Method and system

I want to raise the issue of the possible significance of the use of digital machines for a composer whose work is chiefly based on non-systematic, non-combinatory methods. Although most recent articles on the .use of computers in music start with technical considerations about the problems or advantages of such and such program, I prefer to begin at the aesthetic level, in order to emphasise the necessity of dearly defining this level before consideration of any particular digital machine. There are so many examples of composers using computers just because they. are available, and consequently making the cheap kind of music which constitutes the common reference of those who made the programs or the machines, that I think it is time to define the real priorities. .

It is often said that today, at least since the Seventies, the musical situation of complex non-commercial music is chaotic, characterised by highly individualised principles, criteria, and choices; the excessive diversity of the works reflect this chaos and has led to a general discredit of contemporary music. I think that this assessment was more true ten years ago, and that it refers more to the surface level than to deeper aesthetic principles.

The long agony of neoserialism during the Sixties was only in part the agony of formalism. Obviously, some composers still ding to the idea of music as a dialectic between material and form, and organise their works accordingly. A few even exaggerate these formalist ideals, and present overwrought scores, often regardless of the acoustic results. A new "academism", currently supporting many teachers of composition, is based on this formalism, which commonly plays the rote of official doctrine. Even some newer trends, such as so-called "spectral" music in France - which in many respects continues my own use of acoustic models (Mâche, 1960, 1963, 1983) and my idea of the global gesture as the basis net the result of musical writing - have kept a strong respect for the systematic, formalised approaches of music.

The use of sound-models includes two different meanings and leads to two different types of elaboration, sometimes quite compatible, but basically divergent. Apart from being algorithms or patterns that define hypothetical laws of realisation, the models can be acoustic experiences taken as possible sources of ready-made musical macroforms, the responsibility of the composer being to bring them from an implicit to an explicit status. This procedure is metaphorical, and the chief guideline for composition is poetic rather than systematic, proceeding by analogy between the first intuition (which often, though not always, springs from a perception) and the symbolic achievement of the work.

The techniques of composition are temporarily put into brackets as irrelevant with regard to the real musical dimension, which is symbolic. One then has to invert the more common balance between formal concerns and symbolic dimensions, whereas for many composers these dimensions are either viewed as a secret garden, or as pure illusory consequences, if not side-effects, of the musical structure.

I consider the systematic, formalist dimension to be a matter of pure craftsmanship, admittedly part of the composer's ability, which has to be submitted to more authentic concerns about the why, not the how of making music. That is the reason I say that I often use a personal method (a road, in Greek) instead of a system. Not only does a system tend to be static, to give excessive importance to spatial structures and to reduce time to an additive dimension of separate moments, but it refers exclusively to the rational, logical faculties of mind, which are only a shallow part of human intelligence.

I do not forget that the importance of formalism for half a century (see Messiaen 1944; Boulez 1963; Xenakis 1963) grew precisely in reaction against the degeneration of music into symbolic, expressive, or sentimental pretences. But many signs now show a strong tendency towards the opposite direction. There is certainly a marked interest in such musical aspects as expression and symbolism. It is no longer admitted that any coherent structure can make sense simply as a consequence of suitable internal proportions and logical relationships. Historically, the importance of exploring the inside of the sound (Varèse, Scelsi), as opposed to relations between notes, is clearly coming into recognition. Unfortunately, this correct appraisal of the necessary hierarchy between formal logic and wider dimensions in music is often spoiled by a reactionary, nostalgic attitude.

For example, with the minimalists, we find a nostalgia of cyclic time, whose aim is to wipe out the Western, linear conception of time, and consequently to free music from the excessive weight of History. But the civilisations to which they refer (India, China, Japan) are all, though to a variable extent, gripped by the ideology of historic progress which has been promoted for two centuries by Western civilisation; and the utopias of the Sixties and Seventies (Cage, Riley, etc.) show strong signs of tiredness, alter having mostly failed to reach the mythic level of which they had some intuition.

On the other hand, neoromanticism deliberately appropriates that nostalgia, and sometimes contends that everything composed between 1950 and 1980 is a kind of unpleasant miscarriage of history, One tries to get rid of the fathers by reviving the grandfathers. Starting from a correct analysis of the catastrophic errors of formalism, neoromanticism tends to draw a completely irrelevant conclusion which is another symptom of what I shall call the "baroquist

neurosis". I refer to that backward movement described exclusively in terms of progress, novelty, and inventiveness in the fields of research and interpretation; usually this movement does not acknowledge the deep distrust it embodies toward the future of our culture.

These diseases from which our civilisation suffers might arise from confusion. A strong need is felt for the mythic level in music, but that need is naively confused with a reverence for the historic tradition. The atemporal nostalgia for a lost paradise seeks illusory satisfaction in the cult of lost music and exhausted memories. The real quest should be, on the contrary, for the everlasting, ever-present source of symbolic imagination, alien to formalist tools as well as to such and such historicist incarnation. Instead of featuring a neo-neo-classicism, genuine postmodernism must include all musical products of our time and view those products in terms other than those of "progress".

My own use of models has no other meaning than to organise a methodical investigation capable of stirring up the archetypal features of music, currently masked by the filters of national consciousness. Self-criticism and systematic organisation, afterwards, serve to strengthen these archetypal sound patterns, For this purpose, one need not correlate them as objects submitted to systematic organisation. The organisation, the narrativity itself, can be part of the archetypes, as has been shown to be true for folk-tales (Propp 1928), The problem, supposing a musical semiotics is developed, is to shift from cognition to creation. The creative movement seems to be always in advance. Its sponsor is Prometheus, whereas the semioticians' hero could be his brother, Epimetheus. Baudelaire wrote approximately: "It is impossible that a critic become a poet, but it is indispensable that a poet also be a critic," Similarly, I should say that no analytic system can produce any aesthetic work, but it would help if every composer was more or less a semiotician, especially if he cares about the effects of his music on the listeners.

Narrativity in music implies that instead of starting from such static notions as form, symmetry or dissymmetry, proportions, or tone-hierarchies, one cares first for dynamic processes, either abstract, like energy distribution, or metaphorical, as scenarios and plots. The details, episodes, characters, conflicting or coalescing Gestälten, all are organised afterwards. Even when I use the term "characters", I do not necessarily mean an analogy with human figures. Most of the time narration in music deals with impersonal forces like those of the elements. They are what Antiquity called the gods, that is, inner forces of the human mind, as revealed by images which, for the musician, are made of acoustic substance. But the behaviour of such a "character" cannot be described only in terms of formal similarities or dissimilarities, their impulse being more important than their structure.

These remarks explain why the exploration of the inside of sound is so important, along a path which has as landmarks works by Debussy, Varèse, Xenakis, and Scelsi. Exploration is not contemplation, in spite of some minimalist assertions; it is rather a "way", in both the spiritual and practical senses. That way might include programmatic music as a particular case, even if it has been despised and banned for a long lime (at least since Schönberg and Berg, who overtly condemned it while they secretly practised it), For years it has been declared that such a metaphorical approach to music implies the submission of music to external laws alien to her nature, and can produce only superficial, inorganic works. In spite of the recent craze for Mahler, this sentence has non been rescinded. However, it can be part of a general use of models. It is relevant to consider that non only the elements (groups, motives, etc.) but also the syntax can be derived from the intuitive identification of archetypes through acoustic experiences. By archetypes, I mean preestablished neuronal circuits which, under certain circumstances and from certain perceptions, deliver those basic images that constitute the stock of universals in poetry, painting, dance, music, theatre, rituals, and the like. Although these universals are anterior to any of these images, it seems possible to identify some of them, for example through their musical universality. Premonitions, echoes, disintegrations, coagulations, accelerandi - all belong to such images. It is quite possible that the operations that the alchemists performed were intended chiefly to evoke them. The symbolic values that alchemists manipulate are neither a mask nor an effect nor a cultural code, as is the case with neoromanticism and neoclassicism, but the core of nascent musical imagination, before it is embodied in written or recorded sound-organisations.

So far, computers have been used chiefly by composers dedicated to the combinatory aspect of their task. But I should like to point to some other ways of using computers. Instead of experimenting with formal entities like figures, concepts, algorithms, which are all based on logical operations, and which of course represent procedures closest to the basic architecture of these machines, it is possible to apply their analytical capacities towards a general approach to music. Writing in a new manner is also the domain of computers. After centuries of being an instrument for the development of polyphonic thought, the musical score started being experienced as a limitation, even before the beginnings of electroacoustic music. And the score has certainly led to development of formal concepts linked to space rather than to time, all the geometric features making some twentieth-century scores pure utopias, or "u-chronias". Although tape-music has succeeded, since its birth some 40 years ago, in breaking free of those limitations, it still suffers from awkwardness and stiffness in manipulating the sounds, and from the dullness of the loudspeakers as compared with live

performers. The different synthesis techniques very often continue a formalist approach. Instead of combining notes, they simply combine sonic elements inside the notes; but they still rely on neutralisation of the so-called material. The drawback is that the importance of timbre, which is a major factor in our century's music, cannot be properly treated with such a procedure. "Timbre" precisely designates every individual sound quality that cannot be organised into a scale, and consequently can never be neutralised.

The possibilities I referred to are, among others, those of sequencers. The new generation of these machines, still quickly evolving, goes much further than memorisation of finger movements on a keyboard. Used with samplers and synthesisers, and with their transcription programs, sequencers offer a complete writing system. Ordinary notation is a set of symbols referring to conventional realisations: its elements are signs related to the sounds through complex anamorphosis, and partly aleatory as regards the results. The writing offered by the sequencer fixes precise stimuli which correspond exactly to the sounds, without the intermediate level of the notes. Or, rather, the different notation systems which it proffers (grid, keys, or score) can be adjusted to any desired level of accuracy. The conventional opposition between construction and improvisation disappears, as every result of an improvisation can be submitted to a thorough reelaboration, thanks to those transcriptions, thus allowing the composer to utilise the spontaneity and reflection of that improvisation. As such, the transcription and reelaboration of improvisation represents one possible way to attain the level of archetypes, and offers an interesting tool for practising a musical equivalent of the "automatic writing" of the surrealists. This way seems to be complementary to that represented by the acoustic models. There is hope that the archetype can be disclosed either through a perceptive scheme (nature acting as a phenomenon) or through the silencing of rational consciousness (nature as internal dynamics). In so far as improvisation gives rise to authentic archetypes, instead of useless clichés, the sequencer can provide access to them.

With a sequencer linked with samplers, every feature of an improvisation can be reconsidered: pitch, tempo, timbres, intensities, rhythmic proportions, density of events, direction in time, and so on. For the first time the composer need sacrifice neither spontaneity nor high-level sound relationships. Organisation of sounds, not of notes, becomes easier, without being limited to superficial, fleeting effects. And a priority can be granted to global gesture, to the musical narrativity, so that music can be an utterance before being a structuring. It is probably the lack of the dimension of utterance that has sterilised so many contemporary productions.

It is clear that the analytical capabilities of computers have been underemployed by composers because they generally thought of those machines as synthesisers

or as accelerators in testing configurations of notes. But they can also be efficient as tone-transcribers (sequencers, pitch-detectors, etc.) and as modelling translators (envelope or waveshape extractors such as the programs of Upic, Fast Fourier Transform, etc,). Programs for computer-aided composition should be developed for composers who prefer to go from the bulk of a perceptive or intuitive model to the elements, and not from small, neutral units to higher levels. At any rate, their proper use will always depend on musical imagination. The utopia of automatic composition has collapsed, not only because unheard-of sound structures are not necessarily interesting, but also because complex, coherent architectures are not necessarily meaningful.

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Musical signification, Berlin, New-York, Mouton 1994, p.3-10.