Notes On The Realisation Of The Manipulated Flute Sounds

«Yume» (Japanese, in English «dream-vision») was composed between March and April, 1971 and was premiered in May of the same year. The per formance CD which is to be used with the «live» solo flute was produced exclusively through the manipulation of recorded flute sounds which in this form would be impossible to perform live. The performance tape, therefore, cannot be legitimately performed or replaced by the use of multiple flutists. The tape manipulated flute sounds are produced through alteration of the tape speed, amplification of the special effects, and through the application of reverberation. Through the increasing or decreasing of the tape speed, notes from Contra-G to A-sharp 5 can be reached. All transpositions of 1-2 octaves higher or lower, *glissandi* of a semitone to a minor seventh can be reached through alteration of the tape speed. The specific special effects are as follows:

Movement I

Bar 4 *gonglike sounds:* by the first realisation of the source tape, the single pitches (using alto flute in G) in two dynamic levels (***f*** and ***mf***) are recorded at 38 cm. This is then played back at 9,5 cm and is re-dubbed at 38 cm. Approximately 12 cm of the ***f*** tape was spliced (on an angle) at the beginning of the tape giving the impression of a gonglike attack sound. Directly connected to this follows a 3/4 note containing the ***mf*** sound i. e. 142,9 - 12 cm = 130,9 cm etc.
Bar 6 *tapping:* position the flute as if to play (therefore the pitches will be correct) and trill firmly without blowing.

Movement II

Bar 1 *quick pull of the tape:* either quickly reduce the tape speed during the recording, or turn the motor off. When doing this while the tape is played at regular speed, an upward moving *glissando* effect is achieved.
Bar 13 *gliss (tritone):* during recording, decrease the tape speed through 6 semitones. In order to avoid shortening the lengths of the bars during performance (as a result of the increased tape speed), the 16th notes in the 4 top voices must be played 8 times instead of 6.
Bar 15 *tapping sound:* (see I/6), alternatively grip firmly f and g-flat, i. e. don't just trill. That would not be effective enough.
Bar 36: see bar 13.
Bar 44: when the performance tape is ready, tracks 1-4 will be copied on 19 cm tape speed and then mixed at 38 cm.

Bar 83 *position of the flute:* Grip the note b1, and with the remaining fingers tap firmly the notes d, e, f-sharp and g-sharp respectively. Therefore the percussion effect will be noticeably increased.

Movement III

Bar 1 *«smacking effect»:* place the tongue firmly in position as if playing pitch b1. Click the tongue firmly and repeatedly against the roof of the mouth, as if to imitate the sound of horses walking on cobble stones.
F-t: enclose the hole of the mouth piece with both lips and strongly blow F-t while gripping the note b1.
Bar 2: *randomly tap all keys alternately.*
Mouthpiece (thumb insertion): remove the mouthpiece of the flute, blow on the mouthpiece while moving the thumb back and forth inside it.
Bar 4: the same as F-t but this time puff a «sh» into the flute barrel (like when doing a strong «warm-up»).
Bar 15: voices 1 and 2 are transpositions of voice 3. Copy with double or quadruple tape speed.

Movement IV

Bar 1 *tapping effect:* similar to II/83.
Bar 3: like III/1 but on the relevant pitches.
Bar 5 *tremolo:* continously hit or tap b1.
Bar 6 *percussion effect:* like II/83 on the written pitches.
Voice 1: obtained by filtering the «live» solo-flute and the canon comes with the use of extreme reverb.
Bar 10 *cymbal effect:* on the given pitches puff or blow «tshu» (d1) – «tshi» (e2) into the flute barrel.
Bar 12 *«tshu-i»:* similar to bar 10, only now «tshu-i» on the pitch d1 should be puffed into the flute.

At the first realisation of the performance tape (1971), only 3 reel to reel tape machines were available, and the layering of the single tracks could only be achieved by constant re-recording and copying. Nowadays one could achieve these goals in a shorter time span and more effectively through the use of multi-track machines and/or with sound «sampling» devices.

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