 should last for 252.94 seconds, while the tape actually lasts for 254.87 seconds. This means, the surviving tape is 0.076% longer than expected, almost two seconds absolute. All eight tape tracks do not match the scored durations, and the differences are somewhat similar, but not the same.

Obviously, this situation indicates the need for a critical edition of the historic tape realization. Regardless if the tracks' durations were changed due to the aging of the tape, leading to mechanical extension, or the tape machines on which the master tapes were copied did not run on consistent speed, we are faced with the dilemma of drifting tracks. They most likely even irregularly change their relation. Larry Austin suggests to correct the durations by means of time-stretching algorithms, which should remain unnoticed by the observer considering the smallness of the change of less than tenth of one percent (Austin 2004: 20102). On the other hand, the structure of *Williams Mix* is so extremely complex, that many details remain unnoticed anyway. Thus, the possibility of perception can't become an argument here.

Another consideration leads towards the field of performance practice. As mentioned before, at the time of the first performances of *Williams Mix* multi-track technology was not available. The piece was therefore played on eight single-track machines, two of which being operated by one musician. Whether a separate conductor or one of the four musicians led the performance and indicated the joint start of the tape machines, remains uncertain. In any case, truly precise coordination was impossible to achieve.]]

This reflects on the level of performance experiences made earlier on the level of production. Cage had to discover that he and Earle Brown would measure the tapes slightly differently, even when using the same ruler. Also, the expansion and contraction of the tapes depending of the weather did not remain unnoticed. Ultimately, Cage had to give in: "The usual attitude in this kind of situation [...] is that you'll do the best you can and accept whatever imperfections are unavoidable. In this case, though, I began to move away from the whole idea of control, even control by chance operations. It was a cross roads for me. I took our failure to achieve synchronization as an omen to go forward the unfixed, rather than to change my methods so as to make it more fixed. Now, of course, they have equipment that makes possible much more precise control, and a lot of people are using it to go in that direction" (Tomkins 1965: 116).

For my understanding, this aesthetic conclusion by the composer should lead to the preparation of two versions of the tape parts of *Williams Mix*. One should reflect the state the single track master tapes are in today and provide the performers with eight digital mono-files, possibly in improved sound quality, but as different in duration as they might be. The details of the concert performance should be in the musicians' discretion, it is up to them to place their performance in the context of performance practice of *Williams Mix*. The other version may try to approach the intended synchronization of the score, adjusting the track's durations accordingly and making them available in multi-track media.

### **The Limits of Editing**

When one of the aims of editing music lies in creating or restoring consistency of the edited text, one might find good reason for stronger change of historic tape material.

Morton Feldman's *Intersection for Magnetic Tape* is scored in grid of numbers, similar to the instrumental music of the same title. The score is in three lines: the length of tape, traveling at 15 inch per second, the number of sounds to occur in that duration, and the number of tracks, one to eight, on which these sounds are heard. As with *Williams Mix*, the eight single-track master tapes differ from their intended duration, between 96.9 and 98.8%. But because of the structure of the music, more precise adjustments could be made, re-establishing the sections that are of equal duration for all eight tracks.

If one took up the challenge of such a project, the line to interpretative intervention, perhaps even new realization would be crossed. Improving or correcting a text according to the assumed composer's intentions, is a dangerous temptation the editor should be keenly aware of. Contemporary composers may deal with the classics of electro-acoustic music in ways, the humble scholar can not consider. To know the limits and risks of his undertaken, belong to the editor's foremost obligations.

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