

Duel for two percussionists

1985

Henkjan Honing

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DUEL

FOR TWO PERCUSSIONISTS

European Youth Competition 1985

PROGRAM NOTES

DUEL, a fairytale for two percussionists

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Once upon a time...

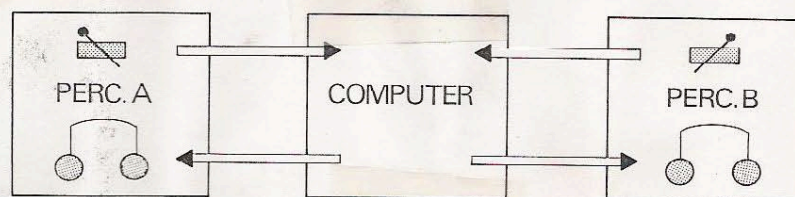
two characters, a duel
deaf and blind to each other

an intermediary, the computer
prevents a combat

a duel seems unwanted
reverse the movement!

no winner, no looser
a play

Two percussionists play their own rhythmical patterns independently. A computer receives information from the instruments with sensors. It plays along with both musicians separately, giving clicks in the headphones they wear. These also serve as sound-damping devices, so the musicians are unable to hear each other. Computer and performers are connected with each other in a double feedbackloop (see figure). Information about one interpreter can reach the other only via the computer. It adjusts the information to and fro and filters it in such a way that the two players come within a reference time-frame, becoming complementary and finally reinforcing each other. Together they then play one and the same rhythmical pattern, originating from the unique characteristics of both rhythms at the start of the piece.



DUEL, for two percussionists

PREFACE

Thinking of Europe we see powers, nations, generations and characters. This plurality carries in itself the seed of misunderstanding and conflict. However, the mutual differences may be known, by the exchange of information. Then it is possible to appreciate each others characteristics. Only in this way cooperation and understanding may arise. This doesn't mean integration nor denial of the differences, of which the result would be chauvinism and problems would be the same. Only larger but closed units would come to existence. Really important is the pluriformity of cooperations and societies, in which there is room for everyone. In this piecemeal process the modern mass communication - and information technologies can play an important role. They are already fully accepted by young people. A fair use of these media implies a democratic accessibility to the information.

These thoughts are elaborated in the composition in a symbolic form. It also gives an impression of the cooperation of two young composers, who explicitly choose to work with these new technologies.

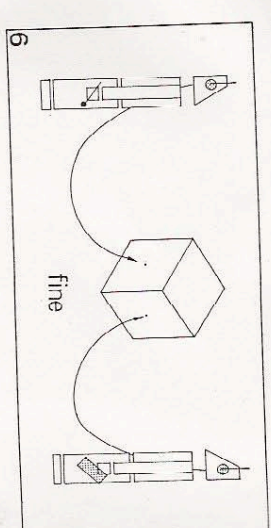
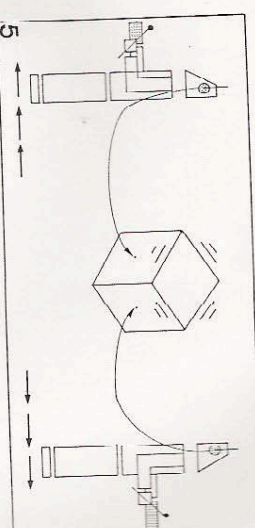
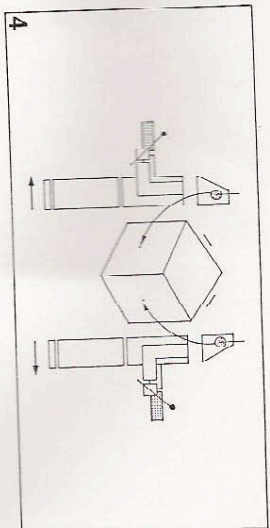
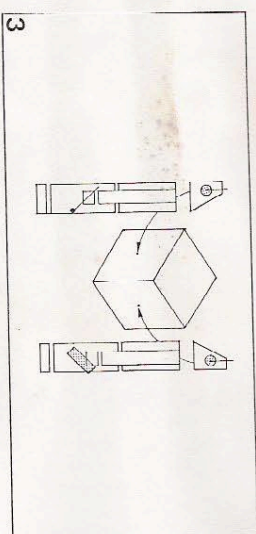
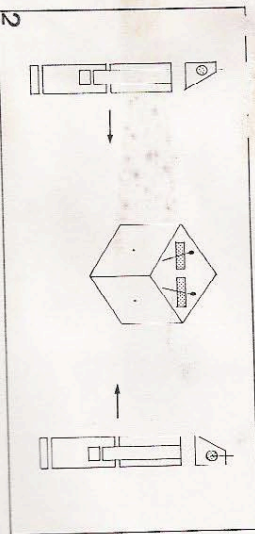
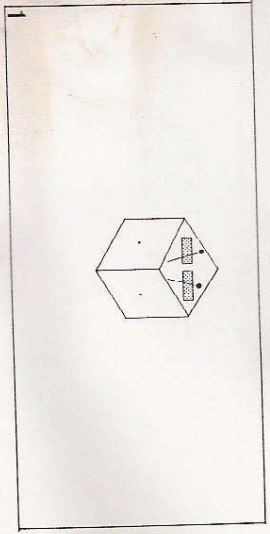
DUEL, for two percussionists

FRAMEWORK

Two percussionists play their own rhythmical patterns independently. A computer receives information from the instruments with sensors. It plays along with both musicians separately, giving clicks in the headphones they wear. These also serve as sound-damping devices, so they are unable to hear each other. Computer and performers are connected with each other in a double feedbackloop (fig1) Information about one interpreter can reach the other only via the computer. It to and fro adjusts the information and filters it in such a way that the two players come within a reference time-frame, becoming complementary and finally reinforcing each other. Together they then play one and the same rhythmical pattern, originating from the unique characteristics of both rhythms at the start of the piece.

STAGE PRESENTATION

On the stage the computer stands, a black cube, with on it the instruments. Two percussionists come on stage from different sides, with their headphones on. They connect their headphones to the computer, pick up their instruments and take position, back to back. The duel starts Whenever a phase of the piece is finished they take a step forward (so they walk away from each other). When the last phase (5) is finished (they are then playing the same pattern), they turn around facing each other. The duel is over (fig2) The theatrical move is the growing tension of an expected climax. The musical move however, is a relaxation, a gradual solution of the conflict. From phase one to five the cube shakes more and more, suddenly stopping at the end of the last phase. In phase 1 the cube starts shaking. This is increased during the piece. At the end of phase 5 it abruptly stops.



DUEL, for two percussionists

THE COMPOSITION

phase 1: without each other

Each percussionist plays a repeated rhythmic pattern chosen by himself, in his own tempo. As an example we give the structures as shown in figure 3.1

phase 2: towards each other

By means of click-sounds the computer is joining each performer. By stretching one pattern and slowing down the other the computer gradually adapts the durations of both phrases to each other, until they are the same. This happens in such a subtle way, that the change of tempo is not forced upon the musicians if they are unwilling or unable to follow it. When both phrases have met in an identical length of time, the next phase begins. See figure 3.2

phase 3: against each other

The computer now moves the starting points of both phrases, until they coincide. Again insofar the interpreters wish, or are able to follow their artificial 'partner'. When both rhythmic patterns synchronize, this phase is completed. We illustrate this process in figure 3.3.

phase 4: with each other

In this phase the computer is only going to support the unique beats in each pattern. One by one the coinciding beats are left out. Complementary patterns emerge and will be the base of the finale in phase 5. See figure 3.4.

phase 5: together

The above-mentioned patterns will now form one entity. One beat of pattern A is transmitted to performer B, and vice versa. As soon as the performers integrate this beat in their own phrase, they intensify each other. Only then the process continues with a following addition. Slowly a common structure, played by both, arises. See figure 3.5. This structure is repeated, after which the computer signals the end of the piece: the conflict is solved.

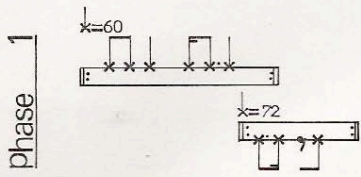


fig 31

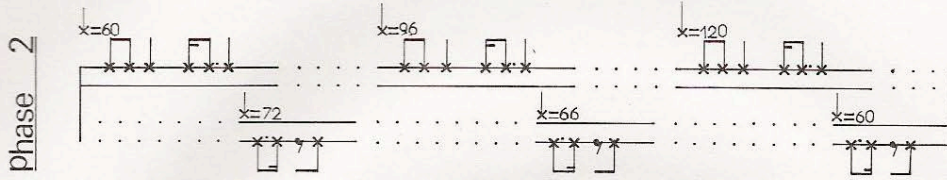


fig 32

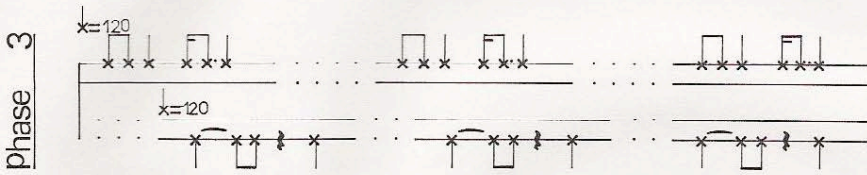


fig 33

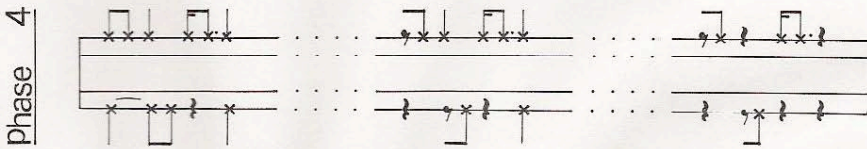


fig 34



fig 35

DUEL, for two percussionists

CHOICE OF INSTRUMENTS

The percussionists can choose between a set of temple blocks and a set of wood blocks. If temple blocks are chosen they should differ a second (see figure 4.) In case of the wood blocks these have to be distinctively different, preferably in a low register.



fig 4

PERFORMANCE PRACTICE

The durations of the phrases are not allowed to diverge more than a factor two. This is to prevent one of the performers to end in an exceptionally high tempo. The most interesting results are obtained with patterns that are essentially different, for example a rhythm with a division in three, against one in which a division of five occurs. The details of the system will soon be clear to the performers during the rehearsals. The common pattern (phase 5) depends on the two patterns chosen in the beginning and not on the tempo nor on the starting point. For two arbitrary patterns there is always just one solution, to which the computer will guide them. The result is thus predictable and controllable. Knowing this, the percussionists can use their whole capability to increase the level of difficulty, being shure that what can be done in rehearsals, will be possible in the performance.

DUEL, for two percussionists

7. SOFTWARE

The program is written in MACRO-11. It runs under the DEC RT-11 operating system on an LSI-11/23 machine, but it is transportable to any DEC PDP-11 computer. Most of the code is given in an appendix. Input and output handling is implemented in an interrupt driven way. Timing data resides in circular buffers and is updated, analysed and modified, as is needed in the different phases. A special pulse pattern autocorrelation algorithm was developed to enable the analysis of the input phraselength.

HARDWARE

For the composition some special devices were needed. They were all connected to the computer through a standard RS-232 data link, in order to increase machine independency. See figure 5.1 The stage layout is depicted in figure 5.2. Note the cube in which the serial/parallel converter plus all the other devices reside.

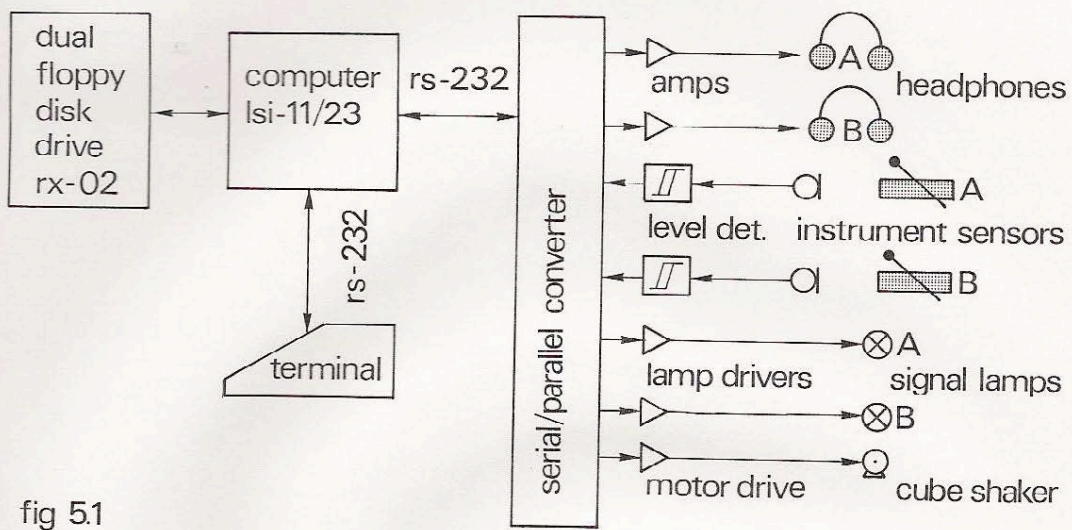


fig 5.1
Logical connection diagram

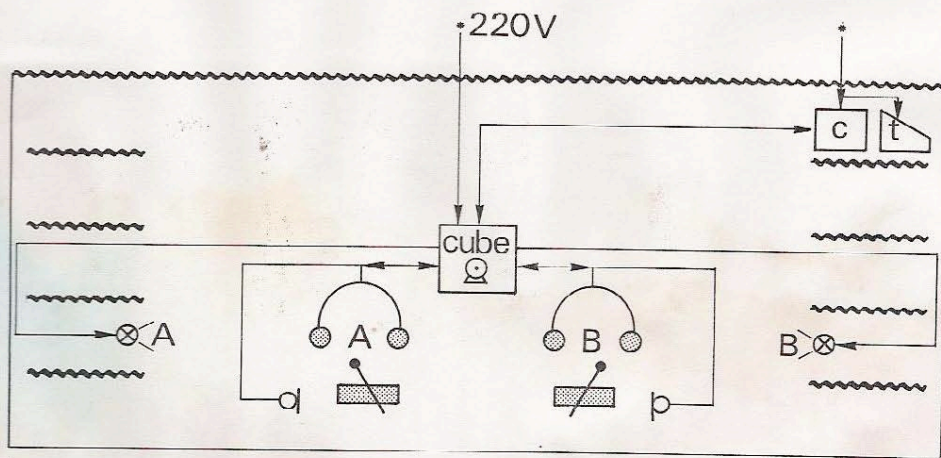


fig 5.2 Physical connection diagram