

Composers or Computers?

By PHILIP LAIRD

IT SEEMS to me surprising that a serious flaw in the serial theory of composition should have remained unnoticed for so many years. For, as Peter Stadlen has pointed out, it is the order of the twelve notes which differentiates one series from another and it is precisely this differentiation which is lost when the composer telescopes his series into a chord. Some of the serial composers replied that serialism provided them with a viable basis for writing music, and pointed to the masterpieces that had been written using this technique. Both sides can be seen to be right according to one's viewpoint; and the argument seems to have rested here.

Serialism as a Basis for Composition

What I want to examine is: first, the idea that serialism and its more recent developments provide a broad and long-term basis for composition, comparable to that of tonality. And, second, the general direction in which serialism is moving the art of composition and some of the probable consequences of this movement.

Some explicit theory of composition became inevitable once tonality was seen to be exhausted. To write music without recourse to a tonal centre opens up so many possibilities that the composer might, like one of Sartre's heroes, become paralysed by his freedom. We know how difficult it was for Schönberg to write music which was freely atonal, and I suppose that it was through being unable to find an aural principle that could take the place of tonality that the twelve-note method came into existence. It was probably the only solution, and certainly much better than any of the alternatives since offered. But, while tonality is an idea which we can formulate *after* a historical survey of European music, the twelve-note method had to be formally defined, at least in the mind of the composer, *before* a work could be composed according to its principles. So, from the start, serialism required the setting up of rules and the pre-compositional selection of material to be manipulated according to them. And Stadlen's flaw not only demonstrates a logical error in the theory but emphasizes the fact that it is a theory because it contains such an error.

Art can never be free, but the first step towards deriving its limitations from pre-meditated rules is one away from art. The most radical element in Schönberg's thought was not his actual technique but the new emphasis he put on the pre-compositional. Tracing the development of the twelve-note method into total serialization, one sees a growth which makes logical sense—though not always aural sense—and also an increasing importance laid upon the role of extra-musical rules. The mere speed of this development does not commend its principle. It used to be said that masterpieces were not written by conforming to rules. Today, Pierre Boulez is taken to task by a sympathetic critic for not sticking strictly to his own serial procedures. Similarly, when Stockhausen sought relaxation from strict serial rules, he sought it

by introducing further rules with 'built-in' relaxation.

So the composer's interest has shifted from the music to the method by which it is written. This is where he exercises his creativity; the music is a by-product. There is indeed much diversity to be found in both the underlying theories and the personal methods of applying them. But there is a tendency for the music to sound all very much the same, whatever the method. This has even been admitted by a spokesman for the 'new music', but he sees it as a sign of a community of kindred spirits! All the techniques, from total serialization to pure chance as used by John Cage, enable the composer to solve the tactical and strategical problems of composition. But conceived extra-musically they cannot recognize the difficulties, let alone the existence, of the listener. Their goal is always the greatest possible unpredictability. This may sound tempting, whether or not one questions its aesthetic value, but it is a self-defeating aim. Nothing is quite so boring as the continually unexpected: the music ceases to move and provides no aural justification for itself to continue to sound.

Entangled with Equations

One sees, coming to the surface in the new methods of composition, the desire of the artist to become the scientist. This is echoed in practice by the adoption of electronic music. Every musical element can be controlled absolutely and every possible sound in the acoustic spectrum can be exploited. Not only is the composer entangled with equations and expensive apparatus, which go so well with his new jargon culled from information theory, but at last he can do away with that unreliable and hitherto necessary appendage, the performer.

In the midst of Koenig's score and instructions for the realization of his *Essay*, a composition for electronic sound, he takes time off to defend the medium. He writes:

The view that electronic music lacks interpretation as a humane element involuntarily imputes just that to the process of composition. Whatever humanity is not already inherent in a musical work cannot be revealed by interpretation.

But this is just word-play. In composition what is humane is the intention, not the actual process. The intention of an orthodox composer is that his music should be performed and listened to by human beings. The electronic composer replaces the performer with a machine. This in itself is not necessarily an aesthetic crime, but it cannot help being a dehumanization. Serial techniques have been transferred and extended to deal with the new medium, so much so that the German theorist Adorno has summed up electronic music as 'Webern played on a Wurlitzer organ'. And together serialism and dehumanization point towards music as an applied science.

What is surprising about this association with science is that it has been engineered so much

by the artists themselves, in theory and in practice. Stockhausen has doffed his hat to both Einstein and Heisenberg, and attempted to base some of his extra-musical thought on their scientific theories. He should look not to human beings but to the machines for an arbitrary choice, just as he has sought them for an accurate performance of his complex rhythms. If he and Cage are really seeking the indeterminate, perhaps they ought to buy themselves a random number generator.

It may be thought that the title of this talk was just wishful, or rather unwishful, thinking on my part. Let me stress that this is not the case: the choice will soon be real. It is common knowledge that computers have been used to play chess, noughts and crosses, and even to compose simple melodies. But we still think of them essentially as idiot-child prodigies. There is, however, much work being done on the development of machines that will be able to learn and to create. Beneath the usual caution with which future scientific expectations are announced, one senses a growing confidence that this will be achieved.

Dr. L. C. Payne observed at the Symposium on the Mechanization of Thought Processes, held three years ago in this country: 'Rules will be found for human intelligence so that machines built on those lines can simulate intelligence'. He then goes on to say: 'I suggest that these will be no less complete because they do not treat the subjective experience of intelligence, and that the arguments that a machine cannot be intelligent because it cannot *feel* or experience intelligence as we feel it are irrelevant'.

The Rule of Law

Despite the claims of the gentleman who wrote in *Fortune* magazine that a computer had been successfully programmed to compose music in the manner of Bach, computers probably do not at present write music any better than they play chess. But they are certainly able to follow rules, and consider what a critic wrote about the transfer of serial technique to electronic music: 'Composition with this material more than any other requires very comprehensive laws. So nobody should be surprised that the rule of law was extended to apply to the new material'. It seems as if the computers have also got hold of the *avant-garde* idea of statistical analysis. At the same conference Dr. S. Gill argued that 'it is possible to envisage a two-stage process, in which the computer began by making a passive analysis of some given works, and then proceeded to compose a series of works itself which could be criticized by a human musician, thus adding to the computer's experience'.

From this one can see why the pre-compositional attitude is quasi-scientific. The more that music is conceived pre-compositionally the easier it is to produce on a computer. Even present computers could be programmed to write some kinds of serial music, and

especially electronic music, which is an exact science in comparison to the traditional art. It is rather ironic that those who have replaced the performer with a machine find themselves most likely to suffer the same fate.

I do not propose to offer any solution; it would be self-contradictory for me to do so.

Nor is it certain how much of an evil mechanized composition will be. What I am convinced of is that, if a machine can really rival a man in the composition of music, then both of them have wasted their time. The particular music was just not worth writing by either means. Schönberg, we know, felt that there was

still plenty of good music to be written in the key of C. There is probably plenty of music still to be written on techniques which he initiated. The real question is: how much by some giant thousand-kilowatt computer and how much by that rather old-fashioned hundred-watt one—the composer?

—*Third Programme*