

A STUDY OF TIME IN TWENTIETH-CENTURY MUSICAL RITUAL

a musico-philosophical development

**- from Debussy (through Stravinsky, Webern and Messiaen) to Stockhausen -
in the utilization of musical time and ecstatic musical involvement
for the purpose of transcending the consciousness of Real Time and Space.**

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Men's curiosity searches past and future
And clings to that dimension. But to apprehend
The point of intersection of the timeless
With time, is an occupation for the saint -
No occupation either, but something given
And taken, in a lifetime's death in love,
Arduous and selflessness and self-surrender.
For most of us, there is only the unattended
Moment, the moment in and out of time,
The distraction fit, lost in a shaft of sunlight,
The wild thyme unseen, or the winter lightning
Or the waterfall, or music heard so deeply
That it is not heard at all, but you are the music
While the music lasts. These are only hints and guesses,
Hints followed by guesses; and the rest
Is prayer, observance, discipline, thought and action.
The hint half guessed, the gift half understood,
Is Incarnation.

T.S.Eliot, "The Dry Salvage" V.

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INTRODUCTION

As the title indicates, this study is concerned with two features of twentieth-century music:

- (i) The development of musical time from traditional rhythm and metre, through twelve-tone serialism, to "post-Webernian" serial thought;
- (ii) An increasing awareness of the need for, and the value of, a return to the medium of ritual - ritual not in the sense of formal ceremonial behaviour, but in the sense of ecstatic participation.

(i) and (ii) are interrelated to form the central theme of the discussion: Twentieth-century Man's need and desire to transcend the consciousness of his subjection to the passage of Time, and his attempts to achieve such liberation through the musical utilization of the ritual principle.

The study rests on a fundamental premise: The artist, in his art, reflects the consciousness of his time.

"Man of a given time and place, in creating the ideological and artistic systems by which he has expressed himself, has projected into his philosophy, his literature, and his art a reflection of the same fundamental preoccupations. These preoccupations, which may be expressed in various media, are those of his time and of its material, moral, economic, social and spiritual circumstances. The genius of the individual serves only to give a more universal and eternal significance to them through the amplitude and quality of his vision."¹

1 : René Huyghe, "Larousse Encyclopedia of Modern Art", p.243.
(Hamlyn, London. 1974.)

This discussion, therefore, aims to investigate a "fundamental preoccupation" of the twentieth century and the ways in which it has been given (relatively "concrete") stature by the "genius of the individual" - the "individual" in this instance being a selected twentieth-century composer.

It must be emphasized that a concern with Time and ritual is not exclusive to the philosophy and music of the composers included in this discussion, nor, indeed, is it present only in Western music. But because of personal interest and various practical considerations, these five twentieth-century composers (Claude Debussy, Igor Stravinsky, Anton Webern, Olivier Messiaen and Karlheinz Stockhausen) have been chosen to illustrate a trend in twentieth-century musical thought: the need and desire to "make music which (is) a real spiritual ceremony"¹ - a ceremony directed towards a specific goal, which is the twentieth-century musico-philosophical equivalent of the ancient Greek "Télêté", "the rite of growing up, becoming complete".²

The discussion is in two parts: Chapters I, II and III deal with the three main elements of the subject - Twentieth-century society and its "temporal dilemma", Musical Ritual, and Time; Chapters IV to VIII are devoted to a discussion of the different ways in which a concern with musical ritual and Time appears in the music and aesthetic of the five selected composers - following a roughly chronological order. (It must be remembered, however, that the aspect of sequence and succession, as it is presented in this discussion, is a very much simplified reflection of a reality in which composers, artistic movements and musical styles of composition rarely appear in an orderly succession of chronological pigeonholes and neatly wrapped-up packages.) Additional information which is not immediately relevant, but which may be useful in clarifying or explaining certain points in the argument, appears in the Appendices.

A final word in advance: It has not been the aim of this dissertation to judge the musical quality or artistic value of the work of the composers

1 : Stockhausen; quoted by Jonathan Cott in "Stockhausen: Conversations with the Composer", p.194. (Picador, Pan Books. 1974.)

2 : Jane E.Harrison, "Ancient Art and Ritual", p.112.

(Williams and Norgate, London. 1951.)

included here. An attempt has been made, however, to evaluate the composers' artistic, philosophic and musical intentions insofar as these appeared to be relevant to the central theme of the discussion. It must therefore be clearly understood that, although a composer's work may be included in a study of this nature, this does not necessarily mean that such a composer's entire output is exclusively, or even predominantly, concerned with musical ritual and Time - it indicates merely the presence of these elements in the composer's creative thought.

I : BACKGROUND TO THE INTEREST IN TIME AND RITUAL
IN TWENTIETH-CENTURY CONSCIOUSNESS.

"Golden lads and girls all must,
like chimney-sweepers,
come to dust."¹

Since time immemorial Man has been conscious of his subjection to the passage of Time and of his desire to be free of it. He has felt the need to "Rage, rage against the dying of the light."² His unhappiness and frustration when faced with the transience of life and beauty, and his desire to immortalize at least one moment of his existence, gave birth to artistic representation - the foundation of Twentieth-century Man's heritage of an artistic memory which stretches back in time over a period of more than 20 000 years, to the day when someone, at Brassenpouy in south-west France, took a piece of ivory and carved into it the delicate features of a young girl's face - the world's earliest known portrait.

It is a rich heritage which records many artists' personal momentary visions of Truth and Beauty, preserved in wood, clay, pigment, metal and stone - the serene loveliness of an Egyptian queen, the magnificence of a young God-King, the intricacies and mathematical precision of relationships in Nature, the mystery of the Supernatural, the awe and fear of Man in confrontation with Divine forces.... It is an artistic heritage which records how, as time went on, Man's resources and techniques of artistic representation were molded by social evolution and changing interrelationships of space and time - how he found creative expression within the restrictions of Egyptian formalism, and learned to conform to the rules of stylization dictated by Byzantine religious portraiture, how he discovered the charm of ornate decoration in the High Baroque, found beauty in the purity and restraint of Classicism, and came to know the intoxicating emotional freedom of Romanticism, and how he has entered into, and attempted to come to terms with, the complexity and diversity of the Twentieth Century.

1 : Shakespeare, "Cymbelline".

2 : Dylan Thomas, "Do not go gently into that good night".

When one surveys the entire field of twentieth-century art, one finds an inventory of the numerous features of a multifaceted environment - the plastics, nylons, galvanised steel and welded aluminium of modern sculptures; the sweeping curves of architectural and engineering designs based on the mathematical laws of aerodynamics; the introduction of movement into traditionally static art forms; the expression of the anguish of a threatened and suffering humanity; the reflection of trends in fashion and philosophy; the excitement, the challenges and despair inherent in contemporary life.

It has taken 20 million years of evolution to produce twentieth-century Man - a creature of incredible sophistication, who has created a society with an infra-structure which all but defies logical analysis. This complexity forms the context of the daily experience of the twentieth-century artist. It constitutes the source of his interest and inspiration, of factors which motivate his artistic sense and mold his creative personality. It is a stimulating and diverse environment which, says Eisenstein, presents "a perspective of boundless new possibilities."¹ Yet this same environment has caused Oscar Kokoschka to exclaim that, "this whole godforsaken century can only be seen as one long nightmare."² Even Thomas Mann called the twentieth century, "...a world of doom from which there is no longer any escaping."³

To be sure, such a discrepancy in opinion is not exclusive to the present time. But just as there have been specific reasons for differing opinions in (and of) various historical periods, so there are a number of particular factors which contribute to the twentieth-century situation in which one person confesses that he "would not have wished to be born at any other time,"⁴ while another despairs of what he calls, "...this terrible twentieth century."⁵ These factors may be found in twentieth-

1 : Quoted by Alan Bullock in "The Twentieth Century", p.242.

(Thames and Hudson, London. 1975.)

2 : Oscar Kokoschka: "My Life", p.86.

(Thames and Hudson, London. 1974.)

3 : "The Letters of Thomas Mann" Vol.II, p.615.

(Secker and Warburg, London.)

4 : Alan Bullock, op cit, p.27.

5 : Messiaen, in a lecture at the "Conférence de Bruxelles" (1958).

(Alphonse Leduc, Paris.)

century society and its reflection in the consciousness of twentieth-century Man. It is possible to isolate three main factors which contributed towards the establishment of the cultural environment as we know it today.

The first of these is, of course, Technology. People like Marshall McLuhan and Eric Hoffer regard technology as a positive evolutionary force. Others, like Jacques Ellul, blame technology for all the evils of present-day society. Bertrand de Jouvenel is more careful and says that technology is whatever one makes of it, while Buckminster Fuller sees in technology the insurance policy for survival in a traumatic present and an exciting future. But whatever one's views as to the nature of the influence of a thriving technology, it would scarcely be possible to overestimate the extent of such an influence at the present time. Within three quarters of a century, science, and scientific application, has changed the very face of reality; it has changed the actual appearance of the world as well as Man's conception, and perception, of it.

Twentieth-century Man has learnt to see his existence in the light of the laws of Relativity and Thermo-dynamics. Infra-red and X-ray astronomy have revealed to him the wonders of "outer space". Medical science has given him the healing power of antibiotics and micro- and transplant-surgery. A vastly developed chemical industry and applied aerodynamics have led to a previously undreamt of level of engineering and architectural skill. Man has learnt to exploit mechanical, electrical and atomic power, and to build computers. He has established radio, television and satellite communication, commercial air travel at supersonic speeds, and the concept of Man-in-Space.

Thus twentieth-century technology brought about a change in mental attitude which amounts to, what Alan Bullock calls, "a revolution in expectation."¹ Man is no longer content to be totally at the mercy of natural or social forces. He now has a degree of authority which allows him to expect that Man could and should actively induce, rather than passively endure, changes in his environmental conditions. This has resulted, often regrettably, in unscrupulous manipulation of the political significance of minority groups, in protest marches, urban terrorism and hi-jackings. But on the other hand, it has given humanity the key to truly liberated innovatory thought, design and creation.

1 : op cit, p.25.

A vitally important feature of present-day technology is, of course, the concept of speed. Electricity, computers and rockets have altered the pace of life. Space capsules travel at speeds exceeding 30 000 kilometres an hour. Temporal delay between cause and effect has been reduced to a point where sequence yields to simultaneity. Industrial and media processing are accelerating. More than this, the twentieth century is caught up in the spiral of accelerating acceleration. Where it will end, no one knows at present, but psychologists and sociologists have come to realise that twentieth-century society are ill-equipped to cope with this situation. Man is being outpaced by events and by the consequences of his own inventions. He is left with a sense of urgency, of desperation even, afraid of wasting time, ever conscious of the pressures and tensions of the "rat race" - he suffers from "future shock".¹

This sense of dislocation is further intensified by the second main factor responsible for the particularly twentieth-century environment - flux in social structure.

A world population of 4 000 million has led to a high degree of urbanization with its consequent dangers of depersonalization and loss of security. A city-dweller may easily lose his sense of identity and his awareness of a personal destiny. His life may deteriorate into a bleak struggle for material existence, devoid of higher purpose and characterized by a high degree of transience, due to shorter, and less meaningful, relationships with people, with places and with possessions. A lack of interpersonal contact deepens his sense of isolation and of the absence of continuity and permanence in his life. It is the kind of life that fosters fear and loneliness.

This negative aspect of urban life has not, however, been the sole cause of the fears and unhappiness experienced in the twentieth century. There is also the third main determinant of the contemporary cultural environment mentioned earlier - the black and tragic reality of the two world wars.

The senseless destruction of life, the deprivations of wartime conditions², the constant fear and suffering - these combined to form an endless stream of doubts and questions. In the midst of death, violence,

1 : Alvin Toffler: "Future Shock", p.19.

(Pan Books, London. 1971.)

2 : See also pp. 45-8.

hatred and starvation, Man had to reassess and reformulate many of his basic philosophical ideas and establish a code for spiritual survival. He needed a philosophy which would reconcile him to hardship and sorrow, which would take away his fear of the passage of Time and the approach of death, which would help him to transcend the present confusion and would give his life meaning in the light of an eternal destiny.

This, then, is the environment of twentieth-century Man: materially progressive and exciting, investing Mankind with power and confidence as never before, yet depriving it of an implicit faith in progress, because progress had introduced Mankind to the fear of extinction, of "no tomorrow". It is an environment with vast opportunities for intellectual development, but with few resources to counteract a spiritual poverty which manifests itself in a consciousness of impermanence and transience, a sense of isolation and futility, and a fear of the passage of Time and the inevitability of death.

Whereas previously many people had found comfort and moral justification for life and death in Religion (which is, says Durkheim, "a system of ideas by means of which individuals can envisage the society of which they are members, and the relations, obscure yet intimate, which they bear to it...")¹, twentieth-century Man is faced with a weakened religious tradition after the disillusionment brought by war and the profusion (and confusion) of intercultural contact brought by electronic communication. Without the reassuring support of a Judeo-Christian view of history and of individual destiny, many people are confronted with a moral and temporal dilemma. They find themselves helpless in the situation described by René Huyghe:

"Man had returned to the starting point - a situation almost analogous to that of prehistory - man faced with menacing forces he had not yet learned to master - knew the anxiety of being unprotected, overwhelmed and at the mercy of the uncontrollable - was 'the hostage of the dumb world'. This same anxiety reappears inevitably in the situation created by modern thought."²

1 : Quoted by S.Langer in "Philosophy in a New Key", p.134.

(The New American Library, Mentor Books. 1948.)

2 : "Larousse Encyclopedia of Modern Art", p.250.

In his desire to transcend his troubled physical existence, twentieth-century Man may take refuge in any of a number of different religions - Buddhism, Christianity, Hinduism - or various forms of meditative psychotechnic practice, like transcendental meditation, trying to come to terms with himself, his world and his future. And indeed, the last three or more decades have seen a tremendous upsurge of interest and participation in what one might call the Ritualistic aspect of mental, spiritual and creative activity.

Ever since the hunter- and fertility magic, the cult of totemism and the initiation rites of prehistory, Man has sought, on the one hand, to placate his gods and enlist their aid for his ventures, and on the other, to escape the limitations of the material universe, through the medium of ritualistic and ecstatic abandon. From the incredibly energetic dances of the Pygmies, the Hamites, the Yeruba and Senufo tribes, the cothurnus dances of the Cameroon, the ecstatic choreography of dances in Benin and Ifé and of the Dances of the Adolescents in Upper Guinea, the feats of endurance of the Dervishes and the dancers in the Delta of the Niger, to the religious intensity of the Kataragama festival in Ceylon (Sri Lanka), people have come to know the power of ritual frenzy. A power which enables a man to walk on live coals, to hang in mid-air (suspended by metal wires hooked through his flesh) for hours, to dance for days on end without food, drink or rest, to attain "enlightenment" through extended periods of fasting and praying - to overcome his physical nature.

The ritual initiate transcends Time and Space, or rather, his consciousness of present, Real Time and Space.¹ In this way ritual frees the mind from its subjection to Time and Space, and it is precisely the mind that needs freeing, especially today. Twentieth-century conditions are favourable for physical existence, but the mind and spirit of twentieth-century Man needs to escape its consciousness of being earthbound and a helpless victim of Temporality.

1 : See p.13+.

Philosophers like Plato, Plotinus and Descartes, have indicated that, for them, Time characterized the imperfect and ultimately disastrous. This view is echoed in the teachings of Zarathustra¹ and the Bhagavadgita.² In all these religions and philosophies, Temporality - the lower life, existence IN Time, transient and imperfect - is contrasted with some form of the Eternal - the higher life, existence OUTSIDE Time, enduring and perfect. Thus Buddhahood, Heaven and Nirvana exist in Eternity. If Man wants to escape the imperfection of his temporal existence, he must, says Plato³, find the key to a better world in Time itself. According to T.S. Eliot: "Only through time time is conquered."⁴

But what frustrating pitfalls and problems surround the whole concept of Time! Of course nobody denies the fact of its existence; it is the nature of its existence which leads scientists, artists and great philosophers alike into a morass of theoretical and philosophical speculation, a confusion of intellectual exercise on a metaphysical plane which is usually presented in suitably vague semantics and complex syntax.

People like St Augustine⁵ and Jacques Maritain⁶ have admitted their confusion and inability to "explain" Time. Others have "defined" Time and described its characteristics in various ways:

1 : "Zurvan" ("Time"), the deity to whom is attributed the origin of Good and Evil, appears, as "Zurvan-Daregho-Chvadhata", as "the force that brings decay, old age and death to men."

S.Brandon: "Time and the destiny of Man", in "The Voices of Time", pp.152-3 (ed. Fraser; Allen Lane, London. 1968.)

2 : The supreme deity, in his guise as Destroyer, says, "I am Time that makes the worlds to perish away, waxed full and working here to compass the world's destruction."

Ibid., pp.155-6.

3 : C.Benjamin: "Ideas of Time in the History of Philosophy", *ibid.*, pp.11-2.

4 : "Burnt Norton" III, from the Quartets.

5 : "What is Time? If no one asks me, I know; but if someone asks me and I want to explain it, I don't know."

Quoted by C.Benjamin, *op cit*, p.16.

6 : Time "is a place where we put our blackest contradictions out to pasture."
Ibid., p.8.

Aristotle: "...Time is a measure of motion and of being moved, and it measures the motion by determining a motion which will measure the whole motion, as the cubit does the length, by determining an amount which will measure the whole."¹

Henri Bergson: "...Time is...best exemplified...in the overlapping of mental states and their gradual transition into succeeding states as we experience the passing of Time."²

John Locke: "...Time is a sort of quantified change in happenings..."³

Immanuel Kant: "Time is a form of intuition."⁴

Cornelius Benjamin: "Time is the mind of Space and Space is the body of Time."⁵

Arthur Schopenhauer: Time is "the possibility of opposite states in one and the same thing."⁶

However, all this is of little use to the individual for whom Time is the relentless agent of mortality and who wants to escape, even if only for a short while, its dominion. For him the solution is to be found, not in the philosophy of Time but in Time itself. Joost A.M.Meerlo points the way:

"What Aristotle called 'Athanadidzein', the yearning for immortality, the yearning to go beyond man's confinement in time led, indeed, to many symbolic actions. In these man tries to reach 'beyond time', to an unrepressed life

1 : Ibid., p.14.

2 : Ibid., p.23.

3 : Ibid., p.16.

4 : Ibid., p.22.

5 : Ibid., p.28.

6 : Ibid., p.8.

in the Sabbath of Eternity."¹

"From the moment word and creative gesture were born, man has tried to catch and condense his subjective experience of time and duration in manifold symbols."²

"Man captures time and duration through his creative acts."¹

"Though time remains for him a 'memento mori', creative man builds his own time."³

If, then, Man is able to transcend Time through art, what could be more natural than to apply this motive (the wish to conquer Time) and these means (creativity and ritual) to that form of art which exists only IN Time, which is, in fact, the art OF Time - Music. And, indeed, during the twentieth century many musicians have done precisely that. In an age in which Man is, more than ever before, aware of Time, and is so often filled with despair at his inability to control its manifestations in Nature, in society, and in Man himself, many composers have turned to the ritual manipulation of Time and of Man-in-Time and have found (and frequently led their audiences to find) liberation in the process and/or product.

Thus one finds in many twentieth-century compositions both a synthesis and a transformation. A synthesis of many aspects of twentieth-century consciousness: the awareness of past history, of a troubled present and an uncertain future, the authority and confidence brought by technology, the diversity of resources and techniques brought by communication and travel, the frustrations of Temporality and the search for spiritual liberation; and a transformation of all these elements into a transcultural message - a vital artistic document of faith in Man's spiritual awareness of the present and of his right to a future.

1 : In "The Voices of Time", op cit., p.240.

2 : Ibid., p.246.

3 : Ibid., p.152.

II : MUSICAL RITUAL.

For the purpose of this discussion ritual may be defined as "a symbolic act of ecstatic abandon whereby a person gains access to a higher level of consciousness." Musical ritual, therefore, refers to the search for a higher consciousness, outside Real Time, through ecstatic musical involvement.

It should be clear from this definition that the type of ritual which interests us here is a synthesis of the rite of initiation and the ritual of the Spring Festival - a combination, therefore, of a "rite of passage"¹ and the concept of re-birth. These are themes which are found, in one form or another, in all the mythologies of the world - the birth of a new, spiritually perfected being (a new consciousness) through the ritual ascent of the ecstatic spiral.²

Ritual in its "primitive" or original form has, of course, disappeared more or less completely from Western civilization. It survives, today, in the form of Drama and the theatrical tradition.

Tragedy, says Aristotle, "originated with the leaders of the Dithyramb."³ The Dithyramb was originally a Spring Festival ritual dance in which everybody present participated. There were leaders who had been specially appointed to conduct the proceedings, but everybody joined in the dancing. The situation changed, however, when, in about the sixth century B.C. - largely due to a decay in religious faith - new plots began to be introduced into the old ritual framework. Whereas previously the same ritual was performed in exactly the same way every time, and everybody was intent on

1 : This phrase was coined by Arnold van Gennep in his book, "The Rites of Passage". (Routledge, London. 1960.)

2 : For a study of the significance of the ecstatic spiral in religion and art, see "The Mystic Spiral", by Jill Purce. (Thames and Hudson, London. 1974.)

For an explanation of the relevance of the ecstatic spiral in the present context, see Chapter VIII, p.94.

3 : Quoted by Jane E.Harrison in "Themis", p.32.

(University Books, New York. 1966.)

DOING rather than OBSERVING because he knew so well what everyone else was doing anyway, the participator now became a spectator, because there was something new to look at and to listen to every time the "ritual" was performed. In this way there evolved a theatre or "concert" situation, with a group of actors (on stage) performing before an audience. Ritual (reinforced by religion) had become Drama, with religious beliefs distilled into theological dogma.

In the twentieth century, however, it would seem that artists have, once again, become aware of the ritualistic origins of drama and religion. To name only two examples in contemporary music:

Stravinsky's "Le Sacre du Printemps" and "Oedipus Rex" :
the "leaping, inspired dance"¹ - the dithyrambic ballet,
and the stylized drama - a tragedy of Greek antiquity.
(Chapter V, pp.42-3.)

A "return" to religion: Stockhausen's interest in a new universal "religion" which heralds a return to ritual - a musical aesthetic in which theology and compartmentalized religion are discarded in favour of a mythological concept of a universal spiritual union through the mediation of ritual. (Chapter VIII.)

In a general sense it may be said that the medium of musical ritual is essentially non-dramatic in that it does not employ the traditional tension-climax-resolution structure in both micro- and macro-musical construction. It avoids the form of the musical narrative (in the usual operatic sense) because it moves on a non-directional plane. The music is basically static and non-developmental in the treatment of the musical material. Music of this nature tends to follow one of two lines of compositional thought. However, occasionally, the dividing line between the two categories seems to fade and often a composition would seem to exist somewhere between these two categories or even to fluctuate between them. This may be clarified in the following manner.

1 : Jane E.Harrison: "Ancient Art and Ritual", p.77.

In his analysis of communications media, Marshall McLuhan differentiates between "hot" and "cool" media - a distinction which is readily applicable to music and which proves very useful in the present context. The following two passages from McLuhan's book, "Understanding Media", are particularly apt:

"There is a basic principle that distinguishes a hot medium like radio from a cool one like the telephone, or a hot medium like the movie from a cool one like TV. A hot medium is one that extends one single sense in 'high definition'. High definition is the state of being well filled with data. A photograph is, visually, 'high definition'. A cartoon is 'low definition', simply because very little visual information is provided. Telephone is a cool medium, or one of low definition, because the ear is given a meager amount of information. And speech is a cool medium of low definition because so little is given and so much has to be filled in by the listener. On the other hand, hot media do not leave so much to be filled in or completed by the audience. Hot media are, therefore, low in participation, and cool media are high in participation or completion by the audience."¹

"...the hotting up of one sense tends to effect hypnosis, and the cooling of all senses tends to result in hallucination."²

When transferred to the medium of ritual music (-making), McLuhan's concept of "hot" and "cool" media does much to clarify some aspects of the contemporary music scene, e.g. it helps to explain, at least in part, the impetus behind the emergence and popularity of aleatory in twentieth-century music, and it provides a reason for the continued existence of fully composed (totally determined) music, and for the fact that these two, seemingly opposed, compositional trends can exist side by side and even, on occasion, intermingle.

1 : Marshall McLuhan: "Understanding Media", p.31.

(Abacus, London. 1964.)

2 : Ibid., p.42.

There are two types of musical ritual: one in which the listener/performer is transported out of his state of physical awareness through the medium of a continuous stream of insistent and repetitive units of musical information which induces a hypnotic effect ("hot" medium musical ritual), and the other in which the stream of information is incomplete and the listener/performer participates - even if only mentally - in the creative process; his transportation in this latter case is self-induced, actively or hallucinatory ("cool" medium musical ritual).

In "hot" medium musical ritual a hypnotic effect, is induced in the listener through the appeal of the music to his physical sense. Dance is very closely allied to this type of ritual which is, in its most basic and primitive sense, a social or group activity - what Pierre Boulez calls, "a collective magic and hysteria."¹ The listener in this instance is firstly a receptor - the rhythms enter into his consciousness, and secondly a transformer - he becomes a performer, translating the acoustic-rhythmic information into a visceral-spatial language. He becomes the rhythm and loses his awareness of Real Time and Space.

In the musical material of this type of ritual all the data is supplied by the composer. Composition is finite and complete within closed systems, which are well-defined and easily perceptible. The musical content is usually limited and the main compositional technique is (varied) repetition. Sectional construction and vertical space are of more importance here than in "cool" medium musical ritual.

In "cool" medium musical ritual a hallucinatory effect is induced in the listener through the appeal of the music to his mental and spiritual senses. He enters a trance-like state as the result of a dys- or hyperfunction of his intellectual faculty, whereby his awareness of Real Time and Space tends to fade and become confused. Consequently this type of ritual provides essentially a personal and individual experience.

Music for "cool" medium ritual falls into two categories. In the first case all the material is supplied by the composer, but the rhythm (temporal structure) is obscured. The listener is drawn into listening INTO the sound; he enters the music, loses himself in it and so becomes, in his imagination, involved in the ritual. (See Chapter IV.)

1 : Quoted by J.Machlis in "Introduction to Contemporary Music", p.435.

(W.W.Norton, New York. 1961.)

In the second case the music provided for "cool" medium ritual is incomplete, i.e. in the various types of aleatoric musical composition. The composition is left open-ended and is only completed in performance. Emphasis is placed on the horizontal aspect of the music, i.e. sound in Time. Naturally it is here the performer who gets involved in the ritual. In order to be able to "fill-in" the musical material the performer's concentration has to be complete so that he becomes totally absorbed in the music. By being actively involved in the creative process, while in actual performance, the musician is caught up in the sound world. He leaves his Real-Time consciousness and enters Virtual Time. In a very real sense he BECOMES the music.

Although this form of ritual aims primarily at the solo performer, it has happened more and more frequently during the last two decades that a group of musicians, while performing aleatoric music, attained that intimate rapport with one another and with the music, which permitted a number of people to function as a single organism, resulting in truly spontaneous collective musical creation¹ - a situation which reminds one of a phrase in Dr.Verall's essay on the "Bacchantes of Euripides":

"The rapture of the initiated lies essentially in this:
'his soul is congregationalized'."²

The aim of "cool" musical ritual in aleatoric works is a state of being and appreciation where the musician has left "normal" existence and has transcended the precepts of traditional music-making and performance. He is "outside" himself and "outside" the concert situation. He has left behind his preconceptions concerning technique and compositional purpose. He has entered a world of pure abstraction where ultimate, free Time and Sound are allowed to "happen", to "be themselves". It is the extreme realization of a musico-philosophical principle which is fundamentally ritualistic: the Primitive - prostrate, yet glorified - before his gods. He hears, and becomes indeed the creator of, the Music of the Spheres.

Summing up: the basic elements of ritual are its motive and its means. The motive in this instance is the participator's desire to be

1 : e.g. in Stockhausen's "Aus den Seben Tagen"; See Chapter VIII.

2 : Quoted by Jane E.Harrison on p.48 of her "Themis", op cit.

transported to a higher, better, freer level of consciousness, to transcend his awareness of Real Time and Space. The means he employs concerns a trance-inducing agent and resides in a medium which will suspend his awareness of Space and Time - he resorts to Rhythm. Thus musical rhythm (in its widest sense as a patterning of Time-flow) is the fundamental principle in the composition and experience of both "hot" and "cool" medium musical ritual.

Finally, it is necessary to point out that:

- (i) The "hot" and "cool" categories in musical ritual are not necessarily mutually exclusive. Elements of both may occur in one and the same musical work and the effect of a musical activity may rely on elements of both the "hot" and "cool" aspects of musical ritual, as in e.g. Terry Riley's "In C", which utilizes the "hot" hypnotic repetition of a limited musical content within a "cool" aleatoric framework.

- (ii) Twentieth-century musical ritual - in both its "hot" and "cool" aspects - may take place on two levels: a "lower", basic level (music AS ritual) and a "higher", stylized level (music ABOUT ritual). (See Chapter V.)

III : MUSICAL TIME

The basic components of music are commonly acknowledged to be Duration, Pitch, Timbre and Dynamics, all of which are functions of Time. Duration and Pitch, in fact, only represent the different divisions ("registers") of the experiential temporal continuum: Duration, that section of the continuum (± 8 seconds to ± 0.0625 seconds) in which the listener experiences, or "hears", the passage of Time - the "length" of the duration of a sound; and Pitch, that section (± 16 Herz to $\pm 18\ 000$ Herz) in which the listener does not consciously perceive the duration of a single vibrational period, but translates a series of these periods into a sound quality experienced (in spatial terms) as relatively "high" or "low", i.e. a temporal function perceived as a tonal arrangement in virtual space. Timbre is simply a transposition, into the micro-region, of the macro-regional patterning of Time-flow known as Rhythm. Dynamics result from the functioning in Time, of the agitating agent (i.e. the loudness of a woodwind sound depends on the speed with which the air column in the instrument is disturbed; the loudness of a percussive sound depends on the speed with which the resounding surface of the instrument is struck.)

Thus Time supports and controls the entire vocabulary of music and, indeed, generates and organises all musical construction, from tiny motivic cells to the complete architecture of a composition. Time is the very life of music - music is Time made audible.

For a very long time most musicians seem to have disregarded the all-pervading importance of Time in music. Time, for them, meant Rhythm, and (between c.1600 and c.1900) almost exclusively metrical rhythm at that. Of course Rhythm (metrical or otherwise) is a function of Time, but it represents only one level of temporal organization - today referred to as Traditional Rhythm.

Traditional rhythmic practice resided in time-signatures, barlines and regularity. It provided a framework which, in the hands of a Mozart, could become the scaffolding for the structure of a composition of delicate yet profound beauty, but which could easily serve as a prop for unimaginative musical banality. It also provided many theorists with much frustration at the difficulties of formulating an exact, or even an adequate, definition

of Rhythm. They have left a rich heritage of Theories of Rhythm, e.g. Mursell's Accentuation Theory, the Theory of Projectionism, and Thodor Lipps' Theory of Tone Rhythms and Pulse¹, to name only a few.

Be that as it may - Traditional rhythm, while presenting theorists with many difficulties, held none of the hazards of incomprehension and aural confusion for the listener. In traditional music rhythm was always coupled with harmony and melody. Moreover, rhythmic structure was determined by interactions between functional tonal hierarchies. Thus rhythm was bound to a regular pulse, it was predictable and easy to listen to - you could tap your foot to the beat.

Clearly the time had come for a more thorough practical exploration of Rhythm. The whole concept and field of Rhythm held enormous, virtually untapped, musical, structural and expressive potential. But it first had to be liberated from its (very unequal) alliance with pitch and tonal relationships before it could become a constructional element in its own right. Much pioneering work was done in this connection by Claude Debussy and Igor Stravinsky. (See Chapters IV and V.)

Of considerable importance in the chronicle of twentieth-century rhythmic "liberation", is the contribution of the so-called Twelve-tone Method of Composition. Composers of the Second Viennese School created, or helped to create, a compositional situation characterized by two important factors: a new general disposition analogous to Alan Bullock's "revolution in expectation"², and a more extensive exploration of musical space.

After the "breakdown" of tonality (or rather its over-expansion from chromaticism to atonality) composers felt the need for the rigour of a compositional discipline of some kind. They were confronted with a situation of frightening and confusing freedom and needed a point of orientation - a frame of reference within which they would nevertheless be able to avoid the danger of simply replacing one set of compositional laws with another. Twelve-tone serialism was a step in this direction, and seems, in retrospect, to have been the transitional stage between the problems of a-tonality and

1 : See V.Zuckermandl: "Sound and Symbol", p.185.

(New York. 1965.)

2 : cf. p.6.

serialism, but more about this later. What concerns us here is the fact that twelve-tone serialism, though replacing tonality with another compositional discipline, allowed composers to retain their new-found freedom in the shift from "pre-determined" (tonality) to "pre-conceived" (twelve-tone serialism).

In tonal music tonal hierarchies and relationships had been pre-determined, and the composer's liberty was largely restricted to the choice among these already defined relationships. But the twelve-tone serial composer chose his own methods as well as his own materials. He chose the ELEMENTS of his music, not only the RELATIONSHIPS. He created his own relationships. Thus musical relationships were no longer pre-determined and the same for all compositions, but were (separately) pre-conceived for every composition. These newly created relationships became a vital constructional function in the compositional process. A pre-determined compositional process, then, implied choice from a set of established hierarchies, while a pre-conceived process demanded the creation of new hierarchies for every composition. Hence the "revolution in expectation" - the composer now had a new authority and freedom in the creation of works, each of which was singular and unique both in its material, composition and aesthetic. (This breakdown of conformity could be seen as a reflection of the increased fragmentation in society.)

Thus twelve-tone serialism opened the way to Electronic music (from CHOOSING one's own new sounds, to CREATING one's own new sounds) and to Aleatoric music (part of the composer's freedom of choice is passed on to the performer, which leads to more and more emphasis on choice, even random choice.)

The advent of twelve-tone serialism represented a breakaway from the gravitational effect of the tonal hierarchical system and opened the door, so to speak, for a freer and more extensive exploration of musical space. In tonal music the composer had worked within a defined, closed musical space with its established hierarchies and often one-directional vectors. Twelve-tone serial music defined a multi-directional musical space. The twelve-tone serial composer worked within a musical space which resembled most closely the form of the spiral. The music moved in ever-rising circles within which the composer established his own vectors - the original (twelve-tone) series forming the fundamental (horizontal) winding, and the circular serial motion being translated into a vertical spiral function through the passage and interaction of Time and temporal

relationships.

This encouraged a greater interest in, and study of, the structure of all directions or dimensions of musico-temporal space. Traditional linear listening (governed by tension-resolution and theme-development-resolution principles) and traditional vertical listening (governed by rules of harmony and orchestration), were replaced by "dimensional" listening - the vertical dimension of sonority and timbre, the horizontal dimensions of musical time and varying rates of time-flow, and the interaction of these dimensions in the formation of another dimension - experiential or perceptual time. (cf. Chapter VI: "Webern and the Study of Musical Time".)

Thus the way was prepared for a free and independent appraisal of, and composition with, Time. The composer was now free to manipulate his musical material according to his own choice, and the musical compositional situation had reached a stage where musical time was recognized as an independent dimension, even though up till then, whereas musical time had been consciously perceived, it had not yet been consciously controlled or organized.

Rhythm, duration and metre were no longer bound to functional harmony. If musical time was to be truly independent, it now had to find its own rhythm-generating agents. Time had to be disciplined according to some kind of regulating principle or "system". This situation led to a search for a time-structuring impulse, a search which moved in essentially two directions. One of these took the form of a completely independent time-organization, and will be discussed in Chapter VII. The other direction was that of serialism.

In their search for an organizing principle in the time dimension, it was logical that composers should have turned, at least initially, to twelve-tone pitch serialization. Durational series were derived from pitch series in two ways. At first a series of twelve durations (as a parallel to a series of twelve pitches) was established by a process of multiplication of the smallest value - resulting in what Stockhausen calls,¹ "the sub-

1 : See the article, "...How Time Passes..." by Karlheinz Stockhausen, in *Die Reihe* no.3, pp.10-40.

harmonic series of proportions" -



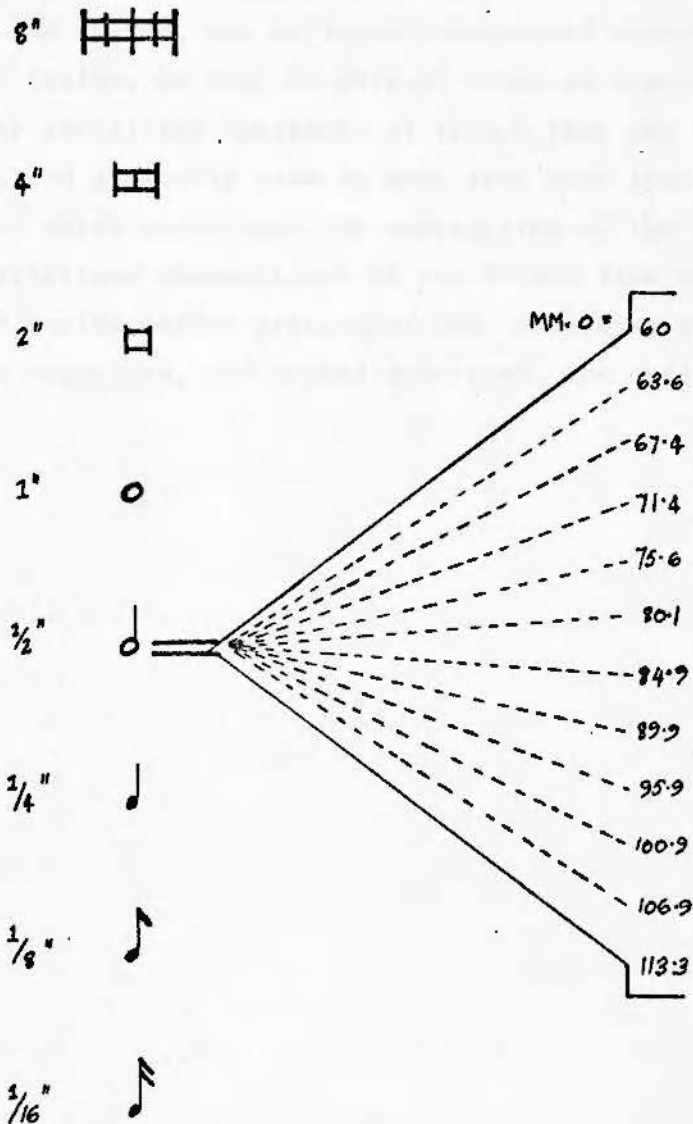
or division of the fundamental biggest value - resulting in the "harmonic or overtone series" -



Composers who used these durational series encountered a number of practical problems, chief among which were the slow tempo of the music and the difficulty in performing these accurately notated durations. They tried to solve the first of these problems - the aural dominance of the longer durational values - by superimposing several durational series or introducing supra-order series. But the real problem lay deeper; it was in fact a question of morphology.

At the base of twelve-tone serial composition lay the principle of equal treatment of all elements of the series. But the chromatic pitch series (C - C-sharp - D - D-sharp - E ...) as well as the harmonic and sub-harmonic durational series, rest on a principle of unequal proportional progression, e.g. the interval with which the frequency of C is increased to obtain C-sharp, is equal to 38% of the C-frequency, while the increase from A to A-sharp represents 22.7% of the frequency of A. Similarly, the difference between the first two elements of the sub-harmonic durational series represents 50% of the durational value of the first element, while the difference between the fourth and fifth elements equals 25% of the durational value of the fourth element.

Composers rectified this weakness in the construction of durational series by deriving a set of logarithmic progressions, which produced a series of discrete values separated by equal intervals. They also advocated a change in the notation of musical time. Instead of designating the discrete elements of the series by using only note values, they made additional use of different metronomic markings. In this way they were able to derive a durational continuum parallel to the pitch continuum: eight "registers", each divisible into eleven (equal) logarithmic intervals, e.g.



Once the scale of durations had been fixed metronomically, it was possible to apply serial procedures¹ to the durations. A twelve-element duration series was derived from a twelve-tone pitch series, its elements distributed among the various duration registers (corresponding to the pitch registers), and the resultant time structure presented with "normal" barring and tempo indications.

When strict twelve-tone pitch serialization made way for what is known today as "serialism" (i.e. the free adoption of serial principles)

1 : For a detailed discussion of these procedures, see the Stockhausen article, op cit.

the Time dimension also became accessible to these serial compositional procedures. Time, and rhythm, was no longer structured according to a duration series of twelve, or six, or sets of three or four, elements. Duration was freely serialized (paradoxical though that may sound). But serialism after c.1950 gradually came to mean even more than this. A situation developed which encouraged the application of the serial principle (the concept of serialized composition) to the ENTIRE Time continuum. Composers began to employ serial principles and techniques through which the Time dimension organized, and indeed generated, the entire musical work.¹

1 : See Chapter VIII.

It is necessary to deviate for a moment from the main line of the discussion, in order to point out the significance in the evolution of new ideas in music, of two trends in twentieth-century art, namely Cubism and Aleatory.

Firstly, then, Cubism. Cubism, as an artistic "movement", originated in the Bateau-Lavoir in Montmartre, almost seven years before the outbreak of the first world war. In its early stages, Cubism was championed by, among others, Apollinaire, Max Jacob and Blaise Cendrars, and it found perhaps its greatest exponents in Picasso, Braque and Fernand Léger.

The basic conceptual background of Cubism is described thus, by René Huyghe:

"Why retain our preconceived notions regarding the appearance of the natural world? Why not merely START from nature to range freely beyond it in the invention of form suggested by it? Why not break nature up by such an analysis and reassemble the elements of the world of appearances, not according to nature's own laws but according to the exigencies of composition? Thus Cubism was born."¹

The two most fundamental principles of Cubist painting technique were simultaneity and construction. The Cubist painter would choose his subject, break it down into its component parts (light, shade, groundplan, elevation, perspective and various planes), and then reconstruct the picture with all the different aspects treated separately, but simultaneously, on the same canvas.

Once again, the emphasis on choice² - a degree of choice which included not only the artist's selection of subject matter, but also extended to the various components of those subjects and the artist's treatment of them. Art was no longer merely an artistic representation of natural laws, but a subjectively determined creation of new, purely artistic, laws - a parallel to the musical evolution from the representation and arrangement of natural musical laws (the Pythagorean interval relationships in pitch and harmony), to the creation of new compositional laws. The Cubist artist's choice broadened into the subjective orientation of Expressionism. The

1 : "Larousse Encyclopedia of Modern Art", p.246.

2 : cf. p.21.

affinity between the subjective restructuring of visual space and the subjective restructuring of tonal space is most clearly illustrated in the artistic career of Arnold Schoenberg, who was both a serial composer and an expressionist painter.

These two principles of artistic composition - simultaneity and constructivism - introduced composers to hitherto unexplored regions of technical and expressive potential in the sound world. The first tentative applications of the ideas of simultaneity and constructivism may be seen in the studies of "musique concrète" by Pierre Henry and Pierre Schaeffer in Paris in the late 1940s and early 1950s. Their exploratory exercises soon led to authoritative works in a new medium which was the result of a process of de-struction and arbitrary re-construction of reality, with its presupposed disregard for sequence, or in fact Real-Time structure of any kind at all.

The very nature of the techniques involved in "musique concrète" composition had important consequences in the evolution of twentieth-century music. With "musique concrète" came the concept of the direct production line in music. The composer-via-performer-to-listener directional sequence was shortened to a composer-to-listener process with the introduction of the "ready-made" performance of a "musique concrète" work.

The same move towards immediacy is apparent in another aspect of "musique concrète" composition. The "musique concrète" composer was not bound to composition via notation. Whereas in traditionally notated music composers had to follow the sequence of progression from Conception (the composer's idea) to Realization (in notation) to Production (in performance), "musique concrète" speeded up the process to Conception + Realization (by the composer - on tape) to Production. The intermediary stage - the performer who needed a fully notated score - was eliminated.

It is possible that the greatest significance of "musique concrète" may be found in its rôle as a necessary transitional stage of technical preparation for electronic music. "Musique concrète" provided the training ground for composers of electronic music until, just as Cubism led to Abstract art when artists found that they no longer needed reality as a source of "abstraction", but could take abstraction itself as their starting point, "musique concrète", with its abstract restructuring of sonic reality, made way for pure electronic music with its independent, "abstract", construction of all musical elements.

Mention has already been made of the line of development from serial to aleatoric music¹. The serial composer's freedom of choice was extended to include performers' freedom of choice. Then composers began to compose performance unpredictability and chance operations into their works. The chance element became more and more important in compositions of this nature until a stage had been reached where the composer did little more than merely create the situation or opportunity for performance - an extreme situation in which the performance, its musical result (or lack of it), its aesthetic implications and its effect on the audience, were completely random.

This structureless and apparently indecisive and aimless concept of creative activity is not, however, the copyright property of the John Cages and the Jackson Pollocks of contemporary art. These exponents of "spontaneous" art are in fact reflecting a trend of thought which is part and parcel of their social environment. It would seem to be the direct result of the Tolvlerian "future shock". Tolvler quotes Sir Robert Vickers as saying:²

"The rate of change increases at an accelerating speed, without a corresponding acceleration in the rate at which further responses can be made; and this brings us nearer the threshold beyond which control is lost."

Tolvler then continues:

"Spontaneity, the personal equivalent of social planlessness, is elevated into a cardinal psychological virtue."

When one adds to this situation the temporalization of consumer goods and environmental conditions typical of the twentieth century, one realizes that Modularism - an everyday feature of contemporary furniture, architecture and social organization - had become a way of life for twentieth-century Man. Reflected in music, Modularism represents the first level of indeterminacy, and provides the impetus behind the structure of works like Stockhausen's "Klavierstück XI", in which the separate sections (parts, or modules) may be combined in any desired or random order.

1 : on p.21.

2 : A.Tolvler: "Future Shock", p.404.

The influence on music of, on the one hand, Cubist immediacy and constructivism, and on the other, modularism and indeterminacy, is most readily discernible in the new forms and systems of musical notation. It is clear that these four factors - immediacy, constructivism, modularism and indeterminacy - affect essentially the Time dimension of music, and their influence on musical notation, accordingly, is basically Time oriented.

The "move towards immediacy" has been noted in connection with "musique concrète"¹. The search for a higher degree of immediacy in musical notation has been the guiding impetus behind most of the notational systems suggested and/or used in contemporary music, e.g. Klavarscribo and Equitone² - systems which had been developed in answer to the need for an integrated form of notation which would be more directly accessible to the reader and performer.

The constructivist compositional techniques of electronic music (initially, of course, of "musique concrète") have led to the practice of notating durations in terms of tape lengths, in centimetres and/or seconds - a practical way in which to notate (and read) both accurate and proportional Time structures.

The demand for greater immediacy in musical scores inspired the development of pictorial instructions for instrumental technique, and later, also graphic scores. (At first, of course, some scores allowed only a certain degree of aleatory - sectional interchangeability, i.e. modularism.) These scores can be interpreted directly, but can of necessity not be precisely notated or performed with any consistency (in different performances) in micro-structure. These graphic scores are, therefore, only possible in the composition and performance of aleatoric music.

Thus it would seem that the concept of Time (i.e. artists' different ways of interpreting and utilizing their perception of Time and the resultant manipulation of Virtual Time in temporal perception) forms the basis of some of the most far-reaching developments in twentieth-century art and music - Cubism and Electronic music, Modularism, Indeterminacy and Aleatory, and the aesthetic and technical principles derived from them.

1 : on p.27.

2 : For these, and other notational developments, see Erhard Karkoschka:
"Notation on New Music"

(Universal, London. 1972.)

IV : DEBUSSY AND THE FREE FLOW OF TIME.

Debussy's contribution to the "liberation" of musical time was of a conceptual nature, rather than any technical rhythmic innovations. He was one of the first twentieth-century (Western) composers to conceive of musical rhythm as a free time-flow. This was the result of his belief in the absolute authority of the musician's ear, and his desire to reveal "realities"¹ in his music.

Debussy conceived of Time as Duration - the Bergsonian ideal of Real Time, as opposed to divisions of clock-time - which resulted in two important aspects of his music:

(1) His experience of Real Time led Debussy to reveal in his music the reality of an unhampered time-flow - free, yet discreetly and artistically controlled - what he called "rhythmecized time"². Consequently his music is not directional in the old sense of the musical term. It does progress, but it does so round the periphery of a circle, or within it. It is in fact static - an immobility behind the mobility. Lockspeiser describes this quality in Debussy's music:

"...several piano works of Debussy such as 'Mouvement', 'Les Fées sont d'exquises danseuses' and 'Le Vent dans la plaine', in which some kind of circular, whirlwind rhythm does not progress towards a goal but, on the contrary, remains static, emphasizing, by means of its spiral configurations, a preoccupation with the present moment ('le perpetuum mobile de l'immobile')."³

1 : "I am trying to introduce something new - realities, so to speak.

What idiots call 'impressionism'." (Quoted by Herbert Eimert in his analysis of "Jeux" - a truly remarkable essay in Die Reihe no.5; p.4.)

2 : Ibid.

3 : "Debussy: His Life and Mind" Vol.II, p.50.

(Cassell, London. 1965.)

3 : Also cf.: The evolution from Debussy's "preoccupation with the present moment" to Moment form, p.98.

A fine illustration of this concept may be found in "Prélude de l'après-midi d'une faune", which, although it has as its theme, or programme, an "event" in Time, is basically non-dramatic. The composition is static - a painting rather than a tale. Diaghilev, Léon Bakst and Vaslav Nijinski must have realized this when they created (for the original ballet production in 1912) as set, costumes and choreography which combine in a perfect evocation of ancient Greek frescoes. The dancers seem to move in a dream which exists somehow outside Time.

(ii) Debussy emphasized the sensuous, coloured, aurally experienced MOMENT.¹ Timbre became more important, and thematic progression less so. This led away from thematic development techniques and functional bridge passages, and led towards composition in levels or planes, in which musical progression consists of (mostly instant) transition from one level or plane to another, as opposed to traditional techniques of tonal and thematic modulation.

Allied with the concept of a static music, is Debussy's compositional practice of symmetry in micro-structures. (Not necessarily in macro-structures, at least not the traditional type of symmetry, i.e. Theme - Contrast/Development - Recapitulation. Debussy favoured a non-cyclical form in sectional construction.) Hence his preference for the whole-tone scale and its derived harmonies, and for motivic construction and a phrase- and thematic structure arrived at through the combination of motives rather than development from a single germinal cell.

This weakened directional motion indicates a consciousness, or at least an unconscious tendency towards, musical ritual, which is further substantiated by Debussy's love of Nature. A closeness to Nature in all its various aspects, both physical and spiritual, lies at the very basis of ritual, which often takes the form of a celebration of Man-in-Nature, e.g. in the Spring Festivals.²

1 : cf. p. 30³.

2 : cf. p. 13. For a complete discussion of this aspect of ritual, see the following: J.E. Harrison: "Ancient Art and Ritual", pp. 76-80

J.E. Harrison: "Themis", Chapters II and VI
and James Frazer: "The Golden Bough".

(Macmillan, London, 1955.)

"I have made mysterious Nature my religion....When I gaze at a sunset sky and spend hours contemplating its marvellous, ever-changing beauty, an extraordinary emotion overwhelms me. Nature in all its vastness is truthfully reflected in my sincere though feeble soul. Around me are the trees stretching up their branches to the skies, the perfumed flowers gladdening the meadows, the gentle grass-carpeted earth,...and my hands unconsciously assume an attitude of adoration... To feel the supreme and moving beauty of the spectacle to which Nature invites her ephemeral guests! - that is what I call prayer..."¹

Works like "Jeux", "Prélude de l'après-midi d'une faune" and, especially, "Syrinx", are beautiful examples of (fully composed) "cool" medium musical ritual.² This is an opinion shared by J.Laloy, when he wrote (as early as 1908)³ that Debussy's music was,

"an art made up of suggestions, nuances, allusions; an evocative art which awoke in the hearer's soul echoes of thoughts that were not merely vague, but intentionally incomplete; an art capable of creating delightful impressionistic pictures out of atmospheric vibrations and effects of light, almost without any visible lines or substance."

Debussy had indeed provided the musical world with one of the most exquisite and gentle, yet effective, ways of transcending the consciousness of Real Space and Time.

1 : Vallas: "Claude Debussy: His Life and Works", p.225.

(Dover Publications, New York. 1973.)

2 : cf. p.16.

3 : In the Grand Revue, 10.2.1908.

(Quoted by Vallas, op cit., p.175.)

V : STRAVINSKY, RHYTHM AND RITUAL

When one thinks about rhythm and ritual in twentieth-century music, it is almost inevitable that the first example that springs to mind will be "Le Sacre du Printemps", and rightly so. "Le Sacre" represents Stravinsky's first major contribution to the exploration of the field of musical time and musical ritual. The significance of the work in the present context is two-fold:

- (i) In the composition of "Le Sacre" Stravinsky used an extensive rhythmic vocabulary, the complexity and diversity of which contributed greatly towards the "emancipation" of rhythm;
- (ii) In "Le Sacre" one sees Stravinsky's first musical realization of his awareness of the ritual potential of music.

In the first instance, then, the score of "Le Sacre" is important for its rhythmic innovations. The very first theme of the work (Example 1) reveals an astonishing degree of care in rhythmic construction. This haunting melody serves as an introduction to some of the rhythmic features of the work, and is analysed here for that purpose.

The melody is placed in the high register of a solo bassoon, with cadential accompaniment on two horns, a clarinet and a bass-clarinet. Stravinsky indicates a "tempo rubato" with an additional "ad lib." instruction in the bassoon part. There are nine time-signature changes in the first fourteen bars, and a variety of rhythmic subdivisions. These rhythmic features result in a seemingly free flow of sound in Time, devoid of regular pulse and metre. But the absence of a clearly discernible metrical structure is not the consequence of lack of care in composition, however. Quite the contrary. The "seemingly free flow of sound in Time" is achieved only through the utmost care in construction and meticulous attention to rhythmic and tonal detail. It is clear, however, that what matters is what the music SOUNDS like, rather than what it LOOKS like on paper. "Le Sacre" provides abundant evidence of Stravinsky's distinction between notated music and its sonic, artistic realization.

The 14-bar theme may be divided into 4 fragments, or 10 cells:

Example 1 :

Example 1 consists of four staves of musical notation, labeled I, II, III, and IV. Each staff contains a sequence of rhythmic figures. Staff I shows a sequence of eighth notes with groupings of 1, 2, 3, and 4. Staff II shows a sequence of eighth notes with groupings of 3 and 5. Staff III shows a sequence of eighth notes with groupings of 3, 6, 7, and 8. Staff IV shows a sequence of eighth notes with groupings of 3 and 10. The notation includes various rhythmic values such as eighth notes, quarter notes, and half notes, along with rests and accidentals.

The rhythmic construction of the first fragment reveals two features which occur throughout the work:

(1) A variety of rhythmic subdivisions:

In this theme Stravinsky uses 4 different subdivisions of the unitary value (♩):

Four rhythmic subdivisions of the unitary value (quarter note) are shown: a quarter note, a triplet of eighth notes, a quintuplet of eighth notes, and a septuplet of eighth notes.

In "Petrouchka" Stravinsky used a much greater variety of rhythmic values, both in juxtaposition:

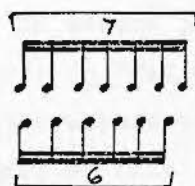
Seven rhythmic values are shown in juxtaposition, labeled 3, 5, 6, 7, 10, 13, and 14. Each value is represented by a group of notes with a bracket above it indicating the total number of notes.

and superposition:

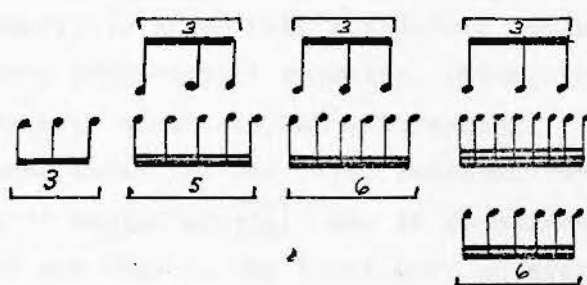
Seven rhythmic values are shown in superposition, labeled 3, 5, 5, 3, 7, 13, 6, 7, and 10. Each value is represented by a group of notes with a bracket above it indicating the total number of notes. The superposition is shown by overlapping the notes of different values.

In the "Danse de la Terre" and the "Glorification de l'Élué" from "Le Sacre" there are the following superimposed rhythms:

"Danse de la Terre"



"Glorification de l'Élué"



(ii) Symmetry, and retrograde symmetry, in micro-structure:

Symmetry in the rhythmic structure of the theme (Example 1):



There is also in this theme a further instance of symmetry - in tonal significance. The fifth quaver in both cell 2 and cell 3 is important. The E and D, respectively the dominant and sub-dominant of the basic tonality (A minor without the raised leading note, or alternatively, the hypodorian mode, although this is contradicted by the cadential C-sharp mediant), define the outer limits of the melody. Of interest also is the fact that the pauses (notated or implied), always on either the tonic (A) or the mediant (C), occur on strong beats in the two outer cells of the first fragment and on weak or unaccented beats in the two inner cells.

The third fragment is a restatement of the first fragment, but slightly varied: cell 6 repeats cell 1 and adds a quaver-anticipation, cell 7 repeats cell 3, and cell 8 repeats cell 4 without the two final unitary values.

The fourth fragment is composed of the terminations of the first and third fragments: cell 9 repeats the third unitary value of cell 3, cell 10 repeats cell 8. What unity of construction, and how very effective!

The rhythmic structure of this theme points towards the main principle involved in "Le Sacre", which is that the rhythmic structure of a motive, a phrase or a theme can be composed independently - free from the dictates

of, though not necessarily unrelated to, melody and harmony. Rhythm has become a constructional element. It need no longer be largely the RESULT of harmonic and/or melodic structure, but can now influence and even decide the tonal character of music.

To return to the aspect of symmetry in Stravinsky's rhythmic language. Already in "Petrouchka" one finds many instances of symmetry, retrograde, and retrograde symmetry in micro-rhythmic structure. An interesting example of this is found in the "Danse Russe" in the first Tableau. The first theme of the section (Example 2) begins at [64], and is constructed of 4 rhythmic elements, two of which are used in the first part of every phrase and the other two of which are used in the second half of every phrase. The theme is repeated five times, as follows:

Example 2 :

Allagro giusto, J = 116

a : b : c : c' : d :

1. ([64] +) c-d-b-a, d-c'-b-a, c-d-b-b, d-d-b-a
2. ([72] +) d-c'-b-a, c-d-b-a, d-c'-b-b, d-d-b-a
3. ([81] +) c-d-b-a, d-c'-b-a, c-d, d-c'-b-b
4. ([82] +) c-d-b-a, d-d-b-b, c-d-b-b, d-c'-b-b
5. ([84] +) c-d-b-a, d-d-b-a, d-c'-b-b, d-d-b-a

From this schema one is able to distinguish several symmetries and retrograde forms:

Symmetry around one element ($[84] - [84]^2$)*
 d-b-a / d / d-b-a

Symmetry around one phrase (${}^6[86] - [86]$)
 d-d-b-a / d-c'-b-b / d-d-b-a

Symmetry around two phrases (${}^2[84] - [85]^2$)
 d-c'-b-b / c-d-b-a, d-d-b-a / d-c'-b-b

* : $[84]^2$ = two bars after [84] ; ${}^2[84]$ = two bars before [84] in the score.

Retrograde forms:

c'-b / b-c (²84 - 84¹)

c-d / d-c' (81⁵⁺⁶)

b-b-c-d-b / b-d-c'-b-b (¹83 - ¹84)

Combination of symmetry and retrograde:

Around one unit (81 - 82²)

c-d-b-a, d-c'-b-a / c-d / d-c'-b-a, c-d-b-a

Around two phrases (first appearance + first half of second appearance)

c-d-b-a, d-c'-b-a / c-d-b-b, d-d-b-a / c-d-b-a, d-c'-b-a

(second appearance + first half of third appearance)

d-c'-b-a, c-d-b-a / d-c'-b-b, d-d-b-a / c-d-b-a, d-c'-b-a

In the first three bars after 85, the rhythmic elements themselves are subdivided to produce a retrograde around a common centre:



Also in "Petrouchka" one finds a temporal structure of particular interest in view of its extensive and much more complicated application in "Le Sacre". The relevant passage is the "Appearance of the Showman", 57 - 60. Underneath the Showman's "theme" on horns and bassoons, the bass articulates the following durational pattern (the crochet is taken as the unitary value) :

6 - 6 - 3 - 3 - 3 - 4

When this passage is repeated after the Showman's flute solo (61 - 63), the pattern is:

3 - 3 - 3 - 6 - 6

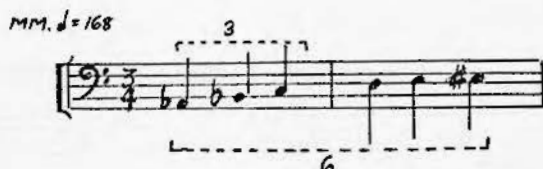
If the flute solo is omitted, the "continuous" durational series becomes:

6 - 6 - 3 - 3 - 3 - 4 - 3 - 3 - 3 - 6 - 6

i.e. a retrograde around the central value, 4.

The same principle, applied to a larger phrase structure, is used in "Le Sacre", in the "Danse de la Terre" in the section beginning at [75]. A rhythmic pedal which remained static in the previous section ([72] - [75]), now has a mobile durational structure (Example 3). The pedal appears in two forms, collected into two periods.

Example 3 :



Periods: I. 3 - 3 - 6 - 6 - 6 - 3 - 6
 II. 3 - 3 - 6 - 3 - 6 - 6 - 6

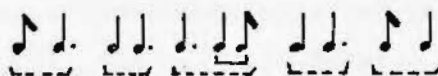
The first two values of I being a preparation, the two periods combine in a retrograde symmetry:

6 - 6 - 6 - 3 - 6 - 3 / 3 - 6 - 3 - 6 - 6 - 6

Thus, purely through durational variation, an immobile tonal structure becomes a mobile structural element in the compositional plan.

Yet another example of symmetry may be found in the "Cercles Mystérieux des Adolescents" ([91] - [104]), where the principle of retrogradation is applied to the harmonic structure of the first theme of the section.

Not unrelated to his predilection for various forms of rhythmic symmetry, is Stravinsky's use of the characteristics of the Indian rhythm *simhavikrīdita* (no.27 in the *Sharngadeva* collection of 120 *deci-tālas*; see Appendix I-E, pp.118 - 125).



(the first element is mobile, the second immobile.)

The first instance of this rhythmic practice, in "Le Sacre", occurs in the Introduction to the first part of the work - the third leading motive of the section, announced by the solo oboe, at [9] (Example 4a). The rhythm of the motive is constructed in the following manner (Example 4b): 8 fragments (each consisting of 2 cells) combine into two phrases (4 fragments, or 8 cells each) - the second being a varied repetition of the first. In every fragment the second phrase presents a changed second cell.

Example 4a :

Example 4a is a musical score in treble clef, 3/4 time. It consists of 8 measures. The first measure is marked with a Roman numeral 'I' and a '1' above it. The second measure has a '2' above it. The third measure has a '3' above it. The fourth measure has a '4' above it. The fifth measure has a Roman numeral 'II' and a '5' above it. The sixth measure has a '5' above it. The seventh measure has a '6' above it. The eighth measure has a '7' above it. The score includes various rhythmic patterns, including eighth and sixteenth notes, and rests. There are also some markings like 'tr' and 'trm' in the eighth measure.

Example 4b :

Example 4b shows 8 numbered rhythmic patterns arranged in two columns. Each pattern is a pair of musical notations. The first pattern (1) shows a quarter note followed by a group of four eighth notes with a '5' below them. The second pattern (2) shows a quarter note followed by a group of six eighth notes with a '6' below them. The third pattern (3) shows a group of six eighth notes followed by a quarter note. The fourth pattern (4) shows a group of seven eighth notes followed by a quarter note. The fifth pattern (5) shows a quarter note followed by a group of four eighth notes with a '6' below them. The sixth pattern (6) shows a group of five eighth notes with a '5' below them, followed by a group of six eighth notes with a '6' below them. The seventh pattern (7) shows a group of seven eighth notes with a '7' below them, followed by a group of three eighth notes with a '3' below them. The eighth pattern (8) shows a group of seven eighth notes with a '7' below them, followed by a quarter note.

Thus the process involved here is the exact opposite of that of the rhythm, *simhavikridita*. Another example of "reversed-*simhavikridita*" construction can be found in "Jeu du Rapt" ([37] - [48], the relevant passage begins at [46]), where two constructional elements interact to form four periods; the first element remains static, the second element changes with every appearance.

In his use, albeit limited, of Indian rhythmic characteristics, Stravinsky foreshadowed the extensive application of Sharngadeva rhythms (*tālas*) in Western music, by Olivier Messiaen¹.

1 : cf. pp.78+

Another aspect of Messiaen's rhythmic language which is already present in "Le Sacre", is Messiaen's concept of "personnages rythmiques" (cf.p.86.) A notable instance is found in "Jeu du Rapt" (in the passage beginning at 46). The principal theme, a mobile rhythmic-melodic structure, interacts with a simple rhythmic structure, also mobile, in such a way that the duration of the one increases while the duration of the other decreases, and vice versa. The one acts, while the other is being acted upon.

The best known example of this type of rhythmic "characterization" in "Le Sacre", is probably the one found in the "Danse Sacrale" (Example 5). The refrain of the "Danse Sacrale" employs three structural elements which interact and occur in three periods, as follows:

Example 5 :

The image displays musical notation for three periods of rhythmic interaction. Each period is represented by a set of musical staves (treble and bass clefs) and a corresponding rhythmic diagram below it. The rhythmic diagrams use vertical lines and brackets to indicate the duration of notes. Period I (measures 142-144) shows a sequence of notes with durations of 3, 4, 7, 4, 7, and 3. Period II (measures 144-146) shows a sequence of notes with durations of 8, 4, 7, 5, 4, 7, and 3. Period III (measures 146-149) shows a sequence of notes with durations of 5, 4, 2, 4, 3, 5, 4, 5, and 7.

- Periods: I. (142 - 144) A3 - A5 - B7 - A5 - B7 - A3
 II. (144 - 146) C8 - A4 - B7 - C5 - A4 - B7 - A3
 III. (146 - 149) A5 - B4 - A2 - B4 - A3 - A5 - B4 - C5 - C7

Thus B remains static while A and C are mobile.

Another example occurs in the "Danse de la Terre", where two mobile structural elements are involved, one of which is a rest (i.e. silence). The relevant passage begins at 73⁴ with the introduction of the structural element, X.

Example 6 :



The durational sequence is the following:

X2 - (12) - X2 - (7) - X1 - (1) - X2 - X2 - (6) - X1 - X1 - (1) - X1 - (1)

The silences become shorter as X occurs with greater frequency.

The effect of most passages of "Le Sacre" on the listener who is still stubbornly hunting for a regular pulse and a recognizable traditional metre, is one of frustration and confusion. How could it be otherwise when so many rhythmic compositional devices are employed for the express purpose of producing a sense of rhythmic and metrical dislocation in these passages. Stravinsky wanted to get away from the "predictable barline". And he succeeded. The most "straightforward" example of this in the score is surely the "Danses des Adolescentes" (13 - 37) with its rhythmic theme of shifting accents. A more complex technique is the multi-layered superimposition of several themes, e.g. in "Cortège du Sage" (67 - 71), where several independent ostinati are combined in different layers, each with its own character, rhythm, duration and period. Listening to this passage, one gets the impression of music moving at various speeds, all at the same time. It is incredibly effective and exciting.

A considerable proportion of the rhythmic devices used in "Le Sacre", have an anti-developmental character and function. Rhythmic pedals, ostinati, composition in discrete layers which are combined successively or simultaneously, rhythmic characters which interact externally to form mobile structural elements while remaining internally immobile - these are combined and interrelated in often very complicated polyrhythmic passages. Time-signatures sometimes change in every bar (e.g. in the "Danse Sacrale", from 145² - 148). Sections which seem to have no pulse at all (except that of the additive unitary value) alternate with sections of repetitive, insistent, hammered-out accents. By employing all these features

Stravinsky has enabled rhythm to enter into alliance with pitch as an EQUAL structural principle.

"Le Sacre du Printemps", therefore, is the result of a very fertile rhythmic imagination and, as such, of immense value in twentieth-century rhythmic composition and analysis. But this composition is more than just an inventory of ingenious rhythmic techniques. "Le Sacre" is also Ritual.

"Stravinsky's music breaks with tradition most effectively, perhaps, by its 'magical' qualities. The rhythmic idiom of 'Le Sacre', the horizontal and vertical rigidity and repetitious figures associated with it, are the concrete expression of an ecstatic incantation."¹

Not even the most unfavourably impressed critics of "Le Sacre" (and in 1914 there were many) could misinterpret at least part of Stravinsky's message. Although they felt compelled to dispute the musical value of the ballet, they all agreed on its character. It was "pre-historic", "primitive", "ritualistic", even "savage". These people were, of course, blaming Stravinsky for succeeding in what he had set out to do.

Stravinsky composed the work around the idea of a primeval sacrificial rite. A chosen maiden dances herself to death in order to appease the gods of fertility. The atmosphere and emotions attendant upon such a ceremony are perfectly reflected in the score. Primeval violence in a desolate landscape, the undercurrent of savagery and a barely concealed mass hysteria, the ponderous and sinister ostinato-approach of the Sage, the frenzied ecstasy of the ritual Adoration of the Earth, and the final mindless, tortured rhythms of the Sacrificial Dance. "Le Sacre" is Dionysian ritual in its most primitive sense. For the listener and the dancer it is "hot" musical ritual (cf. p.16). But even so, perhaps because of the programmatic sectional derivation of the work, one is left with the impression that, already with "Le Sacre", Stravinsky was, to a certain extent, composing music ABOUT ritual (cf. p.18, ii.). Had "Le Sacre" been Stravinsky's last work, there would have been no grounds for such a supposition. However, "Le Sacre" marked only the "beginning" of Stravinsky's musical career, and he went on to compose works like "Oedipus Rex" and "Orpheus", which bear out

1 : André Hodeir: "Since Debussy", p.35.

(Secker and Warburg, London. 1961.)

the idea of music ABOUT ritual, because in these later works Stravinsky had indeed withdrawn to a plane of Apollonian restraint in the composition of musical ritual.

Between "Le Sacre" and "Oedipus Rex" lies the Orphic reform of the religion of Dionysus. Orphism gave birth to classical Greek theatre, and it was here that Stravinsky found the models for his twentieth-century representation of the Greek tragedy. The finale of "Orpheus" (where Orpheus is torn to pieces by the Thracae) represents the ultimate retreat from Dionysian "enthusiasm" to Apollonian restraint. There are still violence and death, rhythm and ritual, but the drama has become stylized. The gods and mortals, monumentalized, act out their eternal fate and we see them from a distance, as if in a dream, outside Time. Dromenon has become Drama.¹

The ritualistic function of religious music in the church is fundamental to Stravinsky's compositions of sacred music. His "Mass" and "Canticum Sacrum", for example, are intended for liturgical use rather than concert performance. (It is hardly surprising to find that a composer of musical ritual of truly Dionysian "enthusiasm", was also interested in religious ritual. Orpheus was after all primarily a priest...)

The connecting link between Stravinsky's ritual music, his religious music, and his rhythmic innovations, is revealed in the following quotation from Stravinsky's "Poetics of Music":² He describes music as,

"...a form of Communion with our fellow men -
and with the Supreme Being."

Stravinsky is referring here to a form of communication which is not verbal, and not dependent upon literary allusion or narrative. He is referring to the communication of pure concepts and emotion (in its highest and least sentimental sense), which is the communication of music and of ritual. Communion (the sacred communication of prayer and worship) with

1 : cf. pp.13-4.

Dromenon: Greek for "rite" - "a thing done";

See J.E.Harrison: "Ancient Art and Ritual" p.35.

2 : Harvard University Press, U.S.A. 1947.

the Supreme Being - existing outside Time - could only be possible if Time could be conquered and transcended. Thus the composer who would fulfill his highest purpose as an artist and musician dedicates himself to the study of, and work with, Time¹ - until Time, formerly a dreaded barrier, becomes his ally in the quest for a higher consciousness. The composer uses Time as a ritual element in his music.

1 : Indeed, in S.Morgenstern's "Composers on Music" (Pantheon Books, New York, 1963), Stravinsky is quoted as saying: "The phenomenon of music is given to us with the sole purpose of establishing an order in things... particularly the coordination between MAN and TIME." (p.224.)

VI : WEBERN AND THE STUDY OF MUSICAL TIME.

Although wartime conditions may, of course, in certain circumstances, be beneficial to Art and Culture, the experiences of artists who find themselves caught up in the violent eruption of national and international politics, are frequently of a kind which cannot but inhibit spontaneous artistic creation. No person could live through such experiences - experiences which were only too common during the two world wars of the twentieth-century - without their effects being imprinted on his mind and artistic personality.

Anton Webern was thirty-one years old at the beginning of the first world war. At fifty-six he saw the outbreak of another world war, and five years later he was dead - accidentally shot by a member of the occupying troops in Mittersill. During the latter half of his life Webern knew intimately the physical and spiritual deprivations enforced by extreme political situations - situations which were more often than not hostile to creative thought and activity. This is illustrated by the following extracts, which were taken from the letters or personal journals of four twentieth-century artists: Thomas Mann and Arnold Schoenberg - Germans, one a novelist, the other a composer, both exiled to America; Lawrence Durrell - an English writer, living in Greece at the time; and André Gide - a French writer who spent the years of the first world war in France and those of the second world war in North Africa.

André Gide:

31.4 (or 1.5).1917

"...the anguish of events has us by the throat; I do not allow myself to speak of them, but I can think of nothing else."¹

6.6.1932

"How can one still write novels when our old world is crumbling around us..."²

1 : "The Journals of André Gide" Vol.II, pp.204-5.

(Secker and Warburg, London. 1955.)

2 : Ibid., Vol.III, p.234.

26.8.1940

"Everything I experience at present is too remote from words;
I am marking time in the moving sands of the inexpressible."¹

Arnold Schoenberg:

To Wassily Kandinsky, 20.7.1922

"...perhaps the worst (during the war) was after all the overturning of everything one has believed in. This was perhaps the most grievous thing of all.

"When one's been used, where one's own work was concerned, to clearing away all obstacles often by means of one immense intellectual effort and in those 8 years found oneself constantly faced with new obstacles against which all thinking, all power of invention, all energy, all ideas, proved helpless, for a man for whom ideas have been everything, it means nothing less than the total collapse of things..."²

Lawrence Durrell:

To Anne Ridler, late October 1939

"I have been more or less tongue-tied: the war is like a great severance, and your voices sound muffled across the gulf. I have written to no one, because there is not an atom of comfort to be given. It is a huge symbolic contortion in which individual lives seem to lose their significance and shape. I am cut to the heart and dumb."³

Thomas Mann:

To Heinrich Mann, 3.1.1918

(During the war) "...I (had to) suffer and struggle....neglect my dearest projects, sentence myself to silence as an artist, probe, compare, and manage to keep myself going..."⁴

1 : Ibid., Vol.IV, p.42.

2 : "Arnold Schoenberg - Letters", pp.70-1.

(Faber and Faber , London. 1964.)

3 : "Spirit of Place: Letters and Essays on Travel", p.61.

(Faber and Faber, London. 1969.)

4 : "The Letters of Thomas Mann", Vol.I, p.89.

(Secker and Warburg, London.)

To Karl Kerényi, 4.8.1934

"When I mention that perplexing 'state of Europe', which involves such a complex of problems for the future, I have come to the chief disturbance, from which my tranquillity, my peace of mind, my need for concentration, my psychic and even physical health, and in short my productivity, have been suffering...

"...My moral-critical conscience is in a constant state of exacerbation, and it is becoming more and more impossible for me to continue pursuing the, it may be, sublime game of novel writing until I have 'rendered an accounting' and unburdened my heart of its concern, its perceptions, its pain, as well as its freight of hatred and contempt."¹

To Walter von Molo, 7.9.1945

"In 1933 the shock of losing the wonted basis of my life, of parting with house and land, books, mementos and all my property, as well as the shock of the deplorable attacks in Germany, the expulsions and repudiations - all that was hard enough, suffocating enough. I shall never forget how Munich's radio and newspapers launched an illiterate and murderous campaign against my Wagner essay, for this was the point at which I fully realized that return was cut off from me. I shall never forget the groping for words, the efforts to write, to reply, to explain myself - those 'letters into the night', as René Schickele, one of the many departed friends, called those smothered monologues. What followed was hard enough, too: the itinerant life from country to country, the passport anxieties, the hotel existence, while our ears rang with the shameful stories that made their way out of the lost country that was running amok, going from bad to worse, growing more and more alien...the angina of exile, the uprooting, the nervous shock of homelessness..."²

This list of personal observations from the war years can be supplemented with many, many more - from the protests of those people who used Dadaism to attack the politics of war (e.g. George Grosz, Raoul Hansmann, and the Herzfelde brothers), those artists who staged their protests in Zürich

1 : Ibid., Vol.I, p.223.

2 : Ibid., Vol.II, p.479.

(Tristan Tzara, Hugo Ball, Hans Arp), in the United States (Duchamp, Picabia), and in France (Apollinaire, Cocteau, Satie and Picasso). These people, like so many others, were concerned with, and protested against, the physical suffering and death caused by war (13 million people killed in the first world war, 30 million in the second world war - statistics which included the names of artists like Boccioni, Sant'Elia, Gaudier-Brzeska, Wilfred Owen, Isaac Rosenberg, Georg Trakl), and the spiritual suffering caused by political barriers which forced people like Van de Velde, Arnold Schoenberg and Thomas Mann to leave Germany permanently, which also banished the Cubist dealer, Kahnweiler, from France, and forced Kandinsky and Marc Chagall to return to Russia.

These were conditions that found conscious reflection in the poetry of e.g. Wilfred Owen, Rosenberg, Siegfried Sassoon, Herbert Read and Georg Trakl, in the so-called "war-novels", the first of which to appear was Henri Barcousse's "Le Feu"; conscious reflection also in paintings like Ben Sahn's "Italian Landscape No.2" and Paul Nash's "We are making a New World", and in sculptures like the one entitled "The Unknown Political Prisoner" by Luciano Minguzzi. But experiences of those turbulent years were also unconsciously reflected in some aspects of the art of the inter-war and post-war years, e.g. a fervent religious character, in works like Schoenberg's "Jacob's Ladder", and an almost desperate search for truth and honesty, for the unadorned essence of art - a search which we see reflected in the music of Anton Webern, where it took the form of an investigation into, firstly, the nature of music, and secondly, the experience of music.

In the first instance, then, Webern stripped music of everything that he considered unnecessary, in order to reach the "skeleton" - the vital and naked truth - of his art. He endeavoured to present his works as integrated, organic musical structures evolved from an internal logic of pure sonic essence, devoid of all "romantic" coloration or elaboration, whether melodic, harmonic or timbral. In these works music is reduced to its essential minimum, where every pitch and dynamic inflection, every indication of tempo and articulation, is the reasoned detail of a carefully proportioned whole.

Through his musical economy and technical discipline Webern revealed sound as existing against, and emerging from, the background of silence. In Webern's music every sounded duration is the illumination of a defined

section of the silent Time continuum. Discrete points and the vectors between them, like an electronic circuit, are sonically illuminated to form a complex of self-contained and interrelated units - a pattern of audible Time.

Within this pattern Webern established the interval (vertical and/or horizontal) as the fundamental micro-structural musical unit. Two pitches, fixed outer limits, define a two-dimensional entity - a vertical or horizontal segment of musical space existing in the dimension of musical time. Thus Webern's music represents a conscious exploration of a three-dimensional sound world.¹

To these three dimensions (horizontal space, vertical space and Time) Webern added a fourth: experiential time. Whereas composers like Debussy and Stravinsky had advocated their belief in the absolute authority of the musician's ear² - the importance of the aural experience, rather than the importance of rules of composition - Webern STUDIED the experience of music and, as music, for him, was Time, this meant a study of the experience of musical time.

The experience of Time is, of course, the result of the experience of change in material and/or spiritual environmental conditions. The perception of musical time, therefore, depends on the listener's perception of change in the musical environment, and varies according to the degree and density of alteration. Clearly, the composer who aims to affect (or even, to a certain extent, control) the listener's temporal perception and experience by means of musical material and compositional techniques has to work with complex interrelationships of musical and information theory as much as with separate musical parameters and their combination in musical and formal structures. In a fascinating and quite excellent discussion of part of the second movement of Webern's "String Quartet" Op.28³, Karlheinz Stockhausen indicates a number of musical determinants of temporal experience which had been used in this composition to mold the listener's perception of the duration and temporal significance⁴ of note groups, phrases and sub-sections in the work. These determinants are: duration, intervals of entry, modes of attack, intensity, vertical density, horizontal interval groups, harmonic

1 : cf. p.22.

2 : cf. p.30 and p.33.

3 : "Structure and Experiential Time", in Die Reihe no.3, pp.64 - 74.

4 : See p.50.

structure, tempo alteration, direction of pitch succession, register and compass.

When a composer is engaged upon the composition of the experience of (Virtual) Time, it is logical to expect that, at some stage, he would employ the techniques of contrapuntal composition, for counterpoint has as its basis the opposition and interaction of various rates of time-flow. At its simplest level it means the following: Within a melody (a closed durational sequence) there is a curve, or a series of curves, of temporal significance which is determined by various factors and the interaction between them, e.g. the introduction and termination of the phrase, the element of durational expectation (which is frequently the result of phrasing and tonal promise) and the durational values of the individual elements and their placing on the expression curve. When different parts of the same curve of temporal significance (or different sections of the same series of curves) are superimposed, there arises a situation in which different areas of temporal significance coincide, i.e. an area (or areas) within which different (or even conflicting) degrees of temporal significance are defined, and interact with one another to create relationships of temporal significance.

These "relationships of temporal significance" were purposely created in works like Webern's Op.28, a composition which may be seen as the highpoint of this composer's frequent use of contrapuntal devices - in particular, of the form of the canon. The above-mentioned "relationships", on a much more complicated level, are also a feature of Webern's favourite musical structure - the variation form.

Variation is essentially a static compositional device, as opposed to development, which is dynamic. A variation is a temporally "closed" form, characterized by temporal equilibrium, whereas a development section, characterized by temporal disequilibrium, is temporally "open" - if not in actual duration, then in temporal significance; in other words: development changes the temporal significance of thematic elements. Thus it is Time which makes the distinction between static and dynamic compositional micro-forms and devices.

Webern's interest in musical time and the fact that he favoured static compositional forms, are related to his basic conception of music as a function of silence. Like Debussy, Webern also saw the immobility behind

the mobility and heard the silence behind the sound¹. Webern's music reveals a vision, essentially ritualistic, of conquered Time, a vision of ideal music outside Real Time - audible Time in Eternity.

"Webern's art, by means of its discontinuous patterns which destroy the old rigid metric divisions that bind us to time as an almost physical presence, by its assertion of an order which makes plastic use of time in order to conquer it, attains release into that condition of eternity toward which all art aspires. It is not merely that Webern has imposed upon the outer world a new vision of form, an order fertilizing and transforming temporal values; beyond that he has intimated as the organic centre of his art, as its ultimate pivot, the stillness and silence at the 'still point of the turning world'."²

1 : cf. p.13.

2 : Christopher Hampton in "Webern and the Consciousness of the Time", p.48. in The Music Review, vol.20, 1959.

VII : MESSIAEN, RHYTHM, RELIGION AND RITUAL.

In the musical aesthetic of Olivier Messiaen there are no absolutes. The only reality for him, is the reality of relative relation. His music is never the music of isolation, always the expression (and exploration) of relationships - Man's relationship with Man, with Nature and, above all, with the Divine. This aesthetic background colours all of Messiaen's music - the conceptual inspiration, as well as musical material and compositional technique. It is the impetus behind the evolution of his religious works, his "birdsong" pieces, his "chants d'amour"; it explains the diversity of his musical resources, his extensive use of symbolism, his surrealist tendencies, his interest in colour and the complexity of his rhythmic language.

Every aspect of Messiaen's music points towards the one outstanding characteristic of his creative thought - Integration. His musical motivation, his choice of material and his methods of composition all spring from the same source. In the following extract from Claude Rostand's book, "French Music Today", Messiaen defines this source of his inspiration - the very foundation of his musical personality.

"I am, above all, a Catholic composer. All my works, whether religious or not, are documents of faith glorifying the mystery of Christ. Through my poor stammerings about Divine Love, I have tried to find a music signifying a new epoch, a loving and chanting music."¹

It is necessary to reflect for a moment on Messiaen's personal view of religion and its implications in his music. Religion is a development from primitive ritual. Man depends upon a god (or gods) for his physical, emotional and/or spiritual needs. Around this central concept the "believer"

1 : Rostand, p.46. Quoted by Carroll Hassmann in "Messiaen: An Introduction to his Compositional Techniques and an analysis of 'La Nativité'."

(Diapason, December 1971.)

constructs the various aspects of his faith, as well as a code of ritual behaviour. In the Roman Catholic Church - to which Messiaen belongs, and which is the most "ritualistic" of all Western theologies - this code of ritual conduct was the basis for the establishment of the Roman Catholic liturgy. Messiaen is very conscious of this ritual aspect and has extended the ritual significance of the liturgy of his church to encompass all aspects of his musical vision.

It will be remembered that, for the purpose of this discussion, ritual has been defined as "a symbolic act of ecstatic abandon whereby a person gains access to a higher level of consciousness"¹. The symbolic significance of various objects and actions is a fundamental necessity in any form of ritual. The initiate's transcending of Real Time and Space is a reality of the spirit, which necessitates the use of a symbolic language. This is, of course, also true of religion.

Messiaen's symbolic world centres around his Catholic faith (although it must be emphasized that Messiaen is not an "orthodox" Roman Catholic, and his religion points ahead towards a new universal religion, rather than back, towards dogmatic and compartmentalized (Western) Christianity.) He believes that Divine Love is made manifest in Nature and in human love. Conversely, it is also clear, from his texts for e.g. "Harawi" and "Chants de terre et de ciel", that human, earthly and temporal love may, through the union of religion (ritual) and music, become sanctified and ideal.

Through his artistic sensibility Messiaen has become aware of twentieth-century Man's spiritual crisis and his need for liberation from the bonds of his physical body and rational mind; through his Faith he has found a way to transcend the spiritual problems inherent in material existence, to find fulfilment and peace. In other words: his religion has provided him with the reason for wanting to transcend Time and Space; his art has provided him with the means and techniques to do so.

Messiaen's very real awareness of Man's involvement in the struggle between his lower nature and the potential of a higher existence and consciousness, the contest between light and darkness, the agon of life itself, is evident in the following extract from the preface to his "Technique de mon Langage Musical":²

1 : p.13.

2 : Published by Alphonse Leduc, Paris. 1944.

"To express with a lasting power our darkness struggling with the Holy Spirit, to raise upon the mountains the doors of our prison of flesh, to give to our century the spring water for which it thirsts, there shall have to be a great artist who will have to be both a great artisan and a great Christian."

"Darkness" versus "the Holy Spirit", "mountains" versus "our prison of flesh", "spring water" versus "thirst" - opposing forces in Man's eternal quest for spiritual liberation and perfection; a liberation and perfection which Messiaen believes can be attained only in the believer's ultimate spiritual union with God, and which must be sought through Faith and its practical implementation in artistic, and for Messiaen specifically musical, creation. Faith-inspired composition, says Messiaen, is the basis of:

"...a true music, that is to say, a spiritual music, one which is an act of faith; a music which touches on every subject and yet remains in constant touch with God; then, too, an original music, whose language may open a few new doors and pluck off a few, still distant stars."¹

Thus Messiaen has formulated his aesthetic in the light of the Truths of the Catholic Faith; he sees himself, his music and his duty as a musician against the background of the Cosmic Creation; he sees Time against, and within, Eternity. Therefore, we see in Messiaen, as in Debussy² and Webern³, the immobility behind (and beyond) the mobility, the silence behind the sound, the freedom from Time in Eternity.

In the expression of his quest for a transcended creative consciousness, Messiaen's language is music, his vocabulary - Symbolism and Time.

1 : Ibid.

2 : p.30.

3 : pp.50-1.

Messiaen's symbols may be divided into three categories: Numerical, Musical, and Verbal symbolism.

The symbolism of numbers is, of course, not exclusively religious, but it is the theological and mystical implications of numerical symbolism that attract Messiaen's attention. The ways in which he composes around these symbolic numbers will become apparent from the following examples.

Mention has already been made of Messiaen's consciousness of the dualities in Nature and Life¹. In the quotations preceding the first and fifth movements of "Les Corps Glorieux" Messiaen refers to the duality of human nature:²

"Their bodies, sown as natural bodies, will rise again as spiritual bodies."

"Their bodies, sown in weakness, will rise again in strength."

In the fifth movement from "Vingt Regards sur l'Enfant-Jésus", "Regard du Fils sur le Fils", Messiaen portrays the duality of Christ's nature - human and divine - through a two-part rhythmic canon of chords (the two parts moving on two dynamic levels: pp and ppp) and its dual rôle in textures which are themselves constituted of two parts - in superposition with the main theme (the first cyclic theme) and in contrast with birdsong in the second half of each phrase.

A similar "symbolic duality" is to be found in "Trois petites liturgies de la Présence divine". The three movements of the composition each has two themes: one based on the interval of the perfect fourth - symbolizing the Divine - and the other based on the tritone (the medieval "devil-in-music") - symbolizing the worldly.

Naturally the number 3 features prominently. It is, first of all, the number of the Holy Trinity: God the Father, the Son and the Holy Spirit. It finds reflection in "Le Mystère de la Sainte Trinité" (the last movement of "Les Corps Glorieux") which is composed in three polyphonic strands. The

1 : pp.53-4.

2 : Messiaen is quoting from the first Epistle of St Paul to the Corinthians, Chapter 15 verses 43 and 44.

principal one of these (derived from the Kyrie melody¹) has a tripartite structure: 9 phrases arranged in 3 sections - an internal ternary structure of 3 phrases in each section. The rhythmic pedal in this movement (in the pedal part) consists of three different Sharngadeva rhythms: rāgavardhana, candrakalā and lackskmiṣa (no. 93, no. 105, and no.88 in the Sharngadeva collection of deçī-tālas²).

In "Regard du Fils sur le Fils" (from "Vingt Regards") the number 3 permeates the entire musical structure: "...3 sonorities, 3 modes, 3 rhythms, 3 strands of music superimposed on each other."³

In the preface to the score of "La Nativité du Seigneur" Messiaen explains that the number 3 also symbolizes the 3 births of Christianity, to which he refers in the musical fabric of the composition: the eternal birth of the Word (no.4 of "Vingt Regards": "Le Verbe"), the temporal birth of Christ (no.1: "La Vierge et l'Enfant") and the spiritual birth of Christians (no.5: "Les Enfants de Dieu").

The second and fifth pieces of the organ work, "Le Livre d'Orgue", are both entitled "Pièce en Trio" and are composed in three-part polyphony - symbolic of the Trinity. The musical texture of the fifth piece, especially, is determined by the number 3: Messiaen gives three Sharngadeva rhythms to the right hand (no.106: laya, no.119: niççanka, no.116: bhagna) and three Sharngadeva rhythms to the left hand (no.15: caccari, no.24: rangapradīpaka, no.53: sama). Both these groups are treated in the three-fold "personnages rythmiques" relationship.⁴

The number 3 has an important rôle in determining the musical material of "Trois petites liturgies de la Présence divine". Messiaen uses 3 groups of different timbre, the number of instruments / soloists in each group being a multiple of 3: 18 sopranos who sing in unison or 3-part division, or are reduced (in certain sections) to 12 or 6 voices; 5-part strings to which Messiaen adds the Ondes Martenot - a total of 6 parts; 2 groups of 3 percussion instruments each: pitched percussion (piano, celesta, vibraphone) and unpitched percussion (maracas, Chinese cymbal and tam-tam). It is also interesting to find a triple division in the rhythm of the vocal part in the first section of the first movement (Example 7, p.57). The first 3 sub-sections define

1 : See p.60.

2 : See pp.78+

3 : Messiaen's preface to the score of "Vingt Regards sur l'Enfant-Jésus".

4 : See pp.86+

the following rhythmic patterns, resulting in 3 non-retrogradable cells of 3 values each: 7 - 8 - 7, 7 - 10 - 7, 7 - 12 - 7 (the quaver is taken as the unitary value).

Example 7 :



In the same composition the number 3 (symbolizing the Trinity) is closely linked with the number 4 (symbolizing God's Creation: Nature, the world.) Messiaen adds a coda (a fourth movement) to the 3 movements of the work. He also adds a fourth sub-section (the tritone theme) to the 3 statements of the opening perfect-fourth theme in the first section of the first movement. The 3-part structure (AAB) of the middle section of the first movement is repeated 4 times, as is the 3-part thematic section in the third movement of the work.

In Indian mythology the number 5 is the number of the god Shiva (or Siva) who provides protection against the daemons responsible for pestilence and death.¹ For Messiaen this idea has become symbolic of the destruction of Death itself. Therefore, the number 5 symbolizes (for Messiaen) salvation through Christ; hence the 5 movements of the "Messe de la Pentecôte", the dedication of the fifth ("Regard du Fils sur le Fils"), fifteenth ("Le baiser de l'Enfant-Jésus") and the twentieth ("Regard de l'Eglisé d'amour") pieces of "Vingt Regards", as well as the fifth movement of "Quatour pour la fin du Temps", "Louange à l'Eternité de Jésus", to Christ.

Another instance of the importance of the number 5 for Messiaen is to be found in "La Nativité du Seigneur". In the preface to the score the composer gives an outline of the 5 principal theological ideas which find reflection in this composition:

1 : See pp.104.

- (i) Our destiny fulfilled by the Incarnation of the Word:
 - no.3: "Desseins éternels"
- (ii) God living among us, God suffering:
 - no.9: "Dieu parmi nous"
 - no.7: "Jésus accepte la souffrance"
- (iii) The 3 births: the eternal birth of the Word
 - no.4: "Le Verbe"
 - the temporal birth of Christ
 - no.1: "La Vierge et l'Enfant"
 - the spiritual birth of Christians
 - no.5: "Les Enfants de Dieu"
- (iv) A description of some of the persons involved in the Christmas feast:
 - The Angels - no.6: "Les Anges"
 - The Magi - no.8: "Les Mages"
 - The Shepherds - no.2: "Les Bergers"
- (v) 9 pieces altogether in honour of the motherhood of the Holy Virgin.

The symbolic implications of the number 7 is well-known - it is the number of perfection, of fulfilment and rest.

"7 is the perfect number, the Creation of 6 days sanctified by the divine Sabbath: the 7 of this (day of) rest is prolonged through eternity and becomes the 8 of inextinguishable light, of perfect peace."¹

There are 7 movements in both "Les Corps Glorieux" and "Visions de l'Amen" (the seventh piece of which is entitled "Amen de la Consommation"), and in "Vingt Regards" the seventh piece, "Regard de la Croix", is symbolic of the divine repose of the crucified Christ. The perfection and immortality of the risen Christ are portrayed in the eighth movement of the "Quatour pour la fin du Temps", "Louange à l'Immortalité de Jésus".

1 : Messiaen's preface to the score of "Quatour pour la fin du Temps".

Messiaen regards the number 9 as symbolic of maternity and birth, hence the 9 movements of "La Nativité du Seigneur" and the dedication of the ninth piece of "Vingt Regards", "Regard du Temps", to "The mystery of the fullness of time; time sees, born into itself, he who is eternal..." Christ (eternal) born into Time, Time itself born out of Eternity; and, reciprocally, birth of Man (temporal) into Eternity, through salvation - liberation from temporality.

Messiaen seems also to attach symbolic importance to a number of elements of his musical material - plainsong, birdsong, and certain tonal keys and modes of limited transposition¹. (It must be emphasized here that these elements are often used purely for their musical characteristics and potential. The examples which follow illustrate some of the instances where Messiaen has attached additional symbolic value to these musical elements.)

Messiaen makes extensive use of plainsong melodies. In his "Technique de mon Langage Musical" he mentions a few favoured ones:²

Fête-Dieu Séquence, "Lauda Sion"

"Gloria laus" du dimanche des Rameaux

Traît du 4e dimanche de Carême

"Alleluia" de Pâques

"Offertoire" du 23e dimanche après la Pentecôte

Antienne "Salve Regina"

Sometimes a plainsong melody appears in its original form, but superimposed on other material, sometimes it is melodically and/or rhythmically transformed, and often only its characteristic melodic contours are abstracted and then integrated into the texture of a composition. Examples are numerous and include the following:

In the "Messe de la Pentecôte" (Messiaen's only work specifically written for liturgical use - as accompaniment to the Low Mass of Pentecost Sunday) the Alleluia for Pentecost Sunday, "Veni Sancte Spiritus", is freely transformed to form the basis of the Strophes in the third movement, the Consecration.

1 : See Appendix I-A, pp.112-3.

2 : Chapter VIII/4.

Two melodies from the "Liber Usualis" are used in "Les Corps Glorieux". The Antiphon of Our Lady at Compline ("Salve Regina") forms the basis of the first movement of the work (Example 8a), and from the "Kyrie IX" is derived the principal melody of the last movement (Example 8b).

Example 8a :

Example 8a shows two staves of music. The top staff is a vocal line in G major, with the lyrics "Sal - ve Re - gi - na, ma - ter mi - se - ri - cor - di - ae". The bottom staff is a piano accompaniment in G major, marked with a forte 'f' dynamic. It features a melodic line with a series of eighth notes and a bass line with a similar rhythmic pattern.

Example 8b :

Example 8b shows two staves of music. The top staff is a vocal line in G major, with the lyrics "Ky - ri - e E - le - i - son". The bottom staff is a piano accompaniment in G major, marked with a forte 'f' dynamic. It features a melodic line with a series of eighth notes and a bass line with a similar rhythmic pattern.

In "Couleurs de la Cité céleste" Messiaen uses four Alleluias: The Alleluia for the eighth Sunday after Pentecost ("Magnus Dominus...") which appears in several different guises. It is combined with birdsong, with a *tâla* instead of its original plainchant rhythm, and with a harmonization of colour-chords; it is presented in superposition with Sharngadeva rhythms, the Alleluia for the Dedication, and motives from the "Turangalîla-Symphonie", and it is melodically transformed in a manner similar to the treatment of the "Haec Dies" in "Regard de l'Esprit de Joie" (from "Vingt Regards") (Example 9, p.61).

The Alleluia for the fourth Sunday after Easter ("Christus resurgens..."), which is transformed melodically, appears together with birdsong in the middle section of the work, and is presented, in "klangfarbenmelodie" fashion, on various instruments.

The Alleluia for the Feast of the Dedication of a Church ("Adorabo..."), which is not melodically transformed, but is superimposed on various other musical elements, including the Alleluia for the eighth Sunday after Pentecost, Sharngadeva rhythms and two themes from the "Turangalîla-Symphonie".

The "Corpus Christi" Alleluia ("Caro mea..."), which, like the Alleluia for the Dedication, is allowed to retain its original melodic structure throughout, and the final appearance of which concludes the composition. Example 9 :

Haec di - - es, quam fe - cit

"Regard de l'Esprit de Joie":

(colb) f ... (chord) ...

Detailed description: This musical example consists of two staves. The top staff is a vocal line in G major, 4/4 time, with the lyrics "Haec di - - es, quam fe - cit". The bottom staff is a piano accompaniment in the same key and time, featuring a rhythmic pattern of eighth and sixteenth notes. It includes dynamic markings "(colb) f" and "(chord)", and a fermata over the final measure.

In the first piece of "La Nativité", "La Vierge et l'Enfant", Messiaen uses richly ornamented versions of the Introit melody for the third Mass of Christmas - "Puer natus est nobis...":

Example 10 :

Pu - er na - tus est no - bis, et - fi - li - us da - tus est no - bis

"La Vierge et l'Enfant":

Un peu vite.

f legato

Detailed description: This musical example features a vocal line and a highly ornamented piano accompaniment. The top staff is a vocal line in G major, 4/4 time, with the lyrics "Pu - er na - tus est no - bis, et - fi - li - us da - tus est no - bis". The bottom staff is a piano accompaniment in the same key and time, characterized by dense, rapid sixteenth-note passages and triplets. It includes dynamic markings "f" and "legato", and a tempo marking "Un peu vite.".

Plainsong forms, also, have been adopted as independent structures, or as subsidiary frameworks within various types of sentences - Binary, Ternary or Song sentences - or adaptations of sonata form.

The form of the Kyrie of the Roman Catholic Mass is used (mainly for the symbolic implications of its tripartite structure) in the final piece of "Les Corps Glorieux", "Mystère de la Sainte Trinité".

Plainchant psalmody finds reflection in "Trois petites liturgies de la Présence divine". The first movement of the work, "Antienne de la Conservation intérieure", is modelled on the structure of a Gregorian psalm-tone: three sections, the first and last of which employ a freer musical style (as a parallel to the versicle or antiphon) and enclose a psalm-chant middle section. The third movement of the same work, "Psalmodie de l'Ubiquité par amour", reflects the liturgical practice of responsorial psalmody: in the first and third sections of the movement there are four passages of rhythmically spoken text followed by refrains of related verbal and identical musical content.

Two notable instances of Messiaen's adaptation of the Anthem occur in the monodic "Subtilité des Corps Glorieux" (the first movement of "Les Corps Glorieux") which utilizes a plainsong melody¹ in what Messiaen calls, "a large ornamented anthem"², and the "Antienne du Silence" (from "Chants de terre et de ciel") where a melody in Anthem form appears in superposition with the principal (vocal) sentence and a quasi-atonal texture in double counterpoint.

The form of the liturgical sequence is also one of Messiaen's favourite structures. He uses it in "Le Verbe" (the fourth piece of "La Nativité") where both form and melody are based on the sequence for the Mass of Easter Sunday, "Victimae paschali", and in "Séquence du Verbe, Cantique Divin" (the second movement of "Trois petites liturgies") in which Messiaen substitutes variations of orchestral melodic ornamentation for the traditional development of each repetition of the "versicle" and "response".

One further adaptation of plainchant form in Messiaen's music should be mentioned: Alleluiatic vocalise. Apart from the use of specific Alleluias and obvious instances of Alleluia-inspired melodies, as in e.g. "Action de grâces" (from "Poèmes pour Mi") and "Resurrection" (from "Chants de terre et de ciel"), much of Messiaen's music is coloured by the characteristic melodic contours and "free" vocal style of the Alleluia. The examples from the two song-cycles mentioned above, as well as examples from "Les Corps Glorieux" and "Couleurs de la Cité céleste", indicate that Messiaen intends to incorporate into his music, together with the musical character of the Alleluia, its traditional association with jubilation and praise of God.

1 : Example 8a, p.60.

2 : "Technique de mon Langage Musical", Chapter XII/5, p.44.

A similar rôle is fulfilled by the inclusion of birdsong in Messiaen's music. But these birdsongs are intended to convey a more intense and mystical experience of joy and exaltation, as well as the liberation from everything negative, dark and dangerous - the expression of a vision of perfect peace and fulfillment in eternal light.

"The abyss is time, with its sadness, its lassitudes.
The birds are the opposite of time; they are our desire
for the light, for the stars, for rainbows and jubilant
song."¹

This is the message of birdsong in compositions like "Regard du Fils sur le Fils" (from "Vingt Regards"), "Dieu parmi nous" (from "Les Corps Glorieux"), "Abîme des oiseaux" (from "Quatour pour la fin du Temps"), "Jardin du Sommeil d'Amour" (from the "Turangalîla-Symphonie"), "Amen des Anges, des Saints, du Chants d'Oiseaux" (from "Visions de l'Amen"), "Les oiseaux et le source" (the Communion from the "Messe de la Pentecôte") and "Couleurs de la Cité céleste".

People often associate different tonal keys with different colours and emotions. For Messiaen, too, certain keys seem to be symbolic of certain emotional states, ideas or theological subjects. There are cases where this kind of symbolism is confined to what seems almost like no more than a coincidence, e.g. the use of the key of F major in both "Les Anges" (from "La Nativité") and "Antienne du Silence" (the song from the "Chants de terre et de ciel" which is dedicated to the feast day of the Guardian Angels). Examples of key symbolism include the following.

The key of G major for music which expresses the yearning for the fulfillment of love:

"Amen de Désir" ("Visions de l'Amen")

"L'Amour de Piroutcha" ("Harawi")

1 : The Author's preface to the score of "Quatour pour la fin du Temps".

The key of E minor, in conjunction with the second mode of limited transposition, for the expression of Christ's sufferings:

"La Croix" ("Les Offrandes oubliées")

"Jésus accepte la souffrance" ("La Nativité du Siegneur")

The key of E major, in a number of slow movements, to express an atmosphere of mysticism and praise:

"Louange à l'Eternité de Jésus" ("Quatour pour la fin du Temps")

"Louange à l'Immortalité de Jésus" ("Quatour pour la fin du Temps")

"Desseins éternels" ("La Nativité")

The key of F-sharp major combined with the second mode of limited transposition, to express ideal or divine love, in a number of slow movements:

Divine Love for Man revealed in the Eucharist:

"Le Banquet céleste"

"O Sacrum convivium"

"Le baiser de l'Enfant-Jésus" ("Vingt Regards")

God's Love for his Son, and through his Son, for Mankind:

"Regard du Père" ("Vingt Regards")

"Regard du Fils sur le Fils" ("Vingt Regards")

"Je dors, mais mon coeur veille" ("Vingt Regards")

The fulfillment of Divine Love:

The second part of "Combat de la Mort et de la Vie" ("Les Corps Glorieux")

The fulfillment of ideal human love:

"Amour, oiseau d'étoile" ("Harawi")

"Jardin du Sommeil d'Amour" ("Turangalîla-Symphonie")

There is one other form of musical symbolism in Messiaen's music which needs to be mentioned. It concerns his use of cyclic or recurring themes. Of course a cyclic theme - acting as a unifying agent within and/or between the various sections of a composition - is nothing new. But apart from actual cyclic themes, like those in "Vingt Regards" and "Visions de l'Amen", Messiaen also employs recurring themes in different compositions,

specifically for their associative and symbolic value, e.g. the "love theme" from "Turangalîla" which recurs in "Cinq Rechants" and in "Cantéyodjayâ", the "flower theme", also from "Turangalîla", which recurs in the "Catalogue d'Oiseaux", and a subsidiary theme from the second movement of "Turangalîla" which reappears in "Cinq Rechants", "Cantéyodjayâ" and "Le Merle noir".

Naturally it is in Messiaen's texts - the quotations which precede the separate movements of a composition, or Messiaen's own poems which he has set to music - that one finds the clearest indications of his symbolic (and sometimes surrealist) tendencies in verbal and musical imagery.

On the first, primary level of verbal symbolism there are the words - names and titles - the meanings of which hold a certain symbolic potential for Messiaen. Words like the Sanskrit "Turangalîla", which contains a wealth of meaning: "turanga" - time, rhythm and movement; "lîla" - love, divine and cosmic play, the play of life and death; thus "Turangalîla" - a hymn to, and of, Time, love, life and death, joy, rhythm and movement. Or the Greek compound "Chronochromie": the colour of Time. Or "Harawi": the Quechua word for a love song which ends in the death of the lovers.

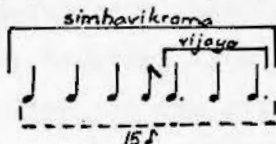
In the composition of "Couleurs de la Cité céleste" Messiaen chose his rhythmic material from the Sharngadeva collection¹ according to the meanings of their names:

- tritîya : (the third Sharngadeva rhythm) symbolic of the Trinity;
- pratapaçekhara : "most beautiful splendour";
- vijaya : "victory";
- râgavardhana : "increasing in colour / growing in love";
- gajalîla : "the game / play of the elephant" - The elephant god, Ganesha, has the symbolic number 4. The rhythm, gajalîla, has four durations, the fourth of which is dotted and symbolizes "illumination of the mind / enlightenment".

Also very interesting is the symbolism in "Et expecto resurrectionem mortuorum". For the second movement, which has as its theme the quotation "Christ risen from the dead, will die no more; death has no more power over him", Messiaen chose the two Sharngadeva rhythms, simhavikrama ("the

1 : See Appendix I-E, pp.118-125.

power of the lion") and vijaya ("victory"), the second of which is contained in the first:



The symbolism extends to the durations themselves: a total of 15 values - the number of the Trinity multiplied by the number of the Hindu god, Shiva (symbolic of Christ as the conqueror of Death)¹. Thus, simply through the choice of these two Sharngadeva rhythms, Messiaen expresses in symbolic durational terms the theological content of the music - the powerful victory of Christ over Death.

The following are three of the most striking examples of verbal symbolism in Messiaen's music.

(i) An example of what one might call, "salvation" symbolism:

Symbols of imperfection are contrasted with symbols of perfection, and then replaced by symbols of liberation from the original state. In "Minuit pile et face" (from "Chants de terre et de ciel") the father becomes aware of his own fall from grace while contemplating his baby son's purity and innocence, but he finds redemption in his appeal to God, "the Father of light, Christ the Vine of Love, and the Spirit, the Comforter with seven Gifts."

(ii) An example of Time symbolism:

In the last movement of the "Trois petites liturgies de la Présence divine" Messiaen speaks of:

"Time of man and of the planet, time of the mountain and the insect....From the depths a ripple arises, the mountain leaps like a sheep and becomes a great ocean. You are present, really present."²

Through Time - Time in all its experiential manifestations - the eternal

1 : See p.57.

2 : There is an implicit reference here to Psalm 114: "The mountains skipped like rams, and the hills like lambs....Dance, O Earth, at the presence of the Lord, at the presence of the God of Jacob, who turned the rock into a pool of water, the granite cliff into a fountain."

Present is attained. To know Time fully is to conquer Time. This, however, is but the first level of Messiaen's symbolic intention. In this passage Messiaen identifies temporal Creation with its Creator. He expresses joy at the revelation, through Time, of the presence of Eternal God in Nature, and the revelation, through His Son, of the presence of Eternal God in Time / the temporal world, and finally, the revelation, to Man, of (the gift of) the Eternal Present - free from the consequences of temporality and mortality - through the intervention of Christ.

(iii) An Example of Love symbolism:

In "Harawi", subtitled "Chant d'amour et de mort", Messiaen traces the symbolic journey of love, from its revelation in a human relationship, temporal and imperfect, through the ritual transformation of sacrificial death, to ideal love in eternity. The woman, Piroutcha (addressed as "colombe verte" - the sacred Maya symbol for the beloved) is transformed into the woman (in the painting, "Seeing is believing" (1938), by Sir William Penrose) who becomes the symbol of Man's desire - no longer for earthly, temporal love, but for divine love, salvation, liberation and eternity. The fourth movement of "Harawi", "Doundou tchil", represents the ritual of courtship. In "L'Amour de Piroutcha" Messiaen introduces death as the inevitable counterpart of love. The lovers long for the death which would bring the higher, perfect fulfillment of their sacrificed love ("Cut off my head, Doundou tchil"). The sixth movement, "Répétition planétaire", represents the lovers' ritual spiral ascent from Time to Eternity, from earthly love, through death, to perfect, ideal love. They travel through a frightening, threatening world ("Escalier tournant, Tourbillon, Étoile rouge, Tourbillon, Planète mange en tournant") which recalls the turmoil of the Creation in "Regard du Père" (from "Vingt Regards") - "galaxies, photons, spirals in contrary motion, inverted lightning flashes.... reveal to us the luminous shadow of his voice.... the face of God behind the flame". This resemblance is very appropriate and indeed, one is inclined to think, intentional - the ritual spiral being the symbol of rebirth¹, the lovers' and their love (in "Harawi") are being re-created; the creation of a new consciousness (a new love in life after death) as a parallel to the Greek "Têlêté" - "the rite of growing up"². There follows a ritual death with

1 : See the Ecstatic Spiral, in Chapter VIII, pp. 97, 105.

2 : p.2.

echoes of primitive black magic ("Mapa, nama, nama, tchil") and desolation ("Bestride a dark cry, dark echo of time, a cry out of eternity, before the earth was formed..."). Finally the imperfect love of "Doundou tchil" and "L'Amour de Piroutcha" has become, through the mythological ritual and transformation of death - the sacrifice of the imperfect physical self in "Adieu" - the perfect, liberated and ecstatic love of "Escalier redit, gestes du soleil" and "Amour oiseau d'étoile". The courtship ritual of "Doundou tchil" has become the expanded ecstatic ritual of "L'Escalier redit", which unites all of Creation in the recurrent refrain, "Du ciel, de l'eau, du temps..."¹

This ecstatic ritual of ultimate, ideal Time in Eternity is the aim of Messiaen's rhythmic language. In other words, Messiaen believes that ecstatic liberation from Time can be obtained by means of rhythm. Why should he wish for such a liberation through rhythm? Again the answer is to be found in his religious convictions. Messiaen's view of Time is at once Judeo-Christian and Platonic: Man exists in a dual world - he leads a lower, temporal existence while possessing the potential of a higher, timeless (i.e. eternal) consciousness; access to this ideal world outside Time may be obtained through the conquest of Time - either in death, through sacrificial Redemption, or in life, through intellectual and artistic creative endeavour. Religion, and religion expanded into a ritual which encompasses all aspects of consciousness, must transcend Real Time and Space, if it is to attain its goal - if it is to transport the believer to a spiritual plane where he will no longer "see only puzzling reflections in a mirror, but...shall see face to face."²

And it is here, in the wish to transcend the consciousness of Real Time and Space while remaining IN Time and Space, that one finds the resolution of two apparent paradoxes in Messiaen's music. In the first instance, Messiaen's yearning for religious fulfillment and the sublimation of love at the end of Time, have inspired in him an attitude of protest against Time and the wish to escape from physical and temporal existence, yet a prominent theme in his music is the intimate communion with Nature,

1 : cf. Stockhausen's ideal of a united universal consciousness through the ascent of the Ecstatic Spiral, p.105-6

2 : The first Epistle of St Paul to the Corinthians, Chapter 13 verse 12.

which represents an intense and conscious existence WITHIN Time. Thus: a desire both to transcend temporality and to experience temporality. A seeming conflict flows from this paradox. Messiaen advocates a musical lyricism in the form of a melodic inspiration, free from Time. At the same time he has devoted a major portion of his creative energy to the study of temporal organization, which frequently results in a very rigorous and immensely complex rhythmic discipline. But there is in fact no real conflicts or paradoxes in either Messiaen's aesthetic or his music. Messiaen has found the solution to these "inconsistencies" in birdsong. The free, natural music of birds, who - as the only creatures (beside Man) that emit musical sounds - represent the "opposite of Time",¹ has revealed to Messiaen a pure lyricism which transcends Real Time, even while being a hymn of praise TO and IN Time. For Messiaen the song of birds is the spontaneous musical expression of freedom, joy, love - WITHIN Time, yet free of Time.

Messiaen's view of Time and his faith in its ritual potential give to his music a number of characteristics which frequently result in an impression of stasis, immobility - a lack of dramatic development. These musical characteristics include various "foreign" musical resources (e.g. Eastern musical instruments, and an onomatopoeic-influenced choice of texts as in "Harawi" and "Sept Haïkaï") and, especially, certain compositional devices which influence the melodic, harmonic, rhythmic and timbral aspects of a composition. Most important, and perhaps most immediately obvious of these, is, of course, the rhythmic aspect. Messiaen has constructed his rhythmic language in such a way that his music may transport the listener out of his Real-Time consciousness - an effect noted by Nicholas Armfelt:²

"One of the most striking features of some of Messiaen's music is that it makes one conscious that everything in it is within the context of something bigger. There is the sound behind the sound, the longer duration behind the shorter one, the slower rhythm behind the quicker one. And behind all movement there is an awareness of stillness, behind all sound an awareness of silence, and

1 : p.63.

2 : Nicholas Armfelt: "Emotion in the Music of Messiaen", p.857.
in The Musical Times no.106, November 1965.

behind all measured time an awareness of eternity."¹

"The characteristic effect of Messiaen's music is to induce in the listener a trance-like state of heightened response to every single instant², a state wherein he experiences simultaneously different rates of time-flow. This is sometimes achieved, of course, by superimposing several rhythms. More amazingly, it is also often achieved by the juxtaposition of contrasting rhythms, where one's sense of the first rhythm continues to be effective long after it has been succeeded by another. Paradoxically, the result of all this is to make the listener feel outside time, so that all the movement seems but a complex decoration of an eternal stillness behind all things."³

Before discussing the Time dimension in Messiaen's music, however, it is necessary to take a brief look at the spatial dimension of his music - harmony and its association with colour.

Harmony in Messiaen's music is used for its colouristic effect rather than its potential for dynamic progression within the hierarchical chord system of functional (tonal) harmony. Added note chords, extensions of the appoggiatura and Messiaen's modes of limited transposition are all used for their contribution to the vertical spatial dimension of music. This harmonic concern for the experience of the "moment"⁴ extends, naturally, to orchestration, and further, to colour symbolism. Messiaen's music is very "visual" in this sense and indicates, indeed, a colour-music-association which goes beyond symbolism. Messiaen regards the experience of colour through visual association with aural experience, as a definite reality. In "Couleurs de la Cité céleste", especially, colour is a prime consideration:

1 : cf. p.54.

2 : cf. p 105.

3 : cf. p.51: "the still point of the turning world" in Webern's music.

4 : cf. pp.31 and 98 : the "moment" in Debussy and Stockhausen.

"The form of the work depends entirely on colours. The melodic or rhythmic themes, the combinations of sounds and of timbres, change in the manner of colours."

"I have noted the names of these colours in the score in order to communicate the vision to the conductor, who will, in turn, transmit the vision to the players he is conducting; it is essential, I would go so far as to say, that the brass 'play red', that the woodwind 'play blue', etc...."¹

This colour consciousness reflects yet another facet of Messiaen's religious personality. As a Catholic, the traditional religious rites of his church have for him very strong and very special associations. It is only natural that Messiaen, when composing music about the Holy City - the eternal destiny upon which his faith is centered - should do so in a musical language which evokes the collage of colour and sacred symbols of "stained-glass windows" and "theological rainbows".²

During a lecture which he gave at the "Conference de Bruxelles" in 1958, Messiaen said:

"Let us not forget that the first, essential element in music is rhythm..."³

Rhythm is certainly an essential element in Messiaen's music. His rhythmic language has evolved into a vital, complex and integrated whole. Messiaen's starting point was the individual and independent duration.

"Suppose that there were a single beat in all the universe. One beat; with eternity before it and eternity after it. A

1 : "Première Note de l'Auteur" in the score of "Couleurs de la Cité céleste".

2 : Preface to "Technique de mon Langage Musical", op cit.

3 : op cit.

before and an after. That is the birth of time. Imagine then, almost immediately, a second beat. Since any beat is prolonged by the silence which follows it, the second beat will be longer than the first. Another number, another duration. That is the birth of rhythm."¹

A brief explanation will clarify the development of rhythm from the addition of durations as opposed to regular metrical division. Experience of Real Time results from the experience of change in environmental conditions. Experience of musical time results from the aural experience of change in the constitution of a musical event, or alternatively, the aural experience of the change from one musical event to another². The perception of rhythm is the result of the perceptual structuring / patterning of the different durations which separate the initiation of different (succeeding) musical events. The rhythm of a passage, therefore, is the consequence of an accumulation of a number of different durations; rhythm is the sum-total of a certain number of individual durations, in a particular order determined by the composer.

Messiaen's interest in the single durational value is especially apparent in a feature of his rhythmic technique which occurs frequently in the compositions of the first period of his creative career - Addition of durational values. (Of course this technique occurs throughout all of Messiaen's later works as well, but there it has become integrated and absorbed into other, more complex, devices of the composer's rhythmic language.) In his "Technique de mon Langage Musical" Messiaen explains the technique of Added Values³. A note value, dot or rest is added to one or more elements of a rhythmic cell:

Example 11 :



+ : added durational values

1 : Ibid.

2 : cf. p.49.

3 : op cit., Chapter III, p.16.

This technique holds a three-fold attraction for the composer. In the first instance, the addition of an extra durational value shifts the metric balance and helps to counteract the tendency, on the part of the listener - conditioned by centuries of rhythmic "hearing" instead of rhythmic "listening" - of barline or regular-metre anticipation.

"A rhythmic music is one that disregards repetition, squareness, and regular division, a music that is, in short, inspired by the movement of nature, a movement of free and uneven durations."¹

An added duration may add additional expression to a chosen segment of the melodic-rhythmic preparation-accent-termination progression. And, finally, through the addition of a single unitary value, the number of durations in a rhythmic cell may be transformed into a prime number - a numerical favourite of the composer.

Example 12 :

"Danse de la fureur" ("Quatour pour la fin du Temps.")



Having established the free multiplication of the single duration as his point of departure, Messiaen was able to organize the durations in various forms of temporal discipline. The pre-conception of durational freedom enabled Messiaen to adapt serial, Greek and, especially, Indian rhythmic characteristics for his own use. Serialized rhythm occurs only a few times; Greek rhythms are used a number of times, mostly in their original forms; but Indian rhythms, although they are frequently used in their original forms, have served to generate most of Messiaen's techniques of rhythmic organization and transformation. The following discussion of Messiaen's rhythmic language will, therefore, take the form of three

1 : Messiaen; Quoted in John Vinton's "Dictionary of 20th-century Music", p.476. (Thames and Hudson, London. 1971.)

categories (Serialized rhythm, Greek rhythms, Indian rhythms), the last of which is subdivided into five sub-categories - accurate use of original Indian rhythms, Augmentation and Diminution, Non-retrogradable rhythms, Independent tâlas, and "Personnages rythmiques".

Serialized rhythm:

Messiaen has written only one twelve-tone serial piece of music - the fifth movement of the "Livre d'Orgue" (1951). Twelve-tone series appear throughout the composition except in the fourth and seventh movements, but it is only in the fifth movement, "Pièce en Trio II", that the twelve-tone pitch series is used according to strict rules of dodecaphonic practice. The rhythm in this piece is completely independent from the pitch structure: a free rhythmic structure in the pedals, and six Hindu rhythms treated as "personnages rythmiques"¹ in the manual parts. However, although Messiaen has not written any other works in the serial idiom, serial techniques have influenced some of his methods of durational organization.

An early example occurs in "Cantéyodjayâ". In the last couplet of the first section of the work Messiaen utilizes a "mode de durées, de hauteurs et d'intensités". The mode consists of three groups of eight different notes each with fixed register, duration and intensity. This indicates a practice opposite to that of twelve-tone serialism: in dodecaphonic music the order of the elements in the series are fixed while the parameters of the different elements are free; Messiaen leaves the order of progression free but fixes the parameters. In the strophes of "Neumes Rythmiques" - marked "neumes rythmiques, avec résonances et intensités fixes" - Messiaen applies the principle of serially fixed parameters to short rhythmic groups.

"Mode de valeurs et d'intensités", the second piece of the "Études de rythme", is composed around a mode of 36 pitches, a rhythmic mode of 24 different durations, a mode of 7 different intensities, and a mode of 12 different keyboard attacks. As the title of the work indicates, the "series" are treated in a modal rather than a serial manner. The result of this modal compositional treatment is one of continuous external variation of internally static and fixed compositional elements.

1 : cf. p.56 and p.86.

The last piece of the "Études de rythme", "Île de feu II", extends the serially derived characteristics of "Mode de valeurs et d'intensités" in its episodes, which are based on a mode of 12 durations, 12 pitches, 4 attacks and 5 intensities. "Île de feu II" also serves to illustrate another "serial" procedure in Messiaen's technique - the derivation of a number of interversions/permutations from the original series - in Messiaen's case, a durational series. The original series is chosen to resemble the form of an "opening fan":¹

from 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12

to 6 - 7 - 5 - 8 - 4 - 9 - 3 - 10 - 2 - 11 - 1 - 12

The permutations are then derived, each from the previous permuted series, by means of the same procedure.

In the second section of the last movement of "Livre d'Orgue" a similar procedure is employed, as is the case in the seventh movement of the work, where the "open fan" form of the series is superimposed on the "closed fan" form of the series (i.e. the retrograde form of the original series). The most extensive and certainly the most complex instance of these serially-derived permutations of durations is to be found in "Chronochromie" in which the Strophes (the first and third movements) are based on three superimposed permutations of 32 chromatic durations which are divided into five groups.

Greek rhythms:

Messiaen has used Greek rhythms, in their original form, in a number of compositions. They include the following:

"Joie et clarté des Corps Glorieux" (from "Les Corps Glorieux")

Example 13 :



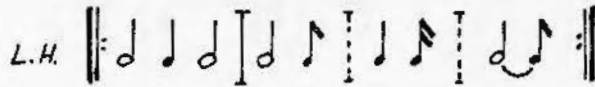
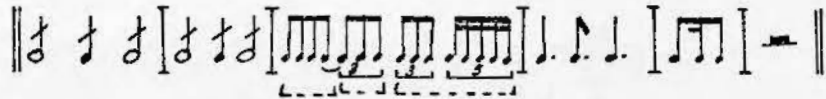
1 : This is, of course, an example of a multiple summation series, but more about summation series later, on p.99.

"Visions de l'Amen":

Example 14 :

Cretic feet:

First Piano: R.H.



"Sept Haïkaï":

Example 15 :

1st Cretic tetrametre:



2nd Cretic tetrametre:



3rd Cretic tetrametre:



Phalaccon :



Original metres:



Pherecratean: 

Phalacean: 

Adonic: 

Greek rhythms are used also in "Danse de la fureur" (from "Quatour pour la fin du Temps"), "Messe de la Pentecôte", "Cinq Rechants", "Couleurs de la Cité céleste" and "Oiseaux Exotiques".

In "Sept Haïkaï" Indian rhythms are used to illustrate a rhythmic practice derived from Greek poetry - "metabole", in which one rhythmic "character" is gradually transformed into another. In this case the Indian rhythm, simhavikrama, changes into miçra varna.¹

1 : See p. 81.

Also Appendix I-E, pp.118-9.

Indian rhythms:

Except for a few instances where Messiaen used a number of *jâti*s ("melodic formulae which were the foundation or origin of more complex *râgas* of later (Indian) music"¹, see Example 16) and rhythms of the Karnatic system (e.g. the rhythms, *matsya-sankirna*, *triputa-mishra*, *matsya-tishra* and *atatâla-cundh*, which are used in "Oiseaux Exotiques"), his main source of Eastern rhythmic inspiration has been the collection of 120 *deci-tâlas* compiled by the Hindu theoretician, *Sharngadeva* (*Carngadeva*).² Messiaen has incorporated these rhythms into his music, or used them as source material for the derivation of the rhythmic devices discussed below.

Example 16 :

Jâti "ândhri":



"Cinq Rechants":



Jâti "shâdji":



"L'Ange aux Parfums":



"Force et Agilité des Corps Glorieux"



1 : Robert Sherlaw Johnson: "Messiaen", p.21.

(Dent, London. 1975.)

2 : See Appendix I-E, pp.118-125.

"Île de Feu II"

p. 8, bar 3

p. 9, bar 1, 3rd note

p. 9, bar 10, 5th note.

The following are a few examples of Sharngadeva rhythms, in their original form, in Messiaen's music.

In "Le Mystère de la Sainte Trinité" (the last piece of "Les Corps Glorieux") and in "Dieu parmi nous" (the last piece of "La Nativité") Messiaen uses three Sharngadeva rhythms which occur with great frequency throughout his work, and which seem to be three of his most favourite rhythmic patterns. The rhythms are râgavardhana (no.93), candrakalâ (no.105) and lackskmica (no.88):

Example 17 :

These rhythms are put to interesting use in "Visions de l'Amen", where the main cyclic theme appears in all three tâlas:

(Example 18, p.80)

Example 18 :



In "Le Verbe" (the fourth piece of "La Nativité") two Sharngadeva rhythms, turangalîla (no.33) and sârasa (no.103), are superimposed in a polyrhythmic passage. Both rhythms are repeated over and over, and due to the fact that the duration of turangalîla consists of 10 unitary values and the duration of sârasa of 9 unitary values, the vertical durational relationships are constantly changing:

Example 19 :



In the "Offertoire" from the "Messe de la Pentecôte" three Sharngadeva rhythms, tritiya (no.3), caturthaka (no.4) and nihçankalîla (no.6), are treated as "personnages rythmiques"¹. This practice is also used in the first movement of the "Livre d'Orgue", but here the Sharngadeva rhythms involved are: pratapaçekhara (no.75), gajajhampa (no.77) and sârasa (no.103). In the fifth movement of the same work, this technique ("personnages rythmiques") is applied to two groups of Sharngadeva rhythms, three rhythms in each group: laya (no.106), niççanka (no.109), bhagna (no.116); caccarî (no.15), rangapradîpaka (no.24) and sama (no.53).

In the first piece of the "Sept Haïkaï" Messiaen uses a tâla consisting of six Sharngadeva rhythms: sama (no.53), vijaya (no.51), simhavikrama (no.8), gajajhampa (no.77), lackskmica (no.88) and candrakalâ (no.105). The tâla is assigned to the piano part and its retrograde form (which is superimposed on the original tâla) is given to the woodwind. This passage is repeated in the coda, where the original tâla appears on woodwind and the retrograde form of the tâla on the piano. In the first and last pieces

1 : See p.86.

of the same composition the Sharngadeva rhythm, *simhavikrama*, is transformed into *micra varna* - the "metabole" mentioned earlier in connection with Greek rhythms.¹

The first movement of "Trois petites liturgies de la Présence divine" provides a very interesting example of the application of the durational characteristics of a Sharngadeva rhythm to sectional construction. The first section of the movement is divided into a number of sub-sections, the first three of which are of interest here. The vocal part in these three sections has the following rhythmic structure: (the unitary value in this case is the quaver)

The durational values of the sounded notes define three non-retrogradable² cells - characteristic of the rhythm, *râgavardhana*:

7 - 8 - 7, 7 - 10 - 7, 7 - 12 - 7

Furthermore, the total durational value of the first four sub-sections also resemble the characteristic shape of *râgavardana*:

Durations of the subsections: 40 - 54 - 52 - 80

Durations of *râgavardhana* : 2 - 3 - 2 - 12

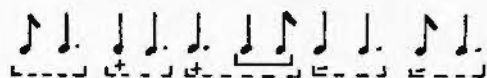
♪ ♪ ♪ ↓

1 : p.77.

2 : See p.84.

Rhythmic Augmentation / Diminution:

Messiaen has derived his technique of augmentation / diminution through addition / subtraction of fractional amounts - an extension of the traditional augmentation by multiplication and diminution by division - from the Sharngadeva rhythm, *simhavikridita* (no.27):



This technique of rhythmic development may be applied in three different ways:

(i) The duration of a simple rhythmic cell (just a single duration) is progressively increased or decreased. In the first movement of the "Turangalila-Symphonie" the cymbal plays a chromatic series of durations (from 7 ♪ to 17 ♪) alternately expanding and contracting. Another chromatic sequence of durations, diminishing from 16 ♪ to 1 ♪ by the subtraction of 1 ♪ each time, occurs in the left hand part at the beginning of "Regard des prophètes, des bergers et des mages" (from "Vingt Regards").

An extension of this technique, so-called "chromatic rhythm"¹, is to be found in the "Turangalila-Symphonie". The duration of the single-value rhythmic cell is progressively diminished according to an arithmetical progression:

Example 20 :

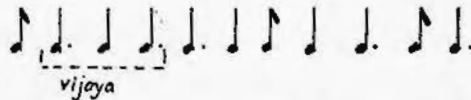


(ii) Only part of a rhythmic cell is augmented / diminished; in other words, the technique of augmentation / diminution is applied to only one, or a few of the elements of a rhythmic cell, while the other elements are left unchanged. (Example 21, p.83)

1 : David Drew: "Messiaen: A Provisional Study", p.48.
in The Score no.10, December 1954.

Non-retrogradable rhythms:

One of Messiaen's most favourite structures. It is derived from the Sharngadeva rhythm, vijaya, which also appears in the Sharngadeva rhythm, simhavikrīdita:



A non-retrogradable rhythm consists of a rhythmic cell or pattern which can be played backwards without any change in the rhythmic result. It usually takes the form of a rhythmic cell and its retrograde arranged around a common central value (e.g. in vijaya.) From this technical basis Messiaen has derived a number of rhythmic procedures: various retrograde symmetries¹ and the application of the principle of retrogradation to original rhythmic (or melodic-rhythmic) structures, e.g. in the "Turangalīla-Symphonie", from which the following three examples are taken.

(1) In "Turangalīla II", the seventh movement of the "Turangalīla-Symphonie", the elements of the chromatic durational sequence from 1 ♪ to 16 ♪ are distributed over various instrumental parts and then treated as non-retrogradable rhythms:

A	Triangle	15	13	3	4	/	15	13	...
B	Wood-block	12	14	1	2	7	8	16	/ 12 ...
C	Turkish cymbal	5	6	9	11	10	/	5	6 ...
A (retrograde)	Maracas	4	3	13	15	/	4	3	13 ...
B (retrograde)	Chinese cymbal	16	8	7	2	1	14	12	/ 16 ...
C (retrograde)	Bass drum	10	11	9	6	5	/	10	...

The same procedure is adopted in "Turangalīla III", the ninth movement of the work, in the passage beginning at 5 : the durational values of a series (1 ♪ to 17 ♪) are divided into three rhythmic groups and distributed among five percussion instruments in their original and retrograde forms: (p.85)

1 : cf. Retrograde symmetries in "Le Sacre du Printemps", pp.37-8.

Wood-block:	4	5	7	3	2	1	6	17	14/8	9	10	16	12	15			
Tam-tam:	8	9	10	16	12	15/4	5	7	3	2	1	6	17	14			
Cymbal:	(7)	11	13	11	13	11	13	(11)	14	17	6	1	2	3	7	5	4
Tambour:	(11)	14	17	6	1	2	3	7	5	4	(7)	11	13	11	13	11	13
Maracas:	(1)	15	12	16	10	9	8	(1)	15	12	16	10	9	8			

(ii) In the first and last sections of "Jardin du Sommeil d'Amour", the sixth movement of the work, the vibraphone plays a melody with a rhythmic structure which contracts and expands a number of times, but always remains non-retrogradable:

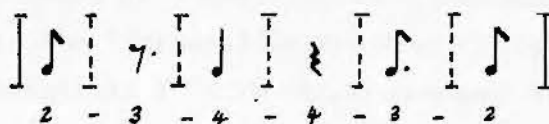
Example 24 :



Sequence of Durations: 8 - 4 - 2 - 3 - 4 - 7 - 4 - 3 - 2 - 4 - 8 .

(iii) Also in "Jardin du Sommeil d'Amour" Messiaen uses a retrograde tâla (in the left hand of the celesta part) which incorporates silences as durational values:¹

Example 25 :



2 - 3 - 4 - 4 - 3 - 2

1 : Stravinsky had already done something similar in the "Danse Sacrale", where he utilized silences as functional durational values, rather than "rests" or punctuation marks which serve only to define melodic-rhythmic phrase structures; cf. p.41, Example 6.

"Personnages rythmiques":

This technique is a development of rhythmic augmentation and diminution which Messiaen explains as follows:

"Let us imagine a stage on which we place three characters. The first acts; he even acts brutally by striking the second. The second person is 'acted' upon, since his actions are dominated by those of the first character. Finally, the third character is present at the conflict and remains inactive. If we transfer this analogy into the realm of rhythm, we obtain three rhythmic groups: in the first the durations are always increasing - this is the attacking character; in the second the durations decrease - this is the character who is attacked; and in the third the durations do not change - this is the immobile character."¹

Messiaen adds that this technique of rhythmic transformation has been inspired by Stravinsky's rhythmic procedures in the "Dance Sacrale" from "Le Sacre du Printemps"². Examples of "personnages rythmiques" have already been mentioned in connection with Sharngadeva rhythms³. Another example occurs in the "Turangalîla-Symphonie": In the fourth and fifth sections of "Turangalîla I" (the third movement of the work) the bass drum plays a rhythm which increases from 1 ♪ to 8 ♪ and then decreases to 1 ♪ again; the maracas play a rhythm which decreases from 8 ♪ to 1 ♪ and then increases to 8 ♪ again; the woodblock plays an unchanging 5-♪ non-retrogradable rhythm.

Examples of "personnages rythmiques" are also to be found in the fifth movement of the "Livre d'Orgue", the "Offertoire" from the "Messe de la Pentecôte" and in "Amen d'étoile" from "Visions de l'Amen". This latter example, from the "Visions de l'Amen", is particularly interesting as the three rhythmic characters appear in superposition. The right hand (a chord

1 : Quoted by Robert Sherlaw Johnson, op cit., p.36.

2 : pp.40-1.

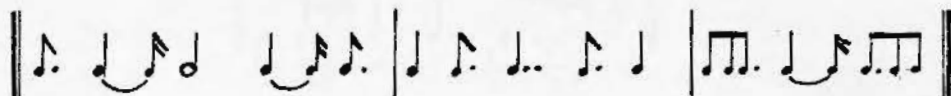
3 : p.80.

Tâla 2:

in e.g. "Danse de la fureur" ("Quatour pour la fin du Temps")

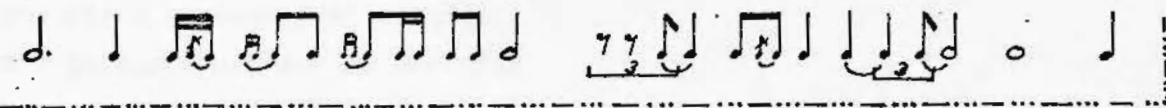
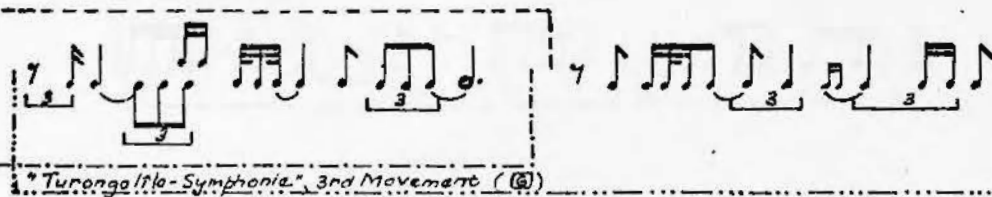
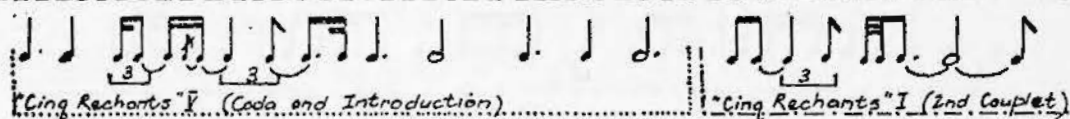
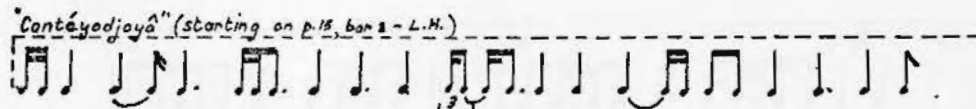
"Visions de l'Amen"

"Par Lui a été fait" ("Vingt Regards")



Tâla 3:


The sections which make up the complete tâla appear in "Cantéyodjayâ", "Cinq Rechants" and the third movement of the "Turangalîla-Symphonie".

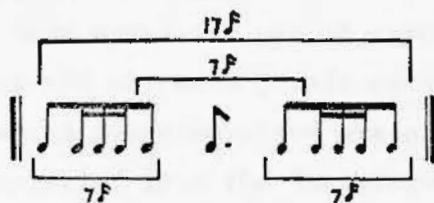


Tâla 4 is just a chromatic sequence of durational values, alternately expanding and contracting from 7 ♪ to 17 ♪.¹

1 : cf. p.82.

Tâla 5:

A complex of non-retrogradable rhythms. It is built up from a rhythmic cell which consists of three overlapping 7- sub-cells:



To this rhythmic cell is added three augmentations of the cell; these four statements then make up the complete tâla, which yields a number of non-retrogradable rhythms as well as larger non-retrogradable patterns which stretch over two statements of the complete tâla.



- 1 - 8 : Non-retrogradable rhythms
- 1 - 4 : First statement of the tâla
- 4 - 8 : Second statement of the tâla

It must be emphasized that these remarks (pp.71-90) represent but the briefest possible discussion of Messiaen's rhythmic language. However, it does serve to illustrate one point: Messiaen's rhythm is a truly liberated rhythm, which is at once free to be independently structured, and free to relate to other musical parameters, because Messiaen has found an independent and self-sufficient temporal discipline.

Apart from the fact that Messiaen's rhythm may be allied (equally, and through independent choice) with other musical parameters, the time dimension may also, and often does, associate with the space dimension in the creation of a space-time consciousness which indicates a natural post-Webern¹ development. Various factors in Messiaen's music contribute towards this space-time language. Messiaen's colour consciousness and colour-music association; visual inspiration for a number of compositions, among them the paintings which inspired "Vingt Regards"² and the Japanese temples which inspired the second and fifth movements of "Sept Haïkaï"²; and the melodic-harmonic counterparts of rhythmic techniques: added-note chords and extensions of the appoggiatura to complement the added durational value, modes of limited transposition to complement non-retrogradable rhythms and the technique of "agrandissement asymétrique" to complement that of "personnages rythmiques".⁴

1 : cf. p.49.

2 : "'Première Communion de la Vierge' (no.9) is based on a painting showing the Virgin kneeling in contemplation, worshipping the child in her womb; 'Le baiser de l'Enfant-Jésus' (no.15) is derived from an engraving of the child Jesus leaving his mother's arms to embrace St Thérèse of Lisieux; and 'Regard de l'Onction terrible' (no.XVIII) is inspired by a tapestry representing Christ, the Word of God mounted on a horse.... revealed in battle..." Robert Sherlaw Johnson, op cit., p.71.

3 : "Both the second and fifth pieces are musical paintings of Japanese temples. The second, 'Le parc de Nara et les lanternes de pierre', is an impression of the four Buddhist temples of Nara and the three thousand stone lanterns which huddle together as far as the eye can see; the fifth, 'Miyajima et le torii dans le mer', evokes the colours of the red and white Shinto temple of Miyajima with its large red gate of 'Torii' half-submerged in the blue sea. Behind them is a mountain covered in deep green Japanese pines and maple trees." Ibid, p.163.

4 : See Appendix I-C, p.115.

In conclusion, a summary of Messiaen's musico-temporal aesthetic. Messiaen, motivated by his religious convictions, wishes to escape or transcend present, Real Time and Space. His yearning for a transcended Time and Space (Love and Faith - the relationship of Man with his fellow men and with his God - fulfilled in Eternity) is transferred to his music in the form of ritual symbolism and an intensive exploration of musical time. Messiaen attempts to transcend his imperfect physical existence in present Time and Space - to attain a perfect existence by entering a new Space, outside Time, through the conquest of Time itself.

And so Messiaen's music is predominantly music about ritual.¹ It represents the expression of a vision of a world and an age which needs, and which longs for, escape from its troubled material existence. It is the sincere confession of a religious twentieth-century musician whose eyes do not yet see, but whose heart hopes for a life after death - "radiant life inconceivable"²; a composer whose music is, in the words of St Thomas:³

"The exaltation of the mind derived from things eternal,
bursting forth in sound."

The following passage is taken from "The Rainbow" by D.H.Lawrence.⁴ But surely it could have been written as a description of Messiaen's music: the church, the eternal silence, the birth and death - the transition of life, the rainbow, the jewelled gloom, the music....

1 : cf. p.67.

2 : See below.

3 : Quoted by Jonathan Cott, p. cit., p.11.

4 : pp. 201-2 in the 1975 Penguin Edition.

"Away from time, always outside of time! Between east and west, between dawn and sunset, the church lay like a seed in silence, dark before germination, silenced after death. Containing birth and death, potential with all the noise and transition of life, the cathedral remained hushed, a great, involved seed, whereof the flower would be radiant life inconceivable, but whose beginning and whose end were the circle of silence. Spanned round with the rainbow, the jewelled gloom folded music upon silence, light upon darkness, fecundity upon death, as a seed folds leaf upon leaf and silence upon the root and the flower, hushing up the secret of all between its parts, the death out of which it fell, the life into which it has dropped, the immortality it involves, and the death it will embrace again. Here, in the church, 'before' and 'after' were folded together, all was contained in oneness."

VII : STOCKHAUSEN, TIME AND THE ECSTATIC SPIRAL.

In the context of this discussion the music of Karlheinz Stockhausen represents the logical conclusion of a number of lines of development: An exploration of musical ritual (Chapter II) and musical time (Chapter III); Debussy's "free flow of time", "immobility behind the mobility" and his "preoccupation with the present moment" (Chapter IV); Stravinsky's ritual and independent rhythms (Chapter V); Webern's experiential time, serial techniques, silence and dimensions of musical time and space (Chapter VI); Messiaen's "single duration", his love of nature and his concern with relationships and Eternity (Chapter VII). All these techniques and concepts are absorbed and integrated in Stockhausen's Temporal Universe.

Stockhausen realized that every element of his musical and extra-musical material, every dimension and every technique, is an element or function of Time. In other words, all the resources which are available to the composer, define or "inhabit" different regions / sections of the Time continuum. Thus duration and rhythm, transported to another, "higher-frequency" region of Time, become pitch and timbre. Moreover, radio-waves and colour are perceptual "registers" of Time; Matter itself, proved by physics to consist almost entirely of vibration, is Time; and the aural perception of space and spatial movement is in fact the result of the perception of functional temporal difference. In the same way certain traditional dualities or "opposites" (e.g. silence and sound; immobility and mobility; electronic, vocal and instrumental music and noise; organization and non-organization) are shown to be simply different parts, or interrelations of different parts, of the total Time continuum.

In order to conform to this pre-conception of an all-encompassing and all-pervading Time continuum, Stockhausen's music has to - and does - incorporate two compositional features:

- (i) An awareness of total interrelatedness, resulting in compositional techniques of Mediation and Integration;
- (ii) Techniques of temporal organization and transformation in which all parameters are equal and interrelated.

(1) Stockhausen has emphasized that his compositions, however diverse his musical resources, are not collages, and that contrast - as a technical device - is never used for its own sake, but always to illustrate an implied or hidden unity above, or within, the process of transmutation - the process in which one configuration of musical elements gradually modulates into another configuration of the same, or different, musical elements. It is a process which, although it is always implicit in the compositional structure, is quite often not completely realized in precise musical terms; i.e. the different parts or sections, or configuration of musical elements within these sections of the Time continuum, which the composer has selected for a particular composition, are clearly defined and presented together with various "in between" stages and features of the underlying continuum - thus illustrating (sometimes through a mediating agent, like the piano in "Kontakte") not an evolutionary progression from A through B and C to D, but rather the potential of such a progression, as well as the (often hitherto unexplored) multi-directional relationships between A, B, C and D. Stockhausen says, of the rôle of the piano in "Kontakte":

"The piano's rôle is to unite or to separate these categories. The electronic sound categories establish relationships and transitions between the instrumental timbres, fusing with them and departing from them towards hitherto unknown regions of sound."¹

Instances of mediation between, and integration of, different musical elements include the following:

Electronic and vocal sound:

"Mikrophonie II"

"Gesang de Jünglinge"

"Carré"

"Momente" (in which Stockhausen also explored the continuum between silence and sounded notes, and between musical notes and noise.)

1 : Karl Wörner: "Stockhausen: Life and Work", p.46.

(Faber and Faber, London. 1974.)

Organization (structured, directed motion in time) and non-organization (unstructured, aimless, undirected motion in time):

"Zyklus"

"Klavierstück X"

Different, relatively unknown or un-"traditional" musical resources:

"Kurzwellen", of which Stockhausen says:

"The earlier antitheses between old and new, between far and near, between known and unknown, are resolved.

EVERYTHING is SIMULTANEOUSLY the WHOLE."¹

"Telemusik":

"'Telemusik' is not a collage anymore. Rather, through the process of intermodulation, old objets trouvés and new sounds...are combined into a higher unity: a universality of past, present and future, of distant places and spaces..."²

"Hymnen", of which Stockhausen writes:

"Numerous compositional processes of inter-modulation were applied in 'Hymnen' (in order to achieve) the unification and integration of seemingly unrelated old and new phenomena."³

These "compositional processes" are nothing new, or forced and artificial; Stockhausen explains:⁴

"What I use is the mutation process of nature; that's what music is all about. It's an intermodulation so that one thing can change into another. (...) Many fairy tales are about this: the straw that the miller's daughter has to weave into gold in 'Rumpelstiltskin', for example. This has been in my works from the

1 : Wörner, op cit., p.68.

2 : Stockhausen's note to the recording of "Telemusik", DGG 643546.

3 : Stockhausen's note to the recording of "Hymnen", DGG 139421/22.

4 : Jonathan Cott, pp.136-7.

beginning: transubstantiation. Like the mystical moments in religion when the water is transformed into wine."¹

Of particular interest is the interrelation of Time and Space in Stockhausen's music. Webern and Messiaen had already been conscious of the relationship existing between the temporal and spatial musical dimensions.² These dimensions are deliberately externalized (i.e. transposed into the macro-time region) and explored in compositions like Stockhausen's "Gesang der Jünglinge" and "Gruppen". Further evidence of a spatial awareness and inspiration may be found in Stockhausen's colour consciousness, which is as real and sincerely felt as is the case in Messiaen's musical thought.³ There was, for example, Stockhausen's determined search for the exact shade of red-violet light for "Trans"⁴. Also "Set Sail for the Sun" and "Gold Dust" from "Aus den Seben Tagen": "Set Sail for the Sun" aims at a state of intuitive music-making where "the whole sound turns to gold, to pure, gently shimmering fire", and "Gold Dust", says Stockhausen, "refers to the experience of closing one's eyes, relaxing completely....and concentrating on the 'colour' which, after an initial gray-black, turns via a warm reddish-violet into gold dust..."⁵

1 : cf. p.67: Têlêté and Transubstantiation in Messiaen's aesthetic - Religion and Ritual as the appropriate media for the creative process of transubstantiation which leads to a new ("grown-up") consciousness.

2 : pp.49 and 91.

3 : pp.70-1.

4 : Appendix II-A, pp.126-7.

5 : Stockhausen's note to the recording of "Aus den Seben Tagen", on DGG 2720 073.

(ii) Like many other composers of his generation, Stockhausen has been greatly influenced, at least initially, by the music of Anton Webern. Webern's serial techniques have been extended and adapted to become integrated in what one might call, Stockhausen's Serial Thought - a mode of compositional thinking characterized by equal and integrated treatment of all musical parameters, and a high degree of flexibility (according to the choice of the composer) within a rigorous and consistent micro-structural as well as macro-structural discipline.

Serial thought is, of course, a natural springboard for a doctrine of mediation¹: a series (of e.g. pitches or durations) is simply an ordered collection of intermediate stages between two terminal points (of whatever dimension, description or degree of definition). It was a logical development, therefore, for Stockhausen, from mediation in micro-structure to mediation, and hence to integration, in macro-structure.

Before turning to a discussion of Stockhausen's techniques of serial temporal manipulation, just a brief reference to one other Webern-influence (albeit indirect) in Stockhausen's music. From Webern, Stockhausen inherited the concept and techniques of pointillism - composition with the single, totally defined, self-contained sonic "point". With increasing complexity the transparent pointillist texture became so dense with accumulated detail that the perception of pointillist detail gave way to statistical perception, and then, via group composition, to statistical composition, in which the over-all shape, rather than the compositional detail, was important to the listener. Thus perception of the macro-region of Time came to predominate over perception of the micro-region of Time. Between these two perceptual (and thus compositional) poles, there is a continuum, one which Stockhausen has explored in many compositions.

The pointillist "single, self-contained point", together with Debussy's "preoccupation with the present moment"² and Messiaen's concept of the "single duration" and the "accumulation of independent durations"³, contributed to the evolution of Stockhausen's "self-contained moment" and of "moment form" - a macro-structure consisting of an accumulation of self-contained moments.

1 : pp.95-7.

2 : p.31.

3 : pp.71-2.

"Each moment, whether a state or a process, is individual and self-regulated, and able to sustain an independent existence. The musical events do not take a fixed course between a determined beginning and an inevitable ending, and the moments are not merely consequents of what precedes them and antecedents of what follows; rather the concentration on the NOW - on every NOW - as if it were a vertical slice dominating over any horizontal conception of time and reaching into timelessness, which I call eternity; an eternity which does not begin at the end of time, but is attainable at every MOMENT."¹

The practical implementation of the serial principle in Stockhausen's music has a dual function: proportioning and distribution. Serial proportioning techniques are used primarily to determine micro-structural ordering, and serial distribution techniques are employed to facilitate the composition of interrelationships and macro-structures.

In his choice of series Stockhausen favours short ones which he frequently arranges in sets with the extreme elements at/near the beginning followed by a "levelling-out" of proportions, e.g. 6 - 1 - 5 - 2 - 4 - 3 (an indication of his interest, later on, in compositional "tendencies").² He sometimes employs certain mathematical series, or sections of these series, e.g. the Fibonacci series (1 - 3 - 8 - 13 - 21 - 34 - 55 - 89 - 144....); the principle of the Golden Section is derived from this series, and Stockhausen has frequently used it to determine the positioning of climaxes and compositional axes, in order to balance the experiential time proportions of different sections of a composition) as in "Adieu", and other, different summation series in e.g. the last part of "Klavierstück IX" (1 - 3 - 6 - 11 - 19 - 32 - 53 - 87 ...) and in the first moment of "Trans"

1 : Wörner quotes Stockhausen, op cit., pp.46-7.
cf. p.105.

2 : A numerical sequence such as this (cf. Messiaen's "open fan" and "closed fan" serial arrangements, p.75) yields, of course, a form of multiple (but non-accumulative) summation series.

(1 - 3 - 6 - 10 - 15 - 21 - 28 ...). A chosen series may be applied to one parameter or compositional element (pitch, duration, timbre, dynamics, tempi, intervals of entry, density, degrees of change, etc.) and allowed to interrelate with the serially structured (using different series) material; or a single series may be used in the composition of all the musical elements, relationships and compositional shapes.

Various methods of serial permutation are used to distribute the musical elements in the compositional plan - to construct supra-series which determine, for example, the number of times a certain (degree of) density should occur, at which points in the composition it might do so, how these occurrences would interrelate with the other parameters, how the appearances of the other parameter-series should be ordered, and so on. The three distribution techniques which are the most frequently used, are the following:

Various forms and derivatives of the Latin square:

e.g. this one which was used to determine the durational structure of "Klavierstück VIII":

2 - 6 - 1 - 5 - 4 - 3
6 - 5 - 3 - 2 - 1 - 4
1 - 3 - 6 - 4 - 2 - 5
5 - 2 - 4 - 6 - 3 - 1
4 - 1 - 2 - 3 - 5 - 6
3 - 4 - 5 - 1 - 6 - 2

Permutations according to the interval structure of the series

e.g. those used in the piano part of "Kontakte", or this cycle of intervals which Stockhausen used to organize the pitch structure of "Klavierstück VIII":

2 - 5 - 1 - 4 - 3
5 - 3 - 4 - 2 - 1
1 - 4 - 5 - 3 - 2
4 - 2 - 3 - 1 - 5
3 - 1 - 2 - 5 - 4

Grids:

Used in e.g. "Gruppen", the composition of the monophonic and polyphonic moments in "Stimmung" and the organization of the orchestral groups in "Trans".

From composition with series which generate the entire musical work, it was but a short step for Stockhausen to composition with melodies. In works like "Mantra" and "Inori" the proportional structure of the melody becomes the germinal "series" which defines the fundamental winding - the trajectory, so to speak - of the compositional spiral¹ - the spiral which, for Stockhausen (as for Messiaen)² leads to enlightenment. Stockhausen's idea of the ecstatic spiral, his principles of integration and universality, his concept of a total Time continuum and his serial thought - all come together in "Inori".

Before discussing "Inori" - a word of caution: The score of this composition has not yet been published and no commercial recording of the work is available; "Inori" has been performed a number of times and it has been broadcast on television - but not in South Africa. Moreover, since "Inori" is a fairly recent composition (it was completed in 1973-4), no discussion by the composer or any analysis of the work by anybody else has as yet been printed in English. The information which follows here has been obtained from Mr Kevin Volans, who conducted a series of lectures on Stockhausen's music during the 1976 Summer School at the University of Cape Town. Mr Volans, as Stockhausen's compositional assistant in Cologne, has attended a number of rehearsals and performances of "Inori" and has discussed the compositional content of the work with the composer. However, the aesthetic and philosophical interpretation of this compositional content, as well as the conclusions reached on the grounds of such an interpretation, must not be attributed to either Mr Volans or the composer, Stockhausen, himself. These remarks belong strictly within the context of this discussion, as they can, as yet, not be conclusively proved to have been the composer's philosophical and compositional intentions.

1 : cf. p.21, the spiral in twelve-tone serialism.

2 : cf. p.67.

"Inori", subtitled "Adorations for soloist and orchestra", continues Stockhausen's interest in music-as-theatre. The orchestra is seated on stage and the soloist - a dancer¹ - on a raised pedestal behind and above the orchestra. A staircase leads down from this pedestal to a small springboard on the stage. A horizontal ramp leads from the pedestal into the wings.

The work lasts for an hour and is composed in five movements. The length of each of the movements (the first of which, "Rhythmus", is discussed here) is determined by the durational proportions of the melody which forms the basis of the work. The entire composition is generated by this melody (Example 28), every pitch of which is associated with a different tempo.²

Example 28 :

MMJ = 47.5 53.5 56.5 60 63.5 67 71 75.5 80 85 90 95 101

1 : The soloist may be either male or female - the rôle has been done by both; the first performances were done by two dancers from Maurice Béjart's Ballet Company.

2 : For the form-scheme of "Inori", see Appendix II-B, p.128.

In the first movement this melody is repeated over and over, but it is never actually heard. What happens is this: Instead of using the actual pitches of the melody, Stockhausen uses the tempi associated with these pitches. The first time the melody is played through, Stockhausen uses just the first pitch-tempo, MM. ♩ = 71; i.e. the string section of the orchestra plays (on a unison G), in the tempo ♩ = 71, a pulse on every appearance in the melody, of G. With the next repetition of the melody, Stockhausen adds two more pitch-tempi: A-flat: MM. ♩ = 75.5 and F-sharp: MM. ♩ = 67. Now the strings play (still on a unison G) three different tempi: a pulse in ♩ = 71 every time a G occurs in the melody, a pulse in ♩ = 75.5 every time an A-flat occurs in the melody, and a pulse in ♩ = 67 every time an F-sharp occurs in the melody. The third time the melody is played through, two further pitch-tempi are added: A: MM. ♩ = 80 and F: MM. ♩ = 63.5; with the result that the melody is now played (on a repeated G) in five different tempi. The process continues until all the pitch-tempi have been introduced (two more, chromatically stepwise one above and one below, with every repetition of the "melody") and the audience hears one pitch (G) vibrating in twelve different tempi.

While all this is going on in the music the soloist is duplicating the process - in mime. The soloist uses a vocabulary of thirteen prayer gestures (the traditional positions of the hands used in the devotional service of various religions), each associated with a different tempo. When, for example, the orchestra plays a tempo of MM. ♩ = 80, the soloist responds with the appropriate gesture. In the first movement of the work the soloist is kneeling on the pedestal and all the gestures centre around the level of the heart, to correspond to the pitch of this section - G. When, from the second movement onwards, other pitches are introduced, the soloist stands up and uses a vertical ambitus of three octaves. Durations are indicated by horizontal extensions of the arms, so that, for a higher-frequency position on the temporal continuum (i.e. a shorter duration), the hands - in the appropriate prayer gesture - enclose a proportionally larger horizontal space. Dynamics are indicated by movements, forward and backward, of the body, and certain indications of expression in the music are associated with a number of head movements.

It is clear that the soloist's part is extremely difficult to learn and to execute. The soloist's task is further complicated by the fact that certain passages are composed and choreographed in such a way that the gestures and the music move, not in unison, but in counterpoint or canon.

Just before the climax of the work - in the fifth movement - the soloist descends the staircase to the stage floor. At the bottom of the staircase he/she stands quite still (the orchestra is silent at this point) and then drops onto one knee on the springboard which - with a sharp, clear percussive sound - propels him/her back into the upright position. The movement is repeated and then, during the orchestral "Spiral", the soloist ascends the staircase to the pedestal. The climax, at the end of "Spiral", is marked by a loud shout from the soloist ("Hu"). At the end of the work the soloist walks slowly - along the horizontal ramp - off the stage.

The prayer gestures in "Inori" bear a striking resemblance to the well-known representations in sculpture, painting and tapestry, of the Dance of Shiva.¹ Legend has it that the Creation was the result of Shiva's five-fold dance (Creation, Veiling, Preservation, Destruction and Release) through which the god attained enlightenment after subduing Asura, the daemon of ignorance.² It will be remembered that Shiva carries the symbolic number 5.³ The fifth element (as in the Sharngadeva rhythm, gajalila, which has a fifth value - a dot, symbolizing enlightenment - added to its four durations³) always represents the attainment of the ultimate consciousness, freedom and fulfillment. In "Inori" the number 5 is important: 5 movements, with the climax in the fifth, 15 bars in the "master"-melody, a total duration of 60 minutes, 20 tempo indications, and so on. It is natural, therefore, to find the parallel of enlightenment and creation of a new (spiritual) world through Shiva's dance, in "Inori".

But "Inori" takes the symbolism even further. The material which Stockhausen employs to lead up to, to bring about and to symbolize the moment of enlightenment, is a synthesis of religious symbolism, sound, dance and the ecstatic spiral - all generated by durational proportions; an organic construction OF, and IN, Time.

When one sees "Inori", not in isolation, but in relation to the compositions which preceded it - compositions like "Telemusik", "Kurzwellen", "Hymnen" and "Aus den Seben Tagen" - Stockhausen's message becomes clear.

1 : cf. p.57.

2 : See "Sacred Dance" by Maria-Gabriele Wosien, p.36.

(Thames and Hudson, London. 1974.)

3 : cf. p.65.

In the words of Sri Aurobindo:

"We may find when all the rest has failed
Hid in ourselves the key of perfect change."¹

The aesthetic implications of such a spiritual inclination is akin to Alan Bullock's "revolution in expectation"². In Messiaen's music, for example, one sees Man as the victim of Time. He hopes for ideal life, in another Space and in Eternity - an Eternity which comes at the end of Time, heralded by the angel who proclaims that "there shall be no more Time."³ Stockhausen, however, sees the potential of Eternity in every moment of Time⁴ and the possibility of ideal existence IN this life, IN present Real Time and Space. All that is needed in order to fulfil this potential is that Man himself must change. He must open up his consciousness, allow himself to be transported by the ecstatic spiral, and tune in to the ever-present continuum of Time and of Music - become part of the universal consciousness. Thus Stockhausen advocates, not the (passive) hope of a new consciousness through the escape from present circumstances, but a deliberate act of spiritual growth which will enable Man to find Eternity and universal peace through a new perception of ordinary material circumstances.

Perceived through a new consciousness, ordinary objects become magical. This is the message of "Gold Dust" (from "Aus den Seben Tagen") and of "Hymnen". In his instructions to the performers of "Gold Dust" Stockhausen requests the musicians to prepare themselves for four days before the performance - resulting in a totally new and magical experience of otherwise fairly commonplace sonic objects.⁵ "Hymnen" points towards an ideal state of universal consciousness where a "cultural" object (a national anthem) - known by everyone in everyday reality - becomes integrated in a new spiritual atmosphere and is perceived as "a marvel of magic".⁶

1 : Jonathan Cott, op cit., p.19.

2 : p.6.

3 : "Quatour pour la fin du Temps".

4 : cf. p.99.

5 : cf. p.70: New perception and "heightened response" in Messiaen's music.

6 : Jonathan Cott, op cit., p.34.

In this spiritual adventure Stockhausen foresees the integration and union, in present Time and Space, of all dualities and opposites. Pluralism and Monism are finally united in "Pluramon" ("Hymnen"). The "harmony of the spheres" becomes the reality of "harmonia mundi" - the harmony of the world. McLuhan's "global village" becomes, in "Kurzwellen" and in the Time-worlds of "Telemusik", Stockhausen's music of a global and interstellar consciousness. Messiaen's love and exploration of Nature becomes Stockhausen's ecstasy of the Cosmic Spiral. Stravinsky's ritual of the body becomes, in Stockhausen's intuitive music, the committed musician's ritual of the spirit:

"I think the ultimate goal of a creative person is to transform his whole existence as a person into a medium that's more timeless, more spiritual. All my energy goes into the music; and it is not really my music... I'm commissioned, so to speak, by a supernatural power to do what I do..."¹

"I meditate before I start to play, I pray. When I start playing I have learned to forget about myself....The moment I start playing I'm gone, and I am the sounds and I am the process, and you can't ask me - I can't give you any answer - what has happened. When it's over, then I fall back, like from a session of laughing gas, into thinking and becoming aware of my environment."²

"...every composer who has understood that he's only realizing what must be done, as Schönberg said, not what he personally wants to do, transcends self-expression and begins the spiritual spiral through his work.... the spiral begins to wind up and he realizes that he's no longer the same. Through the DOING itself, he becomes a better person because he becomes more conscious..."³

1 : Jonathan Cott quotes Stockhausen, op cit., p.51.

2 : Ibid., p.39.

3 : Ibid., p.16.

This is Stockhausen as the composer of "cool" medium musical ritual¹ and as the architect of the Ecstatic (musical) Spiral. In his compositions the music is Time, and the music is Ritual. The composer is at once anointed priest, ecstatic ritual initiate, and twentieth-century musician committed to his vision of a new spiritual reality.

1 : cf.p.17.

CONCLUSION.

It is possible to trace four lines of development in the musical aesthetic of the composers included in this discussion:

(i) A growing consciousness and exploration of musical time: from Debussy's concept of "rhythmicized time" and Stravinsky's autonomous rhythms, through Messiaen's independently structured rhythmic language and Webern's musico-temporal dimensions, to Stockhausen's all-encompassing Time continuum.

(ii) A tendency to move away from the concept of dualities and opposites, towards integration: from Stravinsky's attempts to equalize musical parameters (i.e. change the traditional musical hierarchical relationships in which the dominant roles were assigned to harmony and melody) and Webern's investigation into the relationships between musical parameters and spatio-temporal dimensions, to Messiaen's concern with relationships, and thence to Stockhausen's music in which everything is interrelated and, ultimately, integrated.

(iii) An increasing concern for, and interest in the nature of, the listener's experience: from Debussy's obscured rhythm and Stravinsky's accented rhythms, through Messiaen's "voluptuous music" and "charm of impossibilities"¹ to Webern's study of experiential time and Stockhausen's perceptual "registers" of Time and his ideal of a new spiritual perception of reality.

Allied with this is the development from Debussy's "preoccupation with the present moment", through Messiaen's "single duration" and Webern's pointillism, to Stockhausen's Moment form.

(iv) A return to the idea of ritual in music: the "hot" medium of "Le Sacre du Printemps", the "cool" medium of "Prélude à l'Après-midi d'une Faune" and "Aus den Sieben Tagen", the ritual-derived drama of "Oedipus Rex", the religious background and content of Messiaen's music and the integration of the Bacchic dance and Apollonian stylization in the movements of the

1 : "Technique de mon Langage Musical", op cit., p.13.

soloist in "Inori" as he traces the symbolic gestures within the sculptured space around the axis of his body; a progression, moreover, from the "physical" ritual of "Le Sacre " through the intellectualized ritual derivatives, drama ("Oedipus Rex") and religion (Messiaen's religious music), to the spiritual involvement in the ritual of Stockhausen's ecstatic spiral.

This "spiritual involvement in the ritual of Stockhausen's ecstatic spiral" points towards another feature of twentieth-century musico-temporal aesthetic which has become clear in the course of this discussion - a new interpretation of Man's ideal of freedom from Time's dominion (a trend of thought which is, in the present context, represented by the philosophy and music of Karlheinz Stockhausen). It concerns a re-interpretation (or adaptation) of the Platonic principle of a dual universe. Plato contrasted Man's imperfect material existence IN Time, with an ideal, perfect existence OUTSIDE Time; Man had to seek fulfilment outside himself and outside Time - in a new Space and in Eternity. Stockhausen, too, conceives of a dual universe, contrasting the material with the spiritual; but for him the better and "higher" life exists IN Time - Man has to seek fulfilment WITHIN himself and WITHIN Time. Thus Stockhausen believes that freedom (liberation) from Man's subjection to Time is to be found WITHIN present Time and Space through the active and deliberate cultivation of a new consciousness. Whereas Plato's ideal world was essentially dependent on an "external" circumstance (Man's existence outside Time), Stockhausen's ideal world is, first of all, fundamentally an "internal" attribute (Man's new inner consciousness), although, ideally, this inner liberation will eventually be externalized in a universal consciousness.

It has been pointed out (on p.105) that this musico-philosophical development seems to contain an element of the twentieth-century "revolution in expectation". Man does not wait to receive a spiritually fulfilled life after death (in Eternity); he seeks it in his present life through conscious exploration and manipulation of his mental, spiritual and artistic senses. In this search (in the musical medium) he has, of course, been assisted by twentieth-century technology: the twentieth-century composer who wants to utilize, manipulate and compose with musical time, is able to conquer at least the performer's temporal limitations through the potential of electronic durational control.

"Art", says Marshall McLuhan, "is a translator of experience."¹

The presence, therefore, of a concern with Time and ritual elements in twentieth-century music, is an indication of the presence of these features in the experience and consciousness of twentieth-century Man. In other words, the twentieth-century composer's interest in, and musical expression of, ritual and Time, reflect his experience of ritual and Time in twentieth-century society. Thus a twentieth-century musical work which centres around, or incorporates elements of, ritual and Time, is to a large extent representative of certain characteristics inherent in the society from which it sprang.

"...the impulse which drove the composer to this creation is something of a common experience, of a yet inarticulate ZEITGEIST, which others, too, have felt."²

Apart from considerations of self-expression and technical exploration of new media and material, there would seem to be an underlying purpose, a reason, why the twentieth-century composer should incorporate into his music the twentieth-century Zeitgeist-elements, Time and ritual. This purpose is explained in the following two quotations:

"The essential thing, surely, about a work of art is that it somehow be useful to us in connection with our daily lives."³

"...the obligation - the morality, if you wish - of all the arts today is to intensify, to alter, perceptual awareness and hence, consciousness. Awareness and consciousness of what? Of the real material world. Of the things we see and hear and taste and touch."⁴

1 : Marshall McLuhan: "Understanding Media", p.76.

2 : Susanne K.Langer: "Philosophy in a New Key", p.214.

3 : John Cage; Quoted by R.Kostelanetz in "John Cage", p.163.

(Documentary Monographs in Modern Art, New York. 1970.)

4 : Joe Byrd, *ibid.*, p.23.

Man must use his arts to alter his awareness of reality. This echoes Stockhausen's desire for a new perception and consciousness - a new attitude towards material and spiritual reality effected through the implementation of artistic discipline (in its freest sense - as an aesthetic consideration). The ritualistic concept of the ecstatic spiral in artistic involvement provides the solution to Man's temporal dilemma. His ritual spiral ascent frees him from what Paul del Perugia calls, "the ephemeral tensions of Space and Time".¹

Music, as temporal art, is perhaps the most potent force, and musical ritual the most accessible yet powerful medium, in Man's search for the conquest of Time - a conquest which, in the final analysis, may be seen to be, not of Time, but of Man himself. Conquered Man, in this sense, is Enlightened Man - Man who has freed his mind and disciplined his will to submit to the ritual (spiral) ascent towards a higher, freer consciousness, where he no longer sees only the momentary revelation, but is able to apprehend, and comprehend,

"the point of intersection of the timeless
with Time."²

1 : Paul del Perugia: "From Music to Ecstasy"
in The World of Music XIII/3, 1971.

2 : T.S.Eliot: "The Dry Salvage."

APPENDIX I-A

MODES OF LIMITED TRANSPOSITION

Messiaen invented seven modes of his own, which he called the "modes of limited transposition". These modes can modulate internally - from one transposition to another - and externally - from one mode to another; they can be related to the major tonality; they can be used in conjunction with other modes of limited transposition; and they can be related to, or contrasted with, Hindu, Greek or traditional ecclesiastical modes. Messiaen associates certain characteristic harmonies and melodic and cadential formulae with each mode of limited transposition.

These modes, says Messiaen¹, complements his use of non-retrogradable rhythms², insofar as they already contain their transpositions within themselves, just as the non-retrogradable rhythms already contain their own retrogrades. The modes realize vertically what the non-retrogradable rhythms realize horizontally.

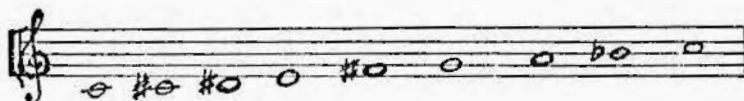
The first mode of limited transposition is in fact the whole-tone scale and is seldom used on its own in Messiaen's music. The second mode is transposable three times, the third is transposable four times, and numbers 4, 5, 6 and 7 are each transposable six times.

These are the modes of limited transposition:

No.1 :



No.2 :



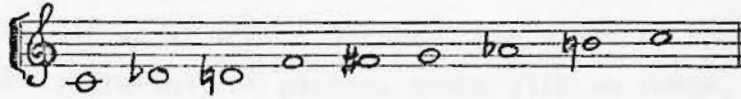
1 : "Technique de mon Langage Musical", p.13.

2 : See pp.84-5.

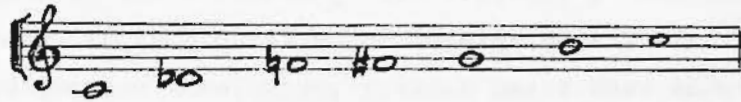
No.3 :



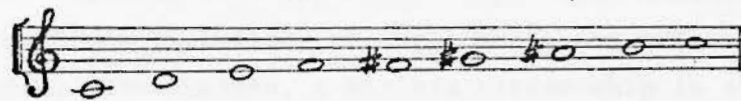
No.4 :



No.5 :



No.6 :



No.7 :



APPENDIX I-B

ADDED NOTES

"With the advent of Claude Debussy, one spoke of appoggiaturas without resolution, of passing notes with no issue, etc. In fact, one found them in his first works. In 'Pélleas et Mélisande', 'Les Estampes', 'Les Préludes', 'Les Images' for the piano, it is a question of foreign notes, with neither preparation nor resolution, without particular expressive accent, which tranquilly make a part of the chord, changing its color, giving it a spice, a new perfume. These notes keep a character of intrusion, of supplement: the bee in the flower! They have, nevertheless, a certain citizenship in the chord, either because they have the same sonority as some classified appoggiatura, or because they issue from the resonance of the fundamental. They are ADDED notes."

"Dissonances or foreign notes, they are all the same. With our complicated chords, is a dissonance possible? And, in this multitude of added notes, what becomes of the old foreign notes: pedal, passing note, embellishment, appoggiatura? They are indispensable to the expressive and contrapuntal life of music; let us preserve them by enlarging them. The pedal will become the pedal group; the passing note, the passing group; the embellishment, the embellishment group. Each of these groups will contain several foreign notes, forming a complete 'whole music' (rhythm, harmony, melody) and being analysed as: a single pedal, a single passing note, a single embellishment."

1 : "Technique de mon Langage Musical", Chapter XIII/1, p.47.

2 : Ibid., p.55.

APPENDIX I-C

"AGRANDISSEMENT ASYMÉTRIQUE"

This is the melodic counterpart of "personnages rythmiques"¹ which Messiaen developed in "Vingt Regards sur l'Enfant-Jésus". ("L'Echange" is entirely centered around this melodic compositional process.) Just as one rhythmic / durational "character" is increased, another "character" diminished, and one "character" allowed to remain immobile in the three-fold "personnages rythmiques" relationship, in the same way the technique of "agrandissement asymétrique" allows one melodic / pitch "character" to "increase" (i.e. it is transposed upwards in pitch), another "character" to "decrease" (i.e. it is transposed downwards in pitch) and another (or others) to remain unchanged.

Here is an example from "Par Lui a été fait" (from "Vingt Regards")

- x : the increasing "character"
- y : the decreasing "character"
- z : the immobile "character"

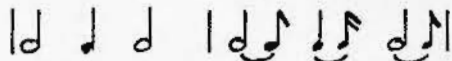


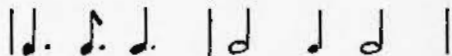
1 : See pp.86-7.

APPENDIX I-D

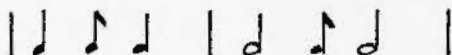
TABLE OF AUGMENTATION AND DIMINUTION THROUGH ADDITION AND SUBTRACTION¹


Augmentation:

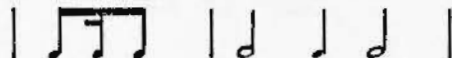
Addition of a quarter of the values: 

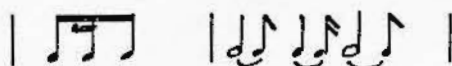
Addition of a third of the values: 

Addition of half the values: 

Addition of the values to themselves: 

Addition of twice the values: 

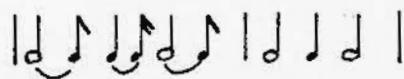
Addition of three times the values: 

Addition of four times the values: 

1 : "Technique de mon Langage Musical", Chapter IV, pp.18-9.

Diminution:

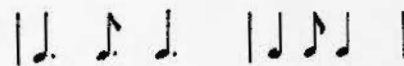
Withdrawal of a fifth of the values:



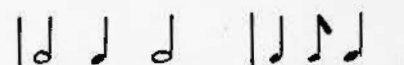
Withdrawal of a quarter of the values:



Withdrawal of a third of the values:



Withdrawal of half the values:



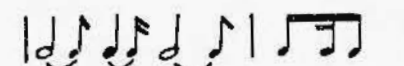
Withdrawal of two-thirds of the values:



Withdrawal of three-quarters of the values:



Withdrawal of four-fifths of the values:













APPENDIX I-E


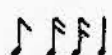
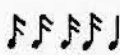
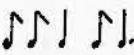



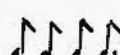



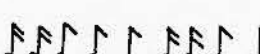



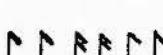
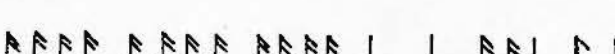
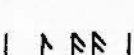

SHARNGADEVA RHYTHMS


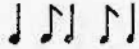
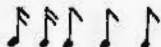
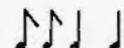

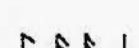

While he was studying at the Paris Conservatoire - he was a student there from 1919 until 1930 - Messiaen discovered - in the first volume of Lavignac's "Encyclopédie de la Musique et Dictionnaire du Conservatoire" (Editions Delagrave, 1924) - the table of 120 deçî-tâias (i.e. rhythms from the Indian provinces) compiled by the Hindu theoretician, Sharngadeva (Çarngadeva) in his treatise "Samgîta-ratnâkara".



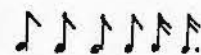
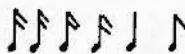
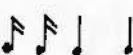


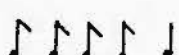

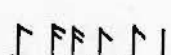




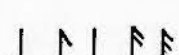
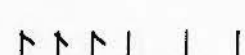

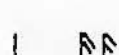
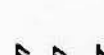
This is the collection of Sharngadeva rhythms:












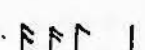
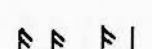
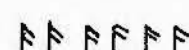
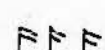
1. aditâla : 
2. dvitiya : 
3. tritiya : 
4. caturthaka : 
5. pañcama : 
6. nihçankalîla : 
7. darpana : 
8. simhavikrama : 
9. ratilîla : 
10. simhalîla : 



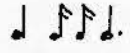

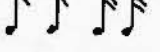
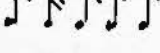

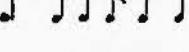

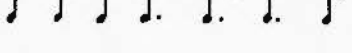
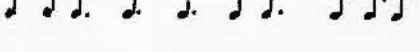


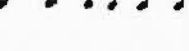





1 : See Robert Sherlaw Johnson, op cit., pp.10 and 194-8.

11. kandarpa : 
12. vīravikrama : 
13. ranga : 
14. çriranga : 
15. caccari : 
16. pratyanga : 
17. yatilagna : 
18. gajalīla : 
19. hamsalīla : 
20. varnabhinna : 
21. tribhinna : 
22. râjacûdâmâni : 
23. rangodyota : 
24. rangapradīpaka : 
25. râjatâla : 
26. tryasra varna : 
- miçra varna : 
- caturasra varna : 
27. simhavikrīdita : 

44. vijayānanda : 
45. kṛidā (and) candanihsāruka : 
46. jayaçrī : 
47. makaranda : 
48. kīrti : 
49. çrīkīrti : 
50. pratitāla : 
51. vijaya : 
52. bindumālī : 
53. sama : 
54. nandana : 
55. manthikā : 
- (or) 
56. dīpaka : 
57. udīkshana : 
58. dhenkī : 
59. vishama : 
60. varnamanthikā : 
61. abhinanda : 

62. ananga : 
63. nândî : 
64. mallatâla : 
65. kankâla (1) pûrna : 
- (2) khanda : 
- (3) sama : 
- (4) vishama : 
66. kanduka : 
67. ekatâli : 
68. kumuda : 
- (or) 
69. catustâla : 
70. dombulî : 
71. abhanga : 
72. râyavankola : 
73. vasanta : 
74. laghuçekhara : 
75. pratâpaçekhara : 
76. jhaihpâ : 

77. gajajhampa : 
78. caturmukha : 
79. madana : 
80. pratimanthaka or koliaka : 
- 81 : pârvitilocana : 
82. rati : 
83. lîlâ : 
84. karanayati : 
85. lalita : 
86. gârugi : 
87. râjanârâyana: 
88. lakskmiça : 
89. lalitapriya : 
90. çrinandana : 
91. janaka : 
92. vardhana : 
93. râgavardhana: 
94. shattâla : 
95. antarakridâ : 

96. hamsa : 
97. utsava : 
98. vilokita : 
99. gaja : 
100. varnayati : 
101. simha 
102. karuna : 
103. sârasa : 
104. candatâla : 
105. candrakalâ : 
106. laya : 
107. skanda : 
108. addatâli or triputa : 
109. dhattâ : 
110. dvavdva : 
111. mukunda : 
112. kuvindaka : 
113. kaladhvani : 
114. gauri : 

115. sarasvatikanthâbharana : ♩ ♩ ♩ ♩ ♩

116. bhagna : ♩ ♩ ♩ ♩ ♩ ♩ ♩

117. râjamrigânga : ♩ ♩ ♩ ♩

118. râjamârtanda : ♩ ♩ ♩

119. niççanka : ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩

120. çarngadeva : ♩ ♩ ♩ ♩ ♩ ♩ ♩

APPENDIX II-A

COLOUR IN "TRANS"¹

In a conversation with Jonathan Cott,² Stockhausen tells him of the dream in which he visualized all the theatrical (and most of the musical) detail of "Trans" - the positioning of the instrumentalists on stage, the sound patterns, the shuttle sounds of a weaving chair (loom), the "dramatic" moments within the work, and so on - everything seen in a haze of red-violet light...

"...it was exactly the same light I've seen several times in meditation....It's a warm light....the closest thing to it I've seen in daylight is when I flew over the North Pole from Copenhagen to Tokyo. It was a night flight.... very early morning...I couldn't see the sun, but the entire ice floe underneath was changing very very slowly from black to gray into this red-violet light....You also see it sometimes over the ocean in the evening when the sun's just set behind the horizon...the last days in summertime when it sinks very slowly...it's those last moments when you have that red-violet light."

Then came the problems of realization:

"At first they didn't know what to do at all. They thought of taking one of those transparent curtains that are sometimes used in theatres to project a clouded mist during certain scenes, and they demonstrated this.... showing me all different kinds of violet lights. And they were completely astonished when I said: No, that's

1 : See p.97.

2 : Jonathan Cott, op cit., pp.52-4.

not it, it should be a little more red, there shouldn't be those dark edges. They said, It really doesn't matter. But I was keeping to what I'd seen in the dream."

"And I remember that when I gave a concert in New York that February - it was at Alice Tully Hall - and when I saw the carpet on the floor, I just laughed, I was happy. And I asked the hall manager for a piece of this carpet. When you looked at it from a distance of about two yards, it came closest to the colour of my dream. He gave me a piece, and I sent it to Baden-Baden. The preselected lamps were already of that colour. So we found the colour approximately..."

2½	5½	4	3	3	4	4
9		18				
XV	XVI	XVII	XVIII	IX	XX	XXI
HARMONIE		POLYPHONIE				
PAUSE	ECHO	EVOLUTION 1	EVOLUTION 2	SPIRAL	ADORATION	PAUSE
				↑ "HU"		

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