

On an Aspect of 'The Raw and The Cooked'

In his 'Overture' Levi-Strauss communicates an insight about artistic languages. "Two articulated mechanisms," he writes, "mesh to form a third, which combines the properties of both." (20) I would like to try to show how in his analysis of music Levi-Strauss loses sight of this insight, and how this loss may have led him to miss the total significance of the structures he has so unerringly and imaginatively revealed in his analysis of mythology, upon which the structure of music is imposed ingeniously, but, in my opinion, misleadingly.

Why did musical language take so long to develop? Why did the Greeks have Homer but no Beethoven? Greek music is now remembered only for the harmonic discoveries of Pythagoras. Let us look into this. The Pythagorean philosophical system was a binary system; it involved raising to philosophical status a list of opposites such as Limit/Unlimited, One/Many, and Male/Female to name but three of the most important. Such binarism is evident in Aristotle's key formulation of the Law of the Excluded Middle, which may help to illustrate what I mean by philosophical status. Let us suppose, in Hegelian terminology, a thesis, in this case a note played on a length of string, and an antithesis, another note played on a different length of that same string.

	ratio	
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Intuitively, the synthesis should be another musical note, another signifier in the same language. But Pythagoras synthesises the contrasts by reference to a mathematical relationship. This was the fatal step, as I shall argue. The Medieval and Renaissance composers on the other hand had a different way of conceptualising music. They believed that the basic harmonic unit was a group of three notes, the triad. Once divergence had been established by the formulation of two distinct musical signs, a third was demanded for the purpose of resolution, and the third sign was now musical and not mathematical.

Thus music at last formalised a metaphorical mechanism equivalent to that which had been operating in poetry. The mathematical basis was still embedded in the determination of this third note, but concealed enough to allow the evolution of the well-tempered scale which departs from the pythagorean harmonic system. It is significant that the intervals of the modern triad, namely the major and minor third, were not admitted by the pythagoreans; their mathematical relationships were not simple enough for the linear model that the pythagoreans used. In the well-tempered scale where all the semitones are approximately equal, the third is perhaps less of a perfect consonance to the ear than the fifth or the fourth or the octave. When these latter intervals are allowed to be in perfect harmonic relationship, as they were in medieval times, the difference between them and the thirds is marked enough in terms of consonance for the thirds to have been regarded as dischords even as late as the thirteenth century. This is partly because the third at that time was not calculated by its harmonic ratio, 5:4 in the case of the major third for instance, but rather defined in terms of tones and semitones. Thus in a scale which had not been tempered, the ditone would produce the ratio 81:64 instead of 80:64. However, as the *New Oxford History of Music* puts it, "It is obvious that the reluctance of theorists to admit thirds ... as consonances was due to the fact that they did not fit into the acoustic theory they had inherited from the Greeks." When the medieval composers finally started using sound rather than ratio as the mediator between two different notes, they were freed from the constraint on thirds. But the well-tempered scale, in attempting to equalise the steps between the octave, to some extent distorts the intervals from their acoustic harmonies. In this sense music has become like poetry, because just as a metaphorical link like 'run' will never provide a completely illuminating relation of dog to stream or stream to engine, so a third note that is not expressing the exact harmonic relation of its predecessors by its frequency will never be a complete resolution; if it were then music as a language would be doomed. Because of the ease of resolution, it would fail to carry enough discreteness to code the variety of human emotion. Such a system would remain at the level of simple melody-and-song, as indeed happened with the Greeks. It could never become a language in the sense that the music of Bach and Mozart and Beethoven and Mahler is a language.

I am aware that the above requires a certain amount of qualification. Greek music was never wholly restricted to pythagorean theory. The system of Aristoxenus, for instance, reveals a variety and complexity of intervals which for melodic potential has no modern rival. Musicologists would say that the principle difference between ancient and modern music is the complete lack of evidence for simultaneous harmony in the former. To compensate for this the Greeks carried the subtleties of melodic differentiation to their limits. But it is undoubtedly the case that most Greek music we are told about was an accompaniment to words. It is likely that the words themselves provided a structure on which variation could centre in an otherwise rather vague and ill-defined system such as the Aristoxenian, appearing as it does devoid of the fundamental rigidity and economy necessary for creating a code with a high generative, but also a high transformational capacity i.e. with swift and almost universal accessibility. I do not want to suggest that melodic subtlety cannot produce discreteness, but that its

discreteness becomes incomprehensible if it is not linked to the structured discreteness of another code, that of language. Melodic subtlety cannot substitute for simultaneous harmony in a purely musical code which is to have the capacity for generating a Beethoven symphony. Similarly it would be hard for simultaneous harmony to arise in a system that was very developed melodically, in the sense of using quarter-tones etc., because of the concomitant lack of basic harmonic sound. A return to the pythagorean simplicity at the start of the middle ages was necessary for the discovery of simultaneous or synchronous harmony. Again, while metaphor and harmony link two ideas in one synchronous event, melody can only link ideas in the diachronous manner. A purely melodic line sufficient to code for the amount of information stored in a classical symphony would be very long indeed, even if it used quarter-tones to produce increased variety among its intervals. Such length in a code as abstract as that of music runs the risk of confusion, of the audience forgetting the thread of the argument.

Now what led me to doubt that Levi-Strauss had fully applied the insight he later develops on continuity and discreteness to his analysis of music in his 'Overture' was his brush with serial composition. It is obvious that Levi-Strauss has little time for serial music, and this is perhaps why he has failed to give it his usual acuity of attention. I will start by outlining the process of composition in a post-serial work as expounded by the composer Peter Maxwell Davies in a lecture at the Dartington Summer School of Music this year, in the belief that post-serialism can throw more light on serialism than can an approach from classical idioms. In composing 'Ave Maris Stella' Davies began with a nine-note plainsong melody which he proceeded to transform by using what he called a magic square. The intricacies of the mathematical mechanism need not concern us; the inevitable charge of arbitrariness must be dealt with however. Let us return to Levi-Strauss; his argument against the validity of the serial language is that it is not related to the physiological basis of its listeners, or not related closely enough.

"Music operates according to two grids. One is physiological - that is, natural; its existence arises from the fact that music exploits organic rhythms and thus gives relevance to phenomena of discontinuity that would otherwise remain latent and submerged, as it were, in time. The other grid is cultural; it consists of a scale of musical sounds of which the number of intervals vary from culture to culture. The system of intervals provides music with an initial level of articulation, which is a function not of the relative heights of the notes (which result from the perceptible properties of each sound) but of the hierarchical relations among them on the scale.." (16)

It can be seen here how Levi-Strauss, in talking about organic rhythms without presenting any cultural rhythmic counterpart, has blurred the whole issue. The fact that the early medieval composers had a ternary rhythmic system, while our own classical system is binary, illustrates the platitude that rhythm is as culturally determined as intervals. The (in Levi-Strauss' terminology) natural counterpart to cultural intervals must be the intervals which are a function of the relative

heights of the notes. Similarly, a musical rhythm is the cultural counterpart of a physiological rhythm, as Levi-Strauss fails to imply later when he says:

"The musical emotion springs precisely from the fact that at each moment the composer withholds or adds more or less than the listener anticipates on the basis of a pattern that he thinks he can guess, but that he is incapable of wholly divining because of his subjection to a dual periodicity; that of his respiratory system, which is determined by his individual nature, and that of the scale, which is determined by training." (17)

He is committing what I term the pythagorean sin, he is applying a different language to create a relationship between two discrete entities in an initial language, thereby undermining the whole validity of that initial language. In fact classical music in both its intervallic and rhythmic aspects functions on a triadic system as outlined above. There are two signifying parts; the expected, which is determined by the structure, and the unexpected, which is represented by departures from the structure. Neither of these is natural; thus neither of the two grids which Levi-Strauss regards as prerequisites for the musical language is natural; they are, in the words of the insight I quoted at the beginning, "Two articulated mechanisms mesh(ed) to form a third, which combines the properties of both." What are these two articulated mechanisms in music? I have called them the expected and unexpected, but this is only their underlying structure. When Mozart writes a sonata in A minor, he establishes at the outset of the work a set of seven notes out of a possible twelve - these are his expected notes. When he also writes in common time, that is four beats to a bar, when he could have chosen two, three or five etc., once more he is delineating an unexpected, this time of rhythm. The antithesis to these delineations is not the natural, organic rhythms of each individual, or the natural harmonic relationships of the notes, but quite simply any venture outside the key or the rhythm initially delineated, on condition that the venture does not move outside the total set of the system. The total set of the system is represented in the case of classical music by tonality, and the laws of rhythmic regularity which accompany it. The third articulated mechanism stipulated by Levi-Strauss is of course the exposition of the whole piece.

A passage from Schoenberg's writings on music in 'Style and Idea' may serve to illustrate this:

"Every tone which is added to a beginning tone makes the meaning of that tone doubtful. If for instance G follows after C, the ear may not be sure whether this expresses C major or G major or even F major or E minor; and the addition of other tones may or may not clarify this problem. In this manner there is produced a state of unrest or imbalance which grows throughout most of the piece, and is enforced further by similar functions of rhythm. The method by which balance is restored seems to me the real idea of composition."

That is to say music resolves itself, it does not directly resolve or mediate between the natural and the cultural. Does this contradict the whole import of 'The Raw and the Cooked'? Not at all.

To go back now to Maxwell Davies and the composition of 'Ave Maris Stella'. It will be remembered that Levi-Strauss argues that serial music is not closely enough related to the physiological. This may be so, but I cannot see what relevance this could have to his argument. If he makes musical language the antithetical grid to natural rhythms and sounds why should he wish them to be close together? It seems to me that he has lost himself, and retreated to a more intuitive point of view that in fact does not follow logically from his previous reasoning. Now Maxwell Davies expressly declares that he is writing music with a tonal background. Likewise, Hans Keller in a recent article in the 'New Statesman' has pointed out how this applies to the majority of the so-called 'atonal' composers. The problem that the serialists encountered when they attempted to extend tonality to include all twelve notes and every rhythm of the classical system as the initially expected was that they were left without any unexpected at all; in fact they were in the mire of continuity which Wagner's chromaticism had hinted at. They ran the risk of each piece signifying exactly the same thing, and thereby nothing at all. It was in answer to this that Schoenberg came up with the solution of the note row as a means for establishing discreteness. And, lo and behold, he discovered that this solution was in reality based on traditional harmony. What distinguishes one note row from another is not a difference in notes, in the way that a difference in notes is the distinguishing feature between say C major and F sharp major, but a difference in the harmonic relationships of the notes themselves. There were always twelve notes in a row, and they were always the same notes, but each different note-row implied a different approach to tonal harmony. And in Webern's triads we find the significant reduction of harmony back to its initial conception as three notes, thesis, antithesis, and synthesis, but a synthesis which is itself the statement of another thesis in any language worth its salt. Schoenberg, the founding father of serialism, puts it like this:

"I have stated in my Harmonielehre that the emphasis given to a tone by a premature repetition is capable of heightening it to the rank of a tonic ... It seemed in the first stages immensely important to avoid a similarity with tonality. Through the necessity of using besides the Basic set its Retrograde, Inversion, and Retrograde Inversion the repetition of tones will occur more often than expected. But every tone appears always in the neighbourhood of two other tones in an unchanging combination which produces an intimate relationship most similar to the relationship of a third and a fifth to its root."

In serial music, in a sense what was unexpected in classical tonality became the set of the expected, and what had been expected became at first, as Schoenberg implies was necessary in a language struggling to establish itself as a new code, the unacceptable, but very quickly merely the unexpected. Maxwell Davies uses the magic square not as an arbitrary definition of what is to be the expected, but as a means toward establishing and maintaining what unexpected paths he wishes to explore. The expected is the whole tonal and rhythmic compass now, including the old classical subsets of this. Thus it has become the function of the modern composer not to make clear what is expected but what is unexpected. This may be a harder task, but it is slowly growing more evident that the unexpected must lie in the approach to a harmony, that is to a group of three notes, a block which it was the function of classical music to establish, and which like the components of Levi-Strauss' myths, can now be used as a support in another edifice.

To end with, let us take another look at the Greek world of Pythagoras and the idea of polarity. As G.E.R. Lloyd has pointed out in his book on the subject, the Pythagorean list of ten pairs of opposites bears a considerable resemblance to the pairs of opposites found among many primitive societies today. He cites, for instance Van de Kroef on the Amboyna and Needham on the Meru. Both these tribes have sets of opposites which contain the Pythagorean pairs, Left/Right and Male/Female. Lloyd also remarks that it is interesting that members of these societies often describe their own social organisation in terms of a simple dualist structure even when the reality is in fact more complex. Binarism is the simplest way of coding discreteness. But in the presocratic philosophers we encounter for the first time something that goes beyond it. Instead of using myths to mediate between two poles, as Levi-Strauss argues the South American Indians do, and as it could be argued Homer and Hesiod do, the presocratics began abstracting the mediating elements from their myths. When Thales maintained that everything was water, he was making, or at any rate representing for us, a breakthrough of immense significance. Water, remember, is one of the mediating elements Levi-Strauss abstracts from the Bororo 'Birdnesting' myths. If the mediating element can somehow be regarded as what is common to the two poles, then Aristotle's statement that Thales regarded water as the material principle sounds like an abstraction of that which everything material has in common. Again, when Heraclitus declared: "This world was not created by either god or man, but has always been and is and will be an everliving fire," "(kosmon tonde oute tis theon oute anthropōn epoiēsan, all' ēn aei kai esti kai estai pur aeizoon) we cannot help but remember that fire was the mediating element abstracted by Levi-Strauss from the Ge myths explaining its origin. We should also note that the Greek word kosmos did not come to be used like our English 'cosmos' until long after Heraclitus wrote. To him it meant 'world-order' with the emphasis on ordering. It is almost as if Heraclitus had anticipated Levi-Strauss, and that he, not the musician Richard Wagner, was the first structuralist. But in fact the crisis in thought which produced the self-consciousness we are heirs to in our attitude towards mythology had not yet come about, even though Heraclitus may have helped precipitate it. It was Parmenides who crystallised the problem pure and simple for all future generations of western thinkers. He is perhaps more approachable in this context through the paradoxes of his disciple Zeno. Zeno set

out to demonstrates the difficulties inherent in discreteness. If there is actual discreteness in time and space, then Achilles never catches the tortoise. This does not attempt to prove that it is impossible for Achilles to catch the tortoise, as some have suggested, but rather that to think in terms of discrete entities is in some way fostering illusion. Zeno was working from the basis of parmenides doctrine that everything is one and continuous (hen sunechen). It has been thought that the parmenidean Way of Truth, his claim that there can only be 'what is' (to eon), a single, homogeneous, unchanging sphere of being, is a primitive attempt at a logical world, an archaic Tractatus, or at any rate a philosophy of mind rather than of matter, and that his Way of Seeming with its fundamental opposition of Day and Night is inserted by way of condescension to the material world of the senses, even though he regarded this as illusory. Nothing in my opinion could be further from the truth. For parmenides, the binary world of opposites is derived from the way our perceptions order reality. In our actual experience, however, nothing conforms to the ideal types of polarities. The real material world is not sensed as composed of opposites, it is only ordered in this way, the pythagorean way, by our reflection upon what the senses give us. But the ordering of the world into discrete parts produces what Levi-Strauss in his analysis of the Bororo and related myths calls 'Negativised Being', and what parmenides some two and a half thousand years before him called (to me eon) of which the former is as good a translation as any. parmenides said, quite rightly, that there is no such thing as this 'Negativised Being', that the space around entities posited to maintain their terminological discreteness is an illusion fostered by terminology:

"For they made up their minds to name two forms of which they ought not to have named one - here is where they have erred - and judged them to be opposite in body and given them discrete signs." (morphas gar katethento duo gnōmas onamazein, tōm mian ou chreōn estin - en hō peplanēmenoi eisin - t'antia d'ekrinanto demas kai sēmat' ethento choris ap' allēlōn).

By no stretch of the imagination is parmenides describing how the world appears, even to these heretics; he is describing how the world is ordered by them. Hence the use of 'gnomas katethento', 'onomazein', 'ekrinanto', 'sēmat ethento', all words implying conscious structural imposition. It seems to me that parmenides was a fully-fledged structuralist, and I mean it in this sense: he understood that thought involved the use of codes, and was the first critic of those who mistook the code for what it codified. His description of reality may be full of fossils in which this mistake had been made, but at least he was able to perceive that what codes for reality in human culture is always less than what it codes for, and is always changing. In this sense it is perfectly legitimate to call reality saturated and unchanging. What the earlier Greek philosophers had done (and what Aristotle was to do later) was to identify single objects or materials, or small collections of these, with reality. The pythagoreans on the other hand identified with it an abstract entity, number. ~~Parmenides was the first to identify reality, (to eon) 'what is' with itself, and thus restore validity to the mythological and artistic ways of thought being encroached on by physical scientists who refused to believe there was anything in Homer's gods and goddesses.~~

I have discussed parmenides to what may seem irrelevant length because I think it not unreasonable to suggest that someone who had just emerged from the mythical way of thought was as intuitively clued-up as to its nature as Levi-Strauss himself (with after all the whole history of Western European thought to clear out of his path) and that parmenides in one way can enlighten us on why Levi-Strauss (as I hope to have shown) has made this puzzling musical misanalogy. If we let ourselves extrapolate along the lines suggested by the analysis of parmenides, mediation surely becomes a reminder of the reality for which we cannot code, the 'Negativised Being' our terminological structure generates, and which is in fact just like the rest of being. Every metaphor, every harmony, every myth is in fact a reminder that there is not a void between the two polarities, that they are merely two extremes of a continuum. Levi-Strauss' discussion of discreteness and continuity implies a realist viewpoint, a Kantian acknowledgement that human cultures cannot exactly know or express the reality they sense, yet that at the same time there must exist a reality independent of our structures for us to impose our structures upon. Thus it does not matter what the mediation consists in, since it cannot hope to be an accurate description of what actually obtains. The mediator is that part of the code which stirs us to realise that the code is only a code, and in doing so to approach reality more closely as a consequence. Hence the Hegelian synthesis. To hypothesise, as I think Levi-Strauss wishes to, that music, like cooking, mediates between nature and culture is ambiguous. By nature does he imply the reality of nature or our view of that reality, and by culture does he mean our view of our culture or the code of culture itself? By rights he should be referring to the inner pair of this chiasmus. But when he claims that the natural in the form of physiological rhythm and the cultural in the form of the arbitrary scale are both parts of the musical code I became suspicious. As I have argued above, physiological rhythms are coded for in music, they are not themselves the code. It is not altogether clear that he wishes us to regard the Raw as a cultural view of nature rather than nature itself; certainly his musical analogy casts doubt on his intentions.

Nevertheless, this is not on the most fundamental level a criticism. After all the myth of mythology, in its mythological role as mediator, is not expected to be an infallible representation of what is the case, but rather should serve as a reminder that discreteness in human thought is required to think rationally at all, that the contrary views this produces are the code and not what is being coded for. We should not be too surprised if the mediator itself contains fossils of what it is mediating, just as the bricoleur's finished product, in 'The Savage Mind', is expected to contain hints that its parts have had and could have other functions. 'The Raw and the Cooked' contains implicit in it the ideas necessary to rectify the damage done by the musical analogy.

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