

NEW TECHNOLOGY AND THE TRAINING OF COMPOSERS IN EXPERIMENTAL MUSIC

by

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Present-day technology provides a composer with...

I wanted to put these words at the beginning of my paper, but then I realized how difficult it would be to complete such a sentence. Perhaps I should have found a compromise, between my initial intentions and the subsequent hesitation, by writing :

**Present-day technology provides a composer with...
further reasons for doubting !**

Superficially new techniques are apparently better than old ones ; in any case they replace them. But is this in fact true ? Can one really speak of « technological progress » in a field of creative activity such as music ? Does the application of new technology influence and indeed condition the value and originality of a work of art ?

One of the most important events in recent musical development took place when composers became aware of the fact that practically *any sound whatsoever* could acquire, through its being judiciously used in a composition, a certain *musical* value. One might say that « thinking in terms of music » enables the present-day composer to raise a purely sonic event to the status of a musical event. Moreover, advanced technology facilitates such « thinking », and serves to translate sonic events into musical *facts*.

Experimental music — or « tape music » as it is sometimes called — has given the composer the opportunity, by means of the new technological equipment used to produce such music, of including every conceivable and

even inconceivable sound in his everyday resources. It has furthermore enabled the composer to « touch » the sonic ingredients with which he works.

If we were to agree that the following three possibilities are relevant for a composer :

- total liberty concerning the choice of sounds,
- opportunity of « testing » the musical implications of new sonic events,
- ability to manipulate sounds easily and directly,

then it should be interesting to investigate each of these conditions in the double context of *new technology* and of *musical education* (more precisely, the opportunity of developing effective methods for training composers).

Criticism of technologists

If one observes closely the development of many experimental music studios, and if one studies the sorts of music which they are producing (often with a view to placing it on the commercial market), it is more than obvious that some types of sounds — namely *electronic* sounds — are being given priority. Such a tendency is in fact a serious constraint for the composer, who is deprived in this subtle way of a complete liberty in the selection of sounds. This situation tends towards a disintegration of *experimental* music into *concrete* and *electronic* music, and of course such a separation is artificial in that it has neither historical nor esthetical premises. Its premises are in fact purely technological. This situation is surely incompatible with the most general intentions of the composer, and defines a fault which can only be attributed to technology... and technologists.

Criticism of computer techniques

Computer techniques share the responsibility of the priority given to electronic sounds. Here is a short list of some of the fields in which computer techniques have been applied to music :

- solution of compositional problems,
- analysis of musical works,
- sound analysis,
- direct sound generation,
- control of sound processing equipment.

The first and the last mentioned fields are probably the most promising for a composer. *However one should realize that the use of computers attributes a priority to one particular category of composers.* Computer techniques imply a program, that is to say : a formalization. Moreover formalization means that certain data must be assumed in an *a priori* manner. Composition and sound processing therefore tend to become intellectual activities, and the possibility of « touching » the musical material is less direct. Intuitive gestures inspired

by the immediacy of sonic objects cannot easily be exploited. This situation is not likely to encourage all the various categories of composers, and in any case it should not be thought of as the only available situation.

One might imagine the application of digital-to-analog conversion techniques to the development of an instrument capable of supplying the composer with *sonic propositions*, which could then be modified in a most general manner.

Future compositional methods will certainly be implemented and improved by means of technology. It is quite likely that certain manipulations regarded as primitive from a purely technological point of view may, in some cases, occupy an important rôle in these compositional methods, and that the artist will consider such manipulations as indispensable. They might even become for him a source of artistic inspiration.

Categories of composer attitudes

Technology should not be directed towards only one category of composers ; it should not be directed towards only one way of thinking. It should leave the composer free to adopt any attitude whatsoever towards his creative activity, and it should allow him considerable choice in the resources which he wishes to use in order to accomplish his work. Let us try to analyze composers' attitudes towards experimental music into three categories :

— A composer who already possesses a detailed and formalized idea of his composition or of his musical material. Let us call him a « formalist ». In certain cases he may choose to modify his basic ideas and intentions.

— A composer who seeks the basic inspiration for his composition in the sounds which he encounters. He would like to be presented with a collection of sonic propositions which he could then either accept, reject or modify. Let us call him an « improvisator ». This sort of composer formulates his intentions during the process of realization, which in such a case becomes a series of experiments. He is in fact very close to the fundamental notion of *experimental* music.

— A composer who has only a general idea — or « vision » — of the composition and of its sound material. He waits for the fulfilment, realization and interpretation of his outline. We might call him a « visionary ». Obviously a certain degree of formalization of the idea is also possible here, but the essential factor is a considerable margin of freedom.

The above classification is necessarily neither very scientific nor versatile. Its weakness, like that of most simple classifications, is that one rarely encounters a real composer who could fit directly into one of these three pure categories. Nevertheless it should be helpful when analyzing technological problems. One can probably « reduce » most real-life situations to one of these

categories, although one should not forget that a particular composer is likely to change from one category to another during the different stages of his creative activity.

Criticism of the isolated composer

Regardless of whether the composer is a « formalist », an « improvisator » or a « visionary », he has to take into account that his musical ideas need to be translated into technological language, no matter what sort of technology he is going to use, be it a simple tape editing technique or a complex computer technique. The composer may decide either to try to translate his ideas himself or to engage an interpreter. The less formalized and precise the composer's musical idea, the more difficult the translation.

In the case of a « formalist » such a translation is relatively simple, and may even result in a computer program. Either an adequately prepared programmer — or the composer himself — can act as translator.

As for an « improvisator » and a « visionary », translation means *interpreting* the inventions. The interpreter needs to have esthetic intuition, experience and knowledge, as well as taste and initiative. It seems doubtful whether computer techniques could be feasible in such cases. The composer probably appears to be the best interpreter of his own ideas. But if this statement was assumed to be correct then it would involve the necessity of formalization in most cases, i.e. a change in the composer's attitudes. And what is to happen if the composer does not wish to change his attitudes ? Moreover, in instrumental music, the composer can produce his own work either as the performer or as the conductor. In most cases he quite consciously decides against such a possibility, even though he be sufficiently proficient in either capacity.

In the case of experimental music there is the additional problem, for the composer, of mastering the technological process. When a composer is left face to face with apparatus, he is obliged to be fully acquainted with it, that is, to possess a working knowledge of the equipment. Since he is neither a technician nor a sound engineer, he often becomes so involved in *technical* activity that he cannot concentrate on *musical* problems. Furthermore, not having a thorough technical training, he is often unable to control complicated operations, necessary if he is to obtain a technical result of high quality. We should also mention the fascination with technology which is understandable in a non-technician. This unsettles the balance still further as far as thinking in musical terms is concerned. Of course this need not always be true. The Paris Studio can be regarded as a unique example of a successful solution. However, apart from such rare exceptions, it would appear that the problem still exists.

A team : composer and interpreter-performer

The above-mentioned problem can be solved either by providing comprehensive musical and technical training for composers, or by accepting the idea of a translator. Such a translator, according to the category of the composer to whom he is attached, can act either as an operator, a joint inspirer, or eventually as an interpreter-performer. The presence of an interpreter allows the composer to concentrate on musical problems; but at the same time, he does not have to give up those technological activities which may inspire him. On the other hand the composer is always free to do without his interpreter.

The principle of a team made up of a composer and an interpreter-performer has been successfully tested in the Polish Radio Experimental Studio in Warsaw for several years (1). The above-listed criticism and doubts, with regard to the technology of experimental music and the composer's position, should not be thought of as an indication of the author's prejudice concerning the development of technical resources and the introduction of new technology. On the contrary, these doubts came to light during the process of designing the development project of the Warsaw Studio. This project involves the automation of processing, including even the use of a computer. These opinions resulted from the necessity of adopting a definite attitude towards the training of students of composition in the field of experimental music.

Summing up, I should like to stress that it seems worthwhile to mention the following doubts when speaking of the technological development of experimental music :

- Preference accorded by recent technology to electronic and synthetic sound generation methods (to the disadvantage of the remainder of the sound world).

- Too eager repudiation of apparently primitive processing methods.

- Underestimation of the importance of the fact that musical material can often be thought of as « tangible ».

- Unwarranted isolation of experimental music from the rest of contemporary music.

- Negligence concerning the natural diversity of composer's attitudes, and a tendency towards technologically favoring the « formalist » composer.

- Diversion of the composer's attention from reasoning in musical terms towards purely technical thinking, brought about by the necessity of his accepting the responsibility of sound engineering.

The question arises as to how, in the light of the above criticism, should a composer be trained to use an experimental music workshop. It is difficult to answer this question in an exhaustive manner. The question can in fact be broken down into the following essential points :

(1) Boguslaw Schäffer's « Symphony », realized and performed by Bohdan Mazurek, can serve as an interesting example of such cooperation of a « visionary » type of composer with an interpreter-performer.

- How can traditional education and music appreciation be surpassed ?
- How can the composer be allowed greater liberty of choice and of activity ?
- How can it be inculcated that any sonic event can become a subject of musical interest ?

The most important aspects of this problem, from a practical point of view, can be summed up in the question : To what extent should a composer be involved in problems connected with technology, techniques and acoustics ?

As far as we in Poland are concerned, we doubt strongly whether a student of composition could be sufficiently trained in order to deal single-handed with all the technical problems involved in processing his works. This would necessitate a thorough professional training and, at the same time, it would distract his attention from fundamental musical problems. I believe that lectures on problems concerned with the technology of experimental music, such as they are given to students in Warsaw, should be based upon a real composer's studio. The student must become aware of the need to create and modify sound events, and of the course of activities to be adopted. The technical methods of achieving these goals, as well as decisions concerning the equipment to be employed, are secondary factors.

This apparently unimportant assumption enables one to retain a proper ratio between musical workshop practice and technology, forcing technology to fall into line with musical thinking. Such a subordination makes the composer to some extent independent of technical situations, and enables him to work in differently equipped studios.

It is impracticable to add to the composer's training a highly specialized education in sound processing. On the other hand, it is quite easy to extend the training received by students of acoustics in such a way as to enable them to deal efficiently with experimental music problems. Experimental music, in view of its modern treatment of sound, utilizes such comprehensive and advanced processing equipment that it offers both the composer and the acoustics expert the grounds of an ideal education.

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